

## Annalise Beube

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**From:** UW - Madison Public Records <universityofwisconsin@mycusthelp.net>  
**Sent:** Wednesday, March 23, 2022 7:19 AM  
**To:** S&G Information Request Staff  
**Subject:** Aaron Siri Siri & Glimstad LLP Public Records Request :: P002044-011422

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

--- Please respond above this line ---



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### Public Records Request: P002044-011422

RE: PUBLIC RECORDS REQUEST of January 14, 2022.

Reference # P002042-011422 and Reference # P002044-011422.

Dear Requester,

I write in response to your public records requests of January 14, 2022. Please note that Kelsey Florek and Allen Bateman are university employees in that the Wisconsin State Laboratory of Hygiene (WSLH) is part of the university. You requested the following:

1.) P002042-0011422: All communications sent or received by Kasen K. Riemersma, DVM, PhD; Peter J. Halfmann, PhD; Yoshihiro Kawaoka, DVM, PhD; Thomas C. Friedrich, PhD; David H. O'Connor, PhD; and/or Ryan Westergaard, MD, PhD regarding "Shedding of Infectious SARS-CoV-2 Despite Vaccination" available online at <https://www.medrxiv.org/content/10.1101/2021.07.31.21261387v4> and attached hereto as Exhibit A.

2.) P002044-011422: All communications sent or received by Kelsey R. Florek, MPH, PhD and/or Allen Bateman, PhD regarding "Shedding of Infectious SARS-CoV-2 Despite Vaccination" available online at: [medrxiv.org/content/10.1101/2021.07.31.21261387v4](https://medrxiv.org/content/10.1101/2021.07.31.21261387v4) and attached hereto as Exhibit A.

Note that since you did not provide exact search terms nor a time frame in which to search, this request is insufficient under Wisconsin's public records law because it does not clearly identify or reasonably limit the universe of records you are requesting. To be sufficient, a request must have "a reasonable limitation as to subject matter and length of time" and must reasonably describe the records you are requesting. Wis. Stat. § 19.35(1)(h). This is intended to prevent the records custodian from having to guess at what records a requester desires, and to avoid imposition of undue burdens on the university that would impair the functioning of the offices necessary to process public records requests.

However, in the interest of transparency we searched in the email accounts of the above listed individuals on the phrase "Shedding of Infectious SARS-CoV-2 Despite Vaccination" and used the time frame you provided in requests Reference Numbers P002043-011422 and P002045-011422 which is June 1, 2021 to January 14, 2022.

These records have been released to the University of Wisconsin-Madison Public Records Center. Click the link below to login and retrieve your records.

[Access the Public Records Center to download the responsive records.](#)

Note that redactions have been made to these records for the following reasons:

1. Log-in information and passcodes. The university has redacted links to protected sites and other information that could potentially provide unauthorized access to password protected sites. We did so after performing the balancing test inherent in the public records law and determining that the public interest in access to such administrative information is outweighed by the public interest in keeping that information private, especially when that information is tangential to the subject of the request and unrelated to the substantive conduct of government business.

1. Drafts. The university denies access to drafts. Under Wis. Stat. § 19.32(2), a record under the public records law "does not include drafts, notes, preliminary computations, and like materials."
2. Personal contact information. The university has redacted personal contact information such as email addresses or personal cell phone numbers of its employees per § 19.36(10)(a), Wis. Stats.
3. Purely personal content. Purely personal content has been redacted from these records pursuant to the balancing test. We have evaluated information in this category in light of the purpose of Wisconsin's public records law, which is to support an informed electorate by providing persons with "information regarding the affairs of government and the official acts of those officers and employees who represent them." (Emphasis in original). *Schill v. Wisconsin Rapids School District*, 2010 WI 86 ¶180, 327 Wis. 2d 572, 786 N.W. 2d 177 (citing Wis. Stat. § 19.31). In *Schill*, the Wisconsin Supreme Court stated that the public disclosure of emails containing purely personal content, as opposed to those containing the affairs of government or the official acts of its employees, "is neither a proper nor an intended effect of the Public Records Law...". *Id.* at ¶178. Thus, content, not medium or format, determines how a document is treated under the public records law. *Id.* at ¶¶110 and 113. In applying the balancing test, we have concluded that any public interest in the disclosure of this purely personal information is outweighed by public policies recognizing the privacy interest of individuals in matters unrelated to the conduct of government business. The public has little interest in the release of personal information unrelated to the function of government, and has a weightier interest in the protection of some minimum amount of privacy being afforded to state employees. See *Schill v. Wisconsin Rapids School District*, 2010 WI 86 ¶ 9 & n. 4 (Abrahamson, C. J., lead op.); *id.* ¶ 148 & n. 2 (Bradley, J., concurring); *id.* ¶ 173 & n. 4 (Gableman, J., concurring), 327 Wis. 2d 572, 786 N.W. 2d 177.

The university is required to inform you that to the extent this amounts to a denial of your request it is subject to review by mandamus under Wis. Stat. § 19.37(1)(a) or by application to the attorney general or district attorney pursuant to Wis. Stat. § 19.37(1)(b).

The university has fully responded to your request and it is now closed.

Sincerely,

Lisa Hull

Public Records Custodian

Office of Compliance

UW-Madison

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[Access the Public Records Center to View the Request](#)





**From:** [Thomas Friedrich \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) There is already a review article...  
**Date:** Sunday, December 12, 2021 4:49:06 PM

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...on breakthrough infections, led by Marc Lipsitch, in [Nature Reviews Immunology](#). Looks comprehensive.



You can reply to this email or [respond in Basecamp](#).

This message was sent to Al Bateman, Anna Kocharian, Brittany Grogan, Dave OConnor, Hannah Segaloff, Kasen Riemersma, Katarina Grande, Kelsey Florek, Peter Halfmann, Ryan Westergaard, Sanjib Bhattacharyya, Thomas Friedrich, and Yoshihiro Kawaoka.

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**From:** [Thomas Friedrich \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Relevant paper in Nature Medicine  
**Date:** Thursday, December 2, 2021 9:45:25 AM

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Hi all. I saw this recent [brief communication](#) in Nature Med today relevant to our paper. Key passage:

Focusing on the *RdRp* gene, regression coefficients for vaccinated over unvaccinated, representing the difference in Ct between the groups, started with 4.6 (95% confidence interval (CI), 2.2–6.9) for BTI 7–30 d after the second vaccine dose, yet decayed over time down to 0.6 (95% CI, 0.05–1.12) after about 2 months ( $P = 0.00005$ , [Methods](#): ‘Change in Ct over time’), and vanished to insignificant values for infections 6 months or longer after vaccination. Analyzing data for up to 34 d after inoculation revealed that this decline, however, was overturned after the booster shot, which was associated with an increase of 2.4 (95% CI, 2.0–2.9) in the Ct.



You can reply to this email or [respond in Basecamp](#).

This message was sent to Al Bateman, Anna Kocharian, Brittany Grogan, Dave OConnor, Hannah Segaloff, Kasen Riemersma, Katarina Grande, Kelsey Florek, Peter Halfmann, Ryan Westergaard, Sanjib Bhattacharyya, Thomas Friedrich, and Yoshihiro Kawaoka.

[Unsubscribe](#) • [Change your notification settings](#)

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Basecamp (University of WI - Madison): Here's the latest activity  
**Date:** Monday, November 29, 2021 9:33:25 AM

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## University of WI - Madison Here's the latest activity across everything

Since 9am on Sunday, November 28

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### g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

#### These messages were posted



**Shelby O. posted [Antibody assays](#)**

Hi all -- I'm working on the approach for project 2, but I imagine this question will apply to other projects. I need to state how we will measure antibody titers. ELISA assays are one way, but not the only way. Here are my questions: 1. Are we just going to propose ELISA assays? I found a r...



**Corrie B. posted [Meeting today, 10am](#)**

Reminder, we have an all hands meeting today for the submission of the P01. Here is an agenda, feel free to add more agenda items. 1. Administrative Announcements-any info from NIH about approval to submit? 2. Project 1, specific aims updates 10 minutes 3. Project 2, specific aims updates 1...

#### Something was added to Docs & Files



**Thomas F. linked up [Shared Paperpile reference library](#)**



[Shared Paperpile reference library](#) • [View on](#)

#### Someone commented on [Shared Paperpile reference library](#)



**Thomas Friedrich**

Here's the link in case the button above does not work: <https://paperpile.com/shared/GCkrUm>

#### Someone commented on [Are there any specific biohazards with aBSL-3 that need to be addressed?](#)



**Thomas Friedrich**

We will need a specific Biohazards section where we describe containment facilities, though. I am sure Amy has relevant boilerplate for IRI.

Someone commented on [group paperstack?](#)



**Thomas Friedrich**

Here's a link to a shared Paperpile reference library: <https://paperpile.com/shared/GCkrUm>

Someone commented on [Project 3 immune suppression: preliminary data](#)



**Thomas Friedrich**

For our future reference, here is an excerpt from one of the Osterhaus group papers describing immune suppressive treatment for ferrets that results in prolonged shedding of influenza virus. Smith Jacqueline Dixon, do the doses given to ferrets sound relevant/proportional to human dosing? "Immuno...

Someone commented on [Specific Aims](#)



**Dave OConnor**

Thomas - it is definitely not great, but I vomited out an Aims page for the Overall section.

Someone commented on [Project timeline](#)



**Shelby O'Connor**

Dave That is a good question. Actually, I think that last Rituxan dose would be at week 11, or day 77. Personally, I think it would be more cost effective to just stop at day 77 or 80 and I don't think we would lose much scientifically. Basically, I proposed administering Rituxan 1x every 4 we...



**Shelby O'Connor**

Dave I just fixed the more detailed timeline to reflect the 4 week Rituxan intervals. Sorry I didn't notice that yesterday. [StudyTimeline\_sampling.pdf]



Someone commented on [Research Strategy](#)



**Dave OConnor**

Thomas - I also vomited out part of a Significance section here and outlined the Innovation and Approach section. Feel free to completely

revise.

## People discussed [Antibody assays](#)



**Thomas Friedrich**

Shelby we proposed full-virus neut assays as part of Project 3 but on Monday's call decided to put that in the Immunology Core. I think you need neut.



**Shelby O'Connor**

So, no ELISAs Thomas ??



**Shelby O'Connor**

Sorry, I have more questions now Thomas. Are you proposing full neut assays or pseudo virus neut assays? And, how will you incorporate the new spike variants that are detected in the long term shedders?



**Thomas Friedrich**

I would use pseudotype assays to clone the new variant Spike.



**Thomas Friedrich**

Well, I think there are a few questions here. 1. If a patient/animal is immunocompromised, what is their ability to respond to SARS-CoV-2 infection? Do they make detectable antibodies against the virus? 2. If Spike variants arise in a patient/animal, are they selected by that patient's/animal's ...



**Shelby O'Connor**

How's about that - you can get a pseudo type kit from BEI: <https://www.beiresources.org/Catalog/BEIPlasmidVectors/NR-53816.aspx> Also - I agree with your questions. I had written down similar ones in my own notes: 1. Will antibodies generated during early infection detect late Spike proteins? 2...



**Nancy Wilson**

It would be interesting if the specificity of the antibodies changed during infection after immunosuppression. I would think that the spike protein would remain immunodominant, just lower titer, or perhaps off target as the virus escapes, but I guess that is what we are asking here! The chall...

## People discussed [Make org chart](#)



**Corrie Burmeister**

Will do!



**Amanda Espinosa**

Corrie I made a sheet in the google drive, "P01\_2021\_tracking" that should help. There are a few highlighted notes that will need to be addressed Dave.

## m: Emergence of a globally unique SARS-CoV-2 Spike E484T mutation in a persistently infected immunocompromised individual

People discussed [Final Figure Review - Week of Nov. 29th](#)



**Dave OConnor**

Nick - A few questions: 1. Are we still meeting tomorrow at 11? There isn't a meeting on my calendar? 2. If so, can you please try to get the clinical figure and Peter 's figure before we meet so we can finalize the figures? I know that this is somewhat out of your control, but I don't think i...



**Thomas Friedrich**

Yes, I think at this point it is better to postpone a day or two to make sure we have all the pieces we need Dave Nick. Luis Gage Kat what do you think?



**Dave OConnor**

We really need to get these figures finished though - Kat have you been in touch with the clinical folks to get this polished? What is the latest data that we have from this patient? Is there anything new from Mayo Joseph ? Peter - I'm losing track of time - when are the assays with the new anti...



**Dave OConnor**

From Peter : "The four mAbs from Invivogen should arrive this week. With last week being a holiday week, it seems shipping is behind. I will report the results as IC99 values for the two viruses in a table though a heat map could be generated from the data if you wanted to."

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## m: Shedding of Infectious SARS-CoV-2 Despite Vaccination

People discussed [Manuscript update](#)



**Katarina Grande**

Current status is now "under review." Brittany, do we have the data file we need from DHS to gauge what our booster/3rd dose BTs are looking like right now?



**Brittany Grogan**

We don't, Katarina, but it's something I can pull together manually, just have to download some files from WEDSS. I can work on developing a masterlist of booster breakthroughs today that we can use in the meantime until DHS adds those to our daily files! To be consistent with "regular" breakthro...

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Basecamp emails this report every morning. [Stop sending it to me.](#)

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Basecamp (University of WI - Madison): Here's the latest activity  
**Date:** Tuesday, November 30, 2021 9:17:10 AM

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## University of WI - Madison

### Here's the latest activity across everything

Since 9am on Monday, November 29

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#### g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

This was checked off on [Resource Sharing Plan](#)

Paste Resource Sharing Plan from previous SIV/SARS-CoV-2 submission into gDoc Assigned to: Dave O.

These were checked off on [Facilities and other resources](#)

Add DHO facilities and resources from air sampling P01 Assigned to: Dave O.

Add SLO facilities and resources from air sampling P01 Assigned to: Dave O.

These were checked off on [Equipment](#)

Add DHO equipment from air sampling P01 to gDoc Assigned to: Dave O.

Add SLO equipment from air sampling P01 to gDoc Assigned to: Dave O.

These were checked off on [Biographical sketches](#)

Shelby O'Connor bio sketch

Should we include scientist biosketches? Assigned to: Amanda E.

This was checked off on [Budget justification](#)

Copy initial budget justification from pre-proposal to gDoc Assigned to: Dave O.

This was checked off on [Authentication of key biological resources](#)

Copy SIV/SARS-CoV-2 authentication document to gDoc to modify Assigned to: Dave O.

This was checked off on [Biographical sketches](#)

Jens Eickhoff biosketch Assigned to: Corrie B.

These messages were posted



**Shelby O. posted [T cell assays](#)**

Nancy AMY I thought I would start a chat about the T cell assays. Basically, I think we need to know: a. Are there antiviral T cells that exist? b. Are there mutations in SARS-CoV-2 from late-stage infections that are located in T cell epitopes? c. Will known antiviral T cells (from early in i...



**Corrie B. posted [Meeting notes](#)**

Updates - P01 submission, are we approved to submit? Dave emailed Eric Stemy, Program Officer yesterday. No respond as of yet. Biostetch updates, other conceptual developments any barriers? None mentioned. P2 updates: Shelby updated the group and shared timeline.



Aims have changed since last ...

Someone commented on [Antibody assays](#)



**Shelby O'Connor**

Nancy yes, we need to do T cell assays. I need a separate discussion for that. Although AMY and I have briefly brought up the topic.

People discussed [P1 question: Selection of immunosuppressive drug regimen for NHP?](#)



**Jacqueline Garonzik Wang**

Hi All - first I want to apologize for being behind on our aims - the holiday week/weekend got a little ahead of me, but I plan to dive back in today and tomorrow re q's 1 - its not unreasonable but its not standard of care. the protocol dixon sent is close to standard of care for our transpla...



**Dave OConnor**

Thanks Jacqueline (CC:Shelby AMY CHRISTINA DAWN), For Project 2, I think we decided this morning that we'd use Dixon's protocol initially in 3 animals. If that doesn't result in prolonged shedding in 2 of 3 macaques, we'll intensify with Rituxan. Smith also shared the NIH standard protocol wit...

People discussed [T cell assays](#)



**Nancy Wilson**

Disagree that T cell assays are less important than antibody. There was a study of HCW in UK in which pre-existing T cell responses to transcription complex from other previous Coronavirus infections resulted in resistance to SARS CoV2 infection. And, T cell assays are more flexible in that we ...



**AMY ELLIS**

We can also include markers that are important for B cell help (like CD154/CD40L, and/or ICOS, etc.....) in T cell functional assays. CD154 is already a part of my AIM assay and I can include it in an ICS assay pretty easily, for a "combo" assay (AIM+ICS). Then we can get information about B cel...



**Nancy Wilson**

That sounds awesome Amy! Would you also add CD20, to easily identify the B cells?



**Thomas Friedrich**

Rituximab is anti-CD20. If we gave it, would it confound a phenotyping panel?



**Nancy Wilson**

Absolutely. There will be no B cells. There may be some late stage memory B cells, esp in some compartments like LN, BM, but no B cells circulating. There may also be plasmablasts circulating or in spleen/BM and plasma cells in BM. In hamsters maybe PC in spleen as well, since we have them the...



**Nancy Wilson**

Also may still be pre-B cells in BM, before CD20 is upregulated. But it will shift the immunophenotyping profoundly. In our Ritux patients, we saw an increase in T cells, but not monocytes, implying dysregulation rather than just that we deleted B cells so now we have more B cells in the lympho...

Someone commented on [Are there any specific biohazards with aBSL-3 that need to be addressed?](#)



**Corrie Burmeister**

Added language from Peter here as a launching point.  
[https://docs.google.com/document/d/1ALTyeVIHh8JXQH79xgCx7\\_rDfy-TPs9G73OyAxZ-D50/edit](https://docs.google.com/document/d/1ALTyeVIHh8JXQH79xgCx7_rDfy-TPs9G73OyAxZ-D50/edit)

People discussed [Meeting notes](#)



**Shelby O'Connor**

Corrie I didn't think I needed to follow up with Hartman or the pharmacy because I thought Peter was getting leftovers from UHS. Did I misunderstand Peter Dave ?



**Dave OConnor**

That is right. For the purposes of the grant, if not reality, we can point to that is how we will get vaccine.



**Corrie Burmeister**

Oh, yes, sorry! That conversation evolved so both you, Shelby and Dave have no action to take regarding vaccine accessibility for NHP. Peter has the info we need.



**Thomas Friedrich**

Update on Rituximab -- Buddy said that they give doses ranging from 7 mg/kg to 20 mg/kg in NHP. Peter I would suggest that the IACUC protocol say we will give a single dose of rituximab at 5-25 mg/kg 1-10 days before virus challenge. Does that sound reasonable?



**Nancy Wilson**

This is the dose our ABMR patients received.... All patients received a single dose of rituximab (375 mg/m<sup>2</sup> BSA), IVIG(200 mg/kg every 2 weeks for 3 months) and dexamethasone (100 mg and taper). BSA = body surface area.

People discussed [Make org chart](#)



**Corrie Burmeister**

[https://lucid.app/lucidchart/4b431cd3-e06d-4c9c-b832-65b8e28c2090/edit?viewport\\_loc=-684%2C885%2C6363%2C3335%2Cp2lqPbRw6Nftp&invitationId=inv\\_54444410-f264-4a16-87db-d56fa87c979d](https://lucid.app/lucidchart/4b431cd3-e06d-4c9c-b832-65b8e28c2090/edit?viewport_loc=-684%2C885%2C6363%2C3335%2Cp2lqPbRw6Nftp&invitationId=inv_54444410-f264-4a16-87db-d56fa87c979d) Dave I can work in Visio, however I just outlined the org chart above in the LucidChart b/c that was the platform use...



**Dave OConnor**

Corrie I can't see the link. I have no problem paying for LucidChart if we need it for a few months.



**Corrie Burmeister**

Boo! I just tried to email you a link. I think you need the OmniGraffle extension downloaded to open Lucid Chart (not sure if you have that). Dave



**Dave OConnor**

I just had to register. This looks like a good start. Remember that Thomas and I are co-multi PI on the entire thing.



**Corrie Burmeister**

Okay-thanks! I'll keep at it, and try to pretty it up a bit. Glad you were able to access this.

Someone commented on [Add SMPH BSL-3 facilities to gDocs - where are we going to process the tissues from infected anim...](#)



**Dave OConnor**

I pinged SMPH to fill in the document.

Someone commented on [Add WNPRC aBSL-2/aBSL-3 facilities to gDoc](#)



**Dave OConnor**

Added call-out for this information to the document.

People discussed [Jens Eickhoff biosketch](#)



**Dave OConnor**

Corrie can you follow up with Jens about a bio sketch?

**Corrie Burmeister**



Yep, Jens will be sending me his biosketch yet today, Dave .

Someone commented on [Biographical sketches](#)



**Corrie Burmeister**

Here it is, and has been added to the Admin Core folder.  
<https://docs.google.com/document/d/1bPOYqxEdKvIS1B28wJQADQgLQrhus/edit>

## **m: Emergence of a globally unique SARS-CoV-2 Spike E484T mutation in a persistently infected immunocompromised individual**

People discussed [Final Figure Review - Week of Nov. 29th](#)



**Nick Minor**

I also agree that it makes sense to postpone till more folks are available. Here's a when2meet poll that we can use to find a good time: <https://www.when2meet.com/?13771595-QaW8U>  
Happy to take any suggestions for when works for people too. Excepting tomorrow morning's labwide meeting and office ...



**Dave OConnor**

Nick meanwhile can you coordinate with Kat and the other clinicians to see if there is anything we can do to move those figures to completion?



**Nick Minor**

Sure thing. I just emailed Kat to see if the figure was remade with the clinicians, and we'll go from there. I'll touch base tomorrow morning with a status update.



**Thomas Friedrich**

Sounds good Nick. I hope we can push this out this week.



**Dave OConnor**

OK - sounds good. If you have downtime and want to work on the manuscript text, I'd encourage you to spend some time harmonizing that with the figures. We 100% \*need\* to have this in Medrxiv before our P01 goes in, and it is very relevant vis a vis Omicron, so I'm going to be pushier than norma...



**Nick Minor**

That sounds good to me. I'm itching to finish it too. When are you planning to submit the P01? Also, that sounds good on the text. I'll start working on it. Is this ([https://docs.google.com/document/d/17PWL1ROUQ\\_3t-q8rWb-ACcOLRDP2Kbpapw29Dui6jUw/edit?usp=sharing](https://docs.google.com/document/d/17PWL1ROUQ_3t-q8rWb-ACcOLRDP2Kbpapw29Dui6jUw/edit?usp=sharing)) the version I should work on, or...



**Thomas Friedrich**

Luis I know it's become a busy week, but you are able to work with Nick to harmonize the draft text and figures, that would be great. I agree with Dave that it is important to get this out as soon as we can. If you guys can get a draft in place that we can collaboratively polish, that would defin...



**Nick Minor**

Update: Sounds like Kat emailed the clinicians after our last figure meeting, but has not heard back. She's trying them again today. In light of our timeline, it seems like the quickest way to finish the figure is to get their notes and translate them into a figure ourselves (which is to say, my...



**Dave OConnor**

Yes, but I defer to Kat and her better understanding. I don't want to undermine our clinical colleagues and their desire to contribute. By the same token, there is urgency to get this done. Kat what do you advise?



**Thomas Friedrich**

Agree, I would like Kat to weigh in here.

**Kat Braun**

Let me try to email again and relay the desired timeline. To clarify, Thomas + Dave, you would like an improved version of the clinical timeline I put together, one summary graf of the clinical story, and then a more detailed version to be used as supplement?

**Dave OConnor**

All three: 1. We need updated text for the narrative text. 2. We need a clinical timeline for the main figures. 3. We need a comprehensive timeline for supplement.

**Luis Antonio Haddock**

Thomas yes, I can work on that with Nick. I asume we are still using the Drive Document that has been around for a while, correct?

**Kat Braun**

I re-iterated the desired timeline and specific tasks to our clinical partners. I will assist/coordinate with them in any way I can. I do think it's worth waiting for their expertise.

**Dave OConnor**

Kat - we can wait a few days, but not much longer. If they can do that we'd love to have them involved. We really need to get this out the door.

**Joseph D. Yao**

Nothing new on this patient at the Mayo Clinic site. We are sending the 3 residual positive specimens collected on this patient at our clinic (Sept. 28, Oct. 25, Oct. 27) via FedEx (frozen) to Robert at AVRL tomorrow. Thanks, Joseph

### Someone commented on [Spike E484A Omicron](#)

**David Baker**

[image.png]Sample size 1 (delta083121\_rep1) . Here is where artic v4 has low depth of coverage for a Delta sample. Artic V3 is a lot worse in general. [image.png]

**David Baker**

V4 gets decent coverage in the spike region except for positions 22786 to 22974 which it gets very LOW coverage.

**David Baker**

I am not seeing any clear statistically significant difference in the spike region for these mutations based on peptide array intensity data alone. [image.png] We used 15-mers, which means all peptides within that 15 mer position range can be impacted by the mutation. Looking at IGG affinity (i...

**David Baker**

It is not a clear cut conclusion based on this data alone.

## m: Shedding of Infectious SARS-CoV-2 Despite Vaccination

### People discussed [Manuscript update](#)

**Dave OConnor**

14 days is the definition I'd use if possible. Otherwise you run the risk of underestimating booster effectiveness. It would be excellent to start cross-checking these cases against viral load. I feel like I've asked this before, but is PHMDC also planning to break out booster vs. non-booster in...

**Brittany Grogan**

Dave I'll chat with Katarina and the rest of the data team at our meeting tomorrow morning, but I think that yes, we can certainly explore breaking out unvaccinated vs vaccinated non-booster vs vaccinated booster, perhaps even on this week's data snapshot. Should we send a list of

booster breakt...



**Thomas Friedrich**

Thanks Brittany and Katarina. I think it is worth analyzing breakthrough viral loads stratified by booster vs. no booster in general, and in preparation of potential reviewer requests for more recent data. We can certainly sequence breakthroughs along with everything else. Luis is the person to c...



**Brittany Grogan**

Sounds good, I added a file to Teams with all of our booster breakthroughs so far where the lab was processed by Exact or UW. There are 43 on the list with the majority being from November.



**Dave OConnor**

Just to be clear, breakthrough equals  $\geq 14$  days after final dose? If so, that's surprisingly high to me.



**Brittany Grogan**

Correct; we have 80 total since 8/13/21. 56 of those are from November, compared to a total of 3,693 total cases so far in November. On last week's data snapshot we reported that so far 1/3 of Dane County residents who have completed the initial vaccine series have received a booster or third dose.



**Dave OConnor**

So if roughly 72% of Dane County is fully vaccinated, that means that roughly 24% have been boosted ( $.72 * .3$ ). This would mean that if the vaccine was having no effect, you'd expect 886 of these November cases to be in vaccinees ( $3693 * .24$ ). An actual number of 56 doesn't seem that bad - about 6...

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Basecamp (University of WI - Madison): Here's the latest activity  
**Date:** Friday, December 3, 2021 9:16:49 AM

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## University of WI - Madison Here's the latest activity across everything

Since 9am on Thursday, December 02

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### g: “Evolutionarily advanced” respiratory virus variants in immunocompromised individuals

People discussed [Project 3 immune suppression: preliminary data](#)



**Dave OConnor**

Dixon - could you attach a PDF preprint? It looks like the article you referenced isn't yet available online. The latest journal issue is Vol 196(5). [image.png]



**Shelby O'Connor**

[RADE-20-00246.1.pdf]this one Dave Dixon ?



**Dave OConnor**

Wizardry Shelby !



**Dixon Kaufman**

Well done!

Someone commented on [Research Strategy](#)



**Shelby O'Connor**

DAWN CHRISTINA AMY Nancy Dave Thomas We got back the data from the SIV/SARS-CoV-2 animals. I am working through the data, so I'm not showing pictures. here are the early reports: 1. I don't see mutations in Spike -- perhaps there are no antibodies to select for them? 2. In one animal, there is ...

---

### m: Emergence of a globally unique SARS-CoV-2 Spike E484T mutation in a persistently infected

## immunocompromised individual

People discussed [2021-11-03 figure meeting](#)



**Nick Minor**

Here's that updated plot, where the june timepoint has variants called from ARTICv3 and midnight reads mapped together. As you can see, there's not much of a qualitative difference, but the number of mutations that reach consensus frequency in june has gone from 95 down to 87. [allele\_frequency.pdf]



**Dave OConnor**

Does the combined mapping reduce the dropouts Nick ?



**Thomas Friedrich**

Yah, we need to understand what coverage across the genome looks like at each timepoint now.



**Nick Minor**

Looks like in the june timepoint, which is the only timepoint we have midnight reads for, there is still a 224 bp region in spike with low coverage, ranging from 22 to 33 reads. This region lines up our previous spike dropouts. There's also a very small stretch of 16 bases toward the end of ORF1 ...

---

## m: Shedding of Infectious SARS-CoV-2 Despite Vaccination

A message was posted



**Thomas F. posted** [Relevant paper in Nature Medicine](#)

Hi all. I saw this recent brief communication in Nature Med today relevant to our paper. Key passage: " Focusing on the RdRp gene, regression coefficients for vaccinated over unvaccinated, representing the difference in Ct between the groups, started with 4.6 (95% confidence interval (CI), 2.2–6....

Someone commented on [Relevant paper in Nature Medicine](#)



**Dave OConnor**

So, like, we were right?

Someone commented on [Manuscript update](#)



**Brittany Grogan**

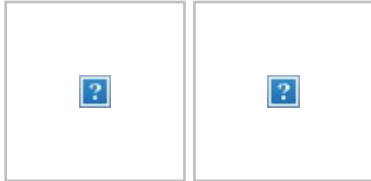
Dave FYI we have included booster case rate data in our snapshot that

was released this evening! We only release hospitalization and death data by vaccination status once a month, so we'll release that in the same format (not vaxxed/vaxxed initial series/vaxxed + boosted) in two weeks, for both O...

---

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Basecamp (University of WI - Madison): Here's the latest activity  
**Date:** Wednesday, December 8, 2021 9:17:01 AM

---



## University of WI - Madison Here's the latest activity across everything

Since 9am on Tuesday, December 07

---

### m: Shedding of Infectious SARS-CoV-2 Despite Vaccination

Someone commented on [Relevant paper in Nature Medicine](#)



**Katarina Grande**  
yep. well done!

---

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Basecamp (University of WI - Madison): Here's the latest activity  
**Date:** Monday, December 13, 2021 9:30:28 AM

---



## University of WI - Madison Here's the latest activity across everything

Since 9am on Sunday, December 12

---

### m: Shedding of Infectious SARS-CoV-2 Despite Vaccination

A message was posted



Thomas F. posted [\\_\\_\\_There is already a review article...](#)  
...on breakthrough infections, led by Marc Lipsitch, in Nature Reviews Immunology. Looks comprehensive.

---

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Basecamp (University of WI - Madison): Here's the latest activity  
**Date:** Friday, December 17, 2021 9:07:49 AM

---



## University of WI - Madison Here's the latest activity across everything

Since 9am on Thursday, December 16

---

### m: Shedding of Infectious SARS-CoV-2 Despite Vaccination

This was added to [2021-12-16 draft](#)

[Read draft](#) Assigned to: Dave O.

---

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Basecamp (University of WI - Madison): Here's the latest activity  
**Date:** Saturday, January 8, 2022 9:03:04 AM

---



## University of WI - Madison

### Here's the latest activity across everything

Since 9am on Friday, January 07

---

#### m: Shedding of Infectious SARS-CoV-2 Despite Vaccination

This was checked off on [2021-12-16 draft](#)

[Read draft](#) Assigned to: Dave O.

This was checked off on [Cover letter](#)

[Suggested and excluded reviewers?](#)

This was checked off on [Acknowledgements](#)

[Make sure funding and ethical approvals are correctly acknowledged in letter format.](#) Assigned to: Dave O. and Thomas F.

This was added to [2021-12-16 draft](#)

[Follow-up with PLOS Pathogens](#) Due: Jan 17 • Assigned to: Katarina G.

---

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Basecamp (University of WI - Madison): Here's the latest activity  
**Date:** Tuesday, January 11, 2022 9:04:51 AM

---



## University of WI - Madison

### Here's the latest activity across everything

Since 9am on Monday, January 10

---

#### m: Shedding of Infectious SARS-CoV-2 Despite Vaccination

Someone commented on [Follow-up with PLOS Pathogens](#)



**Katarina Grande**

Yep, can do!

---

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Basecamp (University of WI - Madison): Here's the latest activity  
**Date:** Thursday, November 25, 2021 9:13:26 AM

---



## University of WI - Madison Here's the latest activity across everything

Since 9am on Wednesday, November 24

---

### g: “Evolutionarily advanced” respiratory virus variants in immunocompromised individuals

This was checked off on [Research Strategy](#)

[What influenza strain should be used for these experiments?](#) Assigned to:  
Thomas F.

Someone commented on [What influenza strain should be used for these experiments?](#)



**Thomas Friedrich**

Sorry I missed this post. I think we decided to leave influenza out of the P01. For NHP studies I would probably focus on A/California/04/2009 (H1N1pdm), because we have most experience with this virus and we know it replicates well in macaques. For ferrets I might choose to focus on H3N2 because...

---

### m: Emergence of a globally unique SARS-CoV-2 Spike E484T mutation in a persistently infected immunocompromised individual

People discussed [Final Figure Review - Week of Nov. 29th](#)



**Nick Minor**

Here's a draft of that supplemental table. There's only one discrepancy for the iSNV at position 19656. In the Artic data, the SNV was found at a frequency of 0.8178, whereas in the Midnight data, its frequency was 0.0065. This prompted me to include read depth in the table, which reveals that Ar...





**Dave OConnor**

Great, small suggestion - round frequencies to three digits.



**Thomas Friedrich**

Here's a link to the Nature Communications paper mentioned above.

#### People discussed [2021-11-03 figure meeting](#)



**Gage Moreno**

I agree Thomas. As long as we present it in a way that says it popped up at consensus frequency which led us to go back and look for its presence below consensus level, then I think it should be okay. Is there even leftover sample to sequence by Illumina at those timepoints? If yes, why couldn't ...



**Dave OConnor**

I think that had been the plan, but my understanding is that there was a bit of an internal miscommunication which is why these were resequenced by ONT Midnight.



**Thomas Friedrich**

Dave that is my understanding also, but IIRC in a conversation earlier this week Luis said that there should be vRNA and/or cDNA available from all timepoints, so Illumina sequencing should be possible also. We did want to do Midnight sequencing as well to fill in amplicon gaps, especially in Spi...



**Dave OConnor**

Thomas so how should Nick reconcile those in his Figure? One way, conceivably, would be to map both ARTIC and Midnight reads simultaneously and variant call against both to eliminate gaps. It's pretty unconventional, but I think it could be justified. After thinking about this a bit more, I thin...

---

## m: Shedding of Infectious SARS-CoV-2 Despite Vaccination

#### People discussed [Manuscript update](#)



**Thomas Friedrich**

Any further updates Katarina ? One question for you and Dave -- we have continued to collect data on Ct value and vaccination status. We could update the figures if this version does not get sent out for review...



**Dave OConnor**

Great point Thomas



**Dave OConnor**

We could also start looking at third vaccine breakthroughs to see if there is any difference in VL in those cases.



**Thomas Friedrich**

That is a great point yourself, Dave .

---

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Basecamp (University of WI - Madison): Here's the latest activity  
**Date:** Tuesday, November 23, 2021 9:17:23 AM

---



## University of WI - Madison Here's the latest activity across everything

Since 9am on Monday, November 22

---

### g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

This was added to [Research Strategy](#)

P1 question: Selection of immunosuppressive drug regimen for NHP?

Assigned to: Jacqueline G. and Jeannia S.

#### A message was posted



**Dave O.** posted [Managing Basecamp notifications](#)

Hi everyone, Following on from Jeannia and Jacqueline 's question this morning, here is a brief tutorial on Basecamp notifications. First, here is the official documentation on notifications. It is a bit lengthy, so the TL;DR is: 1. Click your Avatar in the upper right corner [image.png] 2. E...



#### People discussed [Key Persons biosketches in 2022 format due](#)



**Dave OConnor**

I think that we decided we wouldn't include Scientists, but I don't hold that opinion strongly. Do others have strong opinions?



**Jeannia Smith**

No, I don't. Jeannina Smith M.D. Associate Professor of Medicine (CHS) Medical Director of Transplant Infectious Disease Program Program Director of Infectious Disease Fellowship Assistant Block Leader Invaders and Defense; University of Wisconsin School of Medicine and Public Health University ...

#### People discussed [2021-11-22 all-hands meeting](#)

**ANDREA WEILER**

11/22/21 meeting notes: Administrative update: Amanda -still waiting to hear from program about invitation to submit proposal. Timeline: If we are invited to submit this, it will be due January 11, we will aim to have documents submitted by January 7. (In order to make this work with the holiday...)



**Kristi Hall**

Thanks for taking notes ANDREA I am also attaching the chat from the meeting. [11-22-21-meeting\_chat.pdf]



**Thomas Friedrich**

Thanks for the excellent notes ANDREA!



**Dave OConnor**

For anyone who is interested, here is a remapped Project 2 plan that several of us discussed this morning after the call. [image.png]



People discussed [Preliminary budget review](#)



**Dave OConnor**

DAWN CHRISTINA AMY Can you redo the budget estimate with the experimental design discussed this morning? Thanks!  
<https://storage.3.basecamp.com/4362286/blobs/9810a570-4bda-11ec-b73e-ce416d59e241/download/image.png>



**CHRISTINA NEWMAN**

Dave We are meeting tomorrow at AVRL to revamp the budget.



**Dave OConnor**

I'm planning on spending the next hour or two reading about rituximab in macaques to figure out a preliminary dosing timeline and strategy. Following up on this, there seems to be a reasonably common practice of combining rituximab with other immunosuppressives when trying to avoid anti-ABO anti...



---

## m: Emergence of a globally unique SARS-CoV-2 Spike E484T mutation in a persistently infected immunocompromised individual

A message was posted

Nick M. posted [Final Figure Review - Week of Nov. 29th](#)

Hi everyone, Our figures are nearly finished for the persistent infection manuscript, so I'd like to schedule one last figure review session for early next week. Could we tentatively plan on meeting Monday 11/29 at 11AM CST? If that doesn't work, I can send out a scheduling poll or suggest other...

#### People discussed [Final Figure Review - Week of Nov. 29th](#)



**Dave OConnor**

This works well for me. What would be ideal is if everyone who contributed to the Figures could coordinate with Nick to put them into a shared set of Google Slides/Keynote/Powerpoint that has both the Figure and then a draft legend on each slide (or a slide, with a legend on the following slide, ...



**Gage Moreno**

I won't be able to make 11AM CST on Monday but if that works better for everyone else, I can catch up over slack/basecamp/email.



**Nick Minor**

Great suggestion on the shareable slides. Here's a keynote with a slide for each figure followed by a slide for the associated caption:  
[https://www.icloud.com/keynote/0GgMUGeZOLlrwmgNCO0ijd-fg#final\\_figures\\_20211122](https://www.icloud.com/keynote/0GgMUGeZOLlrwmgNCO0ijd-fg#final_figures_20211122)



**Dave OConnor**

Can I suggest putting the captions in the presenter notes Nick ? These slides look good. In Supp Figure 1, E484 is still weird. It isn't both E484A AND E484T at the same time as it appears now. The E484A should go down when the E484T is up, and vice versa. Would limiting this just to non-synonym...



**Nick Minor**

Sure thing, just updated the slides. And yeah, that weirdness with E484 is one of the not ideal consequences of classifying G-23012-A and A-23013-C as separate iSNVs rather than merging them. That said, Gage just pointed out that to solve this, we just need to subtract the G-23012-A frequencies ...



**Dave OConnor**

Nick - can you add another Supplemental Table that compares the iSNV frequencies in the June timepoint between ARTICv3 and Midnight? That would help make the point that the unusual pattern of variants observed in this timepoint aren't a technical artifact.

#### Someone commented on [2021-11-03 figure meeting](#)

**Nick Minor**

Here are 3 options for the figure's dimensions and for where the legend info could go. Any strong preferences?[allele\_frequency\_option1.pdf][allele\_frequency\_option2.pdf][allele\_frequency\_option3.pdf]



## m: Shedding of Infectious SARS-CoV-2 Despite Vaccination

People discussed [Manuscript update](#)



**Katarina Grande**

agreed, very annoying. same status today.



**Dave OConnor**

A bit of insight: I spoke to a journalist who told me how our paper is being weaponized by the far right. It might be that journals don't want to publish it and deal with the potential backlash.



**Katarina Grande**

Ok, that's helpful context. Unfortunate! Wonder if there is a different frame we could build out in a submission that would help with this. Or is it a lost cause at this point...



**Dave OConnor**

Probably a "lost" cause, but I'm not sure I'd welcome the term "lost." A paper that has been seen by more than 100,000 people is arguably the most impactful thing I've ever been involved with. Even if it means that it just becomes an opportunity to educate about what the data says and why the wea...



**Katarina Grande**

Great point!

---

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Thomas Friedrich](#)  
**Subject:** Basecamp (University of WI - Madison): Here's what's on your plate  
**Date:** Monday, January 3, 2022 9:06:57 AM

---



## University of WI - Madison

### Here's what's on your plate

As of 9:06am on January 03, 2022

### Overdue

---

Sunday, Jan 31, 2021

#### 2020 Action Items in project: TCF Lab DEI Work

[Annual big-picture reflection: Dedicated time at annual lab retreat to evaluate progress, failure...](#) Assigned to: Chelsea C., Gabrielle B., Kasen R., and Thomas F.

### Due this week

---

Monday, Jan 03, 2022

#### Research Strategy in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

[Condense text, including porting some evolutionary analysis methods to Project 3](#) Assigned to: Thomas F.

### Your other assignments

---

#### Consortium/Contractual arrangements in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

[Koelle subaward \(Project 3\)](#) Assigned to: Amanda E., Katia K., and Thomas F.

#### Drafts in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

[Full draft in InDesign](#) Assigned to: Thomas F.

#### Facilities and other resources in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

[Update Kawaoka lab biosafety protocol for transmission experiments](#)  
Assigned to: Peter H. and Thomas F.

#### Research Strategy in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

[Figure: probability of fixed mutations during SARS-CoV-2 transmission](#)

Assigned to: Thomas F.

[Figure: Gantt chart](#) Assigned to: Thomas F.

### **Research Strategy in g: “Evolutionarily advanced” respiratory virus variants in immunocompromised individuals**

[Submit pre-print describing persistently infected patient](#) Assigned to: Dave O. and Thomas F.

### **Specific Aims in g: “Evolutionarily advanced” respiratory virus variants in immunocompromised individuals**

[Define research foci that integrate across all projects](#) Assigned to: Dave O. and Thomas F.

### **Acknowledgements in m: Shedding of Infectious SARS-CoV-2 Despite Vaccination**

[Make sure funding and ethical approvals are correctly acknowledged in letter format.](#) Assigned to: Dave O. and Thomas F.

### **2020 Action Items in project: TCF Lab DEI Work**

[Evaluate our physical space at AVRL to ensure it is welcoming to people of different socioeconomic...](#) Assigned to: ANDREA W., Luis A., and Thomas F.

[Actively participate in programs that support and mentor aspiring scientists from underrepresented...](#) Assigned to: Mason B. and Thomas F.

---

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Thomas Friedrich](#)  
**Subject:** Basecamp (University of WI - Madison): Here's what's on your plate  
**Date:** Monday, December 13, 2021 9:25:52 AM

---



## University of WI - Madison Here's what's on your plate

As of 9:25am on December 13, 2021

### Overdue

---

Sunday, Jan 31, 2021

#### **2020 Action Items in project: TCF Lab DEI Work**

[Annual big-picture reflection: Dedicated time at annual lab retreat to evaluate progress, failure...](#) Assigned to: Chelsea C., Gabrielle B., Kasen R., and Thomas F.

### Your other assignments

---

#### **Consortium/Contractual arrangements in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals**

[Koelle subaward \(Project 3\)](#) Assigned to: Amanda E., Katia K., and Thomas F.

#### **Facilities and other resources in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals**

[Update Kawaoka lab biosafety protocol for transmission experiments](#)  
Assigned to: Peter H. and Thomas F.

#### **Research Strategy in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals**

[Submit pre-print describing persistently infected patient](#) Assigned to: Dave O. and Thomas F.

#### **Specific Aims in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals**

[Define research foci that integrate across all projects](#) Assigned to: Dave O. and Thomas F.

#### **Acknowledgements in m: Shedding of Infectious SARS-CoV-2 Despite Vaccination**

[Make sure funding and ethical approvals are correctly acknowledged in letter format.](#) Assigned to: Dave O. and Thomas F.

## 2020 Action Items in project: TCF Lab DEI Work

Evaluate our physical space at AVRL to ensure it is welcoming to people of different socioeconomic... Assigned to: ANDREA W., Luis A., and Thomas F.

Actively participate in programs that support and mentor aspiring scientists from underrepresente... Assigned to: Mason B. and Thomas F.

---

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**From:** [Basecamp \(University of WI - Madison\)](#)  
**To:** [Thomas Friedrich](#)  
**Subject:** Basecamp (University of WI - Madison): Here's what's on your plate  
**Date:** Monday, December 27, 2021 9:06:16 AM

---



## University of WI - Madison Here's what's on your plate

As of 9:06am on December 27, 2021

### Overdue

---

Sunday, Jan 31, 2021

#### 2020 Action Items in project: TCF Lab DEI Work

[Annual big-picture reflection: Dedicated time at annual lab retreat to evaluate progress, failure...](#) Assigned to: Chelsea C., Gabrielle B., Kasen R., and Thomas F.

### Your other assignments

---

#### Consortium/Contractual arrangements in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

[Koelle subaward \(Project 3\)](#) Assigned to: Amanda E., Katia K., and Thomas F.

#### Drafts in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

[2021-12-13 draft](#) Assigned to: Amanda E., Corrie B., Jacqueline G., Nancy W., Shelby O., and Thomas F.

#### Facilities and other resources in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

[Update Kawaoka lab biosafety protocol for transmission experiments](#)  
Assigned to: Peter H. and Thomas F.

#### Research Strategy in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

[Submit pre-print describing persistently infected patient](#) Assigned to: Dave O. and Thomas F.

#### Specific Aims in g: "Evolutionarily advanced" respiratory virus variants in immunocompromised individuals

[Define research foci that integrate across all projects](#) Assigned to: Dave O. and Thomas F.

## **Acknowledgements in m: Shedding of Infectious SARS-CoV-2 Despite Vaccination**

[Make sure funding and ethical approvals are correctly acknowledged in letter format.](#) Assigned to: Dave O. and Thomas F.

## **2020 Action Items in project: TCF Lab DEI Work**

[Evaluate our physical space at AVRL to ensure it is welcoming to people of different socioeconomic...](#) Assigned to: ANDREA W., Luis A., and Thomas F.  
[Actively participate in programs that support and mentor aspiring scientists from underrepresented...](#) Assigned to: Mason B. and Thomas F.

---

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**From:** [DAVID H O'CONNOR](#)  
**To:** [plosmedicine@plos.org](mailto:plosmedicine@plos.org)  
**Cc:** [Thomas Friedrich](#); [Grande, Katarina](#)  
**Subject:** Direct transfer from Medrxiv to PLOS Medicine  
**Date:** Saturday, November 6, 2021 4:53:13 PM  
**Attachments:** [cover letter 2021-11-06.pdf](#)

---

Dear PLOS Medicine,

Today my co-authors and I tried to use the direct transfer tool of a [manuscript](#) from Medrxiv to PLOS Medicine. We've never used this tool before and it seems almost too easy - I simply chose a journal and clicked a button. Is this all there is to the process? Or do we need to submit a cover letter or additional information to the editors of PLOS Medicine? Just in case, I've attached a cover letter to this email.

Is there anything else we need to do? Should the manuscript be visible from within one (or all) of our PLOS author portals?

Sorry if these are naive questions - this seems like a terrific initiative but one where existing documentation is pretty scarce (or I am looking in the wrong place).

Thanks in advance,

dave

---

Dave O'Connor | UW Medical Foundation Professor  
[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu) | +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

*I choose to work flexibly & send emails outside normal office hours. No need to respond to my emails outside yours.*

6 November 2021

Dear editors:

Please consider our attached manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination," for publication as a brief communication in *PLOS Medicine*. For our study, we assembled a team of virologists, epidemiologists, and public health officials to determine whether individuals infected with SARS-CoV-2 despite full vaccination had the potential to transmit the virus. Our study was conducted in Wisconsin at a time when the Delta variant dramatically increased in prevalence to account for almost all new infections; this, together with sequencing data from our own laboratory, suggests that most infections reported here involved Delta.

Our study complements recent epidemiological investigations suggesting that post-vaccination infections with Delta are transmissible, and it **adds three important observations**:

First, in contrast to previous investigations of individual outbreaks that involved healthcare settings ([Hetemäki et al. 2021](#); [Mlcochova et al. 2021](#)) or particularly large gatherings ([Brown et al. 2021](#)), our study involves persons who sought SARS-CoV-2 testing from community sites spread over a wide geographic area in Wisconsin and thus represents mostly infection in a community setting.

Second, we show that a large proportion of individuals (68%) infected despite full vaccination test positive with Ct <25. Although RT-qPCR Ct values alone are not rigorously quantitative, this low Ct value strongly suggests a high viral load in nasal secretions. Notably, in our study RT-qPCR was performed by a single commercial laboratory using a single assay protocol, helping to control for variability in approaches that could confound comparisons of Ct values generated by different laboratories.

Finally, we show that almost all specimens tested from individuals with Ct values <25 harbor infectious SARS-CoV-2, including 95% of individuals with post-vaccination infections. These findings establish that SARS-CoV-2 RNA detected in vaccinated individuals cannot be due only to cell debris or non-infectious particles.

We believe our findings are significant and timely, and help to inform public health and infection control practices needed to cope with a new surge in COVID-19 cases. We note that one author, Dr. Segaloff, is a CDC Epidemic Intelligence Service officer, and therefore the attached manuscript has undergone CDC clearance prior to submission. We have also shared our findings as a preprint on the nonprofit medrxiv server: <https://www.medrxiv.org/content/10.1101/2021.07.31.21261387v5>.

PLOS Medicine is an especially attractive destination for this paper because of its innovative stance towards Complementary Research. The impact of this work is demonstrably high; the medrxiv preprint has been downloaded by than 100,000 times and the full-text HTML version has been viewed more than 79,000 times. While additional work from other groups (cited in this manuscript) has substantiated and complemented our key findings, our early documentation of transmission-competent SARS-CoV-2 in vaccinated individuals infected with the delta variant remains important and would be of interest to the broad readership of *PLOS Medicine*.

We suggest the following experts as potential reviewers for this work.

Dr. Brian O'Roak, Oregon Health and Science University: [broak@ohsu.edu](mailto:broak@ohsu.edu)

Dr. Bronwyn MacInnis, Broad Institute: [bronwyn@broadinstitute.org](mailto:bronwyn@broadinstitute.org)

Finally, please note that three senior authors contributed equally to this work: Drs. O'Connor, Friedrich, and myself.

Thank you for your consideration.

Sincerely, on behalf of all authors,



Katarina Grande

IR#0682H 000038

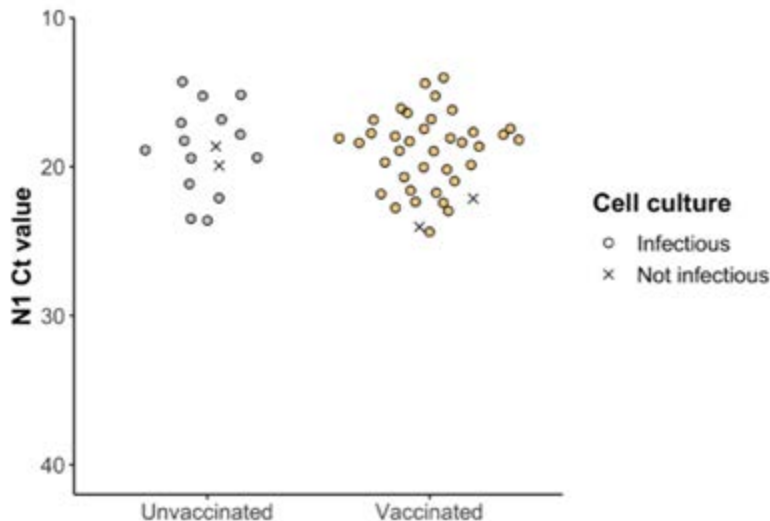


Figure 2. Infectious virus detected in nasal swab specimens from unvaccinated and fully vaccinated cases with Ct values < 25. Infectiousness was determined by the presence of cytopathic effects (CPE) after 5 days of replication in Vero E6 TMPRSS2 cells. Specimens with visually apparent CPE under a light microscope are represented by filled circles, and specimens without apparent CPE are represented by 'X'.

IR#06821\_000039

## **COVID-19 Publication Proposal Form Template**

*This template may be used by Task Forces to prepare MMWR and manuscript concepts for submission through the electronic form: [COVID-19 Publication Proposal Form](#)*

**1. Proposed title of MMWR or manuscript:**

SARS-CoV-2 infection with high viral loads despite vaccination when the Delta variant is prevalent - Wisconsin, July 2021

**2. Responsible author name/POC for submission:**

Hannah Segaloff

**3. Kasen Riemersma**

**4. Responsible author/POC email:**

hannah.segaloff@dhs.wisconsin.gov

riemersma@wisc.edu

**5. Other authors (name, organization):**

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**6. CDC first or senior author (Yes or No):**

No

**7. MMWR or Journal Manuscript (select one):**

MMWR

**8. Background and Objective (character limit- 870):**

Prevalence of the Delta variant has been associated with increased SARS-CoV-2 spread and high viral loads. A recent investigation of a large outbreak suggested that individuals infected with Delta despite vaccination could also have high viral loads and contribute to SARS-CoV-2 spread; however, it is not known whether similarly high viral loads with the potential for onward



transmission are observed among vaccinated persons in community settings.

**9. Data Source & Study Design** (character limit- 700):

We analyzed specimens from 719 persons collected 29 June - 31 July 2021. Delta prevalence in Wisconsin increased from 69% to 95% during this period. Vaccination status was confirmed for 322 persons using public health databases, identifying n=293 fully vaccinated and n=29 unvaccinated at the time of testing. An additional n=18 self-reported as fully vaccinated and n=379 self-reported as unvaccinated. We compared Ct values according to vaccination status and presence of symptoms at the time of testing. We compared time from illness onset to testing in vaccinated vs. unvaccinated individuals with symptomatic infection. We attempted virus isolation from a subset of 79 specimens with Ct < 25.

**10. Major Findings** (character limit- 700):

We detected no significant differences in median Ct values between fully vaccinated (21.7 [18.1-27.2]) and not fully vaccinated specimens (22.9 [18.4-27.3]). 212 of 311 (68%) of persons with infection despite full vaccination had extremely low Ct values < 25, consistent with very high viral loads. Full vaccination did not affect Ct values observed in infected persons, either with or without symptoms, at the time of testing. SARS-CoV-2 was isolated from 74 of 79 specimens with Ct < 25 for which culture was attempted.

**11. Public Health Implications and Research Novelty**

Individuals who are infected despite vaccination could serve as sources of onward transmission to others. Policies that require workers to be vaccinated or routinely tested should be re-evaluated; these reinforce an incorrect belief that those who are vaccinated should be exempt from testing. Vaccinated persons, particularly those who may have high levels of community or occupational exposure to SARS-CoV-2, should be tested for SARS-CoV-2 when symptomatic or exposed, to limit community spread. Continued adherence to non-pharmaceutical interventions, such as masking and distancing, will remain important for both vaccinated and unvaccinated persons because some vaccinated individuals will experience infections with high viral loads.

**12. Science Agenda Priority Questions the Publication Addresses. Please select all that apply. The 19 Priority Questions are listed [here](#).**

X Question #1 ☐ Question #2 ☐ Question #3 ☐ Question #4 X Question #5  
☐ Question #6 ☐ Question #7 ☐ Question #8 X Question #9 X Question #10  
X Question #11 X Question #12 ☐ Question #13 X Question #14 X Question #15  
☐ Question #16 ☐ Question #17 ☐ Question #18 ☐ Question #19

**13. Submitting Task Force or home Center/Program:**

STLT

**14. Team/Working Group (if applicable):**

HDS

**15. Proposal reviewed and approved by Task Force Lead or Response ADS (Yes or No):** *Required prior to submission for proposals originating within an IM TF.*

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**17. Comments (optional):**

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- 
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  - *Proposals submitted electronically by 4:00pm on Monday will be reviewed by Response leadership on Wednesday and receive a decision on Thursday.*
  - *\*For urgent submissions, the TF Lead may send an email to [eocevent172@cdc.gov](mailto:eocevent172@cdc.gov) in addition to the author submitting the form, and a decision will be made in 24 hours.*

Questions may be sent to [eocevent172@cdc.gov](mailto:eocevent172@cdc.gov).

# Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Kasen K. Riemersma, DVM, PhD<sup>1</sup>; Brittany E. Grogan, MPH<sup>2</sup>; Amanda Kita-Yarbro, MPH<sup>2</sup>; Peter Halfmann, PhD<sup>1</sup>; Anna Kocharian, MS<sup>3</sup>; Kelsey R. Florek, PhD<sup>4</sup>; Ryan Westergaard, MD, PhD<sup>3,5</sup>; Allen Bateman, PhD<sup>4</sup>; Gunnar E. Jeppson, BS<sup>6</sup>; Yoshihiro Kawaoka, DVM, PhD<sup>1</sup>; David H. O'Connor, PhD<sup>7</sup>; Thomas C. Friedrich, PhD<sup>1</sup>; Katarina M. Grande, MPH<sup>2</sup>

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## Summary

### *What is already known about this topic?*

Prevalence of the Delta variant has been associated with SARS-CoV-2 spread and high viral loads among vaccinated individuals in a concentrated outbreak. It is unclear whether similarly high viral loads are observed in community settings, or whether high viral RNA burdens in vaccinated individuals are correlated with shedding of infectious virus.

### *What is added by this report?*

In the setting of community transmission where Delta is highly prevalent, SARS-CoV-2 viral loads are similar at the time of testing regardless of vaccine status. High viral loads (PCR Ct <25) were measured in 68% of individuals with infection despite vaccination, and in 63% of unvaccinated persons. Ct <25 was strongly correlated with shedding of infectious virus in both vaccinated and unvaccinated persons.

### *What are the implications for public health practice?*

High viral loads correlated with presence of infectious SARS-CoV-2 frequently occur in people infected despite vaccination, suggesting that such individuals could transmit the virus to others. Although vaccinated individuals are likely protected against severe COVID-19, they should take steps to avoid infecting others, such as wearing masks and getting tested when experiencing COVID-like symptoms or after exposure.

# Main text

The SARS-CoV-2 Delta variant and its sublineages (B.1.617.2, AY.1, AY.2, AY.3; [1]) can cause high viral loads, are highly transmissible, and contain mutations that confer partial immune escape [2,3]. Using PCR threshold cycle (Ct) data from a single large contract laboratory, we show that individuals in Wisconsin, USA had similar viral loads in nasal swabs, irrespective of vaccine status, during a time of high and increasing prevalence of the Delta variant. Infectious SARS-CoV-2 was isolated from 51 of 55 specimens (93%) with Ct <25 from both vaccinated and unvaccinated persons, indicating that most individuals with Ct values in this range (Wilson 95% CI 83%-97%) shed infectious virus regardless of vaccine status. Notably, 68% of individuals infected despite vaccination tested positive with Ct <25, including at least 8 who were asymptomatic at the time of testing. Our data substantiate the idea that vaccinated individuals who become infected with the Delta variant may have the potential to transmit SARS-CoV-2 to others. Vaccinated individuals should continue to wear face coverings in indoor and congregate settings, while also being tested for SARS-CoV-2 if they are exposed or experience COVID-like symptoms.

We analyzed respiratory specimens from 719 individuals collected between 29 June 2021 and 31 July 2021. Delta and its sublineages accounted for 69% of all Wisconsin sequences in GISAID in the week beginning 27 June 2021; this proportion increased to 95% for the week ending 24 July, the most recent date for which data are available [4]. We recovered viral genome sequences from 122 of the specimens analyzed in this report; 110 of 122 (90%) belonged to Delta lineages. The high and increasing prevalence of Delta-lineage viruses during the study period, and high proportion of Delta-lineage viruses among our sequenced samples, together suggest that most infections in our dataset were caused by Delta, though this cannot be directly confirmed.

We defined fully vaccinated individuals as those who received a final vaccine dose at least 2 weeks prior to testing positive. Of the 719 individuals, vaccination status at the time of testing was available in the Wisconsin Immunization Registry and Wisconsin Electronic Disease Surveillance System for 322 (293 vaccinated and 29 unvaccinated), while self-reported vaccination status was available for the remaining 397 (18 vaccinated and 379 unvaccinated). We compared Ct values in specimens from these fully vaccinated and unvaccinated individuals at the time of testing ([Figure 1](#)). We detected no significant differences in Ct values by vaccination status. Notably, 212 of 311 (68%) of individuals with infection despite full vaccination had extremely low Ct values <25, consistent with high viral loads.

While a given Ct value cannot be used to infer infectiousness, previous studies suggested that infectious SARS-CoV-2 can frequently be recovered from specimens with Ct values of 25-30 or lower [5]. To determine whether high viral loads might indicate the presence of infectious SARS-CoV-2, we attempted to culture infectious virus from a subset of 55 specimens with Ct values <25 ([Figure 2](#)). Infectious SARS-CoV-2 was isolated from 14 of 16 specimens (88%) from unvaccinated individuals and 37 of 39 specimens (95%) from vaccinated people, suggesting that Ct <25 is frequently associated with the capacity to shed infectious SARS-CoV-2, even in fully vaccinated persons.

Data on symptom status were available from 516 of the 719 individuals evaluated here, so we further compared Ct values in test-positive specimens according to vaccination and symptom status ([Figure 3A](#)). For symptomatic cases, there was no significant difference in the time elapsed between symptom onset and testing for vaccinated vs. unvaccinated individuals (two-sample K-S test,  $p=0.49$ ; [Figure 3B](#)).

Full vaccination did not affect Ct values observed in infected individuals, either with or without symptoms, at the time of testing. Among those for whom symptom status is known, 252 of 276 individuals who were not fully vaccinated (91%) reported symptoms at the time of testing, while 228 of 240 people who were fully vaccinated (95%) reported symptoms. Among individuals who were asymptomatic at the time of testing, Ct values <25 were detected in 7 of 24 unvaccinated individuals (29%; CI: 13-51%) and in 8 of 12 individuals who were infected despite being fully vaccinated (67%; CI: 35-90%). Infectious virus was detected in the sole specimen tested from an asymptomatic fully vaccinated individual. Although the number of asymptomatic individuals sampled is small, these results indicate that some individuals who are infected despite vaccination can have high viral loads and shed infectious virus even while being asymptomatic. Additional virus isolation data are needed to determine the frequency of infectious virus shedding in asymptomatic cases.

Our findings are consistent with other recent reports detecting high virus loads in some individuals infected despite vaccination in England [6] and Singapore [7]. Our detection of infectious virus in 93% of samples with Ct <25 indicates that high viral loads are consistent with the potential to transmit SARS-CoV-2, regardless of the individual's vaccination status. Notably, transmission of Delta from vaccinated healthcare workers to their household contacts was recently documented in an investigation of a hospital-associated outbreak in Finland [8]. An outbreak in Barnstable County, MA associated with large gatherings also involved a substantial proportion of fully vaccinated individuals [9]. The co-circulation of viruses belonging to Pango lineages B.1.617.2, AY.2, and AY.3, as well as the broad geographic distribution of our specimens, indicate that the infections analyzed here are not associated with any single large outbreak, and that Delta-lineage SARS-CoV-2 can achieve high viral loads consistent with transmissibility in fully vaccinated individuals across a range of exposure settings. Taken together, these studies indicate that individuals infected with Delta variants despite vaccination have the capacity to transmit infection to others.

Our study has at least three important limitations. First, we have only one specimen from most individuals, and therefore we cannot know the trajectory of viral loads at the time of testing. Indeed, a study of Delta infection dynamics suggests that viral loads decline more rapidly in vaccinated vs. unvaccinated individuals, as one might expect [7]. However, that study also indicates that viral loads in vaccinated and unvaccinated individuals remain similarly high for 5-6 days after illness onset, before declining more rapidly in vaccinated people. In our study, 91% of specimens from symptomatic cases were collected from 0-6 days after illness onset and the timing of tests relative to illness onset did not differ by vaccination status. These observations suggest that the Ct value comparisons in our study are likely not biased by the time of testing. A second limitation is that there may be differences in the populations of vaccinated and unvaccinated persons seeking testing that bias our results. Vaccinated individuals may not perceive a high risk of COVID-19 disease, and may be less likely to seek testing than unvaccinated people. It is difficult to determine from our data whether vaccinated and unvaccinated people experienced symptoms of similar severity. Thus, we cannot determine the extent to which our sampling failed to detect asymptomatic or paucisymptomatic infections. Such mild infections may be more frequent among vaccinated than unvaccinated individuals infected with Delta. Consistent with this, a recent report from England detected a substantially greater proportion of low-positive tests with Ct values between 35 and 40 in vaccinated individuals than in the unvaccinated [6]. Importantly, our study was not designed to estimate the rate of infection despite vaccination, but rather to determine whether individuals infected despite vaccination could have high viral loads consistent with the potential to transmit SARS-CoV-2. Finally, there is inherent variability in PCR Ct

values due to specimen variability that can be impacted by collection technique and other variables outside of our control.

The finding of high SARS-CoV-2 viral loads and replication-competent virus in vaccinated individuals has important implications for risk assessment and mitigation. The impact of Delta variants on vaccine effectiveness is currently being evaluated (see, e.g., [10]). Risk disinhibition may lead vaccinated people to increase behaviors that expose them to SARS-CoV-2 infection, and individuals who are infected despite vaccination could serve as sources of onward transmission to others. Vaccinated individuals, particularly those who may have high levels of community or occupational exposure to SARS-CoV-2, should be encouraged to continue frequent testing, especially when symptomatic, to limit community spread. Continued adherence to non-pharmaceutical interventions, such as masking and distancing, will remain important for both vaccinated and unvaccinated individuals because we cannot predict which vaccinated individuals will experience infections with high viral loads. While vaccines continue to provide outstanding protection against severe disease and mortality, the durability of this protection cannot be reliably predicted. Therefore, it is essential for public health policy to encourage vaccination while also planning for contingencies, including diminished long-term protection.

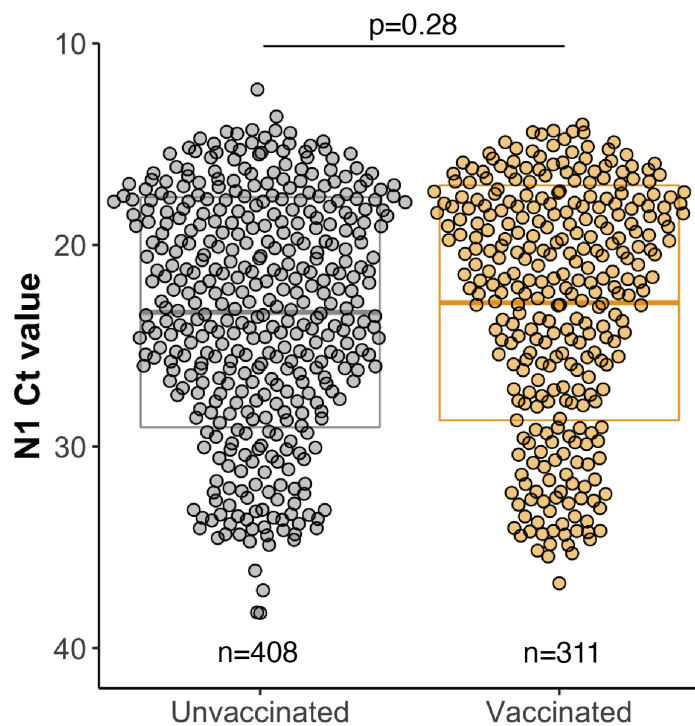


Figure 1. Distributions of SARS-CoV-2 PCR cycle threshold (Ct) values at the time of testing do not differ by vaccination status. N1 PCR Ct values for SARS-CoV-2-positive specimens grouped by vaccination status. Boxplots represent mean N1 Ct values  $\pm$  one standard deviation. P-values were calculated by comparing mean Ct values between the groups by Welch two-sample t-test.

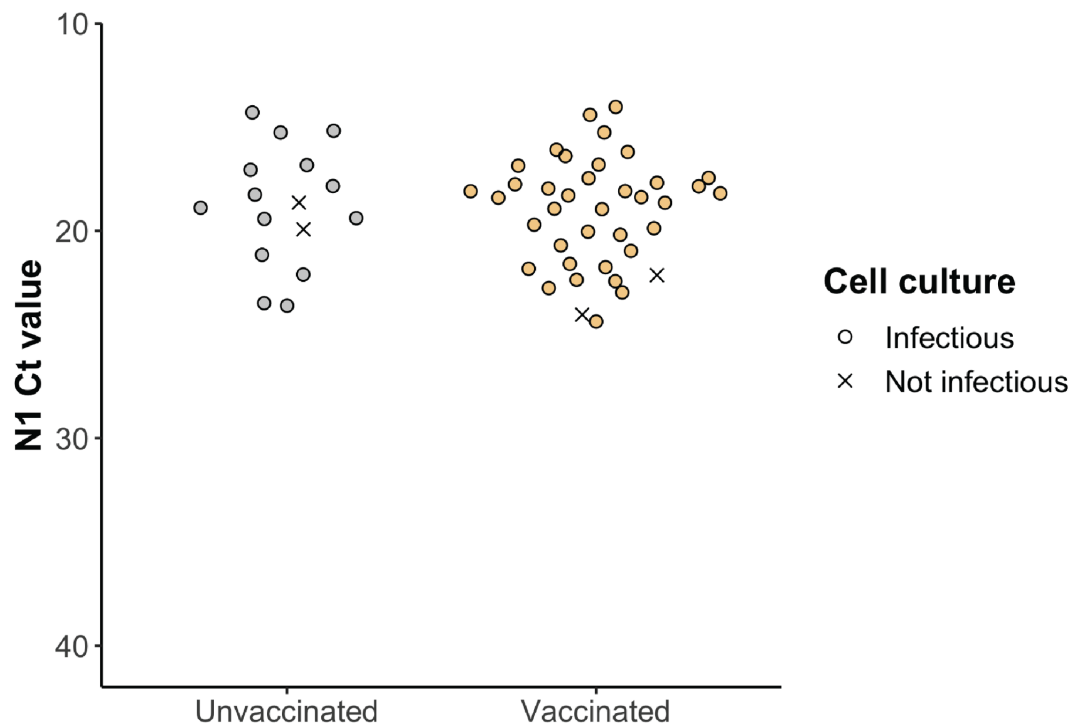


Figure 2. Infectious virus detected in nasal swab specimens from unvaccinated and fully vaccinated cases with Ct values < 25. Infectiousness was determined by the presence of cytopathic effects (CPE) after 5 days of replication in Vero E6 TMPRSS2 cells. Specimens with visually apparent CPE under a light microscope are represented by filled circles, and specimens without apparent CPE are represented by 'X'.



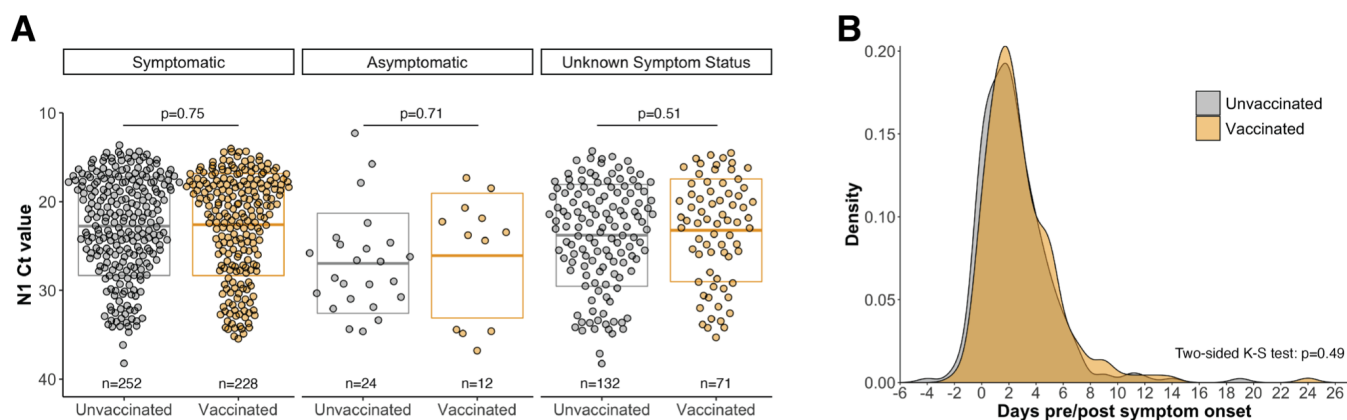


Figure 3. Symptom status does not affect distributions of SARS-CoV-2 PCR cycle threshold (Ct) values at the time of testing in vaccinated vs. unvaccinated persons. A) N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for symptomatic, asymptomatic, and unknown symptom status cases. Boxplots represent mean N1 Ct values  $\pm$  one standard deviation. P-values were calculated by comparing mean Ct values between groups by Welch two-sample t-tests. B) Density distributions of unvaccinated and vaccinated specimen collection dates by day since symptom onset. Day 0 on the x-axis denotes self-reported day of symptom onset. Negative values for days indicate specimen collection prior to symptom onset. Symptom onset data were available for n=249 unvaccinated cases and n=222 vaccinated cases.

# Acknowledgments

We would like to acknowledge the local health departments in Wisconsin who referred samples for SARS-CoV-2 testing. We gratefully acknowledge Shelby O'Connor and Hannah Segaloff for critical review of the manuscript and helpful discussion. We also acknowledge all Exact Sciences employees who contributed to sample testing. This work was supported by Centers for Disease Control and Prevention contracts 75D30120C09870 and 75D30121C11060 to D.H.O and T.C.F. The authors are also members of the Upper Midwest Regional Accelerator for Genomic Surveillance funded by the Rockefeller Foundation.

# Conflict of interest

The authors declare no conflicting interests.

# Ethics statement

Per the University of Wisconsin-Madison IRB, this project qualifies as public health surveillance activities as defined in the Common Rule, 45 CFR 46.102(l)(2). As such, the project is not deemed to be research regulated under the Common Rule and therefore, does not require University of Wisconsin-Madison IRB review and oversight.

# Data availability

Data and processing workflows are available at <https://go.wisc.edu/p22l16>. To protect potentially personally identifiable information, the publicly available dataset contains only PCR Ct values, vaccine status, symptom status, and days from symptom onset to testing for each specimen.

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# To-dos

- [Perform subset analysis excluding “in-betweens” from the not-fully-vaccinated category](#)
- [Add phylogeny of Dane County cases](#)
- [Add culture data to introductory paragraph and main text when available](#)
- [Calculate percent of unvaccinated people with Ct < 20 at testing. Highlight this in Summary section.](#)
- [Check statewide exposure data in WEDSS: can we strengthen the statement that transmission in this cohort is mostly not driven by large gatherings?](#)
-

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Manuscript Title:  
Shedding of Infectious SARS-CoV-2 Despite Vaccination

Article Type:  
Research Article

Authors:  
Katarina Maria Grande; Kasen K. Riemersma; Brittany E. Grogan; Amanda Kita-Yarbro; Peter J. Halfmann; Hannah E. Segaloff; Anna Kocharian; Kelsey R. Florek; Ryan Westergaard; Allen Bateman; Gunnar E. Jeppson; Yoshihiro Kawaoka; David H. O'Connor; Thomas C. Friedrich

Abstract:  
The SARS-CoV-2 Delta variant is highly transmissible and contains mutations that confer partial immune escape. We compared RT-PCR cycle threshold (Ct) data from 699 test-positive anterior nasal swab specimens from fully vaccinated (n = 310) or unvaccinated (n=389) individuals. We observed low Ct values (<25) in 212 of 310 fully vaccinated (68%) and 246 of 389 (63%) unvaccinated individuals. Testing a subset of these low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people. To determine whether infectious virus titers differed in vaccinated and unvaccinated persons, we performed plaque assays on an additional set of 48 samples with Ct <25, finding no difference in infectious virus titer between groups.

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**To:** [Thomas Friedrich](#); [Grande, Katarina](#)  
**Subject:** RE: Backchannel: Re: Decision on Nature Medicine submission NMED-BC116676  
**Date:** Thursday, November 4, 2021 12:52:08 PM  
**Attachments:** [image001.png](#)

---

Yep, with a callout to their no-scoop policy in the cover letter. I just drafted an updated cover letter and put it in a folder called PLOS Medicine. Tom, would you review and submit?

dave

---

Dave O'Connor | UW Medical Foundation Professor  
dhoconno@wisc.edu | +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

*I choose to work flexibly & send emails outside normal office hours. No need to respond to my emails outside yours.*

On Nov 4, 2021, 12:30 PM -0500, Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, wrote:

We might as well try!

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, November 4, 2021 12:27 PM  
**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Cc:** 'DAVID H O'CONNOR' <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Subject:** Backchannel: Re: Decision on Nature Medicine submission NMED-BC116676

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No offer to bounce to Nature Comms. Should we go to Plos Med?

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Grande, Katarina wrote on 2021-11-04 12:21:

Thank you for the quick response, Dr. Monteiro!

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

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<image002.png>

---

**From:** [medicine@us.nature.com](mailto:medicine@us.nature.com) <[medicine@us.nature.com](mailto:medicine@us.nature.com)>

**Sent:** Thursday, November 4, 2021 12:15 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** Decision on Nature Medicine submission NMED-BC116676

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4th Nov 2021

Dear Dr. Grande:

Thank you very much for submitting your manuscript "Shedding of Infectious SARS-CoV-2 Despite Vaccination" (NMED-BC116676). I have had the chance to read your paper, assess the relevant literature and to discuss it with our editorial team.

IR#0682H\_000058

Unfortunately, our opinion is that the paper would not be a strong candidate for Nature Medicine.

When a paper is turned down on editorial grounds, we aim to return it to the authors as quickly as possible, avoiding a time-consuming peer-review process. In making this decision we do not intend it to be a criticism of the technical aspects of the work, but rather an editorial assessment of its appropriateness for publication in Nature Medicine, based on originality of the findings, timeliness, interdisciplinary interest and potential impact on improving human health. In this case, we feel that the insights provided by the new data do not offer a sufficient translational or clinical advance over the recently published literature in this area that would appeal to the broad readership of Nature Medicine.

Nevertheless, thank you very much for giving us the opportunity to consider your work. I am sorry that we cannot be more positive on this occasion and hope you are soon able to interest an alternative journal in your manuscript.

Sincerely,

Joao Monteiro  
Chief Editor  
Nature Medicine

---

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*Details of the confidentiality and pre-publicity policy may be found here <http://www.nature.com/authors/policies/confidentiality.html>*

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**From:** [Grande, Katarina](#)  
**To:** ["medicine@us.nature.com"](mailto:medicine@us.nature.com)  
**Cc:** [DAVID H O'CONNOR](#); [Thomas Friedrich](#)  
**Subject:** RE: Decision on Nature Medicine submission NMED-BC116676  
**Date:** Thursday, November 4, 2021 12:21:37 PM  
**Attachments:** [image002.png](#)  
[image003.png](#)

---

Thank you for the quick response, Dr. Monteiro!

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

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**There's strength in numbers.**  
**Join me! #GetVaccinated**

---

**From:** [medicine@us.nature.com](mailto:medicine@us.nature.com) <[medicine@us.nature.com](mailto:medicine@us.nature.com)>  
**Sent:** Thursday, November 4, 2021 12:15 PM  
**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Decision on Nature Medicine submission NMED-BC116676

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4th Nov 2021

Dear Dr. Grande:

Thank you very much for submitting your manuscript "Shedding of Infectious SARS-CoV-2 Despite Vaccination" (NMED-BC116676). I have had the chance to read your paper, assess the relevant literature and to discuss it with our editorial team. Unfortunately, our opinion is that the paper would not be a strong candidate for Nature Medicine.

IR#0682H\_000061

When a paper is turned down on editorial grounds, we aim to return it to the authors as quickly as possible, avoiding a time-consuming peer-review process. In making this decision we do not intend it to be a criticism of the technical aspects of the work, but rather an editorial assessment of its appropriateness for publication in Nature Medicine, based on originality of the findings, timeliness, interdisciplinary interest and potential impact on improving human health. In this case, we feel that the insights provided by the new data do not offer a sufficient translational or clinical advance over the recently published literature in this area that would appeal to the broad readership of Nature Medicine.

Nevertheless, thank you very much for giving us the opportunity to consider your work. I am sorry that we cannot be more positive on this occasion and hope you are soon able to interest an alternative journal in your manuscript.

Sincerely,

Joao Monteiro  
Chief Editor  
Nature Medicine

---

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*If you need more time at any stage of the peer-review process, please do let us know. While our systems will continue to remind you of the original timelines, we aim to be as flexible as possible during the current pandemic.*

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<http://www.nature.com/authors/policies/confidentiality.html>*

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**From:** [Peter Halfmann](#)  
**To:** [Kasen Riemersma](#)  
**Cc:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** RE: New England Journal of Medicine - 21-14060  
**Date:** Tuesday, September 14, 2021 1:15:00 PM  
**Attachments:** [Copy of Specimens for culture 20210909 PH.xlsx](#)

---

Kasen,

Here are the titers for the first round of samples.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Thursday, September 9, 2021 9:05 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hey Peter,

I'm about to walk over with the first set of 24 more recent specimens. I need a bit more time today to pull the set of 24 older specimens, but will get them to you by the end of the day or first thing tomorrow morning.

I've attached the specimen manifest for the first set of 24.

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Tuesday, September 7, 2021 at 2:30 PM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Early Thursday is good; thanks

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Tuesday, September 7, 2021 2:30 PM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks, Peter! Would you prefer I drop off the 48 specimens on Wednesday or early Thursday?

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Tuesday, September 7, 2021 at 12:02 PM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

We can do 24 samples on Thursday and another 24 samples on Friday.

On Sep 7, 2021, at 9:39 AM, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Like Dave, I can see this going either way. Perhaps we could do a set of specimens from within the same time period that is covered in the submitted paper, and then also a more recent batch? This would cover our bases. However, I don't want to burden Peter too much, so I think he and Yoshi should comment also.

Best,



-Tom

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Dave O'Connor wrote on 2021-09-07 08:42:

Hi all,

I could see it going either way. I don't think we need to add them to the existing dataset. It might even be better to use recent samples because it shows that the trend is stable over time. But I don't feel strongly about it.

dave

Kasen Riemersma wrote on 9/7/21 8:40 AM:

Hi all,

I can definitely provide more samples for Peter to test. Peter, once I know how many you can process, I should be able to send them over quickly.

Tom, if these culture data may be added to our study, I'm inclined to select specimens from the same study period instead of more recent specimens. Do you agree?

Cheers,  
Kasen

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Date:** Sunday, September 5, 2021 at 12:43 PM  
**To:** YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Kasen Riemersma <[kriemersma@wisc.edu](mailto:kriemersma@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi all.

Okay, I agree with all this. In our emails last week, I was not sure whether you guys wanted to respond to Vincent as soon as possible. I completely agree that we would need to generate new titration data with samples that have not undergone multiple freeze-thaw cycles.

Luckily we are getting a large number of samples from Exact each week.

Kasen, can we identify a set of fresh samples that can be aliquoted for Peter to test?

Peter, what is a good number of samples for you to receive?

Best,

-Tom

YOSHIHIRO KAWAOKA wrote on 2021-09-03 19:33:

If we are going to respond to Vincent by sharing our new data, we should do the virus isolation with new samples that have not been thawed several times. I am concerned about the data showing that the number of no-virus-recovery samples from vaccinated individuals is higher than that from unvaccinated individuals. He will criticize this point if we send him the current data.

Best,  
Yoshi

---

**From:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Saturday, September 4, 2021 8:11 AM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Tom,

I updated Medrxiv with the NEJM submission. I didn't update with this week's data. I suggest waiting until we get a disposition on the NEJM paper before updating Medrxiv again.

In terms of Vincent, I'm fine if someone else wants to connect with him and Daniel on the data. I'm not enthusiastic about doing it myself.

dave

--

I often work on email outside of work hours, but you don't have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>

608.890.0845

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, September 3, 2021 18:04  
**To:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks Dave.

Did we update the medrxiv paper with the titration data? If so I can update my Twitter thread on the paper and include it. As you guys have said, even though the samples have undergone multiple freeze-thaw cycles, it is clear that titers are not systematically lower in vaccinees vs. unvaccinated.

Would you guys also email Daniel and Vincent directly to call their attention to these data?

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 3 Sep 2021, at 17:15, DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)> wrote:

What will come first, an NEJM decision on a 400 word letter or [REDACTED] Nonetheless, I pinged the editor (see below) and offered the titer data should it be helpful.

dave

--

I often work on email outside of work hours, but you don't have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>  
608.890.0845

---

**From:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Sent:** Friday, September 3, 2021 14:05  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

**From:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Sent:** Friday, September 3, 2021 2:58 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Subject:** FW: New England Journal of Medicine - 21-14060

---

**From:** Dave O'Connor <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Friday, September 3, 2021 10:17 AM  
**To:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

To whom it may concern,

I am writing on behalf of our co-authors to ask if there are any updates on the status of the 400 word correspondence we submitted to NEJM on August 23. We are keenly aware that this is timely data given the current landscape of SARS-CoV-2 infection despite vaccination.

One small note: some vocal scientists have criticized our work on social media. The primary claim they make is that virus culture in low Ct samples does not mean that there is similar amounts of replication-competent virus in these samples. Subsequent to our August 23 submission, we re-thawed these samples and showed that virus titers are similar in those who are unvaccinated and infected despite infection (see attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine wrote on 8/23/21 1:39 PM:


Dear Ms. Grande and co-authors,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination" to the New England Journal of Medicine.

Your manuscript has been forwarded to members of our editorial staff, who will make an initial evaluation and decide whether it merits further consideration. You will be notified of the decision as soon as possible.

Your manuscript ID is 21-14060.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in

 appropriate. You may also view the status of your manuscript at any time by checking For Authors section of the site.

We are undertaking evaluation of your manuscript with the understanding that neither the substance of the article nor the figures or tables have been published or will be submitted for publication elsewhere during the period

of review.

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The Journal's policy is explained more fully at <https://www.nejm.org/about-nejm/editorial-policies>.

Please call us at 617-734-9800 if you have any questions.

Sincerely,

New England Journal of Medicine  
10 Shattuck Street  
Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-9864  
<http://www.nejm.org>

--

[@dho • 608-890-0845](http://dho.pathology.wisc.edu)

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Tube_ID	titer: pfu/ml	N1_Ct	Collection_Date
1THKW	50	15.06350109	9/2/2021 11:07
1THGD	40	19.98705395	9/2/2021 10:58
1THI1	370	19.58691028	9/2/2021 14:57
1THG9	20	18.32912604	9/2/2021 11:19
1TFJR	0	21.29209604	9/2/2021 14:36
1TFDI	260	24.51859995	9/2/2021 12:05
1TF0Q	3800	15.51073314	9/2/2021 14:14
1TEX4	110	19.44054682	9/2/2021 12:51
1TF3W	120	19.56405534	9/2/2021 15:00
1TFLC	80	24.50682463	9/2/2021 17:35
1TGOH	0	24.9468493	9/2/2021 14:02
1TNRP	3400	17.43160031	9/5/2021 17:21
1THFG	5200	17.66851405	9/2/2021 9:36
1TEC7	730	19.42473556	9/2/2021 13:21
1TMU0	900	18.79827618	9/4/2021 11:44
1TMUL	30	19.8440396	9/4/2021 9:43
1TKJP	0	25.03431554	9/3/2021 9:52
1TKWD	0	19.85761006	9/3/2021 11:34
1TKV7	170	16.62752271	9/3/2021 10:02
1TN5K	5200	18.54030436	9/4/2021 11:33
1TJZ5	250	19.31552845	9/3/2021 12:34
1TJWD	60	20.73535029	9/3/2021 11:21
1TJUV	9000	15.49592228	9/3/2021 16:23
1TJUA	5300	16.47786494	9/3/2021 16:04

**From:** [Peter Halfmann](#)  
**To:** [Kasen Riemersma](#)  
**Cc:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** RE: New England Journal of Medicine - 21-14060  
**Date:** Wednesday, September 15, 2021 12:39:00 PM

---

We got that sample; from what the wells look like there was (bacterial) contamination so I don't to say it was negative.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Wednesday, September 15, 2021 12:37 PM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Cc:** YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks, Peter! Was the specimen whose titer was "ND" missing from the drop off?

Cheers,  
Kasen

Sent from my iPhone

On Sep 15, 2021, at 12:31 PM, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)> wrote:

Kasen,  
Here are the titers for the 2<sup>nd</sup> group of samples.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, September 10, 2021 9:28 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

I handed them off at the door, so hopefully they make their way to you. I've attached the full specimen manifest with both sets of 24.

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Friday, September 10, 2021 at 9:04 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

If you leave them by the door that's fine - thanks

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, September 10, 2021 9:04 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Peter, I'm about to walk over the second set of 24 specimens for virus titration. Please let me know if I should come at a different time.

Thanks,  
Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Thursday, September 9, 2021 at 9:12 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
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608.890.0845

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Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
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**Sent:** Friday, September 3, 2021 10:17 AM  
**To:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
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Dear Ms. Grande and co-authors,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination" to the New England Journal of Medicine.

Your manuscript has been forwarded to members of our editorial staff, who will make an initial evaluation and decide whether it merits further consideration. You will be notified of the decision as soon as possible.

Your manuscript ID is 21-14060.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to

appropriate. You may also view the status of your manuscript at any time by checking For Authors section of the site.

We are undertaking evaluation of your manuscript with the understanding that neither the substance of the article nor the figures or tables have been published or will be submitted for publication elsewhere during the period of review.

Please provide the editors with copies of other manuscripts by you or your coauthors addressing similar or related research questions that are in preparation or under consideration at other journals. This does not apply to abstracts published in connection with scientific meetings or to news reports based on presentations at such meetings.

The Journal's policy is explained more fully at <https://www.nejm.org/about-nejm/editorial-policies>.

Please call us at 617-734-9800 if  
you have any questions.

Sincerely,

New England Journal of Medicine  
10 Shattuck Street  
Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-9864  
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--

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<Copy of Specimens\_for\_culture\_20210910 PH.xlsx>

**From:** [Peter Halfmann](#)  
**To:** [Kasen Riemersma](#)  
**Cc:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** RE: New England Journal of Medicine - 21-14060  
**Date:** Wednesday, September 15, 2021 12:31:00 PM  
**Attachments:** [Copy of Specimens for culture\\_20210910 PH.xlsx](#)

---

Kasen,

Here are the titers for the 2<sup>nd</sup> group of samples.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, September 10, 2021 9:28 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
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I handed them off at the door, so hopefully they make their way to you. I've attached the full specimen manifest with both sets of 24.

Kasen

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Editorial Assistant  
*New England Journal of Medicine*

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We are undertaking evaluation of your manuscript with the understanding that neither the substance of the article nor the figures or tables have been published or will be submitted for publication elsewhere during the period of review.

Please provide the editors with copies of other manuscripts by you or your coauthors addressing similar or related research questions that are in preparation or under consideration at other journals. This does not apply to abstracts published in connection with scientific meetings or to news reports based on presentations at such meetings.

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Please call us at 617-734-9800 if you have any questions.

Sincerely,

New England Journal of Medicine  
10 Shattuck Street  
Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-9864  
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Tube_ID	N1_Ct	Collection_Date	Virus titers: PFU/ml
1SEH2	21.08310128	8/24/2021 8:47	130
1SHM6	21.58934574	8/24/2021 12:38	120
1SHPW	21.54627886	8/24/2021 13:12	0
1SE2X	15.7339903	8/24/2021 9:41	20000
1SHRU	16.50421287	8/24/2021 17:01	3100
1SHSV	18.87103606	8/24/2021 16:51	1900
1SHJN	18.28345724	8/24/2021 12:10	860
1SHS3	21.74136158	8/24/2021 16:57	300
1SHJV	12.59247242	8/24/2021 13:20	3400
1SHFS	18.57897209	8/24/2021 13:41	3100
1SHLF	14.6042653	8/24/2021 13:21	2900
1SHLU	24.83442105	8/24/2021 12:40	0
1SHKY	17.43457586	8/24/2021 12:37	2800
1SHAK	23.66621923	8/24/2021 13:54	0
1SHIC	16.69530582	8/24/2021 16:49	ND
1SJEK	15.23684453	8/25/2021 12:33	53000
1SIY5	21.10522528	8/25/2021 14:22	60
1SDYB	20.30754385	8/24/2021 13:43	420
1SHPG	15.97163045	8/24/2021 14:08	860
1SIZF	15.64100204	8/25/2021 14:41	370
1SKHE	18.25545253	8/25/2021 9:55	110
1SIX6	19.99673466	8/24/2021 9:28	30
1SJ6J	22.95399616	8/25/2021 10:07	0
1SIZP	17.3381538	8/25/2021 10:47	3700

**From:** [Grande, Katarina](#)  
**To:** [Thomas Friedrich](#)  
**Cc:** [DAVID H O'CONNOR](#)  
**Subject:** RE: PLOS Medicine  
**Date:** Wednesday, November 10, 2021 2:35:40 PM  
**Attachments:** [PMEDICINE-S-21-05677.pdf](#)

---

ok, submitted! Sorry that took so long. Attached for your reference, hopefully I didn't mess anything up.

-Kat

---

**From:** Thomas Friedrich <tfriedri@wisc.edu>  
**Sent:** Wednesday, November 10, 2021 10:52 AM  
**To:** Grande, Katarina <KGrande@publichealthmdc.com>  
**Cc:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
**Subject:** Re: PLOS Medicine

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Yep, unfortunately all too common. Our CDC contract should pay for that.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Grande, Katarina wrote on 2021-11-10 10:50:

Fun. Did we realize PLOS charges a publication fee??

---

**From:** Thomas Friedrich <tfriedri@wisc.edu>  
**Sent:** Tuesday, November 9, 2021 6:05 PM  
**To:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
**Cc:** Grande, Katarina <KGrande@publichealthmdc.com>  
**Subject:** Re: PLOS Medicine

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Yes

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H O'CONNOR wrote on 2021-11-09 17:50:

I think we should go with Research Article (it is just a short one).

dave

---

Dave O'Connor | UW Medical Foundation Professor  
[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu) | ☎ +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

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On Nov 9, 2021, 4:03 PM -0600, Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, wrote:

Yes—sorry for delay! Unfortunately it didn't populate everything nicely, so my next step is to find one of our previous submissions in order to answer these questions (below) consistently. There's also a bunch of missing author info, like institution/affiliation, address, contact info etc. For article type, the options are: Research article Guidelines and guidance Policy Forum Collection review (invitation only) Editorial (invitation only) Perspective (invitation only) PLOS Medicine Debate (invitation) ...I was going to select Perspective, but since it's invitation only, how about 'research article'? They can then see that it is a brief research article. **Dual Publication** Have the results, data, or figures in this manuscript been published elsewhere? Are they under consideration for publication elsewhere? **If no:** Enter No **If yes:** • Identify which results, data, or figures were taken from other published or pending manuscripts. Explain why inclusion in this submission does not constitute dual publication. • **Upload a copy of the related work** with your submission as a Related Manuscript file type. Reviewers may be asked to comment on the overlap between the related submissions.

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Other

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\* typeset

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Answer  
Required:

Character Count: 0

Limit 20000 characters

**From:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>**Sent:** Tuesday, November 9, 2021 3:56 PM**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>**Subject:** PLOS Medicine

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Kat,

Did you get the info from PLOS Medicine that we need to submit the paper to them? I directly transferred the paper but they said they would reach out to you to get a bit more information.

Meant to ask this morning but it slipped my mind,

dave

---

Dave O'Connor | UW Medical Foundation Professor

[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu) | ☎ +1 [REDACTED]

<http://dho.pathology.wisc.edu>

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# PLOS Medicine

## Shedding of Infectious SARS-CoV-2 Despite Vaccination

--Manuscript Draft--

<b>Manuscript Number:</b>	
<b>Full Title:</b>	Shedding of Infectious SARS-CoV-2 Despite Vaccination
<b>Short Title:</b>	Shedding of Infectious SARS-CoV-2 Despite Vaccination
<b>Article Type:</b>	Research Article
<b>Section/Category:</b>	Health Systems
<b>Corresponding Author:</b>	Katarina M Grande Public Health Madison & Dane County Madison, WI UNITED STATES
<b>Corresponding Author Secondary Information:</b>	
<b>Corresponding Author's Institution:</b>	Public Health Madison & Dane County
<b>Corresponding Author's Secondary Institution:</b>	
<b>First Author:</b>	Kasen K Riemersma, DVM, PhD
<b>First Author Secondary Information:</b>	
<b>Order of Authors:</b>	Kasen K Riemersma, DVM, PhD Brittany E Grogan, MPH Amanda Kita-Yarbro, MPH Peter Halfmann, PhD Anna Kocharian, MS Kelsey R Florek, MPH, PhD Ryan Westergaard, MD, PhD Allen Bateman, PhD Gunnar E Jeppson, BS Yoshihiro Kawaoka, DVM, PhD David H O'Connor, PhD Thomas C Friedrich, PhD Katarina M Grande, MPH
<b>Order of Authors Secondary Information:</b>	
<b>Abstract:</b>	<p>The SARS-CoV-2 Delta variant is highly transmissible and contains mutations that confer partial immune escape. We compared RT-PCR cycle threshold (Ct) data from 699 test-positive anterior nasal swab specimens from fully vaccinated (n = 310) or unvaccinated (n=389) individuals. We observed low Ct values (&lt;25) in 212 of 310 fully vaccinated (68%) and 246 of 389 (63%) unvaccinated individuals. Testing a subset of these low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people. To determine whether infectious virus titers differed in vaccinated and unvaccinated persons, we performed plaque assays on an additional set of 48 samples with Ct &lt;25, finding no difference in infectious virus titer between groups.</p>
<b>Additional Information:</b>	
<b>Question</b>	<b>Response</b>

<p><b>Financial Disclosure</b></p> <p>Enter a financial disclosure statement that describes the sources of funding for the work included in this submission. Review the <a href="#">submission guidelines</a> for detailed requirements. View published research articles from <a href="#">PLOS Medicine</a> for specific examples.</p> <p>This statement is required for submission and <b>will appear in the published article</b> if the submission is accepted. Please make sure it is accurate.</p> <p><b>Unfunded studies</b> Enter: <i>The author(s) received no specific funding for this work.</i></p> <p><b>Funded studies</b> Enter a statement with the following details:</p> <ul style="list-style-type: none"> <li>• Initials of the authors who received each award</li> <li>• Grant numbers awarded to each author</li> <li>• The full name of each funder</li> <li>• URL of each funder website</li> <li>• Did the sponsors or funders play any role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript?</li> <li>• <b>NO</b> - Include this sentence at the end of your statement: <i>The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.</i></li> <li>• <b>YES</b> - Specify the role(s) played.</li> </ul> <p>* typeset</p>	<p>This work was supported by Centers for Disease Control and Prevention contracts 75D30120C09870 and 75D30121C11060 to D.H.O and T.C.F. The authors are also members of the Upper Midwest Regional Accelerator for Genomic Surveillance funded by the Rockefeller Foundation.</p>
<p><b>Competing Interests</b></p> <p>Use the instructions below to enter a competing interest statement for this submission. On behalf of all authors, disclose any <a href="#">competing interests</a> that could be perceived to bias this work—acknowledging all financial support and any other relevant financial or non-financial competing interests.</p>	<p>The authors have declared that no competing interests exist.</p>

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\* typeset

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6 November 2021

Dear editors:

Please consider our attached manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination," for publication as a brief communication in *PLOS Medicine*. For our study, we assembled a team of virologists, epidemiologists, and public health officials to determine whether individuals infected with SARS-CoV-2 despite full vaccination had the potential to transmit the virus. Our study was conducted in Wisconsin at a time when the Delta variant dramatically increased in prevalence to account for almost all new infections; this, together with sequencing data from our own laboratory, suggests that most infections reported here involved Delta.

Our study complements recent epidemiological investigations suggesting that post-vaccination infections with Delta are transmissible, and it **adds three important observations**:

First, in contrast to previous investigations of individual outbreaks that involved healthcare settings ([Hetemäki et al. 2021](#); [Mlcochova et al. 2021](#)) or particularly large gatherings ([Brown et al. 2021](#)), our study involves persons who sought SARS-CoV-2 testing from community sites spread over a wide geographic area in Wisconsin and thus represents mostly infection in a community setting.

Second, we show that a large proportion of individuals (68%) infected despite full vaccination test positive with Ct <25. Although RT-qPCR Ct values alone are not rigorously quantitative, this low Ct value strongly suggests a high viral load in nasal secretions. Notably, in our study RT-qPCR was performed by a single commercial laboratory using a single assay protocol, helping to control for variability in approaches that could confound comparisons of Ct values generated by different laboratories.

Finally, we show that almost all specimens tested from individuals with Ct values <25 harbor infectious SARS-CoV-2, including 95% of individuals with post-vaccination infections. These findings establish that SARS-CoV-2 RNA detected in vaccinated individuals cannot be due only to cell debris or non-infectious particles.

We believe our findings are significant and timely, and help to inform public health and infection control practices needed to cope with a new surge in COVID-19 cases. We note that one author, Dr. Segaloff, is a CDC Epidemic Intelligence Service officer, and therefore the attached manuscript has undergone CDC clearance prior to submission. We have also shared our findings as a preprint on the nonprofit medrxiv server: <https://www.medrxiv.org/content/10.1101/2021.07.31.21261387v5>.

PLOS Medicine is an especially attractive destination for this paper because of its innovative stance towards Complementary Research. The impact of this work is demonstrably high; the medrxiv preprint has been downloaded by than 100,000 times and the full-text HTML version has been viewed more than 79,000 times. While additional work from other groups (cited in this manuscript) has substantiated and complemented our key findings, our early documentation of transmission-competent SARS-CoV-2 in vaccinated individuals infected with the delta variant remains important and would be of interest to the broad readership of *PLOS Medicine*.

We suggest the following experts as potential reviewers for this work.

Dr. Brian O'Roak, Oregon Health and Science University: [broak@ohsu.edu](mailto:broak@ohsu.edu)

Dr. Bronwyn MacInnis, Broad Institute: [bronwyn@broadinstitute.org](mailto:bronwyn@broadinstitute.org)

Finally, please note that three senior authors contributed equally to this work: Drs. O'Connor, Friedrich, and myself.

Thank you for your consideration.

Sincerely, on behalf of all authors,



Katarina Grande

# Shedding of Infectious SARS-CoV-2 Despite Vaccination

Kasen K. Riemersma, DVM, PhD<sup>1</sup>; Brittany E. Grogan, MPH<sup>2</sup>; Amanda Kita-Yarbro, MPH<sup>2</sup>; Peter J. Halfmann, PhD<sup>1</sup>; Hannah E. Segaloff, PhD<sup>3</sup>; Anna Kocharian, MS<sup>4</sup>; Kelsey R. Florek, MPH, PhD<sup>5</sup>; Ryan Westergaard, MD, PhD<sup>6</sup>; Allen Bateman, PhD<sup>5</sup>; Gunnar E. Jeppson, BS<sup>7</sup>; Yoshihiro Kawaoka, DVM, PhD<sup>1</sup>; David H. O'Connor, PhD<sup>8</sup>; Thomas C. Friedrich, PhD<sup>1</sup>; Katarina M. Grande, MPH<sup>2</sup>

<sup>1</sup> Department of Pathobiological Sciences, University of Wisconsin-Madison, Madison, WI, USA

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<sup>3</sup> Epidemic Intelligence Service, CDC, Atlanta, GA, USA

<sup>3</sup> Wisconsin Department of Health Services, Madison, WI, USA

<sup>5</sup> Wisconsin State Laboratory of Hygiene, Madison, WI, USA

<sup>6</sup> Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, WI, USA

<sup>7</sup> Exact Sciences, Madison, WI, USA

<sup>8</sup> Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, USA

<sup>^</sup>These authors contributed equally. Correspondence can be addressed to:

Katarina Grande [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)

# Abstract

The SARS-CoV-2 Delta variant is highly transmissible and contains mutations that confer partial immune escape. We compared RT-PCR cycle threshold (Ct) data from 699 test-positive anterior nasal swab specimens from fully vaccinated (n = 310) or unvaccinated (n=389) individuals. We observed low Ct values (<25) in 212 of 310 fully vaccinated (68%) and 246 of 389 (63%) unvaccinated individuals. Testing a subset of these low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people. To determine whether infectious virus titers differed in vaccinated and unvaccinated persons, we performed plaque assays on an additional set of 48 samples with Ct <25, finding no difference in infectious virus titer between groups.



# Main text

## Introduction

The SARS-CoV-2 Delta variant is highly transmissible and contains mutations that confer partial immune escape. Outbreak investigations suggest that vaccinated persons can spread Delta<sup>1,2</sup> but it is uncertain whether vaccine-induced immune responses reduce nasal viral RNA burden or the titer of infectious SARS-CoV-2 in people infected despite vaccination relative to unvaccinated persons.

## Methods

To estimate nasal viral RNA burden, we compared RT-PCR cycle threshold (Ct) data from 699 test-positive anterior nasal swab specimens from fully vaccinated (n = 310) or unvaccinated (n=389) individuals. “Fully vaccinated” is defined as having received a second mRNA vaccine dose or single adenovirus vector vaccine dose  $\geq 2$  weeks prior to testing positive. Samples were collected in Wisconsin 29 June through 31 July 2021 and tested by a single contract laboratory. During the study period, estimated prevalence of Delta variants in Wisconsin increased from 69% to over 95%. Vaccination status was determined via self-reporting and validated with state immunization records (**Supplemental Figure 1**). Infectious virus was quantified using plaque assays on a subset of samples with Ct values  $<25$ .

## Results

RT-PCR Ct values  $<25$  had previously been associated with shedding of infectious SARS-CoV-2. We observed low Ct values ( $<25$ ) in 212 of 310 fully vaccinated (68%; **Figure 1A**) and 246 of 389 (63%) unvaccinated individuals. Low Ct values were detected in vaccinated people regardless of symptoms at the time of testing (**Figure 1B**). Ct values  $<25$  were detected in 7 of 24 unvaccinated (29%; CI: 13-51%) and 9 of 11 fully vaccinated asymptomatic individuals (82%; CI: 48-97%), and 158 of 232 unvaccinated (68%, CI: 62-74%) and 156 of 225 fully vaccinated (69%; CI: 63-75%) symptomatic individuals. Testing a subset of these low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people. Infectious virus was detected in the sole specimen tested from an asymptomatic fully vaccinated individual (**Supplemental Figure 2**). Although few asymptomatic individuals were sampled, these results indicate that even asymptomatic, fully vaccinated people might shed infectious SARS-CoV-2.

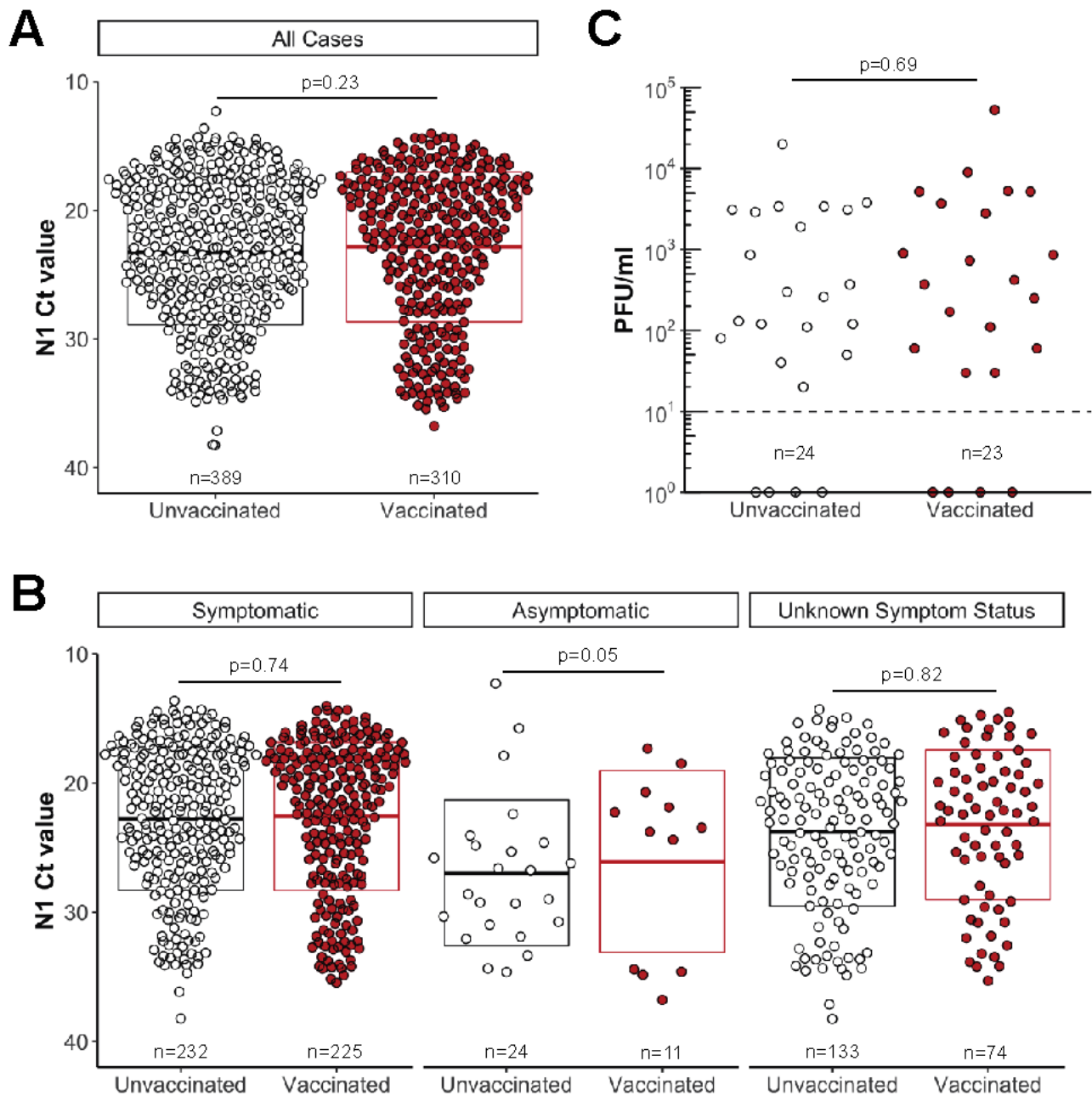
To determine whether infectious virus titers differed in vaccinated and unvaccinated persons, we performed plaque assays on an additional set of 48 samples with Ct <25, finding no difference in infectious virus titer between groups (**Figure 1C**). Notably time from symptom onset to testing did not vary by vaccination status, suggesting that our observations are not confounded by biases in test-seeking behavior between vaccinated and unvaccinated persons ( $p=0.40$ ; **Supplemental Figure 3**).

## Discussion

Combined with other studies<sup>3,4</sup> these data indicate that vaccinated as well as unvaccinated individuals infected with the Delta variant might transmit infection, though other studies suggest this may be relatively inefficient<sup>5</sup>. Importantly, we show that infectious SARS-CoV-2 is found at similar titers in vaccinated and unvaccinated persons when specimen Ct values are low. The inclusion of viruses from multiple counties without a linking outbreak (more than 80% of samples were not associated with an outbreak known to public health), indicate that Delta-lineage SARS-CoV-2 can achieve low Ct values consistent with transmissibility in fully vaccinated individuals across a range of settings.

Preventing infections with the Delta variant is therefore critical to stem transmission. Vaccinated and unvaccinated persons should get tested when symptomatic or after close contact with someone with suspected or confirmed COVID-19. Continued adherence to non-pharmaceutical interventions during periods of high community transmission to mitigate spread of COVID-19 remain important for both vaccinated and unvaccinated individuals. Moreover, the administration of an additional vaccine dose after the initial vaccine series dramatically reduces susceptibility to infection with the Delta variant<sup>6</sup>, providing another valuable strategy for interrupting transmission.

# Figure

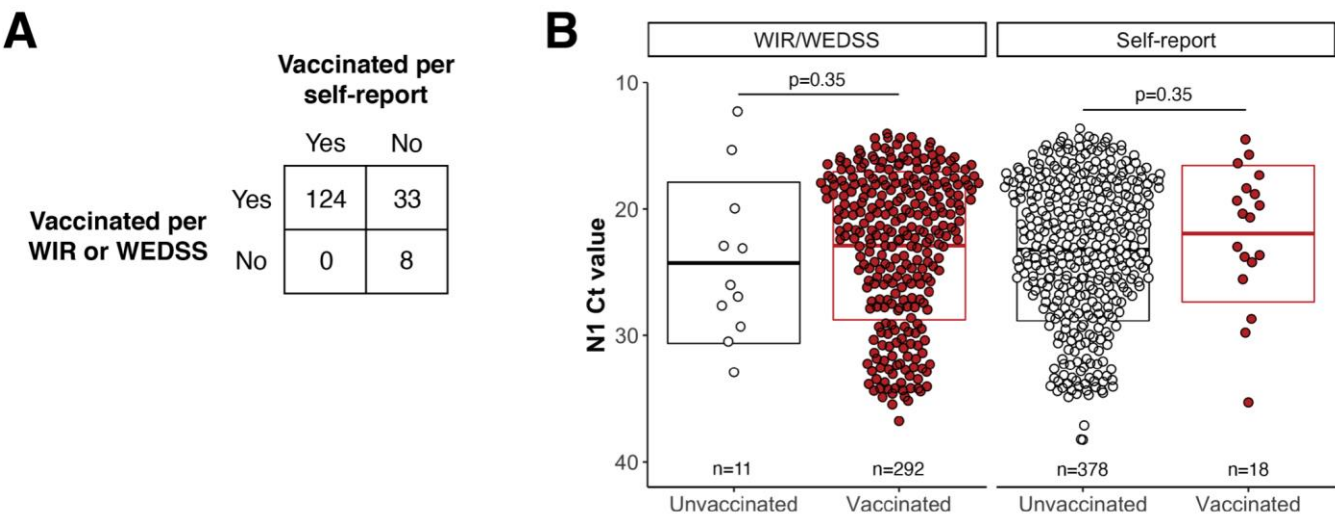


**Figure 1. Individuals infected with SARS-CoV-2 despite full vaccination have low Ct values and shed similar amounts of infectious virus as uninfected individuals. A.** Ct values for SARS-CoV-2-positive specimens grouped by vaccination status. RT-PCR was performed by Exact Sciences Corporation, responsible for over 10% of all PCR tests in Wisconsin during this period, using a qualitative diagnostic assay targeting the SARS-CoV-2 N gene (oligonucleotides identical to CDC's N1 primer and probe set) that has been authorized for emergency use by FDA

(<https://www.fda.gov/media/138328/download>). **B.** N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for individuals who were symptomatic or asymptomatic, or those whose symptom status was not determined, at the time of testing. **C.** We performed plaque assays on Vero E6 TMPRSS2 cells on a subset of specimens. Specimens were selected by N1 Ct-matching between fully vaccinated and unvaccinated persons, then specimens from persons with unknown vaccination status were excluded from the analysis. Infectious titers are expressed as plaque-forming units (pfu) per milliliter specimen. Specimens underwent a freeze-thaw cycle prior to virus titration. In **A** and **B**, boxplots represent mean N1 Ct values  $\pm$  one standard deviation. P-values were calculated by comparing mean Ct values by independent two-group Mann-Whitney U tests.

# Supplemental materials

## Supplemental figure 1



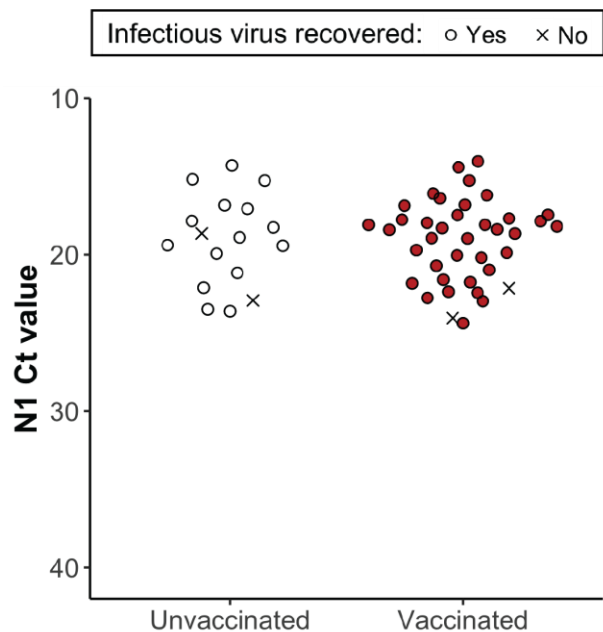
**Supplemental figure 1. Concordance between self-reported vaccination status and the Wisconsin Immunization Registry (WIR) or Wisconsin Electronic Disease Surveillance System (WEDSS).** For all individuals, vaccination status was determined using WIR/WEDSS electronic registries when data were available. Individuals were identified as unvaccinated at the time of testing if WIR/WEDSS data indicated receipt of a first SARS-CoV-2 vaccine dose after the test date.

Individuals were considered fully vaccinated based on WIR/WEDSS data if the registries indicated receipt of a final vaccine dose at least 14 days prior to testing. For individuals whose vaccination status could not be verified in WIR/WEDSS, self-reported data collected at the time of testing were used. Individuals were considered unvaccinated based on self-report only if there was an explicit declaration of unvaccinated status in the self-reported data. Individuals were considered fully vaccinated based on self-report if they fulfilled all of the following criteria: (1) indicated that they had received a COVID vaccine prior to testing; (2) indicated that they did not require another vaccine dose; and (3) reported a date of last vaccine dose that was at least 14 days prior to testing.

Specimens lacking data on vaccination status were excluded from the study. Specimens from partially vaccinated individuals (incomplete vaccine series, or <14 days post-final dose) were also excluded. Fully vaccinated status was determined by WIR/WEDSS for 292 specimens and by self-reported data for 18. Unvaccinated status was determined by WIR/WEDSS for 11 and by self-reported data by 378. **A.** Of the 699 specimens with vaccination status available from at least one source, 165 specimens had data available from both sources. For self-reporting, under-reporting of full vaccination status (33/157)

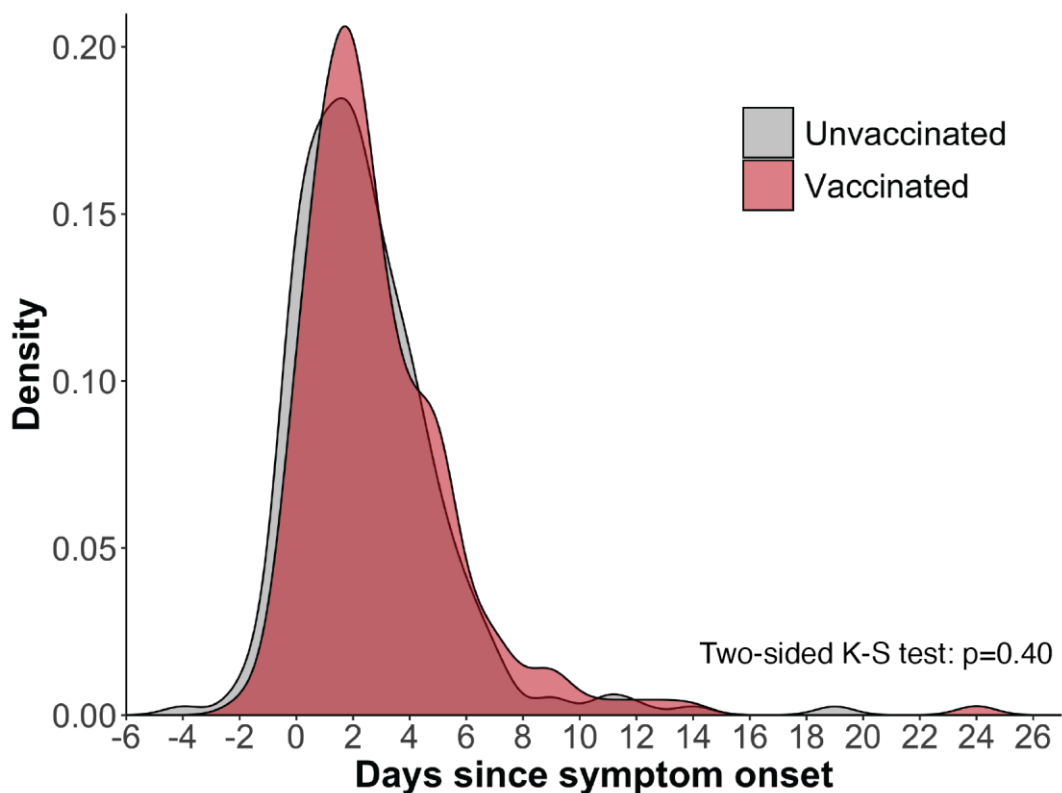
was more common than over-reporting (0/124). **B.** N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for individuals whose vaccination status was determined by WIR/WEDDS or by self-reported data. Boxplots represent mean N1 Ct values +/- one standard deviation. P-values were calculated by comparing mean Ct values by independent two-group Mann-Whitney U tests.

## Supplemental figure 2



**Supplemental figure 2. Infectious SARS-CoV-2 detected in the majority of fully vaccinated individuals with low Ct values.** Infectiousness was determined for a subset of N1 Ct-matched specimens with Ct <25 by inoculation onto Vero E6 TMPRSS2 cells and determining presence of cytopathic effects (CPE) after 5 days in culture. Specimens with unknown vaccination status were excluded from the analysis. Circles indicate presence of CPE; 'X' indicates no CPE detected.

Supplemental figure 3



**Supplemental figure 3. Density distributions of unvaccinated and vaccinated specimen collection dates by day since symptom onset.** Day 0 on the x-axis denotes self-reported day of symptom onset. Negative values for days indicate specimen collection prior to symptom onset. Symptom onset data were available for n=263 unvaccinated cases and n=232 vaccinated cases.



## Conflict of interest

The authors declare no conflicting interests.

## Ethics statement

Per the University of Wisconsin-Madison IRB, this project qualifies as public health surveillance activities as defined in the Common Rule, 45 CFR 46.102(l)(2). As such, the project is not deemed to be research regulated under the Common Rule and therefore, does not require University of Wisconsin-Madison IRB review and oversight.

The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the Centers for Disease Control and Prevention or the institutions with which the authors are affiliated.

## Data availability

Data and processing workflows are available at <https://go.wisc.edu/p22l16>. To protect potentially personally identifiable information, the publicly available dataset contains only PCR Ct values, vaccine status, symptom status, virus culture status, and days from symptom onset to testing for each specimen.

# References

1. Shitrit P, Zuckerman NS, Mor O, Gottesman B-S, Chowers M. Nosocomial outbreak caused by the SARS-CoV-2 Delta variant in a highly vaccinated population, Israel, July 2021. *Euro Surveill.* 2021;26(39). doi:10.2807/1560-7917.ES.2021.26.39.2100822
2. Eyre DW, Taylor D, Purver M, et al. The impact of SARS-CoV-2 vaccination on Alpha & Delta variant transmission. *bioRxiv*. Published online September 29, 2021:2021.09.28.21264260. doi:10.1101/2021.09.28.21264260
3. Pouwels KB, Pritchard E, Matthews P, et al. Impact of Delta on viral burden and vaccine effectiveness against new SARS-CoV-2 infections in the UK. *bioRxiv*. Published online August 24, 2021:2021.08.18.21262237. doi:10.1101/2021.08.18.21262237
4. Chia PY, Xiang Ong SW, Chiew CJ, et al. Virological and serological kinetics of SARS-CoV-2 Delta variant vaccine-breakthrough infections: a multi-center cohort study. *bioRxiv*. Published online July 31, 2021. doi:10.1101/2021.07.28.21261295
5. Bergwerk M, Gonen T, Lustig Y, et al. Covid-19 breakthrough infections in vaccinated health care workers. *N Engl J Med.* 2021;385(16):1474-1484.
6. Bar-On YM, Goldberg Y, Mandel M, et al. Protection of BNT162b2 vaccine booster against Covid-19 in Israel. *N Engl J Med.* Published online September 15, 2021. doi:10.1056/NEJMoa2114255

# Shedding of Infectious SARS-CoV-2 Despite Vaccination

Kasen K. Riemersma, DVM, PhD<sup>1</sup>; Brittany E. Grogan, MPH<sup>2</sup>; Amanda Kita-Yarbro, MPH<sup>2</sup>; Peter J. Halfmann, PhD<sup>1</sup>; Hannah E. Segaloff, PhD<sup>3</sup>; Anna Kocharian, MS<sup>4</sup>; Kelsey R. Florek, MPH, PhD<sup>5</sup>; Ryan Westergaard, MD, PhD<sup>6</sup>; Allen Bateman, PhD<sup>5</sup>; Gunnar E. Jeppson, BS<sup>7</sup>; Yoshihiro Kawaoka, DVM, PhD<sup>1</sup>; David H. O'Connor, PhD<sup>8^</sup>; Thomas C. Friedrich, PhD<sup>1^</sup>; Katarina M. Grande, MPH<sup>2^</sup>

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<sup>6</sup> Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, WI, USA

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<sup>8</sup> Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, USA

<sup>^</sup>These authors contributed equally. Correspondence can be addressed to:

Katarina Grande [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)

# Abstract

The SARS-CoV-2 Delta variant is highly transmissible and contains mutations that confer partial immune escape. We compared RT-PCR cycle threshold (Ct) data from 699 test-positive anterior nasal swab specimens from fully vaccinated (n = 310) or unvaccinated (n=389) individuals. We observed low Ct values (<25) in 212 of 310 fully vaccinated (68%) and 246 of 389 (63%) unvaccinated individuals. Testing a subset of these low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people. To determine whether infectious virus titers differed in vaccinated and unvaccinated persons, we performed plaque assays on an additional set of 48 samples with Ct <25, finding no difference in infectious virus titer between groups.

# Main text

## Introduction

The SARS-CoV-2 Delta variant is highly transmissible and contains mutations that confer partial immune escape. Outbreak investigations suggest that vaccinated persons can spread Delta<sup>1,2</sup> but it is uncertain whether vaccine-induced immune responses reduce nasal viral RNA burden or the titer of infectious SARS-CoV-2 in people infected despite vaccination relative to unvaccinated persons.

## Methods

To estimate nasal viral RNA burden, we compared RT-PCR cycle threshold (Ct) data from 699 test-positive anterior nasal swab specimens from fully vaccinated (n = 310) or unvaccinated (n=389) individuals. “Fully vaccinated” is defined as having received a second mRNA vaccine dose or single adenovirus vector vaccine dose  $\geq 2$  weeks prior to testing positive. Samples were collected in Wisconsin 29 June through 31 July 2021 and tested by a single contract laboratory. During the study period, estimated prevalence of Delta variants in Wisconsin increased from 69% to over 95%. Vaccination status was determined via self-reporting and validated with state immunization records (**Supplemental Figure 1**). Infectious virus was quantified using plaque assays on a subset of samples with Ct values  $<25$ .

## Results

RT-PCR Ct values  $<25$  had previously been associated with shedding of infectious SARS-CoV-2. We observed low Ct values ( $<25$ ) in 212 of 310 fully vaccinated (68%; **Figure 1A**) and 246 of 389 (63%) unvaccinated individuals. Low Ct values were detected in vaccinated people regardless of symptoms at the time of testing (**Figure 1B**). Ct values  $<25$  were detected in 7 of 24 unvaccinated (29%; CI: 13-51%) and 9 of 11 fully vaccinated asymptomatic individuals (82%; CI: 48-97%), and 158 of 232 unvaccinated (68%, CI: 62-74%) and 156 of 225 fully vaccinated (69%; CI: 63-75%) symptomatic individuals. Testing a subset of these low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people. Infectious virus was detected in the sole specimen tested from an asymptomatic fully vaccinated individual (**Supplemental Figure 2**). Although few asymptomatic individuals were sampled, these results indicate that even asymptomatic, fully vaccinated people might shed infectious SARS-CoV-2.

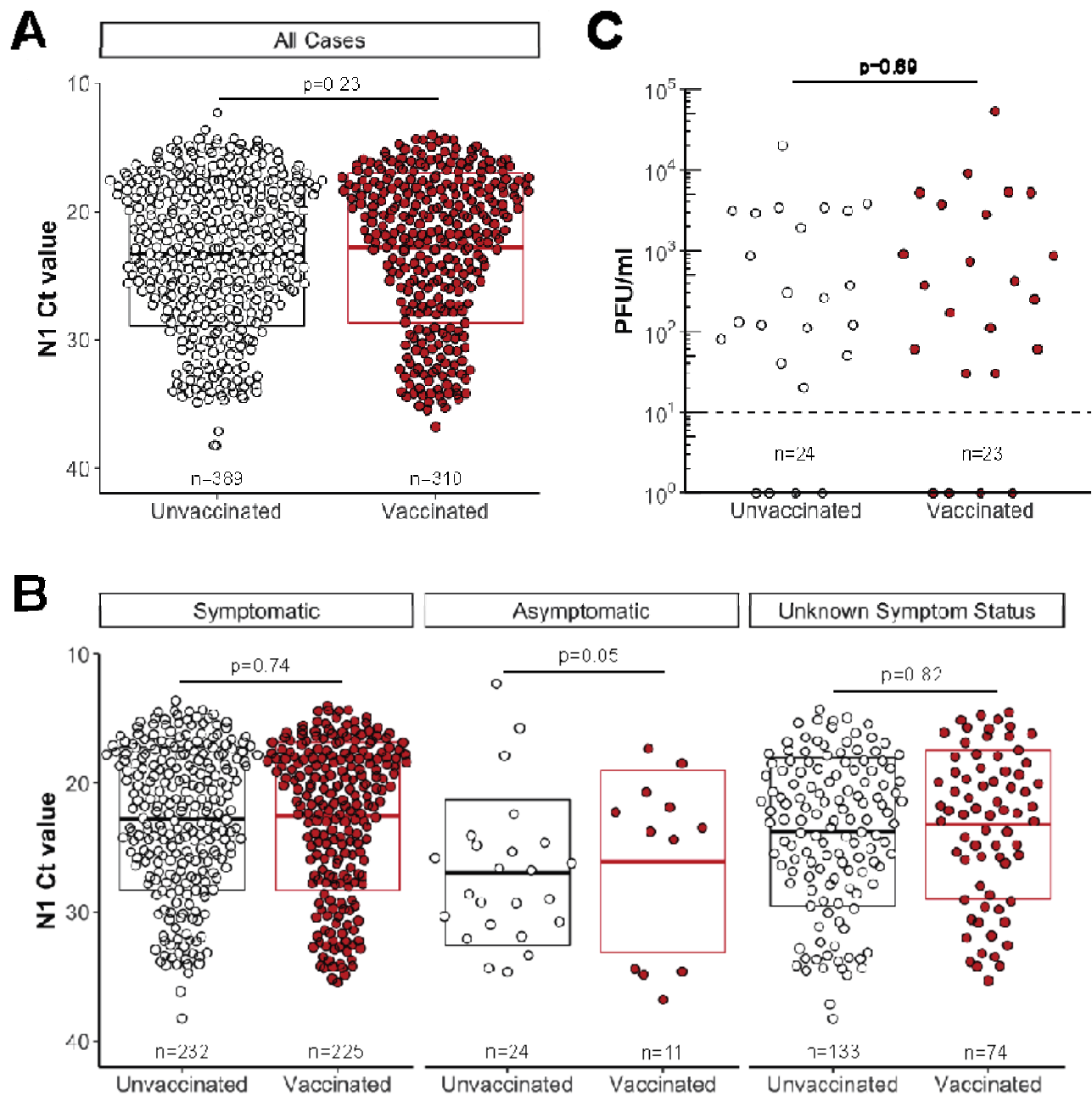
To determine whether infectious virus titers differed in vaccinated and unvaccinated persons, we performed plaque assays on an additional set of 48 samples with Ct <25, finding no difference in infectious virus titer between groups (**Figure 1C**). Notably time from symptom onset to testing did not vary by vaccination status, suggesting that our observations are not confounded by biases in test-seeking behavior between vaccinated and unvaccinated persons ( $p=0.40$ ; **Supplemental Figure 3**).

## Discussion

Combined with other studies<sup>3,4</sup> these data indicate that vaccinated as well as unvaccinated individuals infected with the Delta variant might transmit infection, though other studies suggest this may be relatively inefficient<sup>5</sup>. Importantly, we show that infectious SARS-CoV-2 is found at similar titers in vaccinated and unvaccinated persons when specimen Ct values are low. The inclusion of viruses from multiple counties without a linking outbreak (more than 80% of samples were not associated with an outbreak known to public health), indicate that Delta-lineage SARS-CoV-2 can achieve low Ct values consistent with transmissibility in fully vaccinated individuals across a range of settings.

Preventing infections with the Delta variant is therefore critical to stem transmission. Vaccinated and unvaccinated persons should get tested when symptomatic or after close contact with someone with suspected or confirmed COVID-19. Continued adherence to non-pharmaceutical interventions during periods of high community transmission to mitigate spread of COVID-19 remain important for both vaccinated and unvaccinated individuals. Moreover, the administration of an additional vaccine dose after the initial vaccine series dramatically reduces susceptibility to infection with the Delta variant<sup>6</sup>, providing another valuable strategy for interrupting transmission.

# Figure



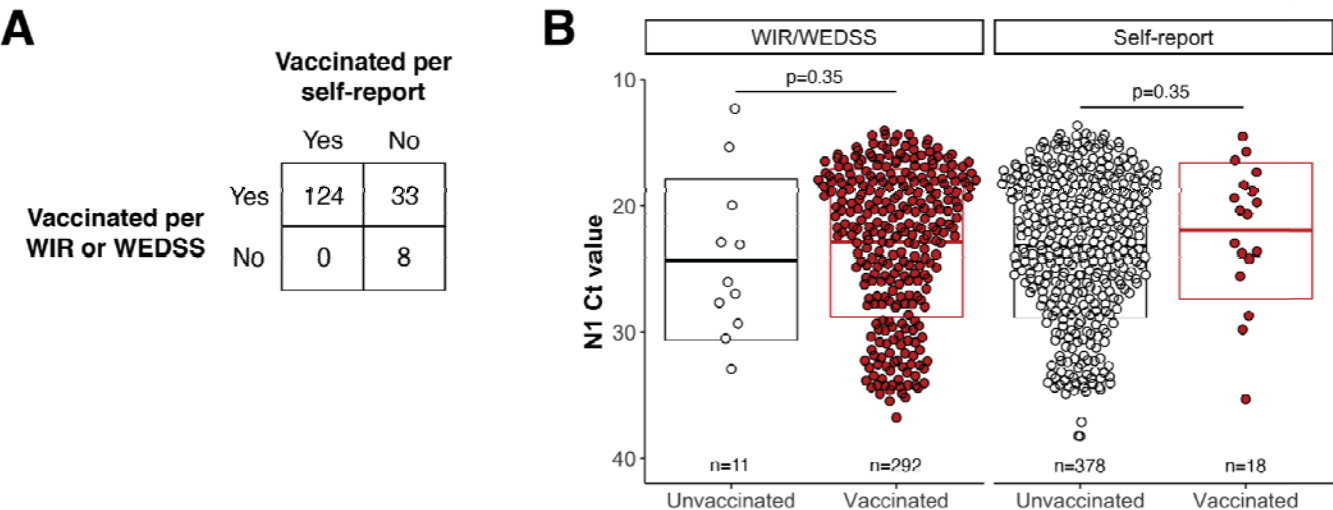
**Figure 1. Individuals infected with SARS-CoV-2 despite full vaccination have low Ct values and shed similar amounts of infectious virus as uninfected individuals. A.** Ct values for SARS-CoV-2-positive specimens grouped by vaccination status. RT-PCR was performed by Exact Sciences Corporation, responsible for over 10% of all PCR tests in Wisconsin during this period, using a qualitative diagnostic assay targeting the SARS-CoV-2 N gene (oligonucleotides identical to CDC's N1 primer and probe set) that has been authorized for emergency use by FDA

(<https://www.fda.gov/media/138328/download>). **B.** N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for individuals who were symptomatic or asymptomatic, or those whose symptom status was not determined, at the time of testing. **C.** We performed plaque assays on Vero E6 TMPRSS2 cells on a subset of specimens. Specimens were selected by N1 Ct-matching between fully vaccinated and unvaccinated persons, then specimens from persons with unknown vaccination status were excluded from the analysis. Infectious titers are expressed as plaque-forming units (pfu) per milliliter specimen. Specimens underwent a freeze-thaw cycle prior to virus titration. In **A** and **B**, boxplots represent mean N1 Ct values  $\pm$  one standard deviation. P-values were calculated by comparing mean Ct values by independent two-group Mann-Whitney U tests.



# Supplemental materials

## Supplemental figure 1



**Supplemental figure 1. Concordance between self-reported vaccination status and the Wisconsin Immunization Registry (WIR) or Wisconsin Electronic Disease Surveillance System (WEDSS).** For all individuals, vaccination status was determined using WIR/WEDSS electronic registries when data were available. Individuals were identified as unvaccinated at the time of testing if WIR/WEDSS data indicated receipt of a first SARS-CoV-2 vaccine dose after the test date.

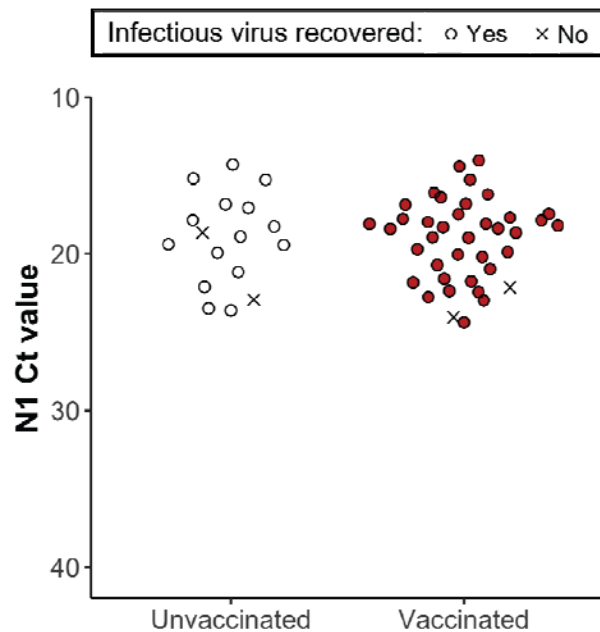
Individuals were considered fully vaccinated based on WIR/WEDSS data if the registries indicated receipt of a final vaccine dose at least 14 days prior to testing. For individuals whose vaccination status could not be verified in WIR/WEDSS, self-reported data collected at the time of testing were used. Individuals were considered unvaccinated based on self-report only if there was an explicit declaration of unvaccinated status in the self-reported data. Individuals were considered fully vaccinated based on self-report if they fulfilled all of the following criteria: (1) indicated that they had received a COVID vaccine prior to testing; (2) indicated that they did not require another vaccine dose; and (3) reported a date of last vaccine dose that was at least 14 days prior to testing.

Specimens lacking data on vaccination status were excluded from the study. Specimens from partially vaccinated individuals (incomplete vaccine series, or <14 days post-final dose) were also excluded. Fully vaccinated status was determined by WIR/WEDSS for 292 specimens and by self-reported data for 18. Unvaccinated status was determined by WIR/WEDSS for 11 and by self-reported data by 378.

**A.** Of the 699 specimens with vaccination status available from at least one source, 165 specimens had data available from both sources. For self-reporting, under-reporting of full vaccination status (33/157)

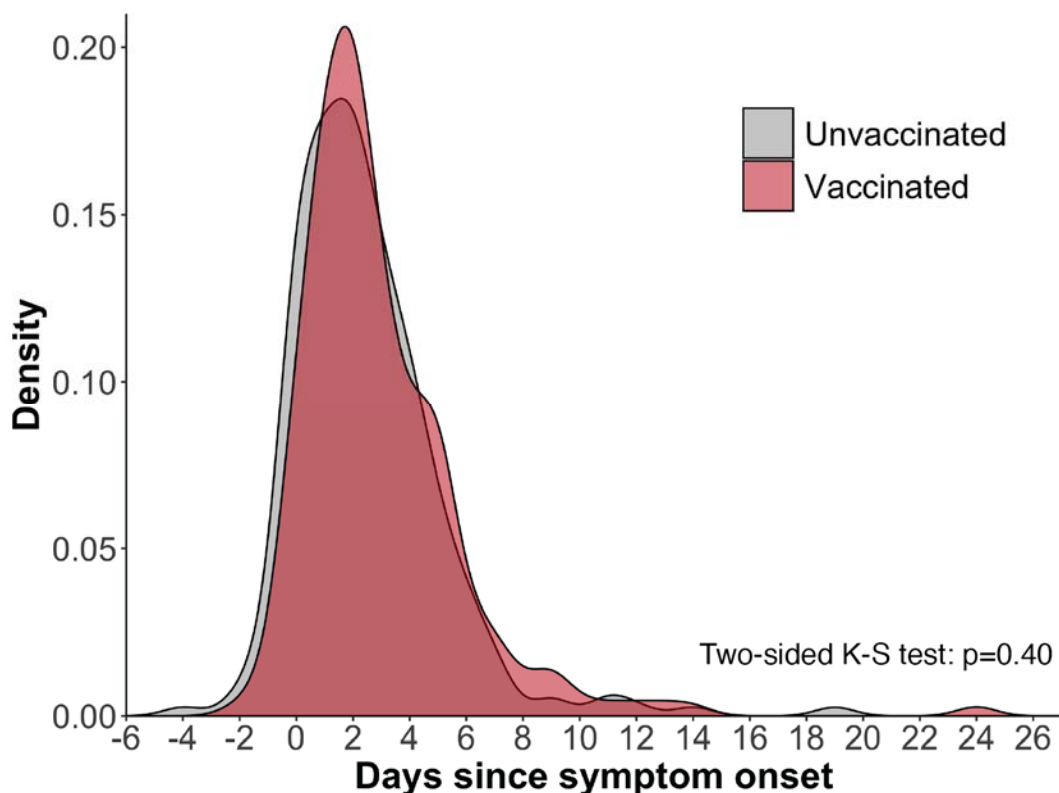
was more common than over-reporting (0/124). **B.** N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for individuals whose vaccination status was determined by WIR/WEDDS or by self-reported data. Boxplots represent mean N1 Ct values +/- one standard deviation. P-values were calculated by comparing mean Ct values by independent two-group Mann-Whitney U tests.

## Supplemental figure 2



**Supplemental figure 2. Infectious SARS-CoV-2 detected in the majority of fully vaccinated individuals with low Ct values.** Infectiousness was determined for a subset of N1 Ct-matched specimens with Ct <25 by inoculation onto Vero E6 TMPRSS2 cells and determining presence of cytopathic effects (CPE) after 5 days in culture. Specimens with unknown vaccination status were excluded from the analysis. Circles indicate presence of CPE; 'X' indicates no CPE detected.

Supplemental figure 3



**Supplemental figure 3. Density distributions of unvaccinated and vaccinated specimen collection dates by day since symptom onset.** Day 0 on the x-axis denotes self-reported day of symptom onset. Negative values for days indicate specimen collection prior to symptom onset. Symptom onset data were available for n=263 unvaccinated cases and n=232 vaccinated cases.

## Conflict of interest

The authors declare no conflicting interests.

## Ethics statement

Per the University of Wisconsin-Madison IRB, this project qualifies as public health surveillance activities as defined in the Common Rule, 45 CFR 46.102(l)(2). As such, the project is not deemed to be research regulated under the Common Rule and therefore, does not require University of Wisconsin-Madison IRB review and oversight.

The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the Centers for Disease Control and Prevention or the institutions with which the authors are affiliated.

## Data availability

Data and processing workflows are available at <https://go.wisc.edu/p22l16>. To protect potentially personally identifiable information, the publicly available dataset contains only PCR Ct values, vaccine status, symptom status, virus culture status, and days from symptom onset to testing for each specimen.

# References

1. Shitrit P, Zuckerman NS, Mor O, Gottesman B-S, Chowers M. Nosocomial outbreak caused by the SARS-CoV-2 Delta variant in a highly vaccinated population, Israel, July 2021. *Euro Surveill.* 2021;26(39). doi:10.2807/1560-7917.ES.2021.26.39.2100822
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5. Bergwerk M, Gonen T, Lustig Y, et al. Covid-19 breakthrough infections in vaccinated health care workers. *N Engl J Med.* 2021;385(16):1474-1484.
6. Bar-On YM, Goldberg Y, Mandel M, et al. Protection of BNT162b2 vaccine booster against Covid-19 in Israel. *N Engl J Med.* Published online September 15, 2021. doi:10.1056/NEJMoa2114255



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**From:** [Peter Halfmann](#)  
**To:** [Thomas Friedrich](#)  
**Cc:** [DAVID H O'CONNOR](#)  
**Subject:** RE: [EXTERNAL] Automatic reply: Preprint: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021  
**Date:** Thursday, August 19, 2021 6:17:00 PM

---

Thanks Tom –yeah there will be a set this weekend and other on Tuesday

---

**From:** Thomas Friedrich <tfriedri@wisc.edu>  
**Sent:** Thursday, August 19, 2021 6:03 PM  
**To:** Peter Halfmann <peter.halfmann@wisc.edu>  
**Cc:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
**Subject:** Re: [EXTERNAL] Automatic reply: Preprint: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Hey Peter. I am not sure when they would need updated info. Should we tell them that we expect new data by Monday?

Sent from my iPhone

On Aug 19, 2021, at 16:08, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)> wrote:

TWIV – is this a Tuesday or Thursday thing? We have some samples infected but won't stain and count until Friday/Saturday.

I don't have Daniel on this email.

Thanks

---

**From:** [dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu) <[dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu)>  
**Sent:** Thursday, August 19, 2021 3:45 PM  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Cc:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>; Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: [EXTERNAL] Automatic reply: Preprint: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Dave and Thomas,

Any quantitative stuff hot off the press so when I discuss your preprint and Vincent starts to rant I can give him some info?



Thanks,

Daniel

On Aug 15, 2021, at 1:56 PM, Dave O'Connor <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)> wrote:

Yeah, Tom and I were on TWIV a few times several years back. At that time we were talking about predicting future pandemic threats and coping with Zika virus with real-time data sharing. In this era of preprints and what not, it seems both quaint and forever ago!

dave

[dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu) wrote on 8/15/21 12:45 PM:

Dave,

Appreciate the information. I am planning on discussing your preprint on our next TWIV so would look forward to the quantitative data! Not sure if you are a listener to any of our podcasts. <https://www.microbe.tv>

Daniel

On Aug 15, 2021, at 10:58 AM, DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)> wrote:

Hi Daniel,

Not yet. Hopefully Peter from Yoshi's lab will have quantitative data later this coming week or next week. Initial goal was to simply address the criticism that the high PCR levels didn't correspond to replication competent virus.

Cheers,

Dave

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---

**From:** [dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu)

[<dg2810@cumc.columbia.edu>](mailto:dg2810@cumc.columbia.edu)

**Sent:** Sunday, August 15, 2021 7:22 AM

**To:** DAVID H O'CONNOR

**Subject:** Fwd: [EXTERNAL] Automatic reply:  
Preprint: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent - Wisconsin, July 2021

Dr O'Connor,

I forwarded my email you way as suggested  
by Dr Grande,

Look forward to your response

-----

I hope this email finds you well. I was hoping to  
ask a few questions about the  
preprint **Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta  
Variant is Prevalent - Wisconsin, July 2021.**

You report "Infectious SARS-CoV-2 was  
isolated from 14 of 16 specimens (88%) from  
unvaccinated individuals and 37 of 39  
specimens (95%) from vaccinated people.'

In figure 2 According to figure 2 Infectiousness  
was determined by the presence of cytopathic  
effects (CPE) after 5 days of replication in  
Vero E6 TMPRSS2 cells with visually apparent  
CPE under a light microscope. Any real  
time monitoring or quantification?

Sincerely,

Daniel Griffin, MD PhD CTropMed CTH  
Chief, Division of Infectious Disease  
- ProHEALTH, an OPTUM Company  
Senior Fellow for Infectious Disease - UHG

Research and Development  
Clinical Instructor of Medicine - Columbia  
University College of Physicians and Surgeons  
Department of Medicine-Division of Infectious  
Diseases  
President -Parasites Without Borders  
1 Dakota Drive Suite 205  
New Hyde Park, NY 11042  
Office Tel: (516)-656-6500  
Cell: (347)-276-6116  
[Email: danielgriffinmd@gmail.com](mailto:danielgriffinmd@gmail.com)  
[www.parasiteswithoutborders.com](http://www.parasiteswithoutborders.com)  
[www.microbe.tv](http://www.microbe.tv)  
Twitter @DanielGriffinMD

Begin forwarded message:

**From:** "Grande, Katarina"  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** [EXTERNAL] Automatic  
reply: Preprint: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent - Wisconsin,  
July 2021  
**Date:** August 14, 2021 at 10:43:41  
PM EDT  
**To:** "Griffin, Daniel"  
<[dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu)>

I will return to the office on  
Monday, August 16.  
For public health COVID data  
questions, please reach out to  
Brittany Grogan, Manjari Ojha, or  
Crystal Gibson.

For questions related to the  
medRxiv pre-print, please  
contact Tom Friedrich  
[[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)] or Dave  
O'Connor [[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)]

If you need to reach someone  
at Public Health Madison &  
Dane County more urgently,

please call 608-266-4821 to  
speak with a receptionist.

--

<http://dho.pathology.wisc.edu>  
[@dho • 608-890-0845](mailto:dho@pathology.wisc.edu)

**From:** [Grande, Katarina](#)  
**To:** [DAVID H O'CONNOR](#)  
**Cc:** [Thomas Friedrich](#)  
**Subject:** RE: medRxiv -- Manuscript Screened  
**Date:** Wednesday, August 11, 2021 3:45:27 PM

---

Got it!

---

**From:** Dave O'Connor <dhoconno@wisc.edu>  
**Sent:** Wednesday, August 11, 2021 3:43 PM  
**To:** Grande, Katarina <KGrande@publichealthmdc.com>  
**Cc:** Thomas Friedrich <tfriedri@wisc.edu>  
**Subject:** Re: medRxiv -- Manuscript Screened

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Nope, our previous experience with MMWR was not positive. CDC can take our data if they want it for MMWR. If they don't, that's OK too. Their preprint policy is backwards and nonsensical.

dave

Grande, Katarina wrote on 8/11/21 3:33 PM:

Should we intervene/revoke given MMWR just said they don't allow data shared in a pre-print???

-----Original Message-----

From: [medrxiv@cshlbp.org](mailto:medrxiv@cshlbp.org) <[medrxiv@cshlbp.org](mailto:medrxiv@cshlbp.org)>  
Sent: Wednesday, August 11, 2021 3:33 PM  
To: [dhoconno@wisc.edu](mailto:dhoconno@wisc.edu); Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
Subject: medRxiv -- Manuscript Screened

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MS ID#: MEDRXIV/2021/261387  
MS TITLE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Dear Dr. Grande,

We are pleased to inform you that the above manuscript has passed screening and will be online shortly. Processing typically completes same or next day (occasionally longer if over a weekend or a holiday).

Once an article is published in a journal, medRxiv will automatically update the preprint with a link to the published version. Depending on the journal, this process may take up to two weeks.

The medRxiv team

--

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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 2:30:54 PM

---

A bit of insight: I spoke to a journalist who told me how our paper is being weaponized by the far right. It might be that journals don't want to publish it and deal with the potential backlash.



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**From:** [Brittany Grogan \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 8:28:52 AM

---

We don't,  Katarina, but it's something I can pull together manually, just have to download some files from WEDSS. I can work on developing a masterlist of booster breakthroughs today that we can use in the meantime until DHS adds those to our daily files!

To be consistent with "regular" breakthroughs, do we want to consider a 'booster breakthrough' as an episode date (i.e. earliest date between symptom onset or test collection date) 14 or more days after the booster shot? CDC said on a call last week that they're finding it takes about 7 days to see a benefit from the booster, and I know that the Israel data  Davesent us shows more of a benefit at 12 days vs. 7 days. I'll reach out to  Anna to see if DHS is planning on presenting booster breakthrough data and if so, what interval they will use to define it.



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**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 9:24:55 AM

---

14 days is the definition I'd use if possible. Otherwise you run the risk of underestimating booster effectiveness.

It would be excellent to start cross-checking these cases against viral load. I feel like I've asked this before, but is PHMDC also planning to break out booster vs. non-booster infection and severe case rates?



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**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 1:46:54 PM

---

Sounds good, I added a file to Teams with all of our booster breakthroughs so far where the lab was processed by Exact or UW. There are 43 on the list with the majority being from November.



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**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 12:28:36 PM

---

Thanks  Brittany and  Katarina. I think it is worth analyzing breakthrough viral loads stratified by booster vs. no booster in general, and in preparation of potential reviewer requests for more recent data. We can certainly sequence breakthroughs along with everything else. Luis is the person to coordinate with, yes.



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**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 1:57:33 PM

---

Just to be clear, breakthrough equals  $\geq 14$  days after final dose?



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**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 2:18:42 PM

---

Correct; we have 80 total since 8/13/21. 56 of those are from November, compared to a total of 3,693 total cases so far in November. On last week's data snapshot we reported that so far 1/3 of Dane County residents who have completed the initial vaccine series have received a booster or third dose.



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 3:03:54 PM

---

So if roughly 72% of Dane County is fully vaccinated, that means that roughly 24% have been boosted ( $.72 * .3$ )

This would mean that if the vaccine was having no effect, you'd expect 886 of these November cases to be in vaccinees ( $3693 * .24$ ). An actual number of 56 doesn't seem that bad - about 6% as likely to be infected after boosting than if unvaccinated.

Unless I can't do math anymore, which is entirely possible :)



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Relevant paper in Nature Medicine  
**Date:** Thursday, December 2, 2021 9:48:16 AM

---

So, like, we were right?



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**From:** [Brittany Grogan \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Thursday, December 2, 2021 9:11:04 PM

---

 Dave FYI we have included booster case rate data in our snapshot that was released this evening! We only release hospitalization and death data by vaccination status once a month, so we'll release that in the same format (not vaxxed/vaxxed initial series/vaxxed + boosted) in two weeks, for both October and November.



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Relevant paper in Nature Medicine  
**Date:** Tuesday, December 7, 2021 4:34:34 PM

---

yep. well done!



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 1:33:18 PM

---

agreed, very annoying. same status today.



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**From:** [Brittany Grogan \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 11:10:34 AM

---

 Dave I'll chat with  Katarina and the rest of the data team at our meeting tomorrow morning, but I think that yes, we can certainly explore breaking out unvaccinated vs vaccinated non-booster vs vaccinated booster, perhaps even on this week's data snapshot.

Should we send a list of booster breakthroughs for potential sequencing? It's been a couple months since I've sent a request for sequencing; is this something I would send to Luis?



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 4:17:44 PM

---

Great point!



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**From:** [Thomas Friedrich \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 2:52:36 PM

---

Any further updates  Katarina?

One question for you and  Dave -- we have continued to collect data on Ct value and vaccination status. We could update the figures if this version does not get sent out for review...



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This message was sent to Al Bateman, Anna Kocharian, Brittany Grogan, Dave OConnor, Hannah Segaloff, Kasen Riemersma, Katarina Grande, Kelsey Florek, Peter Halfmann, Ryan Westergaard, Sanjib Bhattacharyya, Thomas Friedrich, and Yoshihiro Kawaoka.

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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 2:59:46 PM

---

Great point  Thomas



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 3:08:44 PM

---

Probably a "lost" cause, but I'm not sure I'd welcome the term "lost." A paper that has been seen by more than 100,000 people is arguably the most impactful thing I've ever been involved with. Even if it means that it just becomes an opportunity to educate about what the data says and why the weaponization is wrong.



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 3:00:10 PM

---

We could also start looking at third vaccine breakthroughs to see if there is any difference in VL in those cases.



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**From:** [Thomas Friedrich \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 3:00:33 PM

---

That is a great point yourself,  Dave .



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 8:11:47 AM

---

Current status is now "under review."

 Brittany, do we have the data file we need from DHS to gauge what our booster/3rd dose BTs are looking like right now?



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 2:37:09 PM

---

Ok, that's helpful context. Unfortunate! Wonder if there is a different frame we could build out in a submission that would help with this. Or is it a lost cause at this point...



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**From:** [Thomas Friedrich](#)  
**To:** [Grande, Katarina](#)  
**Cc:** [DAVID H O'CONNOR](#)  
**Subject:** Re: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)  
**Date:** Friday, October 29, 2021 6:25:26 PM  
**Attachments:** [image.png](#)

---

Okay, I will do it Sunday.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas Friedrich wrote on 2021-10-29 17:01:

Did either of you guys happen to submit today? I feel like we should do this asap. I have a family thing tomorrow but could potentially do it Sunday.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Grande, Katarina wrote on 2021-10-29 13:43:

Looks good! Thanks for this work!

-Kat

---

**From:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Friday, October 29, 2021 11:27 AM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>; Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** RE: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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How's this?

dave

---

Dave O'Connor | UW Medical Foundation Professor  
[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu) | ☎ +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

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IR#0682H\_000148

to my emails outside yours.

On Oct 29, 2021, 11:15 AM -0500, Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, wrote:

Attached!

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>

**Sent:** Friday, October 29, 2021 11:14 AM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Subject:** Re: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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I can do it but I don't have the cover letter from MMWR or suggested reviewers? Can you forward to me?

dave

---

Dave O'Connor | UW Medical Foundation Professor  
[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu) |  +1   
<http://dho.pathology.wisc.edu>

*I choose to work flexibly & send emails outside normal office hours. No need to respond to my emails outside yours.*

On Oct 29, 2021, 10:23 AM -0500, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>, wrote:

Okay, so now we need a cover letter and some suggested reviewers.

I am going to be tied up with deadlines for much of the rest of the day, but we should be able to go back to the initial MMWR submission prep to find the reviewers we suggested there.

Kat/Dave, do you have time to update the cover letter accordingly?

-T

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Grande, Katarina wrote on 2021-10-28 13:51:

Love it! Submit!

Tried to offer a compromise to the comment. Also fine either way.

Submit!

---

**From:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
**Sent:** Thursday, October 28, 2021 1:48 AM  
**To:** Thomas Friedrich  
**Cc:** Grande, Katarina  
**Subject:** Re: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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Just submit.

On Oct 27, 2021, 11:54 PM -0500, Thomas Friedrich  
<tfriedri@wisc.edu>, wrote:

Great, thanks. I responded to your comment -- I think the text should stay -- but we will see what Kat thinks.

Also, should we share this version with coauthors, or just submit?

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H O'CONNOR wrote on 2021-10-27 19:16:

This looks great Tom. I added one comment to your comment. I also made the spacing between text and superscripted references consistent throughout. Once you resolve the comment (either way is fine with me) I think it's good to go.

dave

—  
Dave O'Connor | UW Medical Foundation Professor  
[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu) | +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

*I choose to work flexibly & send emails outside normal office hours. No need to respond to my emails outside yours.*

On Oct 27, 2021, 6:13 PM -0500, Thomas Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>, wrote:

Hi both.

I went through the text and edited carefully. I expanded it in a few places where the very short text constraints of previous formats made some things less clear than they could be. I also added in a few points to cite papers that are really recent and/or had been excluded from previous versions due to format constraints. This includes all the citations Kat suggested in the Google Doc. Please [take a look](#) and let me know what you think. I really hope this does not need to go back to CDC clearance.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas Friedrich wrote on 2021-10-27 15:24:

Thanks Kat.

I am going to edit the doc now and try to get to a near-final draft we can submit, pending the okay from you and Dave.

-T

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Grande, Katarina wrote on 2021-10-26  
17:29:

Ok! Added a few citation  
ideas to the Google doc.  
And added the ones you  
cited that I didn't have to  
the running list I have going,  
here:

[Evidence of transmission  
from fully vaccinated  
individuals in a large  
outbreak of the SARS-  
CoV-2 Delta variant in  
Provincetown,  
Massachusetts | medRxiv](#)  
(published 10/20) (Siddle  
and Gage, et al)

- Together, genomic  
epidemiology provides a  
high-resolution picture of  
the Provincetown  
outbreak, revealing  
multiple cases of  
transmission of Delta from  
fully vaccinated  
individuals. However,  
despite its magnitude, the  
outbreak was restricted in  
its onward impact in MA  
and the US, likely due to  
high vaccination rates and  
a robust public health  
response

Personal communication  
with Contra Costa Health  
Officer and Medical  
Director (10/18)

- “Agree it would be nice  
for CDC to come out and  
say what is only logical -  
of course milder disease  
and shorter course of  
illness (results of vaccine)  
lead to reduced  
transmission on a  
community level - it only  
makes sense - less time  
sneezing and aerosolizing  
virus by infected  
vaccinated individuals  
compared to the  
unvaccinated will lead to  
less transmission. This is



sort of reminiscent of the early days of masking when they would not say that masks reduce transmission despite it being common sense and the literature took about 6 months to catch up...Agree it puts the locals like us in a tougher position. –Dr. Tzvieli

- "Since the well publicised and by now well critiqued Cape Cod study, there have been several other papers that suggest the duration of infectivity is less, the area under the curve of viral load over time is less, and even some research that suggests simply measuring levels of viral shedding in the nose is insufficient as much of that virus may be coated with antibodies in the fully vaccinated and thus rendered less infectious. Good studies of real world transmission from fully vaccinated to others would be ideal but so far seem to be lacking, so we must rely on these other proxy studies." –Dr. Farnitano

<https://www.npr.org/sections/health-shots/2021/10/12/1044553048/covid-data-vaccines-breakthrough-infections-transmission>

- NPR summary of the science around transmission after breakthrough infection. Links to NEJM article from 10/14; virological characteristics of BT infections from 8/21; intramuscular vaccines elicit varying degrees of plasma and salivary antibody response from 8/30

<https://www.nejm.org/doi/full/10.1056/NEJMoa2109072>

(published 10/14)

(Bergwerk et al)

Covid-19 Breakthrough  
Infections in Vaccinated  
Health Care Workers

- In all 37 case patients for whom data were available regarding the source of infection, the suspected source was an unvaccinated person
- No onward transmission among the 39 primary infections after vaccination

[No Significant Difference in Viral Load Between Vaccinated and Unvaccinated, Asymptomatic and Symptomatic Groups Infected with SARS-CoV-2 Delta Variant | medRxiv](#)

(published 10/5)

(Acharya)

- Viral loads (Ct) similar for asymptomatic and symptomatic infected people regardless of vaccine status, age, or gender
- This is different than the finding in the UK study, which found higher Cts among vaccinated than unvaccinated

[Eurosurveillance | Nosocomial outbreak caused by the SARS-CoV-2 Delta variant in a highly vaccinated population, Israel, July 2021](#)

(published 9/30) (Shitrit, et al)

- Rapid nosocomial spread occurred among vaccinated, including individuals wearing surgical masks

[The impact of SARS-CoV-2 vaccination on Alpha & Delta variant transmission | medRxiv](#)  
(published 9/29) (Eyre)

- Robust contact tracing study from England, looking at secondary infections in contacts of vaccinated and unvaccinated index cases.
- Vaccination lowered the odds of transmitting to contacts.
- This effect may go away after 12 weeks.
- Ct values didn't have much impact on likelihood of onward transmission.  
Authors: "factors other than PCR-measured viral load at diagnosis are important in vaccine-associated transmission reductions"

[Protection of BNT162b2 Vaccine Booster against Covid-19 in Israel - PubMed \(nih.gov\)](#)  
(published 9/15) (Bar-On et al)

- In this study involving participants who were 60 years of age or older and had received two doses of the BNT162b2 vaccine at least 5 months earlier, we found that the rates of confirmed Covid-19 and severe illness were substantially lower among

those who received a booster (third) dose of the BNT162b2 vaccine.

[CDC science brief](#)  
(updated 9/15)

- Together, these studies suggest that vaccinated people who become infected with Delta have potential to be less infectious than infected unvaccinated people. However, more data are needed to understand how viral shedding and transmission from fully vaccinated persons are affected by SARS-CoV-2 variants, time since vaccination, and other factors, particularly as transmission dynamics may vary based on the extent of exposure to the infected vaccinated person and the setting in which the exposure occurs.

[Effect of Vaccination on Transmission of SARS-CoV-2 | NEJM](#) (published 9/8)

- Looked at how commonly household members get COVID from a vaccinated healthcare worker household member
- Very large sample size.
- Pre-Delta. (Delta became dominant in Scotland in mid-May). Timing of study was when only healthcare workers were eligible for vaccine, 12/8-3/3/2020.
- Saw that COVID was less common among household members of vaccinated healthcare workers compared to before vaccination; saw this effect after 1 dose.

- “We provide empirical evidence suggesting that vaccination may reduce transmission by showing that vaccination of health care workers is associated with a decrease in documented cases of Covid-19 among members of their households.”

[Longitudinal analysis of SARS-CoV-2 vaccine breakthrough infections reveal limited infectious virus shedding and restricted tissue distribution | medRxiv](#) (Illinois study) (published 9/2)

- Looked at where virus was hanging out among 23 vaccinated and unvaccinated people with (Alpha!) COVID
- “The durations of both infectious virus shedding and symptoms were significantly reduced in vaccinated individuals compared with unvaccinated individuals.”
- “We also observed that breakthrough infections are associated with strong tissue compartmentalization and are only detectable in saliva in some cases. These data indicate that vaccination shortens the duration of time of high transmission potential, minimizes symptom duration, and may restrict tissue dissemination.”

[Intramuscular SARS-CoV-2 vaccines elicit varying degrees of plasma and salivary antibody responses as compared to natural infection | medRxiv](#) (published 8/30)

- Large amount of

antibodies in mucosal membranes in the nose and mouth, two of the primary entry points for COVID

[Viral dynamics of SARS-CoV-2 variants in vaccinated and unvaccinated individuals | medRxiv](#) (NBA study)  
(published 8/25)

- Longitudinal look at NBA players' PCR tests during pre-Delta and Delta time periods
- Vaccinated individuals' viral loads went down faster than unvaccinated (as seen in Singapore study)
- "These findings are in keeping with the hypothesis that vaccination protects against the severe manifestations of disease but offers less protection against infection in the upper airway. Precautions are therefore necessary to prevent onward transmission even from vaccinated individuals"

[Impact of Delta on viral burden and vaccine effectiveness against new SARS-CoV-2 infections in the UK | medRxiv](#)  
(published 8/24) (Pouwels et al)

- Infections occurring following 2 vaccinations had

similar peak viral burden to those in unvaccinated individuals. COVID vax still reduces new infections, but effectiveness and attenuation of peak viral burden are reduced with Delta.

[Virological characteristics of SARS-CoV-2 vaccine breakthrough infections in health care workers | medRxiv](#) (published 8/21)

- Looked at 161 breakthrough cases among 24,706 vaccinated Dutch healthcare workers
- Found lower Ct values in symptomatic breakthrough infections than asymptomatic breakthrough infections
- Found vaccination decreased the probability of culture positivity

[Transmission dynamics and epidemiological characteristics of Delta variant infections in China | medRxiv](#) (published 8/13)

- Contact tracing study from China, rather small sample size, looked at one outbreak
- Lots of transmission (73.9%) occurred before symptoms showed up, could be because of high

viral loads during this period

- Ct values higher in unvaccinated cases. "The vaccinated Delta cases in our study with a decreased viral load might have a reduced transmission potential given that viral RNA load of SARS-CoV-2 was independently associated with the shedding of transmissible viruses"

[Transmission of SARS-CoV-2 Delta Variant Among Vaccinated Healthcare Workers, Vietnam](#) (published 8/10)

- Studied breakthroughs among healthcare workers in Vietnam, small sample size (62)
- "Breakthrough Delta variant infections are associated with high viral loads, prolonged PCR positivity, and low levels of vaccine-induced neutralizing antibodies, explaining the transmission between the vaccinated people."

[Virological and serological kinetics of SARS-CoV-2 Delta variant vaccine-breakthrough infections: a multi-center cohort study](#)



[medRxiv](#) (published 7/31)  
(Chia et al)

- The Singapore study
- Vaccination associated with a faster decline in viral RNA load and a robust serological response
- <image.png>

[Covid-19 Breakthrough Infections in Vaccinated Health Care Workers - PubMed \(nih.gov\)](#)  
(published 7/28)  
(Bergwerk)

- Alpha.
- No secondary infections documented.
- Most BT infections were mild or asymptomatic.

---

**From:** DAVID H O'CONNOR  
[<dhoconno@wisc.edu>](mailto:dhoconno@wisc.edu)  
**Sent:** Monday, October 25, 2021 6:25 PM  
**To:** Thomas Friedrich  
[<tfriedri@wisc.edu>](mailto:tfriedri@wisc.edu);  
Grande, Katarina  
[<KGrande@publichealthmdc.com>](mailto:KGrande@publichealthmdc.com)  
**Subject:** RE: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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Yep!

dave

---

Dave O'Connor | UW  
Medical Foundation  
Professor  
[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu) |

+1 [REDACTED]  
<http://dho.pathology.wisc.edu>

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send emails outside  
normal office hours. No  
need to respond to my  
emails outside yours.*

On Oct 25, 2021, 5:49 PM  
-0500, Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>,  
wrote:

Sorry, got pulled in to  
infinite meetings today!  
Will try to highlight a few  
papers tomorrow—  
didn't Gage's group post  
one last week finding  
transmission indeed  
occurring from vax'ed in  
Provincetown?

---

**From:** Thomas Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Monday, October  
25, 2021 9:25 AM  
**To:** DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Cc:** Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: FW:  
JAMA21-11227  
(Shedding of Infectious  
SARS-CoV-2 Despite  
Vaccination)

Caution: This email was  
sent from an external  
source. Avoid unknown  
links and attachments.

Just  
because it  
can be  
2000  
words  
doesn't  
mean it  
needs to  
have 2000  
words.

Exactly.

We will want to edit  
the abstract you had in

the medrxiv version,  
because IIRC it just  
repeats a lot of the  
language in the paper  
itself.

We should also add a  
sentence or two to the  
discussion so we can  
cite a few more recent  
papers. Kat, could you  
possibly take a stab at  
that? You could even  
just suggest a few  
talking points that we  
could wordsmith  
collaboratively.

Dave, should we still  
edit the SharePoint  
version?

-T

Thomas Friedrich

Professor  
Dept. of  
Pathobiological  
Sciences  
University of  
Wisconsin  
School of Veterinary  
Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H  
O'CONNOR wrote on  
2021-10-25 09:22:

Alrighty.  
Just  
because it  
can be  
2000  
words  
doesn't  
mean it  
needs to  
have 2000  
words.

If you look  
at the  
Medrxiv  
version, I  
had to  
create an

abstract or  
else they  
don't  
accept the  
submission,  
so we can  
use that as  
a start. I'm  
on this  
WHO  
webinar all  
morning  
but could  
help later.

dave

—  
Dave  
O'Connor |  
UW  
Medical  
Foundation  
Professor  
[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)  
+1  
<http://dho.pathology.wisc.edu>

*I choose to  
work  
flexibly &  
send  
emails  
outside  
normal  
office  
hours. No  
need to  
respond to  
my emails  
outside  
yours.*

On Oct 25,  
2021, 9:19  
AM -0500,  
Thomas  
Friedrich  
[<tfriedri@wisc.edu>](mailto:tfriedri@wisc.edu),  
wrote:

I think  
a Nat  
Med  
Brief  
Communication  
would  
require  
minimal  
reformatting:

					<b>Brief Communication</b>
--	--	--	--	--	--------------------------------

					A Brief Communication is a format intended for reporting of timely new results that, while limited in scope, are of substantial clinical or public health importance, and that therefore need to be quickly vetted and shared. Brief Communications begin with a unreferenced abstract (150 words) followed by the main text (a single section containing
--	--	--	--	--	--

				<p>introduction, results and discussion). The main text can be up to 2000 words and contains no headings. Brief Communications can have 2 display items. Brief Communications include an online Methods section. As a guideline, Brief Communications allow up to 20 references. Additional 20 references can be included in the online Methods section.</p> <p>Brief Communications are always peer reviewed</p>
--	--	--	--	---

and  
include  
received/accepted  
dates.  
They  
may  
be  
accompanied  
by  
supplementary  
information.

Thomas  
Friedrich

Professor  
Dept.  
of  
Pathobiological  
Sciences  
University  
of  
Wisconsin  
School  
of  
Veterinary  
Medicine  
@tcfriedrich  
@tcf-  
lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)


DAVID  
H  
O'CONNOR  
wrote  
on  
2021-  
10-25  
09:16:

Either  
one  
is  
fine  
with  
me,  
though  
I'd  
really  
like  
to  
submit  
as-  
is  
without  
a

lengthy  
reformatting/modification.  
I'm  
happy  
to  
do  
this  
after  
we  
get  
some  
traction  
if  
requested  
by  
editors/reviewers,  
I  
just  
don't  
want  
to  
invest  
the  
time  
only  
to  
have  
another  
desk  
rejection.

dave

—  
Dave  
O'Connor  
|  
UW  
Medical  
Foundation  
Professor  
[dhocomno@wisc.edu](mailto:dhocomno@wisc.edu)  
|

+1  
  
<http://dho.pathology.wisc.edu>

*I  
choose  
to  
work  
flexibly  
&  
send  
emails  
outside  
normal  
office*



hours.  
No  
need  
to  
respond  
to  
my  
emails  
outside  
yours.

On  
Oct  
25,  
2021,  
9:10  
AM  
-0500,  
Thomas  
Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>,  
wrote:

One  
other  
option  
might  
be  
a  
brief  
communication  
to  
Nature  
Medicine:  
<https://www.nature.com/nm/content>

-  
T

Thomas  
Friedrich

Professor  
Dept.  
of  
Pathobiological  
Sciences  
University  
of  
Wisconsin  
School  
of  
Veterinary  
Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas

Friedrich  
wrote  
on  
2021-  
10-  
25  
09:06:

Is  
PLOS  
Med  
format-  
neutral?

I  
know  
we  
looked  
at  
Lancet,  
but  
before  
we  
officially  
go  
to  
PLOS  
Med,  
is  
there  
any  
other  
high-  
impact  
journal  
we  
might  
want  
to  
consider?

Thomas  
Friedrich

Professor  
Dept.  
of  
Pathobiological  
Sciences  
University  
of  
Wisconsin  
School  
of  
Veterinary  
Medicine  
@tcfriedrich  
@tcf-  
lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID  
H  
O'CONNOR  
wrote  
on  
2021-  
10-  
25  
08:46:

OK,  
Kat,  
can  
you  
please  
officially  
withdraw  
the  
paper  
from  
consideration  
at  
JAMA  
and  
we  
can  
revise  
the  
cover  
letter  
for  
PLOS?  
Unless  
you  
or  
Tom  
feel  
otherwise,  
I  
think  
we  
should  
submit  
as-  
is  
to  
PLOS  
Med.

dave

—  
Dave  
O'Connor  
|  
UW  
Medical  
Foundation  
Professor  
[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)

+1

<http://dho.pathology.wisc.edu>

*I  
choose  
to  
work  
flexibly  
&  
send  
emails  
outside  
normal  
office  
hours.  
No  
need  
to  
respond  
to  
my  
emails  
outside  
yours.*

On  
Oct  
25,  
2021,  
8:05  
AM  
-0500,  
Grande,  
Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>,  
wrote:

Off  
to  
PLOS  
we  
go!

**From:**  
Jody  
Zylke  
<[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>

**Sent:**  
Saturday,  
October  
23,  
2021  
5:11  
AM

**To:**  
Grande,  
Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:**  
RE:  
JAMA21-  
11227  
(Shedding  
of  
Infectious  
SARS-  
CoV-  
2  
Despite  
Vaccination)

Caution: This email was sent from an external source. Avoid unknown links and attachments. Yes, all the JAMA Network journals have

the  
same  
policies.

Jody

**From:**  
Grande,  
Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Sent:**  
Friday,  
October  
22,  
2021  
11:45  
AM

**To:**  
Jody  
Zylke  
<[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>

**Cc:**  
'DAVID  
H  
O'CONNOR'  
<[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)>;  
Thomas  
Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Subject:**

RE:  
JAMA21-  
11227  
(Shedding  
of  
Infectious  
SARS-  
CoV-  
2  
Despite  
Vaccination)

[Warning  
External  
Email]  
Thanks  
for  
your  
response,  
Dr.  
Zylke.  
We're  
struggling  
with  
this  
since  
this  
endeavor  
was  
such  
a  
massive  
collaborative  
effort!  
Does  
JAMA  
Open  
Network  
have  
the  
same  
7  
author  
limit  
for  
a  
Research  
Letter  
submission?  
Thanks  
again  
for  
your  
time!

-  
Katarina

**KATARINA  
GRANDE,  
MPH**

(pronouns:  
she/her/hers)

**Public  
Health  
Supervisor/COVID-  
19**

**Data**

**Team**

**Lead**

| [Public  
Health  
Madison](#)

[&](#)

[Dane  
County](#)

2300

South

Park

St,

Rm

2010,

Madison,

WI

53713

Phone:

(608)

243-

0409

|

Cell:

██████████

██████████

██████████

|

Fax:

(608)

266-

4858

*Healthy*

*People.*

*Healthy*

*Places.*



This  
email,  
including  
any  
attachments,  
may  
contain  
confidential

or  
protected  
health  
information  
which  
is  
only  
for  
the  
intended  
recipient.  
If  
you  
received  
this  
email  
in  
error,  
please  
delete  
and  
notify  
the  
sender  
immediately.  
Emails  
sent  
or  
received  
by  
our  
agency  
are  
subject  
to  
open  
records  
requests  
and  
could  
be  
released  
to  
the  
public,  
unless  
there  
is  
an  
exception  
allowed  
by  
law.

<image002.png>

**From:**  
[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)



<[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>

**Sent:**

Thursday,  
October  
21,  
2021  
5:02  
PM

**To:**

Grande,  
Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:**

JAMA21-  
11227  
(Shedding  
of  
Infectious  
SARS-  
CoV-  
2  
Despite  
Vaccination)

Caution: This  
email was  
sent from an  
external  
source.  
Avoid  
unknown  
links and  
attachments.

Dear  
Ms  
Grande:

Thanks  
for  
submitting  
a

research  
letter  
to  
JAMA.  
The  
study  
is  
interesting  
and  
I  
would  
be  
willing  
to  
send  
it  
for  
peer  
review.  
However,  
research  
letters  
are  
limited

to  
7  
authors,  
and  
we  
cannot  
make  
an  
exception.

Would  
you  
be  
willing  
to  
decrease  
the  
number  
of  
authors  
to  
7?  
If  
not,  
we  
will  
not  
be  
able  
to  
consider  
your  
manuscript.

Sincerely,

Jody  
W  
Zylke,  
MD  
Deputy  
Editor,  
JAMA  
Email:  
[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)

**From:** [Thomas Friedrich](#)  
**To:** [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)  
**Subject:** Re: FW: Receipt of NMED-BC116676  
**Date:** Tuesday, November 2, 2021 3:03:38 PM

---

No worries -- fingers crossed!

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com) wrote on 2021-11-02 14:53:

Nope, looks great. Thanks again for your work on getting this edited and submitted!

---

**From:** Thomas Friedrich <[tcfriedri@wisc.edu](mailto:tcfriedri@wisc.edu)>  
**Sent:** Tuesday, November 2, 2021 2:30 PM  
**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: FW: Receipt of NMED-BC116676

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Nope. I think that is just for you as corresponding author.

Any issues there?

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com) wrote on 2021-11-02 14:06:

Did you get a copy of this receipt?

---

**From:** [medicine@us.nature.com](mailto:medicine@us.nature.com) <[medicine@us.nature.com](mailto:medicine@us.nature.com)>

**Sent:** Tuesday, November 2, 2021 2:05 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** Receipt of NMED-BC116676

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Our ref: NMED-BC116676

2nd Nov 2021

Dear Dr. Grande,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination". We expect to have our internal review completed shortly. At that time we will email you the status of your manuscript. Please quote the manuscript number NMED-BC116676 in future correspondence.

Thank you for considering Nature Medicine as a place to publish and if you have questions please do not hesitate to contact me. Our internal review usually takes less than two weeks; if you do not hear from us, feel free to drop me a note over email and I will get back to you as soon as I can.

As you may know, we are trying to improve the quality and transparency of methods and statistics reporting in our papers (<http://www.nature.com/nm/journal/v19/n5/full/nm0513-508.html>). To that end, we ask that you complete two items: an editorial policy checklist that verifies compliance with all required editorial policies and a reporting summary that collects information on experimental design and reagents.

- Reporting summary:  
<https://www.nature.com/documents/nr-reporting-summary.zip>
- Editorial policy checklist:  
<https://www.nature.com/documents/nr-editorial-policy-checklist.zip>

Please note that we will only use this checklist if the editors decide to send your article for external review. However, to avoid any unnecessary delays in the handling of your papers, we encourage you to fill the checklist during the journal's internal review of the paper.

You may check the status of your manuscript by selecting the "Check manuscript status" link under the following URL:

<https://mts-nmed.nature.com/cgi-bin/main.plex?el=A7H4BBKi4A5EaJQ4F4A9ftddmZaQdWF5RnkMpwM3eIXwZ>

Clicking on this link will automatically send you to the web page.

You can now use a single sign-on for all your accounts, view the status of all your manuscript submissions and reviews, access usage statistics for your published articles and download a record of your refereeing activity for the Nature journals. Please check your account regularly and ensure that we have your current contact information.

In addition, Springer Nature encourages all authors and reviewers to associate an Open Researcher and Contributor Identifier (ORCID) to their account. ORCID is a community-based initiative that provides an open, non-proprietary and transparent registry of unique identifiers to help disambiguate research contributions.

For your reference, please note that all published original research manuscripts, Reviews and Perspectives must contain a declaration of any financial and non-financial competing interests. The declaration is required only when a paper is being accepted. Full details of the policy can be found at "<http://www.nature.com/nature/submit/policies/competing/index.html>"

Yours sincerely,

Editorial Assistant  
Nature Medicine  
[medicine@us.nature.com](mailto:medicine@us.nature.com)

**\*Our flexible approach during the COVID-19 pandemic\***

*If you need more time at any stage of the peer-review process, please do let us know. While our systems will continue to remind you of the*

*original timelines, we aim to be as flexible as possible during the current pandemic.*

This email has been sent through the Springer Nature Tracking System NY-610A-NPG&MTS

*Confidentiality Statement:*

*This e-mail is confidential and subject to copyright. Any unauthorised use or disclosure of its contents is prohibited. If you have received this email in error please notify our Manuscript Tracking System Helpdesk team at <http://platformsupport.nature.com>.*

*Details of the confidentiality and pre-publicity policy may be found here <http://www.nature.com/authors/policies/confidentiality.html>*

[Privacy Policy](#) | [Update Profile](#)

**From:** [Thomas Friedrich](#)  
**To:** [Grande, Katarina](#)  
**Cc:** [DAVID H O'CONNOR](#)  
**Subject:** Re: FW: Your PLOS Medicine Submission (PMEDICINE-D-21-04683) - [EMID:a9f2a3d642ffe1bc]  
**Date:** Thursday, November 11, 2021 10:51:38 AM

---

Great, thanks Kat.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Grande, Katarina wrote on 2021-11-11 10:36:

Let's see if I can find time today to rebuild a Plos Pathogens submission; shouldn't be too difficult since I have all the material from yesterday.

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, November 11, 2021 10:35 AM  
**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Cc:** 'DAVID H O'CONNOR' <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Subject:** Re: FW: Your PLOS Medicine Submission (PMEDICINE-D-21-04683) - [EMID:a9f2a3d642ffe1bc]

Caution: This email was sent from an external source. Avoid unknown links and attachments.

I would rather not, but could be convinced not to care

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Grande, Katarina wrote on 2021-11-11 10:33:

It looks like the automatic transfer option is PLOS One. Should we start there, for ease?

---

**From:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Thursday, November 11, 2021 10:28 AM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: FW: Your PLOS Medicine Submission (PMEDICINE-D-21-04683) - [EMID:a9f2a3d642ffe1bc]

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Yep. What Tom said. Can you transfer from PLOS Medicine to PLOS Pathogens via the web interface?

dave

—  
Dave O'Connor | UW Medical Foundation Professor

IR#0682H\_000183

[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu) | ☎ +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

*I choose to work flexibly & send emails outside normal office hours. No need to respond to my emails outside yours.*

On Nov 11, 2021, 9:57 AM -0600, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>, wrote:

I would try Plos Pathogens first and again highlight PLOS's ostensible no-scooping policy. After that PLOS ONE.

Mostly I am pissed off at CDC's inane clearance policy and retrograde policy on preprints, as well as at NEJM for sitting on the paper for 6 weeks.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H O'CONNOR wrote on 2021-11-11 09:32:

Maybe PLOS Pathogens?

dave

—  
Dave O'Connor | UW Medical Foundation Professor  
[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu) | ☎ +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

*I choose to work flexibly & send emails outside normal office hours. No need to respond to my emails outside yours.*

On Nov 11, 2021, 9:10 AM -0600, Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, wrote:

And here it (rejection notice) is!  
Do we end our journey here, folks? Are these data too 'old' at this point from a pandemic perspective? Has this finding been published enough already, from the perspectives of editors? Even though we acknowledge and cite findings since our study, maybe the journal community has fully shifted from wanting to focus on viral load proxies to the conversations around waning immunity, location of virus in nasal passageways, likelihood of getting infected in the first place if vaccinated, etc. etc. Again, we include all these nuances, but alas. Thoughts?

-Kat

-----Original Message-----

From: [em.pmedicine.0.77446e.85884cb9@editorialmanager.com](mailto:em.pmedicine.0.77446e.85884cb9@editorialmanager.com)  
<[em.pmedicine.0.77446e.85884cb9@editorialmanager.com](mailto:em.pmedicine.0.77446e.85884cb9@editorialmanager.com)> On Behalf Of PLOS  
Medicine  
Sent: Thursday, November 11, 2021 8:12 AM  
To: Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
Subject: Your PLOS Medicine Submission (PMEDICINE-D-21-04683) -  
[EMID:a9f2a3d642ffe1bc]



Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Dr. Grande,

Thank you very much for submitting your manuscript entitled "Shedding of Infectious SARS-CoV-2 Despite Vaccination" (PMEDICINE-D-21-04683) for consideration at PLOS Medicine.

As with all manuscripts submitted to the journal, yours was considered in light of other papers that we receive, and our aims for the journal. We are looking for papers of wide general interest which would lead to a substantial advance in clinical management or public health policy, or which provide a substantial new insight into the pathogenesis of disease, with a clear path toward clinical application. Within these categories, we prioritize research on conditions that contribute to a substantial proportion of the global burden of disease.

Now that we have had a chance to evaluate your paper, I regret to tell you that we do not think it is appropriate for the journal given current editorial criteria and our expectations regarding the extent of conceptual or practical advance that we anticipate being of interest to our broad readership.

While we cannot therefore consider your manuscript further for publication in PLOS Medicine, we suggest transferring your manuscript to PLOS ONE instead ([www.plosone.org](http://www.plosone.org)).

PLOS ONE is a peer-reviewed journal that accepts original research that contributes to the base of academic knowledge. The review process at PLOS ONE focuses on scientific validity, strong methodology and high ethical standards, and the journal's inclusive scope and broad reach means that research published in PLOS ONE will be read, cited and used by researchers across many disciplines.

Please remember to ensure that all authors are aware of and agree to the transfer of this submission, and that submissions can only be considered by one journal at a time.

If you would like to submit your work to PLOS ONE, please click the following link:  
[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_www.editorialmanager.com\\_pmedicine\\_lasp-3Fi-3D712184-26l-3DWRWADMXC&d=DwIGaQ&c=byefhD2ZumMFFQYPZBagUCDuBiM9Q9twmxaBM0hCgII&r=zyp-4-WY7kOLmgSbRwbjUT7zXI88RkfDqC-J0FyhCFc&m=ANWtspF2OmBAqD\\_QBoxfPv-PbK6wbZegJHiOnFFZcfg&s=goMSNcf1Aq4-898WVDWmt-1pZDw7RF8a6lngNnHQ4\\_Q&e=](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.editorialmanager.com_pmedicine_lasp-3Fi-3D712184-26l-3DWRWADMXC&d=DwIGaQ&c=byefhD2ZumMFFQYPZBagUCDuBiM9Q9twmxaBM0hCgII&r=zyp-4-WY7kOLmgSbRwbjUT7zXI88RkfDqC-J0FyhCFc&m=ANWtspF2OmBAqD_QBoxfPv-PbK6wbZegJHiOnFFZcfg&s=goMSNcf1Aq4-898WVDWmt-1pZDw7RF8a6lngNnHQ4_Q&e=)

Please note that the journals are editorially independent and we therefore cannot guarantee the outcome if you choose to pursue a transfer.

Should you choose to transfer your submission to PLOS ONE, you will receive a confirmation email within 24-48 hours of accepting the transfer. Your submission details and manuscript files will be transferred automatically; however, because all PLOS journals vary in submission requirements, once in the PLOS ONE Editorial Manager site, you will be asked to provide additional information before you can finalize your new submission to PLOS ONE. If you have any questions, please feel free to contact the journal at [plosone@plos.org](mailto:plosone@plos.org).

Thank you for giving us the opportunity to consider your work.

Sincerely,

Richard Turner, PhD  
Senior Editor, PLOS Medicine

[plosmedicine@plos.org](mailto:plosmedicine@plos.org)

In compliance with data protection regulations, you may request that we remove your personal registration details at any time. (Use the following URL:

[https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_www.editorialmanager.com\\_pmedicine\\_login.asp-3Fa-3Dr&d=DwlGaQ&c=byefhD2ZumMFFQYPZBagUCDuBiM9Q9twmxaBM0hCgII&r=zyp-4-WV7kOLmgSbRwbjUT7zXI88RkfDqC-J0FyhCFc&m=ANWtspF2OmBAqD\\_QBoxfPv-PbK6wbZcgJHiOnFFZcfg&s=LwbKJSvS0j1nup1b0e2TM4H8HAd8eWehu8LzouUjA-o&e=](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.editorialmanager.com_pmedicine_login.asp-3Fa-3Dr&d=DwlGaQ&c=byefhD2ZumMFFQYPZBagUCDuBiM9Q9twmxaBM0hCgII&r=zyp-4-WV7kOLmgSbRwbjUT7zXI88RkfDqC-J0FyhCFc&m=ANWtspF2OmBAqD_QBoxfPv-PbK6wbZcgJHiOnFFZcfg&s=LwbKJSvS0j1nup1b0e2TM4H8HAd8eWehu8LzouUjA-o&e=) ). Please contact the publication office if you have any questions.

**From:** [Thomas Friedrich](#)  
**To:** [DAVID H O'CONNOR](#)  
**Cc:** [Grande, Katarina](#)  
**Subject:** Re: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)  
**Date:** Monday, October 25, 2021 10:21:54 AM  
**Attachments:** [image.png](#)

---

Taking the JAMA editor off. :)

I fully agree on bringing it back to Google Docs.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H O'CONNOR wrote on 2021-10-25 09:55:

A point on process - I really think we should bring it back into gDocs. Doing this in Word was a huge PITA and required excessive formatting to get right at the end. Would be much better to edit collaboratively in gDocs and export to Word at the very end.

dave

---

Dave O'Connor | UW Medical Foundation Professor  
[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu) | +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

*I choose to work flexibly & send emails outside normal office hours. No need to respond to my emails outside yours.*

On Oct 25, 2021, 9:29 AM -0500, Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, wrote:

Thanks, Jody, we appreciate your response. Given this, we'd like to withdraw our submission from consideration.

Thanks again for your time, we hope you have a nice week!

-Katarina

---

**From:** Jody Zylke <[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>  
**Sent:** Saturday, October 23, 2021 5:11 AM  
**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** RE: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Yes, all the JAMA Network journals have the same policies.

Jody

---

**From:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Sent:** Friday, October 22, 2021 11:45 AM  
**To:** Jody Zylke <[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>  
**Cc:** 'DAVID H O'CONNOR' <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** RE: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

[Warning External Email]

Thanks for your response, Dr. Zylke. We're struggling with this since this endeavor was such a massive collaborative effort! Does JAMA Open Network have the same 7 author limit for a Research Letter submission?

Thanks again for your time!

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

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This email, including any attachments, may contain confidential or protected health information which is only for the intended recipient. If you received this email in error, please delete and notify the sender immediately. Emails sent or received by our agency are subject to open records requests and could be released to the public, unless there is an exception allowed by law.

<image002.png>

---

**From:** [Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org) <[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>

**Sent:** Thursday, October 21, 2021 5:02 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Ms Grande:

Thanks for submitting a research letter to JAMA. The study is interesting and I would be willing to send it for peer review. However, research letters are limited to 7 authors, and we cannot make an exception.

Would you be willing to decrease the number of authors to 7? If not, we will not be able to consider your manuscript.

Sincerely,

IR#0682H\_000189

Jody W Zylke, MD  
Deputy Editor, JAMA  
Email: [Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)

**From:** [Thomas Friedrich](#)  
**To:** [DAVID H O'CONNOR](#)  
**Cc:** [REDACTED]  
**Subject:** Re: NEJM figure updates  
**Date:** Wednesday, September 29, 2021 10:26:30 PM  
**Attachments:** [EOC\\_Riemersma\\_Viral loads in vaccinees\\_NEJM\\_revised\\_2021-09-29.docx](#)

---

Dave and Kasen,

Attached is a draft revised version of the NEJM letter.

Kasen, I would appreciate it if you could give a quick read, especially to the Figure 1 legend, to make sure I have correctly described how the samples were chosen.

I decided to omit the supplemental figure showing infectious titer as a function of Ct because we don't have a best-fit line or r-squared value. We should calculate these for when we show that plot in future, though -- Kasen can do it if he has time, or else we can ask Luis to do that.

Thanks,

-T

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

[REDACTED] wrote on 2021-09-29 20:36:

All right, I've attached the updated figures and the table of titer data that Dave can share. The figure files are also in the TCF shared google drive in the same directory listed in my previous email. To avoid confusion, Dave should probably remove the older (2-freeze-thaw) titer data in the excel file he's currently sharing since it's no longer in the manuscript.

Let me know if you have any questions or if anything needs to be changed.

Cheers,  
Kasen

On Wed, Sep 29, 2021 at 6:55 PM Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:  
Okay, thanks. Sorry about this.

Also, please check to make sure the axes are not cut off in the figure you place in Illustrator. It looked like the very top of the 5 in the  $10^5$  on the y axis and the very last zero on the x-axis were every-so-slightly cropped.

Sorry again to bug you about this. After we get this back in things should be less hectic. But, given that we have an opportunity to essentially revise the paper before the editor looks at it, I want to be sure we get it back in asap. I worry that the editor will decide to read it right away, having been pinged by the assistant, so I want to be sure he sees these data.

Thanks again,

-Tom

[REDACTED] wrote:

Hey Tom,

Sorry about that, I had not seen your previous emails. You are correct, I used the two-freeze-thaw data. I will correct the figures with the newer -one-freeze-thaw data tonight. I will do so after Mary is done with her computer late this evening, and I will email you when the main figure and the supplemental figure files have been updated.

Kasen

On Wed, Sep 29, 2021 at 6:24 PM Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

— —

Hi Kasen. \_\_\_\_\_

— —

Sorry to bother you, but I wanted to make sure you received the messages below. Can you please check the revised figure and make sure that it contains the correct plaque assay data? I think the figure you made actually uses the data from the samples that had undergone 2 freeze-thaw cycles. \_\_\_\_\_

— —

We had hoped to get the revised paper to NEJM today, but I think we are still good if we can submit it tomorrow morning. The assistant editor said she was going to flag it for the editor's attention. \_\_\_\_\_

— —

Thanks, \_\_\_\_\_

— —

-T \_\_\_\_\_

— —

\*From: \*Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

<<mailto:tfriedri@wisc.edu>>>

\*Date: \*Wednesday, 29 September 2021 at 10:57

\*To: \* [REDACTED] <[mailto:\[REDACTED\]](mailto:[REDACTED])>

<[mailto:\[REDACTED\]](mailto:[REDACTED])>

\*Subject: \*Re: NEJM figure updates \_\_\_\_\_

Here is the pdf of the panel I was thinking of. Note the much smaller number of negative samples. \_\_\_\_\_



Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
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<<http://www.vetmed.wisc.edu/friedrichlab>> \_\_\_\_\_

Thomas Friedrich wrote on 2021-09-29 10:54:

\_\_\_\_\_  
Hi Kasen.

Thanks for putting together the revised figure, but I think you may have the incorrect panel. The data you shared earlier from the single freeze-thaw showed only 4 samples from each group (vaccinated vs unvaccinated) that had no detectable plaques. Here there are many samples in each group for which there are no plaques.

Can you please confirm this?

I am hoping to get an updated paper back to NEJM by close of business today, so I can perhaps swap in the correct panel in Illustrator if you can help me find/generate it.

Thanks,

-Tom \_\_\_\_\_

Thomas Friedrich

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University of Wisconsin  
School of Veterinary Medicine  
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@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)  
<<http://www.vetmed.wisc.edu/friedrichlab>> \_\_\_\_\_

\_\_\_\_\_  
[REDACTED] <mailto:[REDACTED]>  
wrote on 2021-09-28 21:11:

\_\_\_\_\_  
Hey Tom, \_\_\_\_\_  
  
\_\_\_\_

I updated the NEJM figure by replacing the old culture plot with the titer data. I wasn't sure if you wanted to try squeezing the titer-by-ct plot into the main figure, so I just made it as a new supplemental figure 3. The .ai files and associated .png plots are stored in Drive/Shared Drives/TCF lab/Former Lab

Members/Riemersma\_Kasen/SARS2\_Sequencing/Ct\_values\_vax\_unvax/NEJM/Figures\_NEJM.  
The updated main figure is 'NEJM\_Figure1\_v3' and the new supplemental is 'NEJM\_SupplementalFigure3'.\_\_\_\_\_

— —

Let me know if you have any questions, or if you want the figures formatted differently. I don't have the adobe suite on my new work computer, so I will only be able to make edits in the evening when I can steal Mary's computer.\_\_\_\_\_

— —

Cheers,\_\_\_\_\_

Kasen\_\_\_\_\_

— —

On Tue, Sep 28, 2021 at 3:44 PM Kasen Riemersma

<[REDACTED]>  
<mailto:[REDACTED]> wrote: \_\_\_\_\_

Hey Tom,

[REDACTED]

I will work on updating the NEJM figure with the virus titer and titer-by-ct plots tonight since I'll need to use Mary's computer to do so. Re: plot formatting, I adjust the dimensions of each plot when exporting from R, so will just need to match the dimensions of the newer plots with the NEJM plots. For the titer data, which specimens should I include: specimens from the study period that underwent multiple freeze-thaws, or newer specimens that underwent one freeze-thaw?

That's crazy (and incredibly frustrating) that the editor hasn't looked at it! Have you contacted them to ask what's up?

Kasen

> On Sep 28, 2021, at 11:13 AM, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
<mailto:[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>> wrote:  
>  
> Hey Kasen.  
>

> [REDACTED]  
> [REDACTED]

> I would like to ask for a little help in updating the figure for the NEJM paper -- I would like to replace the panel showing virus isolation with the one you generated comparing virus titers. I would also like to show your plot of infectious titer as a function of Ct value. I am not sure how you generated the

Illustrator file, but whatever you did, you did very well at making the data points the same size and the axes about the same scale in each panel. I cannot do that with the pdf files you attached in your email.

>

> If you'd have a few moments to talk me through the figure-making process you used, and perhaps to just update this figure, I would really appreciate it.

>

> Dave and I are hoping to submit an updated version to NEJM as soon as possible -- I think we have an opportunity to do this, because somehow the editor has not looked at it yet!

>

> Thanks,

>

> -T

>

> Thomas Friedrich

>

> Professor

> Dept. of Pathobiological Sciences

> University of Wisconsin

> School of Veterinary Medicine

> @tcfriedrich

> @tcf-lab

> [www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

> <http://www.vetmed.wisc.edu/friedrichlab>> \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_

-- \_\_\_\_\_

Kasen K. Riemersma, DVM, PhD\_\_\_\_\_

Postdoctoral Research Associate, Friedrich Lab\_\_\_\_\_

School of Veterinary Medicine\_\_\_\_\_

University of Wisconsin, Madison\_\_\_\_\_

[REDACTED] <mailto:[REDACTED]>  
[REDACTED]

\_\_\_\_

\_\_\_\_

--

Kasen K. Riemersma, DVM, PhD  
Postdoctoral Research Associate, Friedrich Lab  
School of Veterinary Medicine  
University of Wisconsin, Madison

[REDACTED] <mailto:[REDACTED]>

--

Kasen K. Riemersma, DVM, PhD  
Postdoctoral Research Associate, Friedrich Lab  
School of Veterinary Medicine  
University of Wisconsin, Madison

**From:** [Thomas Friedrich](#)  
**To:** [Segaloff, Hannah E - DHS](#)  
**Cc:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#)  
**Subject:** Re: NEJM letter author list  
**Date:** Tuesday, August 17, 2021 11:28:29 AM

---

Great, thanks Hannah.

-T

Thomas Friedrich

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[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 17 Aug 2021, at 11:08, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Thanks Tom,

I'd like to add a middle initial, which is E.

I should have a CDC affiliation: We can use "Epidemic Intelligence Service, CDC"

I'll send this in back to clearance.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Tuesday, August 17, 2021 10:31 AM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR

<[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)>

**Subject:** Re: NEJM letter author list

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Thanks for asking this — it caused me to notice that we had not added you to the author list! I know we removed you from it before submitting to medrxiv, so I have added you back. I will paste the list below, if that is sufficient. Should your affiliation be listed as Wisconsin DHS, as it is here, or CDC? If CDC, please let me know exactly how it should be shown — we can only list one affiliation per author. Also, please let me know if we should add a middle initial for you.

Thanks!

-Tom

# Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Kasen K. Riemersma, DVM, PhD<sup>1</sup>; Brittany E. Grogan, MPH<sup>2</sup>; Amanda Kita-Yarbro, MPH<sup>2</sup>; Peter J. Halfmann, PhD<sup>1</sup>; Hannah Segaloff<sup>3</sup>; Anna Kocharian, MS<sup>3</sup>; Kelsey R. Florek, PhD<sup>4</sup>; Ryan Westergaard, MD, PhD<sup>5</sup>; Allen Bateman, PhD<sup>4</sup>; Gunnar E. Jeppson, BS<sup>6</sup>; Yoshihiro Kawaoka, DVM, PhD<sup>1</sup>; David H. O'Connor, PhD<sup>7</sup>; Thomas C. Friedrich, PhD<sup>1</sup>; Katarina M. Grande, MPH<sup>2</sup>

<sup>1</sup> Department of Pathobiological Sciences, University of Wisconsin-Madison, Madison, WI, USA

<sup>2</sup> Public Health Madison & Dane County, Madison, WI, USA

<sup>3</sup> Wisconsin Department of Health Services

<sup>4</sup> Wisconsin State Laboratory of Hygiene

<sup>5</sup> Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin

<sup>6</sup> Exact Sciences, Madison, WI, USA

<sup>7</sup> Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, USA.

<sup>^</sup>These authors contributed equally. Correspondence can be addressed to:

Katarina Grande [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)

Thomas Friedrich [tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)

David O'Connor [dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)

Thomas Friedrich

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[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 17 Aug 2021, at 10:02, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Can one of you send me a version of the manuscript with the final author list on it? They want that before it goes further in clearance and I want to make sure I have it in the desired order.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

**From:** [Thomas Friedrich](#)  
**To:** [DAVID H O'CONNOR](#)  
**Cc:** [Kasen Riemersma](#); [YOSHIHIRO KAWAOKA](#); [Peter Halfmann](#); [Katarina Grande](#)  
**Subject:** Re: New England Journal of Medicine - 21-14060  
**Date:** Tuesday, September 7, 2021 9:39:19 AM

---

Like Dave, I can see this going either way. Perhaps we could do a set of specimens from within the same time period that is covered in the submitted paper, and then also a more recent batch? This would cover our bases. However, I don't want to burden Peter too much, so I think he and Yoshi should comment also.

Best,

-Tom

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Dave O'Connor wrote on 2021-09-07 08:42:

Hi all,

I could see it going either way. I don't think we need to add them to the existing dataset. It might even be better to use recent samples because it shows that the trend is stable over time. But I don't feel strongly about it.

dave

Kasen Riemersma wrote on 9/7/21 8:40 AM:

Hi all,

I can definitely provide more samples for Peter to test. Peter, once I know how many you can process, I should be able to send them over quickly.

Tom, if these culture data may be added to our study, I'm inclined to select specimens from the same study period instead of more recent specimens. Do you agree?

Cheers,  
Kasen

---

**From:** Thomas Friedrich [<tcfriedri@wisc.edu>](mailto:tcfriedri@wisc.edu)  
**Date:** Sunday, September 5, 2021 at 12:43 PM  
**To:** YOSHIHIRO KAWAOKA [<yoshihiro.kawaoka@wisc.edu>](mailto:yoshihiro.kawaoka@wisc.edu)  
**Cc:** DAVID H O'CONNOR [<dhocconno@wisc.edu>](mailto:dhocconno@wisc.edu), Peter Halfmann [<peter.halfmann@wisc.edu>](mailto:peter.halfmann@wisc.edu), Katarina Grande [<kgrande@publichealthmdc.com>](mailto:kgrande@publichealthmdc.com), Kasen Riemersma [<kriemersma@wisc.edu>](mailto:kriemersma@wisc.edu)  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi all.

Okay, I agree with all this. In our emails last week, I was not sure whether you guys wanted to respond to Vincent as soon as possible. I completely agree that we would need to generate new



titration data with samples that have not undergone multiple freeze-thaw cycles.

Luckily we are getting a large number of samples from Exact each week.

Kasen, can we identify a set of fresh samples that can be aliquoted for Peter to test?

Peter, what is a good number of samples for you to receive?

Best,

-Tom

YOSHIHIRO KAWAOKA wrote on 2021-09-03 19:33:

If we are going to respond to Vincent by sharing our new data, we should do the virus isolation with new samples that have not been thawed several times. I am concerned about the data showing that the number of no-virus-recovery samples from vaccinated individuals is higher than that from unvaccinated individuals. He will criticize this point if we send him the current data.

Best,  
Yoshi

---

**From:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>

**Sent:** Saturday, September 4, 2021 8:11 AM

**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[kggrande@publichealthmdc.com](mailto:kggrande@publichealthmdc.com)>

**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Tom,

I updated Medrxiv with the NEJM submission. I didn't update with this week's data. I suggest waiting until we get a disposition on the NEJM paper before updating Medrxiv again.

In terms of Vincent, I'm fine if someone else wants to connect with him and Daniel on the data. I'm not enthusiastic about doing it myself.

dave

--

I often work on email outside of work hours, but you don't have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>

608.890.0845

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Sent:** Friday, September 3, 2021 18:04

**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>

**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks Dave.

Did we update the medrxiv paper with the titration data? If so I can update my Twitter thread on the paper and include it. As you guys have said, even through the samples have undergone multiple freeze-thaw cycles, it is clear that titers are not systematically lower in vaccinees vs. unvaccinated.

Would you guys also email Daniel and Vincent directly to call their attention to these data?

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 3 Sep 2021, at 17:15, DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)> wrote:

What will come first, an NEJM decision on a 400 word letter or [REDACTED]  
[REDACTED] Nonetheless, I pinged the editor (see below) and offered the titer data should it be helpful.

dave

--

I often work on email outside of work hours, but you don't have to!  
If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>

608.890.0845

---

**From:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>

**Sent:** Friday, September 3, 2021 14:05

**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>

**Subject:** RE: New England Journal of Medicine - 21-14060

Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Sent:** Friday, September 3, 2021 2:58 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Subject:** FW: New England Journal of Medicine - 21-14060

---

**From:** Dave O'Connor <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Friday, September 3, 2021 10:17 AM  
**To:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

To whom it may concern,

I am writing on behalf of our co-authors to ask if there are any updates on the status of the 400 word correspondence we submitted to NEJM on August 23. We are keenly aware that this is timely data given the current landscape of SARS-CoV-2 infection despite vaccination.

One small note: some vocal scientists have criticized our work on social media. The primary claim they make is that virus culture in low Ct samples does not mean that there is similar amounts of replication-competent virus in these samples. Subsequent to our August 23 submission, we re-thawed these samples and showed that virus titers are similar in those who are unvaccinated and infected despite infection (see attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine wrote on 8/23/21 1:39 PM:

Dear Ms. Grande and co-authors,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination" to the New England Journal of Medicine.

Your manuscript has been forwarded to members of our editorial staff, who will make an initial evaluation and decide whether it merits further consideration. You will be notified of the decision as soon as possible.

Your manuscript ID is 21-14060.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to ScholarOne

[REDACTED] and te.

You may also view the status of your manuscript at any time by checking For Authors section of the site.

We are undertaking evaluation of your manuscript with the understanding that neither the substance of the article nor the figures or tables have been published or will be submitted for publication elsewhere during the period of review.

Please provide the editors with copies of other manuscripts by you or your coauthors addressing similar or related research questions that are in preparation or under consideration at other journals. This does not apply to abstracts published in connection with scientific meetings or to news reports based on presentations at such meetings.

The Journal's policy is explained more fully at <https://www.nejm.org/about-nejm/editorial-policies>.

Please call us at 617-734-9800 if you have any questions.

Sincerely,

New England Journal of Medicine  
10 Shattuck Street  
Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-9864  
<http://www.nejm.org>

--

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**From:** [DAVID H O"CONNOR](#)  
**To:** [Letter](#)  
**Cc:** [Thomas Friedrich](#)  
**Subject:** Re: New England Journal of Medicine - 21-14060  
**Date:** Thursday, September 30, 2021 7:03:28 AM  
**Attachments:** [EOC\\_Riemersma\\_Viral loads in vaccinees\\_NEJM\\_revised\\_2021-09-29.docx](#)

---

Hi Vivian,

Please find attached an updated version of our NEJM submission. The key change (denoted with track changes in case it is helpful) is that the virus culture data is now shown with quantitative titers.

Thanks again in advance for your consideration,

dave

Letter wrote on 9/28/21 2:35 PM:

That would be fine.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** Dave O'Connor [<dhocunno@wisc.edu>](mailto:dhocunno@wisc.edu)  
**Sent:** Tuesday, September 28, 2021 12:30 PM  
**To:** Letter [<letter@nejm.org>](mailto:letter@nejm.org)  
**Cc:** Thomas Friedrich [<tfriedri@wisc.edu>](mailto:tfriedri@wisc.edu)  
**Subject:** Re: New England Journal of Medicine - 21-14060

Sure, can we get it to you by COB tomorrow? It will take a day or so to remake the figures and update the text.

dave

Letter wrote on 9/28/21 10:58 AM:

Hello Dr. O'Connor,

You can send the manuscript to me via email as a word doc. I can upload it to your submission. This way, you will not need to start a new

submission. Let me know what you prefer.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** Dave O'Connor <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Tuesday, September 28, 2021 11:56 AM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Cc:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Vivian,

In the month that we've been under review, we've collected additional data that strengthens the paper. We didn't anticipate this kind of lengthy delay in reviewing a short note. Is there any easy way that we can add this new data to the manuscript without having it compromise our position in the queue, especially if the editor has not yet read the version that is currently queued up?

If not, no worries, but we figure it wouldn't hurt to ask.

Thanks,

dave

Letter wrote on 9/28/21 9:43 AM:

Hello Dr. O'Connor,

We are still waiting for a decision from the editor. He is one of the editors chiefly handling Covid-19 submissions at the Journal and his response time is slower than usual due to the volume of submissions. I apologize for the delay. I have sent an additional reminder to the editor for a decision. You'll receive an email from us with a decision as soon as possible.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** Dave O'Connor <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Monday, September 27, 2021 3:59 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Cc:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Vivian,

Thanks for checking in with the editor about two weeks ago.  
Given that our short letter has now been with the editor  
under internal review for more than a month (August 23),  
I'm hoping this bodes well for a favorable outcome.

Thanks again for any updates you can provide,

dave

Dave O'Connor wrote on 9/14/21 4:01 PM:

Thanks Vivian for sending the reminder. Please  
let us know if you need additional information  
from us.

Best,

dave

Letter wrote on 9/14/21 3:32 PM:

Hello Dr. O'Connor,

Thank you for your email.  
Unfortunately a decision has not  
be made regarding your letter. An  
additional reminder has been sent

to the editor for a decision. An exact date for a decision cannot be provided given the increased volume in covid-related submissions but know that we strive to give authors as timely a decision as possible. We apologize for the delay, and thank you for your interest in the Journal.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** Dave O'Connor  
<[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Tuesday, September 14, 2021 4:26 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Cc:** Thomas Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Vivian,

I apologize for asking again, but it has now been another week and a half that the 400 word letter has been with the editor. Do you have an update on when we might receive a final editorial decision?

Thanks again,

dave

Letter wrote on 9/3/21 2:05 PM:



Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal  
of Medicine*

---

**From:** NEJM Editorial  
[<editorial@nejm.org>](mailto:editorial@nejm.org)

[>](#)

**Sent:** Friday,  
September 3, 2021  
2:58 PM

**To:** Letter  
[<letter@nejm.org>](mailto:letter@nejm.org)

**Subject:** FW: New  
England Journal of  
Medicine - 21-14060

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**From:** Dave  
O'Connor  
[<dhocconno@wisc.edu>](mailto:dhocconno@wisc.edu)

[u>](#)

**Sent:** Friday,  
September 3, 2021  
10:17 AM

**To:** NEJM Editorial  
<[editorial@nejm.org](mailto:editorial@nejm.org)>

**Subject:** Re: New  
England Journal of  
Medicine - 21-14060

To whom it may  
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I am writing on  
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authors to ask if  
there are any  
updates on the  
status of the 400  
word  
correspondence we  
submitted to NEJM  
on August 23. We  
are keenly aware  
that this is timely  
data given the  
current landscape of  
SARS-CoV-2 infection  
despite vaccination.

One small note:  
some vocal scientists  
have criticized our  
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media. The primary  
claim they make is  
that virus culture in  
low Ct samples does  
not mean that there  
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replication-  
competent virus in  
these samples.  
Subsequent to our  
August 23  
submission, we re-  
thawed these  
samples and showed

that virus titers are  
similar in those who  
are unvaccinated  
and infected despite  
infection (see  
attached), generally  
tracking with PCR  
RNA levels. We  
would likely want to  
include a version of  
this plot in a revised  
NEJM  
correspondence to  
silence this  
inaccurate criticism.

Thanks in advance  
for your  
consideration,

dave

New England Journal  
of Medicine wrote  
on 8/23/21 1:39 PM:

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[@dho • 608-890-0845](mailto:dho.608-890-0845)

# Shedding of Infectious SARS-CoV-2 Despite Vaccination

Kasen K. Riemersma, DVM, PhD<sup>1</sup>; Brittany E. Grogan, MPH<sup>2</sup>; Amanda Kita-Yarbro, MPH<sup>2</sup>; Peter J. Halfmann, PhD<sup>1</sup>; Hannah E. Segaloff, PhD<sup>3</sup>; Anna Kocharian, MS<sup>4</sup>; Kelsey R. Florek, MPH, PhD<sup>5</sup>; Ryan Westergaard, MD, PhD<sup>6</sup>; Allen Bateman, PhD<sup>5</sup>; Gunnar E. Jeppson, BS<sup>7</sup>; Yoshihiro Kawaoka, DVM, PhD<sup>1</sup>; David H. O'Connor, PhD<sup>8</sup>; Thomas C. Friedrich, PhD<sup>1</sup>; Katarina M. Grande, MPH<sup>2</sup>

<sup>1</sup> Department of Pathobiological Sciences, University of Wisconsin-Madison, Madison, WI, USA

<sup>2</sup> Public Health Madison & Dane County, Madison, WI, USA

<sup>3</sup> Epidemic Intelligence Service, CDC, Atlanta, GA, USA

<sup>3</sup> Wisconsin Department of Health Services, Madison, WI, USA

<sup>5</sup> Wisconsin State Laboratory of Hygiene, Madison, WI, USA

<sup>6</sup> Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, WI, USA

<sup>7</sup> Exact Sciences, Madison, WI, USA

<sup>8</sup> Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, USA

<sup>^</sup>These authors contributed equally. Correspondence can be addressed to:

Katarina Grande [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)

## Main text (39~~59~~ words; limit 400)

The SARS-CoV-2 Delta variant might cause high viral loads, is highly transmissible, and contains mutations that confer partial immune escape <sup>1,2</sup>. Outbreak investigations suggest that vaccinated persons can spread Delta <sup>3,4</sup>. We compared RT-PCR cycle threshold (Ct) data from 699 swab specimens collected in Wisconsin 29 June through 31 July 2021 and tested with a qualitative assay by a single contract laboratory. Specimens came from residents of 36 counties, most in southern and southeastern Wisconsin, and 81% of cases were not associated with an outbreak. During this time, estimated prevalence of Delta variants in Wisconsin increased from 69% to over 95%. Vaccination status was determined via self-reporting and state immunization records ([Supplemental Figure 1](#)).

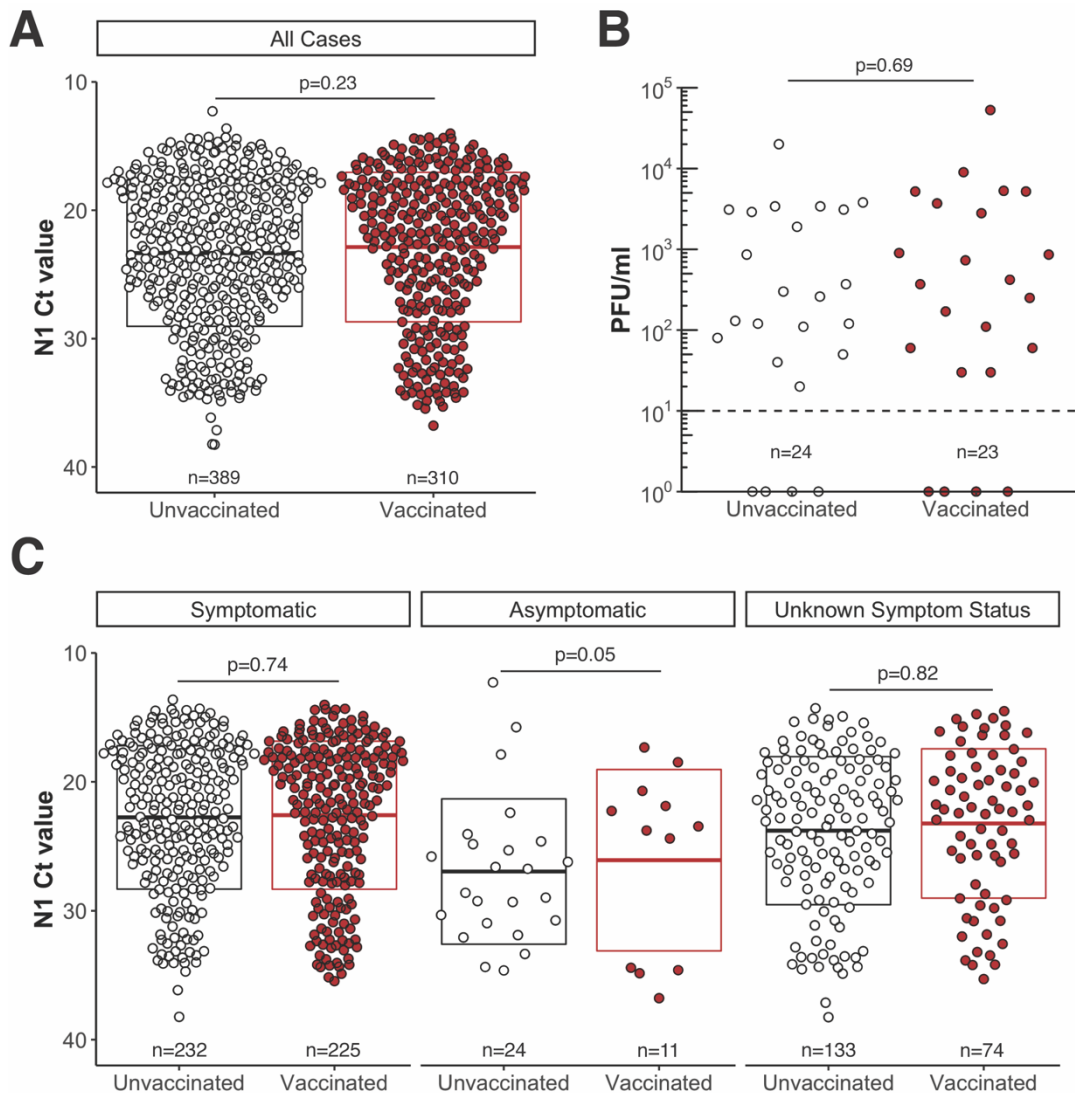
We observed low Ct values (<25) in 212 of 310 fully vaccinated (68%; [Figure 1A](#)) and 246 of 389 (63%) unvaccinated individuals. Testing a subset of such low-Ct samples revealed ~~infectious that infectious~~ SARS-CoV-2 was present at similar levels in vaccinated and unvaccinated persons in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people ([Figure 1B](#)).

Low Ct values were detected in vaccinated people regardless of symptoms at the time of testing ([Figure 1C](#)). Ct values <25 were detected in 7 of 24 unvaccinated (29%; CI: 13-51%) and 9 of 11 fully vaccinated asymptomatic individuals (82%; CI: 48-97%), and 158 of 232 unvaccinated (68%, CI: 62-74%) and 156 of 225 fully vaccinated (69%; CI: 63-75%) symptomatic individuals. Time from symptom onset to testing did not vary by vaccination status ( $p=0.40$ ; [Supplemental Figure 2](#)). Infectious virus was detected in the sole specimen tested from an asymptomatic fully vaccinated individual. Although few asymptomatic individuals were sampled, these results indicate that even asymptomatic, fully vaccinated people might shed infectious virus.

Combined with other studies <sup>2-5</sup>, these data indicate that both vaccinated and unvaccinated individuals infected with the Delta variant might transmit infection. Importantly, we show that infectious SARS-CoV-2 is frequently found even in vaccinated persons when specimen Ct values are low. The inclusion of viruses from Pango lineages B.1.617.2, AY.2, and AY.3, and multiple counties without a linking

outbreak, indicate that Delta-lineage SARS-CoV-2 can achieve low Ct values consistent with transmissibility in fully vaccinated individuals across a range of settings. Vaccinated and unvaccinated persons should get tested when symptomatic or after close contact with someone with suspected or confirmed COVID-19. Continued adherence to non-pharmaceutical interventions during periods of high community transmission to mitigate spread of COVID-19 remain important for both vaccinated and unvaccinated individuals.

# Figure

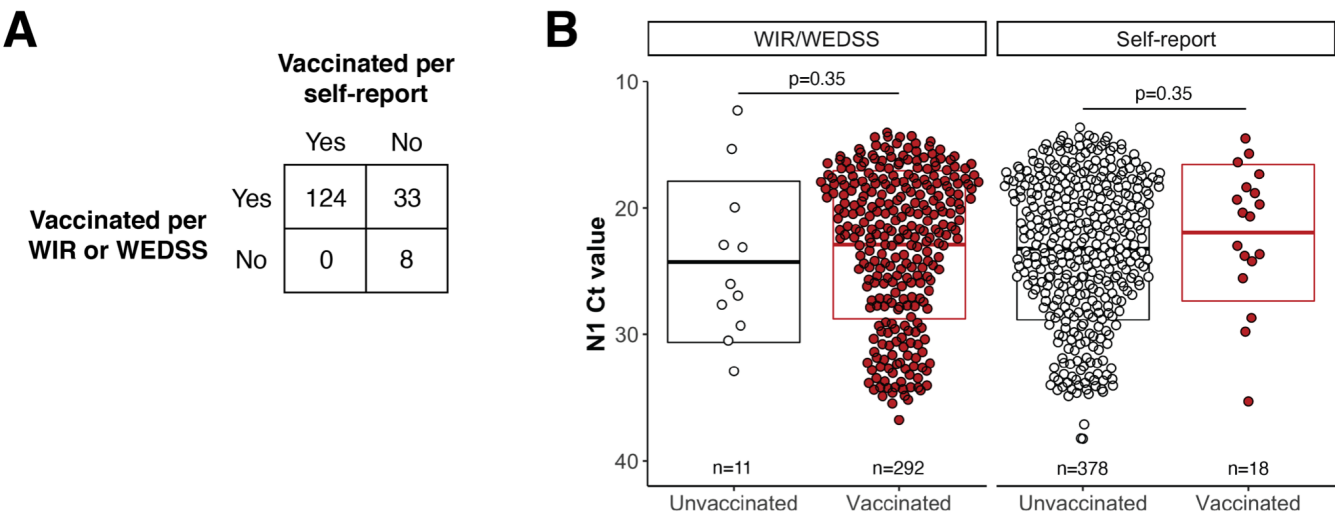


**Figure 1. Individuals infected with SARS-CoV-2 despite full vaccination have low Ct values and shed infectious virus.** **A.** Ct values for SARS-CoV-2-positive specimens grouped by vaccination status. RT-PCR was performed by Exact Sciences Corporation, responsible for over 10% of all PCR tests in Wisconsin during this period, using a qualitative diagnostic assay targeting the SARS-CoV-2 N gene (oligonucleotides identical to CDC's N1 primer and probe set) that has been authorized for emergency use by FDA (<https://www.fda.gov/media/138328/download>). **B.** ~~Infectiousness was determined for~~We performed plaque assays on Vero E6 TMPRSS2 cells on a subset of N1-Ct-matched specimens ~~with Ct <25, by inoculation onto Vero E6 TMPRSS2 cells and determining presence of cytopathic effects (CPE) after 5 days in culture.~~ Specimens ~~were~~ selected by N1 Ct-matching between fully vaccinated and ~~not fully un~~vaccinated persons, then specimens from persons with unknown vaccination status were excluded from the analysis. ~~Circles indicate presence of CPE; 'X' indicates no CPE detected~~Infectious titers are expressed as plaque-forming units (pfu) per milliliter specimen. Specimens underwent a freeze-thaw cycle prior to virus titration. **C.** N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for individuals who were symptomatic or asymptomatic, or those whose symptom status was not determined, at the time of testing. In **A** and **C**,

boxplots represent mean N1 Ct values +/- one standard deviation. P-values were calculated by comparing mean Ct values by independent two-group Mann-Whitney U tests.

# Supplemental materials

## Supplemental figure 1



Supplemental figure 1. Concordance between self-reported vaccination status and the Wisconsin Immunization Registry (WIR) or Wisconsin Electronic Disease Surveillance System (WEDSS). For all individuals, vaccination status was determined using WIR/WEDSS electronic registries when data were available. Individuals were identified as unvaccinated at the time of testing if WIR/WEDSS data indicated receipt of a first SARS-CoV-2 vaccine dose after the test date.

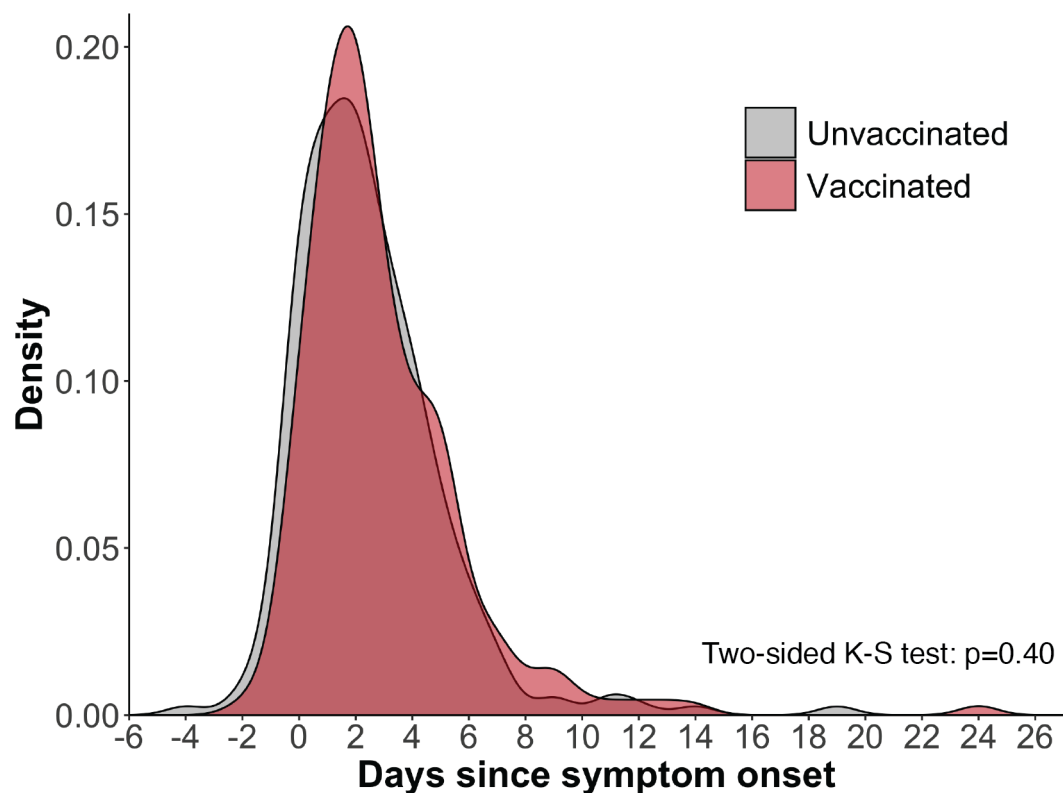
Individuals were considered fully vaccinated based on WIR/WEDSS data if the registries indicated receipt of a final vaccine dose at least 14 days prior to testing. For individuals whose vaccination status could not be verified in WIR/WEDSS, self-reported data collected at the time of testing were used. Individuals were considered unvaccinated based on self-report only if there was an explicit declaration of unvaccinated status in the self-reported data. Individuals were considered fully vaccinated based on self-report if they fulfilled all of the following criteria: (1) indicated that they had received a COVID vaccine prior to testing; (2) indicated that they did not require another vaccine dose; and (3) reported a date of last vaccine dose that was at least 14 days prior to testing.

Specimens lacking data on vaccination status were excluded from the study. Specimens from partially vaccinated individuals (incomplete vaccine series, or <14 days post-final dose) were also excluded. Fully vaccinated status was determined by WIR/WEDSS for 292 specimens and by self-reported data for 18. Unvaccinated status was determined by WIR/WEDSS for 11 and by self-reported data by 378.

**A.** Of the 699 specimens with vaccination status available from at least one source, 165 specimens had data available from both sources. For self-reporting, under-reporting of full vaccination status (33/157) was more common than over-reporting (0/124). **B.** N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for individuals whose vaccination status was determined by WIR/WEDSS or by self-reported data. Boxplots represent mean N1 Ct values +/- one standard

deviation. P-values were calculated by comparing mean Ct values by independent two-group Mann-Whitney U tests.

## Supplemental figure 2



Supplemental figure 2. Density distributions of unvaccinated and vaccinated specimen collection dates by day since symptom onset. Day 0 on the x-axis denotes self-reported day of symptom onset. Negative values for days indicate specimen collection prior to symptom onset. Symptom onset data were available for n=263 unvaccinated cases and n=232 vaccinated cases.



## Conflict of interest

The authors declare no conflicting interests.

## Ethics statement

Per the University of Wisconsin-Madison IRB, this project qualifies as public health surveillance activities as defined in the Common Rule, 45 CFR 46.102(l)(2). As such, the project is not deemed to be research regulated under the Common Rule and therefore, does not require University of Wisconsin-Madison IRB review and oversight.

The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the Centers for Disease Control and Prevention or the institutions with which the authors are affiliated.

## Data availability

Data and processing workflows are available at <https://go.wisc.edu/p22116>. To protect potentially personally identifiable information, the publicly available dataset contains only PCR Ct values, vaccine status, symptom status, and days from symptom onset to testing for each specimen.

# References

1. Planas D, Veyer D, Baidaliuk A, et al. Reduced sensitivity of SARS-CoV-2 variant Delta to antibody neutralization. *Nature* [Internet] 2021 [cited 2021 Jul 28];1–7. Available from: <https://www.nature.com/articles/s41586-021-03777-9>
2. Mlcochova P, Kemp S, Dhar MS, et al. SARS-CoV-2 B.1.617.2 Delta variant replication, sensitivity to neutralising antibodies and vaccine breakthrough [Internet]. *bioRxiv*. 2021 [cited 2021 Aug 15];2021.05.08.443253. Available from: <https://www.biorxiv.org/content/10.1101/2021.05.08.443253v5>
3. Brown CM, Vostok J, Johnson H, et al. Outbreak of SARS-CoV-2 infections, including COVID-19 vaccine breakthrough infections, associated with large public gatherings - Barnstable County, Massachusetts, July 2021. *MMWR Morb Mortal Wkly Rep* [Internet] 2021;70(31):1059–62. Available from: [https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm?utm\\_source=mp-fotoscapes](https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm?utm_source=mp-fotoscapes)
4. Hetemäki I, Kääriäinen S, Alho P, et al. An outbreak caused by the SARS-CoV-2 Delta variant (B.1.617.2) in a secondary care hospital in Finland, May 2021. *Euro Surveill* [Internet] 2021;26(30). Available from: <http://dx.doi.org/10.2807/1560-7917.ES.2021.26.30.2100636>
5. Chia PY, Xiang Ong SW, Chiew CJ, et al. Virological and serological kinetics of SARS-CoV-2 Delta variant vaccine-breakthrough infections: a multi-center cohort study [Internet]. *bioRxiv*. 2021; Available from: <http://medrxiv.org/lookup/doi/10.1101/2021.07.28.21261295>

**From:** [Thomas Friedrich](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Cc:** [DAVID H O'CONNOR](#); [Peter Halfmann](#); [Katarina Grande](#); [Kasen Riemersma](#)  
**Subject:** Re: New England Journal of Medicine - 21-14060  
**Date:** Sunday, September 5, 2021 12:43:43 PM

---

Hi all.

Okay, I agree with all this. In our emails last week, I was not sure whether you guys wanted to respond to Vincent as soon as possible. I completely agree that we would need to generate new titration data with samples that have not undergone multiple freeze-thaw cycles.

Luckily we are getting a large number of samples from Exact each week.

Kasen, can we identify a set of fresh samples that can be aliquoted for Peter to test?

Peter, what is a good number of samples for you to receive?

Best,

-Tom

YOSHIHIRO KAWAOKA wrote on 2021-09-03 19:33:

If we are going to respond to Vincent by sharing our new data, we should do the virus isolation with new samples that have not been thawed several times. I am concerned about the data showing that the number of no-virus-recovery samples from vaccinated individuals is higher than that from unvaccinated individuals. He will criticize this point if we send him the current data.

Best,

Yoshi

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Saturday, September 4, 2021 8:11 AM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Tom,

I updated Medrxiv with the NEJM submission. I didn't update with this week's data. I suggest waiting until we get a disposition on the NEJM paper before updating Medrxiv again.

In terms of Vincent, I'm fine if someone else wants to connect with him and Daniel on the data. I'm not enthusiastic about doing it myself.

dave

--

I often work on email outside of work hours, but you don't have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>

608.890.0845

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, September 3, 2021 18:04  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks Dave.

Did we update the medrxiv paper with the titration data? If so I can update my Twitter thread on the paper and include it. As you guys have said, even though the samples have undergone multiple freeze-thaw cycles, it is clear that titers are not systematically lower in vaccinees vs. unvaccinated.

Would you guys also email Daniel and Vincent directly to call their attention to these data?

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 3 Sep 2021, at 17:15, DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)> wrote:

What will come first, an NEJM decision on a 400 word letter or [REDACTED]  
[REDACTED] Nonetheless, I pinged the editor (see below) and offered the titer data should it be helpful.

dave

--

I often work on email outside of work hours, but you don't have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>

608.890.0845

---

**From:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>

**Sent:** Friday, September 3, 2021 14:05

**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>

**Subject:** RE: New England Journal of Medicine - 21-14060

Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>

**Sent:** Friday, September 3, 2021 2:58 PM

**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>

**Subject:** FW: New England Journal of Medicine - 21-14060

---

**From:** Dave O'Connor <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>

**Sent:** Friday, September 3, 2021 10:17 AM

**To:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>

**Subject:** Re: New England Journal of Medicine - 21-14060

To whom it may concern,

I am writing on behalf of our co-authors to ask if there are any updates on the status of the 400 word correspondence we submitted to NEJM on August 23. We are keenly aware that this is timely data given the current landscape of SARS-CoV-2 infection despite vaccination.

One small note: some vocal scientists have criticized our work on social media. The primary claim they make is that virus culture in low Ct samples does not mean that there is similar amounts of replication-competent virus in these samples. Subsequent to our August 23 submission, we re-thawed these samples and showed that virus titers are similar in those who are unvaccinated and infected despite infection (see

attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine wrote on 8/23/21 1:39 PM:

Dear Ms. Grande and co-authors,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination" to the New England Journal of Medicine.

Your manuscript has been forwarded to members of our editorial staff, who will make an initial evaluation and decide whether it merits further consideration. You will be notified of the decision as soon as possible.

Your manuscript ID is 21-14060.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please contact the Manuscripts at [REDACTED] and edit your status of your manuscript at any time by checking For Authors section of the site.

We are undertaking evaluation of your manuscript with the understanding that neither the substance of the article nor the figures or tables have been published or will be submitted for publication elsewhere during the period of review.

Please provide the editors with copies of other manuscripts by you or your coauthors addressing similar or related research questions that are in preparation or under consideration at other journals. This does not apply to abstracts published in connection with scientific meetings or to news reports based on presentations at such meetings.

The Journal's policy is explained more fully at <https://www.nejm.org/about-nejm/editorial-policies>.

Please call us at 617-734-9800 if you have any questions.

Sincerely,

New England Journal of Medicine  
10 Shattuck Street  
Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-9864  
<http://www.nejm.org>

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delete the original message from all computer systems. Thank you.

**From:** [Thomas Friedrich](#)  
**To:** [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)  
**Subject:** Re: Request to interview from National Geographic  
**Date:** Friday, August 13, 2021 11:32:48 AM

---

Sounds good — thanks. Will talk to you at 3:30 Central unless things go sideways.

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 13 Aug 2021, at 11:20, [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) wrote:

Dear Tom

I really appreciate your reply. I sent you a meeting invite for 3:30 pm Central.

If for some reason, something comes up, please feel free to push the meeting later to your convenience.

I look forward to talk to you soon.

Regards

Sanjay

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, August 13, 2021 11:13 AM  
**To:** [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)  
**Subject:** Re: Request to interview from National Geographic

Hi Sanjay.

I am in a daylong meeting that is supposed to last until at least 2:30 Central.

Could we perhaps Zoom at 3:30? Please feel free to send me a calendar invite if that is possible for you.

-T

Thomas Friedrich



Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 13 Aug 2021, at 10:22, [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) wrote:

Dear Tom

Can I talk to you sometime today? I have already talked to Kasem and Katrina, but I will love to talk to you still even for 10 min (over phone or Zoom, whatever you prefer).

I am available most of the day except 1 pm – 3:30 pm Central.

Sanjay

*Sanjay Mishra, MS, PhD*  
Nashville, TN 37221; USA  
[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) | [@Ecquis](#) | +1 (615) 829 6563  
[LinkedIn](#) | [Google Scholar](#) | [Contently](#) | [Skype](#)

---

**From:** [Thomas Friedrich](#)  
**Sent:** Thursday, August 12, 2021 3:20 PM  
**To:** [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)  
**Cc:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Katarina Grande](#)  
**Subject:** Re: Request to interview from National Geographic

Hi Sanjay.

A follow up tomorrow sounds good. I am in meetings most of the rest of today anyway.

Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin

School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 12 Aug 2021, at 15:00, [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)  
wrote:

Dear All

I really appreciate your reply. I will love to talk to you today,  
but I am still negotiating with my editors on how important  
and urgent your work is.

Can I reach out tomorrow, because I will hate to take your  
busy time in interviewing, but not being able to write about  
it.

I will love to talk to you today, if you prefer! Please advise.

Sanjay

*Sanjay Mishra, MS, PhD*  
*Nashville, TN 37221; USA*  
[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) | [@Ecquis](#) | +1 (615) 829 6563  
[LinkedIn](#) | [Google Scholar](#) | [Contently](#) | [Skype](#)

---

**From:** [Kasen Riemersma](#)

**Sent:** Thursday, August 12, 2021 2:56 PM

**To:** [DAVID H O'CONNOR](#); [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)

**Cc:** 'Sanjay Mishra'; [Thomas Friedrich](#)

**Subject:** Re: Request to interview from National Geographic

I am unfortunately unavailable until tomorrow, but could  
chat anytime from 10-2 CDT then.

Kasen

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>

**Date:** Thursday, August 12, 2021 at 2:37 PM

**To:** [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)

<[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>

**Cc:** 'Sanjay Mishra' <[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)>, Kasen  
Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, Thomas Friedrich

[<tfriedri@wisc.edu>](mailto:<tfriedri@wisc.edu>)

**Subject:** Re: Request to interview from National Geographic

I can chat after 4:30 CDT, or go ahead without me!

dave

[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com) wrote on 8/12/21 2:36 PM:

Hi Dr. Mishra,  
Thanks for reaching out. I could jump on a call after 3:30pm. I'm cc'ing my co-authors, who are the true scientists on the paper—I'm the applied public health person of the bunch. So depending on your angle, it may be helpful to link with them, or see if we could jump on a call together.

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead**

| [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] |

Fax: (608) 266-4858

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**From:** Sanjay Mishra

IR#0682H\_000235

[<mishra.sanjay@outlook.com>](mailto:mishra.sanjay@outlook.com)

**Sent:** Thursday, August 12, 2021 2:07 PM

**To:** Grande, Katarina

[<KGrande@publichealthmdc.com>](mailto:KGrande@publichealthmdc.com)

**Subject:** Request to interview from National Geographic

**Importance:** High

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Katarina

I read your preprint posted earlier today with alarm: "Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021"  
Can I urgently talk to you since I am pitching this as story to my editor at National Geographic, as a follow up to my recent stories on Delta variant, value of masking and breakthrough infections:

In National Geographic:

1. [Why is Delta more infectious and deadly? New research holds answers.](#) (August 6, 2021)
2. [How dangerous is the new Delta Plus variant? Here's what we know.](#) (July 2, 2021)
3. [The Delta variant is serious. Here's why it's on the rise.](#) (June 16, 2021); updated:
  - a. [The Delta variant is spreading fast, especially where vaccination rates are low](#) (July 8, 2021)
4. [This 'double mutant' variant is adding fuel to India's COVID-19 crisis](#) (April 28, 2021)

In The Conversation:

1. [What is a breakthrough infection? 6 questions](#)

[answered about catching  
COVID-19 after vaccination](#)

(July 28, 2021)

2. [Can people vaccinated against  
COVID-19 still spread the  
coronavirus?](#) (May 25, 2021)

I and the readers of National Geographic will  
highly appreciate it

*Sanjay Mishra, MS, PhD*

*Nashville, TN 37221; USA*

[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) | [@Ecquis](#) | +1

(615) 829 6563

[LinkedIn](#) | [Google Scholar](#) | [Contently](#) | [Skype](#)

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**From:** [Thomas Friedrich](#)  
**To:** [Segaloff, Hannah E - DHS](#)  
**Cc:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Katarina Grande](#)  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Thursday, August 19, 2021 3:05:30 PM  
**Attachments:** [Riemersma\\_Viral loads in vaccinees\\_NEJM\\_revised\\_CLEAN\\_2021-08-19.docx](#)  
[Riemersma\\_Viral loads in vaccinees\\_NEJM\\_revised\\_tracked\\_2021-08-19.docx](#)

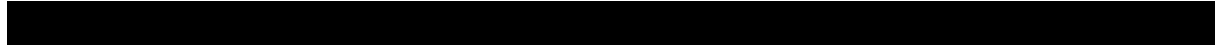
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Hi Hannah.

Attached please find clean (well, clean-ish) and tracked versions of the revised manuscript. We addressed all the comments and made the changes requested. I hope this can be approved quickly.

Note: As you know, to edit collaboratively, we uploaded the Word doc with CDC comments to Google Drive. I re-downloaded the edited version as a Word doc — this is the “clean” version and preserves CDC comments and our responses. To make the “tracked” version I had to compare that downloaded document to the Word doc you forwarded from CDC. When I did that I noticed that it duplicated several comments from CDC folk. For the sake of readability I tried to delete duplicates, but there are still a lot of comments in a small space. It also appears that replies within comments were not recognized, so now they just appear as comments on top of other comments. I hope that all makes sense.

If these copies do not come through, you can download them from the shared Google drive here:



Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 09:41, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Hi All,

Here are the first round of comments. We should get all responses within 24 to 48 hours of our submission. It looks like this needs to be approved by Lab TF, cross clearance and the response.

Let me know if I can help with comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)


---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Thursday, August 19, 2021 9:24 AM  
**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah,

Please address the mandatory comments and return for re-review.

 [Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Sent:** Wednesday, August 18, 2021 9:18 AM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hello,

Thank you for the quick work getting this approved for DIM expedited clearance. I haven't had a manuscript in expedited clearance before. Does it have the same steps as standard? How much time should I anticipate for the clearance process?

Thank you!  
Hannah

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**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 11:51 AM

**To:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

NP! Glad we were able to turn this around so quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:47 PM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon, Jonathan L.



(CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:43 PM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Afternoon,

This has been approved for expedited clearance.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:40 PM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thank you. I approve expedited clearance.

Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

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**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:16 PM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey Stephanie,

Please see attached for the updated draft.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

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**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 11:05 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Sure thing, working on the updated draft now.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:56 AM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Yes, please request an updated draft with Hannah's name on it and then I approve it going for expedited clearance.

Stephanie

Stephanie R. Bialek MD MPH

Deputy Incident Manager

COVID-19 Response

CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:56 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey Stephanie,

From correspondence with ADS and STLT Hannah was inadvertently left off the manuscript but WI has confirmed that she is a co-author but her name is not on this draft. Should we request an updated draft with Hannah information on there as the co-author?

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:51 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta

Variant is Prevalent

Hey,

I am working on getting clarification as we speak, update to follow.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:49 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hannah Segaloff EISO is listed on the clearance request form as an author but not on the manuscript. Can you clarify that she indeed and author? If so, then my approval for expedited clearance stands.

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:40 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thanks for the speedy response!

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:39 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

I approve.

Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:38 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Morning Stephanie,

Happy Tuesday! We would like to request DIM1 expedited approval for the attached manuscript. Please refer to the email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:32 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance on this item or wait until you receive the DIM approval ?

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 9:59 AM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Cc:** Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>

**Subject:** Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Good Morning,

You may have heard but our task force was asked by STLT, and we agreed, to sponsor this manuscript through clearance. The authors are targeting NEJM and are requesting our task force to request IM approval for expedited clearance. Our main POC for this manuscript is our CDC EISO Hannah Segaloff (Cc'd). Let me know if you have any questions.

Hannah- our clearance team can help shepherd your paper through clearance. I would anticipate our laboratory SMEs to have some questions for your team.

Best regards,

John

John Kools  
ADS, Laboratory & Testing Task Force  
CDC COVID-19 Response  
Phone: 404-217-7258

---

**From:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 4:51 AM

**To:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Subject:** FW: Follow up on your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: 404.840.9507

---

**From:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>

**Sent:** Monday, August 16, 2021 3:35 PM

**To:** Segaloff, Hannah (CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov)) <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan (CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov)) <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard, Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>

**Cc:** Ricaldi Camahuali, Jessica (CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>; Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS 2019 NCOV Response STLT ADS <[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>; CDC IMS 2019 NCOV Response Lab Task Force <[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>

**Subject:** Re: Follow up on your results

Dear Hannah,

Thank you for these additional documents. Due to this manuscript's focus on laboratory data, our Laboratory and Testing Task Force colleagues have agreed to be the sponsoring task force for CDC COVID-19 Response clearance. John Kools is the Lab TF ADS and can assist with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for Science  
State, Tribal, Local, and Territorial Support Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Office: 404-639-1538 | Cell: 678-887-5058  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>

**Sent:** Monday, August 16, 2021 3:13 PM

**To:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan (CDC [dhs.wisconsin.gov](http://dhs.wisconsin.gov)) <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard, Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>

**Cc:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Ricaldi Camahuali, Jessica (CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>

**Subject:** RE: Follow up on your results

Thank you. I have attached the concept proposal that was approved from the original MMWR submission as well as a clearance request form.

Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)



<Reimersma\_Viral loads in vaccinees\_  
NEJM\_editedauthorlist\_LABTFCOMMENTS.docx>

**From:** tfriedri@wisc.edu  
**To:** [Kasen Riemersma](#)  
**Cc:** [Segaloff, Hannah E - DHS](#); [DAVID H O'CONNOR](#); [Katarina Grande](#); [Westergaard, Ryan P - DHS](#)  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Saturday, August 21, 2021 4:30:13 PM

---

Hi all.

Thanks to Hannah

Sent from my iPhone

On Aug 21, 2021, at 15:30, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)> wrote:

Hey Hannah,

The folder with the publicly shared dataset is currently restricted to UW addresses which is why it's denying you, but the files in the folder haven't been updated yet anyways. I've attached the updated dataset here. I tried to just include the data needed to address the questions so that it's easier to parse, but let me know if you need any other info. Also, I think the column names should be straightforward, but let me know if you have any questions.

Thanks for addressing the reviewer comments!

Kasen

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Date:** Saturday, August 21, 2021 at 2:26 PM  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

I don't seem to have access to the data that was used for this. Can someone grant me access? It may just be google acting up but my request to view the shared folder keeps was denied.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Saturday, August 21, 2021 12:47 PM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah,

I'm still not sure I understand. Why are there new comments now after we responded to the ones that were issued yesterday? If there are edits that can fit in the 400 word limit that's fine but I worry that the request for

more information is at odds with the word count.

Do you want to take a crack at these edits since you know how to write these things on the way that the clearance process expects?

Cheers,

Dave

Get [Outlook for iOS](#)

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Saturday, August 21, 2021 11:49:15 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi All,

This was not cleared by the JIC- they want to see the new version before clearance. However, comments don't seem too extensive.

I can work on the comments about the statewide perspective.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, August 20, 2021 4:32 PM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>; Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Thanks, Hannah!

Kasen

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Date:** Friday, August 20, 2021 at 4:25 PM  
**To:** Segaloff, Hannah E - DHS <[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Sweet, thanks Hannah!

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 20 Aug 2021, at 16:24, Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

It's back in. Fingers crossed that we get this back quickly. It looks like the on call clearance coordinator has email check-ins over the weekend at 10am and 3pm so those are the times that you are likely to hear Saturday or Sunday.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, August 20, 2021 4:18 PM  
**To:** DAVID H O'CONNOR <[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)>  
**Cc:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Oops, just saw this. I think we should go with Hannah's version since she addresses the question about the CDC ethics statement.

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 20 Aug 2021, at 16:14, DAVID H O'CONNOR <[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)> wrote:

Looks fine to me Hannah. Thanks for taking care of the edits.

dave

Segaloff, Hannah E - DHS wrote on 8/20/21 4:12 PM:

IR#0682H\_000252

Sorry for the repeat emails. I can just send this version back if you all agree since changes were so minor.

-Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, August 20, 2021 3:44 PM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Do you have any updates on the CDC clearance process? Can you see if others have been able to look at the paper?

Thanks,

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 18:51, Thomas Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Okay, fingers crossed!

Sent from my iPhone

On Aug 19, 2021, at 18:02, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Though on second thought I can see that the STLT TF  
is reviewing now- so maybe this is moving faster  
than I thought.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 5:44 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>;  
DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>;  
Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

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Thanks Hannah.

I really hope they can return comments tomorrow  
so we can submit. [REDACTED]  
[REDACTED] Do  
you think that is at all possible?

Best,

Tom

Sent from my iPhone

On Aug 19, 2021, at 15:20, Segaloff,  
Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
wrote:

Thanks Tom,

I will send these along and the note.  
I'm hoping we can switch over to a  
Google drive format for comments.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health  
Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)

IR#0682H\_000254

[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 3:05 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma  
<[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H  
O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>;  
Katarina Grande  
<[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious  
SARS-CoV-2 Despite Vaccination when  
the Delta Variant is Prevalent

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external sender. Do not click on  
links or open attachments unless  
you recognize the sender.**

Hi Hannah.

Attached please find clean (well, clean-ish) and tracked versions of the revised manuscript. We addressed all the comments and made the changes requested. I hope this can be approved quickly.

Note: As you know, to edit collaboratively, we uploaded the Word doc with CDC comments to Google Drive. I re-downloaded the edited version as a Word doc — this is the “clean” version and preserves CDC comments and our responses. To make the “tracked” version I had to compare that downloaded document to the Word doc you forwarded from CDC. When I did that I noticed that it duplicated several comments from CDC folk. For the sake of readability I tried to delete duplicates, but there are still a lot of comments in a small space. It also appears that replies within comments were not recognized, so now they just appear as comments on top of other comments. I hope that all makes sense.

If these copies do not come through, you can download them from the shared Google drive here:

[REDACTED]

Best,

-Tom

IR#0682H\_000255

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at  
09:41, Segaloff, Hannah  
E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
wrote:

Hi All,

Here are the first round of  
comments. We should get  
all responses within 24 to  
48 hours of our  
submission. It looks like  
this needs to be approved  
by Lab TF, cross clearance  
and the response.  
Let me know if I can help  
with comments.

Hannah

Hannah Segaloff, PhD, MPH | LT,  
U.S. Public Health Service  
Epidemic Intelligence Service  
Officer  
U.S. Centers for Disease Control  
and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health  
Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** CDC IMS 2019  
NCOV Response Lab TF  
Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Thursday, August  
19, 2021 9:24 AM  
**To:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV  
Response Lab TF  
Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of




Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

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sender. Do not click  
on links or open  
attachments unless  
you recognize the  
sender.**

Hi Hannah,

Please address the  
mandatory comments  
and return for re-  
review.

 [Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination  
when the Delta Variant  
is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab  
Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6  
PM EST  
Saturday & Sunday On  
Call (Check Ins at 10 AM &  
3 PM)

**From:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>

**Sent:** Wednesday, August  
18, 2021 9:18 AM

**To:** CDC IMS 2019 NCOV  
Response Lab TF  
Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Hello,

Thank you for the quick work getting this approved for DIM expedited clearance. I haven't had a manuscript in expedited clearance before. Does it have the same steps as standard? How much time should I anticipate for the clearance process?

Thank you!  
Hannah

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[gqy9@cdc.gov](mailto:gqy9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 11:51 AM  
**To:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; CDC  
IMS 2019 NCOV Response  
Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>  
**Cc:** Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;  
Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[jki5@cdc.gov](mailto:jki5@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

NP! Glad we were able to turn this around so quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist

Laboratory and Testing Task  
Force  
COVID-19 Emergency  
Response  
Centers for Disease Control  
and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 12:47 PM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; CDC  
IMS 2019 NCOV Response  
Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>  
**Cc:** Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;  
Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[jki5@cdc.gov](mailto:jki5@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 12:43 PM  
**To:** CDC IMS 2019 NCOV  
Response Lab TF  
Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>;  
Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;  
Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>  
**Subject:** Fw: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Afternoon,

This has been approved for  
expedited clearance.

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and Testing Task  
Force  
COVID-19 Emergency  
Response  
Centers for Disease Control  
and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 12:40 PM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Thank you. I approve  
expedited clearance.  
Stephanie

Stephanie R. Bialek MD  
MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 12:16 PM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Hey Stephanie,

Please see attached for the  
updated draft.

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and Testing Task  
Force  
COVID-19 Emergency  
Response  
Centers for Disease Control  
and Prevention  
Lab TF Communications  
Mailbox: [cocevent503@cdc.gov](mailto:cocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 11:05 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)

(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Sure thing, working on the  
updated draft now.

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and Testing Task  
Force  
COVID-19 Emergency  
Response  
Centers for Disease Control  
and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17,  
2021 10:56 AM

**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin,  
Jarrett

(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Yes, please request an  
updated draft with  
Hannah's name on it  
and then I approve it  
going for expedited  
clearance.

Stephanie  
Stephanie R. Bialek MD  
MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 10:56 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Hey Stephanie,

From correspondence with  
ADS and STLT Hannah was  
inadvertently left off the  
manuscript but WI has  
confirmed that she is a co-  
author but her name is not on  
this draft. Should we request  
an updated draft with Hannah  
information on there as the  
co-author?

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and Testing Task  
Force  
COVID-19 Emergency  
Response  
Centers for Disease Control  
and Prevention  
Lab TF Communications  
Mailbox: [cocevent503@cdc.gov](mailto:cocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 10:51 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Hey,

I am working on getting  
clarification as we speak,  
update to follow.

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and Testing Task  
Force  
COVID-19 Emergency  
Response  
Centers for Disease Control  
and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17,  
2021 10:49 AM

**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Hannah Segaloff EISO is  
listed on the clearance  
request form as an  
author but not on the  
manuscript. Can you  
clarify that she indeed  
and author? If so, then  
my approval for  
expedited clearance  
stands.

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)



<[qqy9@cdc.gov](mailto:qqy9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 10:40 AM

**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin,  
Jarrett

(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Thanks for the speedy  
response!

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and Testing Task  
Force  
COVID-19 Emergency  
Response  
Centers for Disease Control  
and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 10:39 AM

**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)

<[qqy9@cdc.gov](mailto:qqy9@cdc.gov)>

**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin,  
Jarrett

(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

I approve.

Stephanie R. Bialek MD  
MPH  
Deputy Incident Manager

COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 10:38 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Fw: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Morning Stephanie,

Happy Tuesday! We would  
like to request DIM1  
expedited approval for the  
attached manuscript. Please  
refer to the email thread  
below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and Testing Task  
Force  
COVID-19 Emergency  
Response  
Centers for Disease Control  
and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** CDC IMS 2019  
NCOV Response Lab TF  
Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 10:32 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Cc:** CDC IMS 2019 NCOV  
Response Lab TF  
Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Fw: Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance  
on this item or wait until  
you receive the DIM  
approval ?

Thank you,  
Alexis

CDC IMS 2019-nCoV  
Lab Task Force  
Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**  
Monday-Friday 9 AM - 6  
PM EST  
Saturday & Sunday On  
Call (Check Ins at 10 AM &  
3 PM)

**From:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 9:59 AM  
**To:** CDC IMS 2019 NCOV  
Response Lab TF  
Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[gqv9@cdc.gov](mailto:gqv9@cdc.gov)>; Gartin,  
Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>;  
Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>;  
Llewellyn, Anna C.

(CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>

**Subject:** Shedding of  
Infectious SARS-CoV-2  
Despite Vaccination when  
the Delta Variant is  
Prevalent

Good Morning,

You may have heard but  
our task force was asked  
by STLT, and we agreed,  
to sponsor this  
manuscript through  
clearance. The authors  
are targeting NEJM and  
are requesting our task  
force to request IM  
approval for expedited  
clearance. Our main POC  
for this manuscript is our  
CDC EISO Hannah Segaloff  
(Cc'd). Let me know if you  
have any questions.

Hannah- our clearance  
team can help shepherd  
your paper through  
clearance. I would  
anticipate our laboratory  
SMEs to have some  
questions for your team.

Best regards,

John

John Kools  
ADS, Laboratory & Testing  
Task Force  
CDC COVID-19 Response  
Phone: 404-217-7258

---

**From:** Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>  
**Sent:** Tuesday, August 17,  
2021 4:51 AM  
**To:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Subject:** FW: Follow up on

your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: 404.840.9507

---

**From:** Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>  
**Sent:** Monday, August 16, 2021 3:35 PM  
**To:** Segaloff, Hannah  
(CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>;  
Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>;  
Westergaard, Ryan  
(CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>;  
Bisgard, Kris  
(CDC/DDPHSS/CSELS/DSEPD)  
<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Ricaldi Camahuali,  
Jessica

(CDC/DDID/NCEZID/DPEI)  
<[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>; Kools,  
John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>;  
Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS  
2019 NCOV Response  
STLT ADS  
<[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>;  
CDC IMS 2019 NCOV  
Response Lab Task Force  
<[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>  
**Subject:** Re: Follow up on  
your results

Dear Hannah,

Thank you for these  
additional documents.  
Due to this manuscript's  
focus on laboratory  
data, our Laboratory  
and Testing Task Force  
colleagues have agreed  
to be the sponsoring  
task force for CDC  
COVID-19 Response  
clearance. John Kools is  
the Lab TF ADS and can  
assist with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for  
Science  
State, Tribal, Local, and  
Territorial Support Task  
Force  
COVID-19 Emergency  
Response  
Centers for Disease Control  
and Prevention  
Office: 404-639-1538 | Cell:  
678-887-5058  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

**From:** Segaloff, Hannah E  
- DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday, August 16,  
2021 3:13 PM

**To:** Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>;  
Westergaard, Ryan  
(CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>;  
Bisgard, Kris  
(CDC/DDPHSS/CSELS/DSEPD)  
<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Ricaldi  
Camahuali, Jessica  
(CDC/DDID/NCEZID/DPEI)  
<[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>  
**Subject:** RE: Follow up on  
your results

Thank you. I have  
attached the concept  
proposal that was  
approved from the  
original MMWR  
submission as well as a  
clearance request form.

Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT,  
U.S. Public Health Service  
Epidemic Intelligence Service  
Officer  
U.S. Centers for Disease Control  
and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health  
Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

<Reimersma\_Viral  
loads in vaccinees\_  
NEJM\_editedauthorlist\_LABTFCOMMENTS.docx>

--  
<http://dho.pathology.wisc.edu>  
[@dho](mailto:@dho) • 608-890-0845

<N1\_Ct\_updated\_Hannah.csv>

**From:** [Thomas Friedrich](#)  
**To:** [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)  
**Cc:** [Katarina Grande](#); [DAVID H O"CONNOR](#); [Kasen Riemersma](#)  
**Subject:** Re: [Nat Geo] Evidence mounts that people with breakthrough infections can spread Delta easily  
**Date:** Friday, August 20, 2021 12:34:27 PM

---

Thanks Sanjay — the story looks great! I am glad to see Kasen and Kat featured.

Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](#)  
[@tcf-lab](#)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 20 Aug 2021, at 12:12, [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) wrote:

Dear Katrina, Kasen, Tom

My article is online now: <https://www.nationalgeographic.com/science/article/evidence-mounts-that-people-with-breakthrough-infections-can-spread-delta-easily>

Dear Tom,

I apologize none of your wonderful quotes made it to the final story. Editors are tough critics.

I really appreciate your time and help in getting this story out. I can only hope that these articles make even a tiny difference in convincing some fence sitters and help others to stay cautious.

Sanjay

---

**From:** [Grande, Katarina](#)  
**Sent:** Thursday, August 12, 2021 2:36 PM  
**To:** '[Sanjay Mishra](#)'  
**Cc:** [DAVID H O"CONNOR](#); '[Kasen Riemersma](#)'; [Thomas Friedrich](#)  
**Subject:** RE: Request to interview from National Geographic

Hi Dr. Mishra,

Thanks for reaching out. I could jump on a call after 3:30pm. I'm cc'ing my co-authors, who are the true scientists on the paper—I'm the applied public health person of the bunch. So depending on your angle, it may be helpful to link with them, or see if we could jump on a call together.



-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

*Healthy People. Healthy Places.*

[<image001.png>](#)

This email, including any attachments, may contain confidential or protected health information which is only for the intended recipient. If you received this email in error, please delete and notify the sender immediately. Emails sent or received by our agency are subject to open records requests and could be released to the public, unless there is an exception allowed by law.

[<image002.png>](#)

---

**From:** Sanjay Mishra <[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)>

**Sent:** Thursday, August 12, 2021 2:07 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** Request to interview from National Geographic

**Importance:** High

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Katarina

I read your preprint posted earlier today with alarm: "Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021"

Can I urgently talk to you since I am pitching this as story to my editor at National Geographic, as a follow up to my recent stories on Delta variant, value of masking and breakthrough infections:

In National Geographic:

1. [Why is Delta more infectious and deadly? New research holds answers.](#) (August 6, 2021)
2. [How dangerous is the new Delta Plus variant? Here's what we know.](#) (July 2, 2021)
3. [The Delta variant is serious. Here's why it's on the rise.](#) (June 16, 2021); updated:
  - a. [The Delta variant is spreading fast, especially where vaccination rates are low](#) (July 8, 2021)
4. [This 'double mutant' variant is adding fuel to India's COVID-19 crisis](#) (April 28, 2021)

In The Conversation:

1. [What is a breakthrough infection? 6 questions answered about catching COVID-19 after vaccination](#) (July 28, 2021)
2. [Can people vaccinated against COVID-19 still spread the coronavirus?](#) (May 25, 2021)

IR#0682H\_000273

I and the readers of National Geographic will highly appreciate it

*Sanjay Mishra, MS, PhD*

*Nashville, TN 37221; USA*

[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) | [@Ecquis](#) | +1 (615) 829 6563

[LinkedIn](#) | [Google Scholar](#) | [Contently](#) | [Skype](#)

**From:** [Sabine Tian/MDPI](#)  
**To:** [THOMAS FRIEDRICH](#)  
**Subject:** [Vaccines, IF 4.422] - Ask for the Status of Your Manuscript "Shedding of Infectious SARS-CoV-2 Despite Vaccination"  
**Date:** Monday, December 20, 2021 9:06:25 PM

---

Dear Dr. Friedrich,

Hope my email finds you well. This is Sabine Tian of journal Vaccines (ISSN 2076-393X, IF 4.422, <https://www.mdpi.com/journal/vaccines>).

We are writing to ask if you have finished your following paper published in Preprint platform or if it has been submitted to any journals.

"Shedding of Infectious SARS-CoV-2 Despite Vaccination"

If not, we would like to invite you to submit this paper to the Special Issue in our journal Vaccines. It is our great honor to read this paper and think it is suitable for our journal (If you are interested, please contact me for the suitable special issue).

I attached more information at the end of this email. In case of any questions, please feel free to contact me.

We would be honored to receive a positive reply from you and look forward to your feedback on our proposal. Thank you for your support.

Kind regards,  
Sabine Tian/MDPI  
Section Managing Editor  
E-Mail: [sabine.tian@mdpi.com](mailto:sabine.tian@mdpi.com)  
.....

**\*Some Special Issues\***

COVID-19 Vaccines and Vaccination  
Knowledge and Beliefs on Vaccines  
Research on Monoclonal Antibodies and Antibody Engineering  
Mechanisms of Mucosal Immunoregulation and Allergy  
Cancer Immunotherapy and Vaccines Research  
A Century of Vaccine Adjuvants: from 1920 to 2020 and Beyond  
Nucleic Acid Vaccine  
Research on MHC background and TCR diversity in Vaccinology  
Frontiers in Cross-Protective Vaccines  
Veterinary Parasitic Vaccines: Current Status and Future Directions  
Frontiers in Flavivirus Vaccines  
...and so on (Can contact me to recommend).

**\*Rapid Process\***

According to our average record in 2020, a first decision based on thorough review was provided to authors around 12.9 days after submissions, and papers were published after acceptance in 3 days.

**\*Flexible Opportunity & Contribution Form\***

We would be honored to gain your kind feedback on the exact topic or organization of your contribution. If you have not enough time yourself, we would be happy if you would like members of your staff, post-docs or students to write the paper. You are warmly welcome to contribute in any form of scientific communication (original research article, review, short communication, case reports, etc.).

**\*Publishing Fee\***

Vaccines is fully open access. An Article Processing Charge (APC) of CHF 2000 currently applies to all accepted papers. Open access (unlimited and free access by readers) increases publicity and promotes more frequent citations, as indicated by several studies. Open access is supported by the authors and their institutes.

**\*Journal Introduction\***

/Vaccines/ (ISSN 2076-393X, <http://www.mdpi.com/journal/vaccines>) is an international, peer-reviewed, quick-refereeing open access journal published online by MDPI, Basel, Switzerland. /Vaccines/ is indexed by SCIE, PubMed (NLM), etc. The Impact Factor is 4.422

.....

Hope your family and you are fine during COVID-19 and everything will be back to normal soon.

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**From:** [medicine@us.nature.com](mailto:medicine@us.nature.com)  
**To:** [Peter Halfmann](#)  
**Subject:** NMED-BC116676 Receipt of New Paper by Nature Medicine  
**Date:** Tuesday, November 2, 2021 2:05:07 PM

---

Dear Dr Halfmann,

Please note that you are listed as a co-author on the manuscript "Shedding of Infectious SARS-CoV-2 Despite Vaccination" (reference number: NMED-BC116676), which was recently submitted to Nature Medicine.

The corresponding author is solely responsible for communicating with the journal and managing communication between co-authors. Please contact the corresponding author directly with any queries you may have related to this manuscript.

You can now use a single sign-on for all your accounts, view the status of all your manuscript submissions and reviews, access usage statistics for your published articles and download a record of your refereeing activity for the Nature journals. Please check your account regularly and ensure that we have your current contact information.

In addition, Springer Nature encourages all authors and reviewers to associate an Open Researcher and Contributor Identifier (ORCID) to their account. ORCID is a community-based initiative that provides an open, non-proprietary and transparent registry of unique identifiers to help disambiguate research contributions.

Should you wish to publish your ORCID with this manuscript, please use the link below to access your account listed as co-author and attach your ORCID following

[REDACTED] ">these instructions. Please note that it must be linked prior to acceptance, it will not be possible to add/modify ORCIDs at proof, and you may not receive further notification before an accept decision is made. Please ensure the ORCID is linked to your account associated with this manuscript, and not to any other account you may have on our system.

Login = [REDACTED]

If you have any issues attaching an ORCID to your Manuscript Tracking System account, please contact the [Platform Support Helpdesk](#).

Many thanks,

Editorial Assistant  
Nature Medicine  
[medicine@us.nature.com](mailto:medicine@us.nature.com)

**\*Our flexible approach during the COVID-19 pandemic\***

*If you need more time at any stage of the peer-review process, please do let us know. While our systems will continue to remind you of the original timelines, we aim to be as flexible as possible during the current pandemic.*

This email has been sent through the Springer Nature Tracking System NY-610A-NPG&MTS

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**From:** [em.ppathogens.0.77467c.eff3e03c@editorialmanager.com](mailto:em.ppathogens.0.77467c.eff3e03c@editorialmanager.com) on behalf of [PLOS Pathogens](#)  
**To:** [Peter Halfmann](#)  
**Subject:** PLOS Pathogens: Please confirm your authorship - [EMID:d9ac2fd5588cc51c]  
**Date:** Thursday, November 11, 2021 4:58:55 PM

---

Dear Halfmann,

You are receiving this email because Ms. Katarina M Grande listed you as an author on the manuscript titled "Shedding of Infectious SARS-CoV-2 Despite Vaccination," recently submitted to PLOS Pathogens.

All co-authors MUST confirm their authorship before a manuscript can be accepted for publication.

Click this link to CONFIRM your authorship and/or add your ORCID to this submission now:



The Corresponding Author has entered your name into our online submission system as indicated below. Please ensure your name is entered correctly, as this impacts indexing. If your name is not entered correctly, please confirm your authorship and then email the journal office at [plospathogens@plos.org](mailto:plospathogens@plos.org).

First Name: Peter  
Middle Name: J.  
Last Name: Halfmann

Alternatively, if you are not aware of this submission, or if you should not be listed as a co-author, then please contact the journal office at [plospathogens@plos.org](mailto:plospathogens@plos.org).

We appreciate your timely response. The abstract follows below, for your reference.

Kind regards,

PLOS Pathogens Staff  
[plospathogens@plos.org](mailto:plospathogens@plos.org)

-----  
Manuscript Title:  
Shedding of Infectious SARS-CoV-2 Despite Vaccination

Article Type:  
Research Article

Authors:  
Katarina Maria Grande; Kasen K. Riemersma; Brittany E. Grogan; Amanda Kita-Yarbro; Peter J. Halfmann; Hannah E. Segaloff; Anna Kocharian; Kelsey R. Florek; Ryan Westergaard; Allen Bateman; Gunnar E. Jeppson; Yoshihiro Kawaoka; David H. O'Connor; Thomas C. Friedrich

Abstract:  
The SARS-CoV-2 Delta variant is highly transmissible and contains mutations that confer partial immune escape. We compared RT-PCR cycle threshold (Ct) data from 699 test-positive anterior nasal swab specimens from fully vaccinated (n = 310) or unvaccinated (n=389) individuals. We observed low Ct values (<25) in 212 of 310 fully vaccinated (68%) and 246 of 389 (63%) unvaccinated individuals. Testing a subset of these low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people. To determine whether infectious virus titers differed in vaccinated and unvaccinated persons, we performed plaque assays on an additional set of 48 samples with Ct <25, finding no difference in infectious virus titer between groups.

---

In compliance with data protection regulations, you may request that we remove your personal registration details at any time. (Use the following URL: <https://www.editorialmanager.com/ppathogens/login.asp?a=r>). Please contact the publication office if you have any questions.



**From:** [em.ppathogens.0.77467c.eff3e03c@editorialmanager.com](mailto:em.ppathogens.0.77467c.eff3e03c@editorialmanager.com) on behalf of [PLOS Pathogens](#)  
**To:** [Peter Halfmann](#)  
**Subject:** PLOS Pathogens: Submission confirmation for PPATHOGENS-D-21-02286 - [EMID:afbd2b2acb21bb18]  
**Date:** Thursday, November 11, 2021 4:58:54 PM

---

You are being carbon copied ("cc:'d") on an e-mail "To" "Katarina M Grande"  
[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)

CC: "Kasen K. Riemersma" [riemersma@wisc.edu](mailto:riemersma@wisc.edu), "Brittany E. Grogan"  
[bgrogan@publichealthmdc.com](mailto:bgrogan@publichealthmdc.com), "Amanda Kita-Yarbro" [akita@publichealthmdc.com](mailto:akita@publichealthmdc.com), "Peter J. Halfmann" [peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu), "Hannah E. Segaloff"  
[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov), "Anna Kocharian" [anna.kocharian@dhs.wisconsin.gov](mailto:anna.kocharian@dhs.wisconsin.gov),  
"Kelsey R. Florek" [kelsey.florek@slh.wisc.edu](mailto:kelsey.florek@slh.wisc.edu), "Ryan Westergaard"  
[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov), "Allen Bateman" [acbateman@wisc.edu](mailto:acbateman@wisc.edu), "Gunnar E. Jeppson" [gjeppson@exactsciences.com](mailto:gjeppson@exactsciences.com), "Yoshihiro Kawaoka" [yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu),  
"David H. O'Connor" [dhoconno@wisc.edu](mailto:dhoconno@wisc.edu), "Thomas C. Friedrich" [tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)

Dear Ms. Grande,

Your submission entitled "Shedding of Infectious SARS-CoV-2 Despite Vaccination" has been received by PLOS Pathogens. You will be able to check on the progress of your paper by logging on to Editorial Manager as an author. The URL is <https://www.editorialmanager.com/ppathogens/>.

Best,

PLOS Pathogens Staff  
[plospathogens@plos.org](mailto:plospathogens@plos.org)

---

*In compliance with data protection regulations, you may request that we remove your personal registration details at any time. ([Remove my information/details](#)). Please contact the publication office if you have any questions.*

**From:** [Peter Halfmann](#)  
**To:** [Kasen Riemersma](#)  
**Cc:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** RE: New England Journal of Medicine - 21-14060  
**Date:** Wednesday, September 15, 2021 12:39:00 PM

---

We got that sample; from what the wells look like there was (bacterial) contamination so I don't to say it was negative.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Wednesday, September 15, 2021 12:37 PM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Cc:** YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks, Peter! Was the specimen whose titer was "ND" missing from the drop off?

Cheers,  
Kasen

Sent from my iPhone

On Sep 15, 2021, at 12:31 PM, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)> wrote:

Kasen,  
Here are the titers for the 2<sup>nd</sup> group of samples.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, September 10, 2021 9:28 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

I handed them off at the door, so hopefully they make their way to you. I've attached the full specimen manifest with both sets of 24.

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
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**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

If you leave them by the door that's fine - thanks

---

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**Subject:** Re: New England Journal of Medicine - 21-14060

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Thanks,  
Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Thursday, September 9, 2021 at 9:12 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Got them; thanks! Sounds good.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Thursday, September 9, 2021 9:05 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hey Peter,

I'm about to walk over with the first set of 24 more recent specimens. I need a bit more time today to pull the set of 24 older specimens, but will get them to you by the end of the day or first thing tomorrow morning.

I've attached the specimen manifest for the first set of 24.

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Tuesday, September 7, 2021 at 2:30 PM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Early Thursday is good; thanks

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Tuesday, September 7, 2021 2:30 PM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks, Peter! Would you prefer I drop off the 48 specimens on Wednesday or early Thursday?

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Tuesday, September 7, 2021 at 12:02 PM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

We can do 24 samples on Thursday and another 24 samples on Friday.

On Sep 7, 2021, at 9:39 AM, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Like Dave, I can see this going either way. Perhaps we could do a set of specimens from within the same time period that is covered in the submitted paper, and then also a more recent batch? This would cover our bases. However, I don't want to burden Peter too much, so I think he and Yoshi should comment also.

Best,

-Tom

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine

@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Dave O'Connor wrote on 2021-09-07 08:42:

Hi all,

I could see it going either way. I don't think we need to add them to the existing dataset. It might even be better to use recent samples because it shows that the trend is stable over time. But I don't feel strongly about it.

dave

Kasen Riemersma wrote on 9/7/21 8:40 AM:

Hi all,

I can definitely provide more samples for Peter to test. Peter, once I know how many you can process, I should be able to send them over quickly.

Tom, if these culture data may be added to our study, I'm inclined to select specimens from the same study period instead of more recent specimens. Do you agree?

Cheers,  
Kasen

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Date:** Sunday, September 5, 2021 at 12:43 PM  
**To:** YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)>, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Kasen Riemersma <[kriemersma@wisc.edu](mailto:kriemersma@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi all.

Okay, I agree with all this. In our emails last week, I was not sure whether you guys wanted to respond to Vincent as soon as possible. I completely agree that we would need to generate new titration data with samples that have not undergone multiple freeze-thaw cycles.

Luckily we are getting a large number of samples from Exact each week.

Kasen, can we identify a set of fresh samples that can be aliquoted for Peter to test?

Peter, what is a good number of samples for you to receive?

Best,

-Tom

YOSHIHIRO KAWAOKA wrote on 2021-09-03 19:33:

If we are going to respond to Vincent by sharing our new data, we should do the virus isolation with new samples that have not been thawed several times. I am concerned about the data showing that the number of no-virus-recovery samples from vaccinated individuals is higher than that from unvaccinated individuals. He will

criticize this point if we send him the current data.

Best,  
Yoshi

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Saturday, September 4, 2021 8:11 AM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[kggrande@publichealthmdc.com](mailto:kggrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Tom,

I updated Medrxiv with the NEJM submission. I didn't update with this week's data. I suggest waiting until we get a disposition on the NEJM paper before updating Medrxiv again.

In terms of Vincent, I'm fine if someone else wants to connect with him and Daniel on the data. I'm not enthusiastic about doing it myself.

dave

--

I often work on email outside of work hours, but you don't have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>

608.890.0845

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, September 3, 2021 18:04  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks Dave.

Did we update the medrxiv paper with the titration data? If so I can update my Twitter thread on the paper and include it. As you guys have said, even though the samples have undergone multiple freeze-thaw cycles, it is clear that titers are not systematically lower in vaccinees vs. unvaccinated.

Would you guys also email Daniel and Vincent directly to call their attention to these data?

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 3 Sep 2021, at 17:15, DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)> wrote:

What will come first, an NEJM decision on a 400 word letter or Kat's return from Iceland? Nonetheless, I pinged the editor (see below) and offered the titer data should it be helpful.

dave

--

I often work on email outside of work hours, but you don't have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>  
608.890.0845

---

**From:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Sent:** Friday, September 3, 2021 14:05  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Sent:** Friday, September 3, 2021 2:58 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Subject:** FW: New England Journal of Medicine - 21-14060

---

**From:** Dave O'Connor <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Friday, September 3, 2021 10:17 AM  
**To:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

To whom it may concern,

I am writing on behalf of our co-authors to ask if there are any updates on the status of the 400 word correspondence we submitted to NEJM on August 23. We are keenly aware that this is timely data given the current landscape of SARS-CoV-2 infection despite vaccination.

One small note: some vocal scientists have criticized our work on social media. The primary claim they make is that virus culture in low Ct samples does not mean that there is similar amounts of replication-competent virus in these samples. Subsequent to our August 23 submission, we re-thawed these samples and showed that virus titers are similar in those who are unvaccinated and infected despite infection (see attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine wrote on 8/23/21 1:39 PM:

Dear Ms. Grande and co-authors,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination" to the New England Journal of Medicine.

Your manuscript has been forwarded to members of our editorial staff, who will make an initial evaluation and decide whether it merits further consideration. You will be notified of the decision as soon as possible.

Your manuscript ID is 21-14060.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to

appropriate. You may also view the status of your manuscript at any time by checking For Authors section of the site.

We are undertaking evaluation of your manuscript with the understanding that neither the substance of the article nor the figures or tables have been published or will be submitted for publication elsewhere during the period of review.

Please provide the editors with copies of other manuscripts by you or your coauthors addressing similar or related research questions that are in preparation or under consideration at other journals. This does not apply to abstracts published in connection with scientific meetings or to news reports based on presentations at such meetings.

The Journal's policy is explained more fully at <https://www.nejm.org/about-nejm/editorial-policies>.

Please call us at 617-734-9800 if  
you have any questions.

Sincerely,

New England Journal of Medicine  
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Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-9864  
<http://www.nejm.org>

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<http://dho.pathology.wisc.edu>  
[@dho • 608-890-0845](mailto:dho@pathology.wisc.edu)

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<Copy of Specimens\_for\_culture\_20210910 PH.xlsx>



**From:** [Peter Halfmann](#)  
**To:** [Kasen Riemersma](#)  
**Cc:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** RE: New England Journal of Medicine - 21-14060  
**Date:** Wednesday, September 15, 2021 12:31:00 PM  
**Attachments:** [Copy of Specimens for culture\\_20210910 PH.xlsx](#)

---

Kasen,

Here are the titers for the 2<sup>nd</sup> group of samples.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, September 10, 2021 9:28 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

I handed them off at the door, so hopefully they make their way to you. I've attached the full specimen manifest with both sets of 24.

Kasen

---

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**Date:** Friday, September 10, 2021 at 9:04 AM  
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If you leave them by the door that's fine - thanks

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**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Tuesday, September 7, 2021 at 2:30 PM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Early Thursday is good; thanks

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Tuesday, September 7, 2021 2:30 PM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks, Peter! Would you prefer I drop off the 48 specimens on Wednesday or early Thursday?

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Tuesday, September 7, 2021 at 12:02 PM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

We can do 24 samples on Thursday and another 24 samples on Friday.

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**Date:** Sunday, September 5, 2021 at 12:43 PM  
**To:** YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>  
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---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Sent:** Friday, September 3, 2021 18:04

**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>

**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

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**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
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Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Sent:** Friday, September 3, 2021 2:58 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Subject:** FW: New England Journal of Medicine - 21-14060

---

**From:** Dave O'Connor <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Friday, September 3, 2021 10:17 AM  
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Your manuscript has been forwarded to members of our editorial staff, who will make an initial evaluation and decide whether it merits further consideration. You will be notified of the decision as soon as possible.

Your manuscript ID is 21-14060.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in

appropriate. You may also view the status of your manuscript at any time by checking For Authors section of the site.

We are undertaking evaluation of your manuscript with the understanding that neither the substance of the article nor the figures or tables have been published or will be submitted for publication elsewhere during the period of review.

Please provide the editors with copies of other manuscripts by you or your coauthors addressing similar or related research questions that are in preparation or under consideration at other journals. This does not apply to abstracts published in connection with scientific meetings or to news reports based on presentations at such meetings.

The Journal's policy is explained more fully at <https://www.nejm.org/about-nejm/editorial-policies>.

Please call us at 617-734-9800 if you have any questions.

Sincerely,

New England Journal of Medicine  
10 Shattuck Street  
Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-9864  
<http://www.nejm.org>

--  
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**To:** [Thomas Friedrich](#); [DAVID H O'CONNOR](#)  
**Cc:** [Kasen Riemersma](#); [YOSHIHIRO KAWAOKA](#); [Katarina Grande](#)  
**Subject:** RE: New England Journal of Medicine - 21-14060  
**Date:** Tuesday, September 7, 2021 9:46:24 AM

---

Yoshi

---

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**To:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
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IR#0682H\_000296



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[REDACTED] and te.

You may also view the status of your manuscript at any time by checking For Authors section of the site.

We are undertaking evaluation of your manuscript with the understanding that neither the substance of the article nor the figures or tables have been published or will be submitted for publication elsewhere during the period of review.

Please provide the editors with copies of other manuscripts by you or your coauthors addressing similar or related research questions that are in preparation or under consideration at other journals. This does not apply to abstracts published in connection with scientific meetings or to news reports based on presentations at such meetings.

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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 2:30:54 PM

---

A bit of insight: I spoke to a journalist who told me how our paper is being weaponized by the far right. It might be that journals don't want to publish it and deal with the potential backlash.



You can reply to this email or [respond in Basecamp](#).

This message was sent to Al Bateman, Anna Kocharian, Brittany Grogan, Dave OConnor, Hannah Segaloff, Kasen Riemersma, Katarina Grande, Kelsey Florek, Peter Halfmann, Ryan Westergaard, Sanjib Bhattacharyya, Thomas Friedrich, and Yoshihiro Kawaoka.


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**From:** [Brittany Grogan \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 8:28:52 AM

---

We don't,  Katarina, but it's something I can pull together manually, just have to download some files from WEDSS. I can work on developing a masterlist of booster breakthroughs today that we can use in the meantime until DHS adds those to our daily files!

To be consistent with "regular" breakthroughs, do we want to consider a 'booster breakthrough' as an episode date (i.e. earliest date between symptom onset or test collection date) 14 or more days after the booster shot? CDC said on a call last week that they're finding it takes about 7 days to see a benefit from the booster, and I know that the Israel data  Davesent us shows more of a benefit at 12 days vs. 7 days. I'll reach out to  Anna to see if DHS is planning on presenting booster breakthrough data and if so, what interval they will use to define it.



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**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 9:24:55 AM

---

14 days is the definition I'd use if possible. Otherwise you run the risk of underestimating booster effectiveness.

It would be excellent to start cross-checking these cases against viral load. I feel like I've asked this before, but is PHMDC also planning to break out booster vs. non-booster infection and severe case rates?



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**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 1:46:54 PM

---

Sounds good, I added a file to Teams with all of our booster breakthroughs so far where the lab was processed by Exact or UW. There are 43 on the list with the majority being from November.



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**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 12:28:36 PM

---

Thanks  Brittany and  Katarina. I think it is worth analyzing breakthrough viral loads stratified by booster vs. no booster in general, and in preparation of potential reviewer requests for more recent data. We can certainly sequence breakthroughs along with everything else. Luis is the person to coordinate with, yes.



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**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 1:57:33 PM

---

Just to be clear, breakthrough equals  $\geq 14$  days after final dose?



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**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 2:18:42 PM

---

Correct; we have 80 total since 8/13/21. 56 of those are from November, compared to a total of 3,693 total cases so far in November. On last week's data snapshot we reported that so far 1/3 of Dane County residents who have completed the initial vaccine series have received a booster or third dose.



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 3:03:54 PM

---

So if roughly 72% of Dane County is fully vaccinated, that means that roughly 24% have been boosted ( $.72 * .3$ )

This would mean that if the vaccine was having no effect, you'd expect 886 of these November cases to be in vaccinees ( $3693 * .24$ ). An actual number of 56 doesn't seem that bad - about 6% as likely to be infected after boosting than if unvaccinated.

Unless I can't do math anymore, which is entirely possible :)



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Relevant paper in Nature Medicine  
**Date:** Thursday, December 2, 2021 9:48:16 AM

---

So, like, we were right?



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**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Thursday, December 2, 2021 9:11:04 PM

---

 Dave FYI we have included booster case rate data in our snapshot that was released this evening! We only release hospitalization and death data by vaccination status once a month, so we'll release that in the same format (not vaxxed/vaxxed initial series/vaxxed + boosted) in two weeks, for both October and November.



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Relevant paper in Nature Medicine  
**Date:** Tuesday, December 7, 2021 4:34:34 PM

---

yep. well done!



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 1:33:18 PM

---

agreed, very annoying. same status today.



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**From:** [Brittany Grogan \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 11:10:34 AM

---

 Dave I'll chat with  Katarina and the rest of the data team at our meeting tomorrow morning, but I think that yes, we can certainly explore breaking out unvaccinated vs vaccinated non-booster vs vaccinated booster, perhaps even on this week's data snapshot.

Should we send a list of booster breakthroughs for potential sequencing? It's been a couple months since I've sent a request for sequencing; is this something I would send to Luis?



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 4:17:44 PM

---

Great point!



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**From:** [Thomas Friedrich \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 2:52:36 PM

---

Any further updates  Katarina?

One question for you and  Dave -- we have continued to collect data on Ct value and vaccination status. We could update the figures if this version does not get sent out for review...



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 2:59:46 PM

---

Great point  Thomas



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 3:08:44 PM

---

Probably a "lost" cause, but I'm not sure I'd welcome the term "lost." A paper that has been seen by more than 100,000 people is arguably the most impactful thing I've ever been involved with. Even if it means that it just becomes an opportunity to educate about what the data says and why the weaponization is wrong.



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 3:00:10 PM

---

We could also start looking at third vaccine breakthroughs to see if there is any difference in VL in those cases.



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**From:** [Thomas Friedrich \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 3:00:33 PM

---

That is a great point yourself,  Dave .



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 8:11:47 AM

---

Current status is now "under review."

 Brittany, do we have the data file we need from DHS to gauge what our booster/3rd dose BTs are looking like right now?



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 2:37:09 PM

---

Ok, that's helpful context. Unfortunate! Wonder if there is a different frame we could build out in a submission that would help with this. Or is it a lost cause at this point...



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**From:** [YOSHIHIRO KAWAOKA](#)  
**To:** [DAVID H O'CONNOR](#); [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)  
**Cc:** [Peter Halfmann](#); [Thomas Friedrich](#)  
**Subject:** RE: FW: Preprint: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021  
**Date:** Monday, August 16, 2021 9:15:00 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)

---

Daniel Griffin!

---

**From:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
**Sent:** Monday, August 16, 2021 10:41 PM  
**To:** KGrande@publichealthmdc.com  
**Cc:** YOSHIHIRO KAWAOKA <yoshihiro.kawaoka@wisc.edu>; Peter Halfmann <peter.halfmann@wisc.edu>; Thomas Friedrich <tfriedri@wisc.edu>  
**Subject:** Re: FW: Preprint: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Hi Kat,

I already responded to him yesterday!

dave

[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com) wrote on 8/16/21 8:37 AM:

Hi Yoshi and Peter,  
Would you please response to Daniel when you have a moment? I believe the answer to the question is "nope, no real time monitoring or quantification as of now, but it is something we're working on." But in case Daniel has more technical questions, best if you answer. Thanks!

-Kat

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)  
**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)  
2300 South Park St, Rm 2010, Madison, WI 53713  
Phone: (608) 243-0409 | Cell: (608) 640-9430 | Fax: (608) 266-4858

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There's strength in numbers.  
Join me! #GetVaccinated

**From:** Griffin, Daniel <[dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu)>

**Sent:** Saturday, August 14, 2021 9:44 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** Preprint: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dr Grande,

I hope this email finds you well. I was hoping to ask a few questions about the preprint **Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021**.

You report "Infectious SARS-CoV-2 was isolated from 14 of 16 specimens (88%) from unvaccinated individuals and 37 of 39 specimens (95%) from vaccinated people."

In figure 2 According to figure 2 Infectiousness was determined by the presence of cytopathic effects (CPE) after 5 days of replication in Vero E6 TMPRSS2 cells with visually apparent CPE under a light microscope. Any real time monitoring or quantification?

Sincerely,

Daniel Griffin, MD PhD CTropMed CTH  
Chief, Division of Infectious Disease - ProHEALTH, an OPTUM Company  
Senior Fellow for Infectious Disease - UHG Research and Development  
Clinical Instructor of Medicine - Columbia University College of Physicians and Surgeons  
Department of Medicine-Division of Infectious Diseases  
President -Parasites Without Borders  
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New Hyde Park, NY 11042  
Office Tel: (516)-656-6500  
Cell: [REDACTED]  
[Email: danielgriffinmd@gmail.com](mailto:danielgriffinmd@gmail.com)

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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 1:33:18 PM

---

agreed, very annoying. same status today.



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**From:** [Brittany Grogan \(Basecamp\)](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 8:28:51 AM

---

We don't,  Katarina, but it's something I can pull together manually, just have to download some files from WEDSS. I can work on developing a masterlist of booster breakthroughs today that we can use in the meantime until DHS adds those to our daily files!

To be consistent with "regular" breakthroughs, do we want to consider a 'booster breakthrough' as an episode date (i.e. earliest date between symptom onset or test collection date) 14 or more days after the booster shot? CDC said on a call last week that they're finding it takes about 7 days to see a benefit from the booster, and I know that the Israel data  Davesent us shows more of a benefit at 12 days vs. 7 days. I'll reach out to  Anna to see if DHS is planning on presenting booster breakthrough data and if so, what interval they will use to define it.



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**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 11:10:43 AM

---

 Davel'll chat with  Katarina and the rest of the data team at our meeting tomorrow morning, but I think that yes, we can certainly explore breaking out unvaccinated vs vaccinated non-booster vs vaccinated booster, perhaps even on this week's data snapshot.

Should we send a list of booster breakthroughs for potential sequencing? It's been a couple months since I've sent a request for sequencing; is this something I would send to Luis?



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 9:24:58 AM

---

14 days is the definition I'd use if possible. Otherwise you run the risk of underestimating booster effectiveness.

It would be excellent to start cross-checking these cases against viral load. I feel like I've asked this before, but is PHMDC also planning to break out booster vs. non-booster infection and severe case rates?



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**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 12:28:34 PM

---

Thanks  Brittany and  Katarina. I think it is worth analyzing breakthrough viral loads stratified by booster vs. no booster in general, and in preparation of potential reviewer requests for more recent data. We can certainly sequence breakthroughs along with everything else. Luis is the person to coordinate with, yes.



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**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 1:47:05 PM

---

Sounds good, I added a file to Teams with all of our booster breakthroughs so far where the lab was processed by Exact or UW. There are 43 on the list with the majority being from November.



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**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 1:57:34 PM

---

Just to be clear, breakthrough equals  $\geq 14$  days after final dose?



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**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
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---

Correct; we have 80 total since 8/13/21. 56 of those are from November, compared to a total of 3,693 total cases so far in November. On last week's data snapshot we reported that so far 1/3 of Dane County residents who have completed the initial vaccine series have received a booster or third dose.



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**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 3:03:53 PM

---

So if roughly 72% of Dane County is fully vaccinated, that means that roughly 24% have been boosted ( $.72 * .3$ )

This would mean that if the vaccine was having no effect, you'd expect 886 of these November cases to be in vaccinees ( $3693 * .24$ ). An actual number of 56 doesn't seem that bad - about 6% as likely to be infected after boosting than if unvaccinated.

Unless I can't do math anymore, which is entirely possible :)



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Relevant paper in Nature Medicine  
**Date:** Thursday, December 2, 2021 9:48:17 AM

---

So, like, we were right?



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**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Thursday, December 2, 2021 9:11:07 PM

---

 Dave FYI we have included booster case rate data in our snapshot that was released this evening! We only release hospitalization and death data by vaccination status once a month, so we'll release that in the same format (not vaxxed/vaxxed initial series/vaxxed + boosted) in two weeks, for both October and November.



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 2:37:11 PM

---

Ok, that's helpful context. Unfortunate! Wonder if there is a different frame we could build out in a submission that would help with this. Or is it a lost cause at this point...



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 4:17:46 PM

---

Great point!



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**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 22, 2021 2:30:51 PM

---

A bit of insight: I spoke to a journalist who told me how our paper is being weaponized by the far right. It might be that journals don't want to publish it and deal with the potential backlash.



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 2:59:45 PM

---

Great point  Thomas



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**From:** [Dave OConnor \(Basecamp\)](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 3:00:06 PM

---

We could also start looking at third vaccine breakthroughs to see if there is any difference in VL in those cases.



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**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 3:00:38 PM

---

That is a great point yourself,  Dave .



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**From:** [Katarina Grande \(Basecamp\)](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Monday, November 29, 2021 8:11:48 AM

---

Current status is now "under review."

 Brittany, do we have the data file we need from DHS to gauge what our booster/3rd dose BTs are looking like right now?



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**From:** [Thomas Friedrich \(Basecamp\)](#)  
**To:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: (m: Shedding of Infectious SARS-CoV-2 Despite Vaccination) Manuscript update  
**Date:** Wednesday, November 24, 2021 2:52:30 PM

---

Any further updates  Katarina?

One question for you and  Dave -- we have continued to collect data on Ct value and vaccination status. We could update the figures if this version does not get sent out for review...



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**From:** [Thomas Friedrich](#)  
**To:** [Peter Halfmann](#)  
**Cc:** [DAVID H O'CONNOR](#); [Kasen Riemersma](#); [YOSHIHIRO KAWAOKA](#); [Katarina Grande](#)  
**Subject:** Re: New England Journal of Medicine - 21-14060  
**Date:** Tuesday, September 7, 2021 9:49:04 PM

---

Okay, Kasen, can you and Luis identify 2 batches of 24 samples for Peter to test Thursday and Friday?

T

Sent from my iPhone

On Sep 7, 2021, at 12:02, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)> wrote:

We can do 24 samples on Thursday and another 24 samples on Friday.

On Sep 7, 2021, at 9:39 AM, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Like Dave, I can see this going either way. Perhaps we could do a set of specimens from within the same time period that is covered in the submitted paper, and then also a more recent batch? This would cover our bases. However, I don't want to burden Peter too much, so I think he and Yoshi should comment also.

Best,

-Tom

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Dave O'Connor wrote on 2021-09-07 08:42:

Hi all,

I could see it going either way. I don't think we need to add them to the existing dataset. It might even be better to use recent samples because it shows that the trend is stable over time. But I don't feel strongly about it.

dave

Kasen Riemersma wrote on 9/7/21 8:40 AM:

Hi all,

I can definitely provide more samples for Peter to test. Peter, once I know how many you can process, I should be able to send them over quickly.

Tom, if these culture data may be added to our study, I'm inclined to select specimens from the same study period instead of more recent specimens. Do you agree?

Cheers,  
Kasen

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

IR#0682H\_000345

**Date:** Sunday, September 5, 2021 at 12:43 PM

**To:** YOSHIHIRO KAWAOKA <yoshihiro.kawaoka@wisc.edu>

**Cc:** DAVID H O'CONNOR <dhoconno@wisc.edu>, Peter Halfmann <peter.halfmann@wisc.edu>, Katarina Grande <kgrande@publichealthmdc.com>, Kasen Riemersma <riemersma@wisc.edu>

**Subject:** Re: New England Journal of Medicine - 21-14060

Hi all.

Okay, I agree with all this. In our emails last week, I was not sure whether you guys wanted to respond to Vincent as soon as possible. I completely agree that we would need to generate new titration data with samples that have not undergone multiple freeze-thaw cycles.

Luckily we are getting a large number of samples from Exact each week.

Kasen, can we identify a set of fresh samples that can be aliquoted for Peter to test?

Peter, what is a good number of samples for you to receive?

Best,

-Tom

YOSHIHIRO KAWAOKA wrote on 2021-09-03 19:33:

If we are going to respond to Vincent by sharing our new data, we should do the virus isolation with new samples that have not been thawed several times. I am concerned about the data showing that the number of no-virus-recovery samples from vaccinated individuals is higher than that from unvaccinated individuals. He will criticize this point if we send him the current data.

Best,  
Yoshi

---

**From:** DAVID H O'CONNOR <dhoconno@wisc.edu>

**Sent:** Saturday, September 4, 2021 8:11 AM

**To:** Thomas Friedrich <tfriedri@wisc.edu>

**Cc:** Peter Halfmann <peter.halfmann@wisc.edu>; YOSHIHIRO KAWAOKA <yoshihiro.kawaoka@wisc.edu>; Katarina Grande <kgrande@publichealthmdc.com>

**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Tom,

I updated Medrxiv with the NEJM submission. I didn't update with this week's data. I suggest waiting until we get a disposition on the NEJM paper before updating Medrxiv again.

In terms of Vincent, I'm fine if someone else wants to connect with him and Daniel on the data. I'm not enthusiastic about doing it myself.

dave

--

I often work on email outside of work hours, but you don't have to!  
If you're receiving this outside of your work hours, I don't expect a

response until you are back in the office.

<http://dho.pathology.wisc.edu>

608.890.0845

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, September 3, 2021 18:04  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks Dave.

Did we update the medrxiv paper with the titration data? If so I can update my Twitter thread on the paper and include it. As you guys have said, even though the samples have undergone multiple freeze-thaw cycles, it is clear that titers are not systematically lower in vaccinees vs. unvaccinated.

Would you guys also email Daniel and Vincent directly to call their attention to these data?

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 3 Sep 2021, at 17:15, DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)> wrote:

What will come first, an NEJM decision on a 400 word letter or [REDACTED] Nonetheless, I pinged the editor (see below) and offered the titer data should it be helpful.

dave

--

I often work on email outside of work hours, but you don't have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

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---

**From:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Sent:** Friday, September 3, 2021 14:05  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Sent:** Friday, September 3, 2021 2:58 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Subject:** FW: New England Journal of Medicine - 21-14060

---

**From:** Dave O'Connor <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Friday, September 3, 2021 10:17 AM  
**To:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

To whom it may concern,

I am writing on behalf of our co-authors to ask if there are any updates on the status of the 400 word correspondence we submitted to NEJM on August 23. We are keenly aware that this is timely data given the current landscape of SARS-CoV-2 infection despite vaccination.

One small note: some vocal scientists have criticized our work on social media. The primary claim they make is that virus culture in low Ct samples does not mean that there is similar amounts of replication-competent virus in these samples. Subsequent to our August 23 submission, we re-thawed these samples and showed that virus titers are similar in those who are unvaccinated and infected despite infection (see attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine wrote on 8/23/21 1:39 PM:

Dear Ms. Grande and co-authors,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination" to the New England Journal of Medicine.

Your manuscript has been forwarded to members of our editorial staff, who will make an initial evaluation and decide whether it merits further consideration. You will be notified of the decision as soon as possible.

Your manuscript ID is 21-14060.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to ScholarOne Manuscripts at <https://mc05.manuscriptcentral.com/nejm> and edit your user information as appropriate. You may also view the status of your manuscript at any time by checking For Authors section of the site.

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**From:** [Dave O'Connor](#)  
**To:** [Chris Barncard](#); [Grande, Katarina](#); [Thomas Friedrich](#)  
**Cc:** [Finke, Morgan R.](#); [Kelly Tyrrell](#)  
**Subject:** Attention rodeo redux  
**Date:** Tuesday, August 10, 2021 7:21:31 PM  
**Attachments:** [Viral loads in vaccinees\\_Medrxiv 10 Aug 2021-3.pdf](#)

---

Chris, Morgan, Kelly -

Quick heads up that we just updated our preprint on infection despite vaccination. Here is the new version. I expect that, like the last version, it might get some attention. A key criticism of our work last week was that it was underpowered and that PCR Ct did not equate to replication-competent virus. Fine. So we added 400+ more individuals and, with Yoshi's lab's help, showed that nearly all of the high viral load samples we tested contained live, replication-competent virus. I really wish Nate Silver had taken my bet; I'd be \$100 richer.

dave

# Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Kasen K. Riemersma, DVM, PhD<sup>1</sup>; Brittany E. Grogan, MPH<sup>2</sup>; Amanda Kita-Yarbro, MPH<sup>2</sup>; Peter Halfmann, PhD<sup>1</sup>; Anna Kocharian, MS<sup>3</sup>; Kelsey R. Florek, PhD<sup>4</sup>; Ryan Westergaard, MD, PhD<sup>3,5</sup>; Allen Bateman, PhD<sup>4</sup>; Gunnar E. Jeppson, BS<sup>6</sup>; Yoshihiro Kawaoka, DVM, PhD<sup>1</sup>; David H. O'Connor, PhD<sup>7</sup>; Thomas C. Friedrich, PhD<sup>1</sup>; Katarina M. Grande, MPH<sup>2</sup>

<sup>1</sup> Department of Pathobiological Sciences, University of Wisconsin-Madison, Madison, WI, USA; <sup>2</sup> Public Health Madison & Dane County, Madison, WI, USA; <sup>3</sup> Wisconsin Department of Health Services; <sup>4</sup> Wisconsin State Laboratory of Hygiene; <sup>5</sup> Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin; <sup>6</sup> Exact Sciences, Madison, WI, USA; <sup>7</sup> Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, USA.

<sup>^</sup> Author to whom all correspondence should be addressed. E-mail: KGrande@publichealthmdc.com

## Abstract

The SARS-CoV-2 Delta variant and its sublineages (B.1.617.2, AY.1, AY.2, AY.3; [1]) can cause high viral loads, are highly transmissible, and contain mutations that confer partial immune escape [2,3]. Using PCR threshold cycle (Ct) data from a single large contract laboratory, we show that individuals in Wisconsin, USA had similar viral loads in nasal swabs, irrespective of vaccine status, during a time of high and increasing prevalence of the Delta variant. Infectious SARS-CoV-2 was isolated from 51 of 55 specimens (93%) with Ct <25 from both vaccinated and unvaccinated persons, indicating that most individuals with Ct values in this range (Wilson 95% CI 83%-97%) shed infectious virus regardless of vaccine status. Notably, 68% of individuals infected despite vaccination tested positive with Ct <25, including at least 8 who were asymptomatic at the time of testing. Our data substantiate the idea that vaccinated individuals who become infected with the Delta variant may have the potential to transmit SARS-CoV-2 to others. Vaccinated individuals should continue to wear face coverings in indoor and congregate settings, while also being tested for SARS-CoV-2 if they are exposed or experience COVID-like symptoms.

## Main text

We analyzed respiratory specimens from 719 individuals collected between 29 June 2021 and 31 July 2021. Delta and its sublineages accounted for 69% of all Wisconsin sequences in GISAID in the week beginning 27 June 2021; this proportion increased to 95% for the week ending 24 July, the most recent date for which data are available [4]. We recovered viral genome sequences from 122 of the specimens analyzed in this report; 110 of 122 (90%) belonged to Delta lineages. The high and increasing prevalence of Delta-lineage viruses during the study period, and high proportion of Delta-lineage

viruses among our sequenced samples, together suggest that most infections in our dataset were caused by Delta, though this cannot be directly confirmed.

We defined fully vaccinated individuals as those who received a final vaccine dose at least 2 weeks prior to testing positive. Of the 719 individuals, vaccination status at the time of testing was available in the Wisconsin Immunization Registry and Wisconsin Electronic Disease Surveillance System for 322 (293 vaccinated and 29 unvaccinated), while self-reported vaccination status was available for the remaining 397 (18 vaccinated and 379 unvaccinated). We compared Ct values in specimens from these fully vaccinated and unvaccinated individuals at the time of testing ([Figure 1](#)). We detected no significant differences in Ct values by vaccination status. Notably, 212 of 311 (68%) of individuals with infection despite full vaccination had extremely low Ct values <25, consistent with high viral loads.

While a given Ct value cannot be used to infer infectiousness, previous studies suggested that infectious SARS-CoV-2 can frequently be recovered from specimens with Ct values of 25-30 or lower [5]. To determine whether high viral loads might indicate the presence of infectious SARS-CoV-2, we attempted to culture infectious virus from a subset of 55 specimens with Ct values <25 ([Figure 2](#)). Infectious SARS-CoV-2 was isolated from 14 of 16 specimens (88%) from unvaccinated individuals and 37 of 39 specimens (95%) from vaccinated people, suggesting that Ct <25 is frequently associated with the capacity to shed infectious SARS-CoV-2, even in fully vaccinated persons.

Data on symptom status were available from 516 of the 719 individuals evaluated here, so we further compared Ct values in test-positive specimens according to vaccination and symptom status ([Figure 3A](#)). For symptomatic cases, there was no significant difference in the time elapsed between symptom onset and testing for vaccinated vs. unvaccinated individuals (two-sample K-S test,  $p=0.49$ ; [Figure 3B](#)). Full vaccination did not affect Ct values observed in infected individuals, either with or without symptoms, at the time of testing. Among those for whom symptom status is known, 252 of 276 individuals who were not fully vaccinated (91%) reported symptoms at the time of testing, while 228 of 240 people who were fully vaccinated (95%) reported symptoms. Among individuals who were asymptomatic at the time of testing, Ct values <25 were detected in 7 of 24 unvaccinated individuals (29%; CI: 13-51%) and in 8 of 12 individuals who were infected despite being fully vaccinated (67%; CI: 35-90%). Infectious virus was detected in the sole specimen tested from an asymptomatic fully vaccinated individual. Although the number of asymptomatic individuals sampled is small, these results indicate that some individuals who are infected despite vaccination can have high viral loads and shed infectious virus even while being asymptomatic. Additional virus isolation data are needed to determine the frequency of infectious virus shedding in asymptomatic cases.

Our findings are consistent with other recent reports detecting high virus loads in some individuals infected despite vaccination in England [6] and Singapore [7]. Our detection of infectious virus in 93% of samples with Ct <25 indicates that high viral loads are consistent with the potential to transmit SARS-CoV-2, regardless of the individual's vaccination status. Notably, transmission of Delta from vaccinated healthcare workers to their household contacts was recently documented in an investigation of a hospital-associated outbreak in Finland [8]. An outbreak in Barnstable County, MA associated with large gatherings also involved a substantial proportion of fully vaccinated individuals [9]. The co-circulation of viruses belonging to Pango lineages B.1.617.2, AY.2, and AY.3, as well as the broad geographic distribution of our specimens, indicate that the infections analyzed here are not associated with any single large outbreak, and that Delta-lineage SARS-CoV-2 can achieve high viral loads consistent with transmissibility in fully vaccinated individuals across a range of exposure settings. Taken



together, these studies indicate that individuals infected with Delta variants despite vaccination have the capacity to transmit infection to others.

Our study has at least three important limitations. First, we have only one specimen from most individuals, and therefore we cannot know the trajectory of viral loads at the time of testing. Indeed, a study of Delta infection dynamics suggests that viral loads decline more rapidly in vaccinated vs. unvaccinated individuals, as one might expect [7]. However, that study also indicates that viral loads in vaccinated and unvaccinated individuals remain similarly high for 5-6 days after illness onset, before declining more rapidly in vaccinated people. In our study, 91% of specimens from symptomatic cases were collected from 0-6 days after illness onset and the timing of tests relative to illness onset did not differ by vaccination status. These observations suggest that the Ct value comparisons in our study are likely not biased by the time of testing. A second limitation is that there may be differences in the populations of vaccinated and unvaccinated persons seeking testing that bias our results. Vaccinated individuals may not perceive a high risk of COVID-19 disease, and may be less likely to seek testing than unvaccinated people. It is difficult to determine from our data whether vaccinated and unvaccinated people experienced symptoms of similar severity. Thus, we cannot determine the extent to which our sampling failed to detect asymptomatic or paucisymptomatic infections. Such mild infections may be more frequent among vaccinated than unvaccinated individuals infected with Delta. Consistent with this, a recent report from England detected a substantially greater proportion of low-positive tests with Ct values between 35 and 40 in vaccinated individuals than in the unvaccinated [6]. Importantly, our study was not designed to estimate the rate of infection despite vaccination, but rather to determine whether individuals infected despite vaccination could have high viral loads consistent with the potential to transmit SARS-CoV-2. Finally, there is inherent variability in PCR Ct values due to specimen variability that can be impacted by collection technique and other variables outside of our control.

The finding of high SARS-CoV-2 viral loads and replication-competent virus in vaccinated individuals has important implications for risk assessment and mitigation. The impact of Delta variants on vaccine effectiveness is currently being evaluated (see, e.g., [10]). Risk disinhibition may lead vaccinated people to increase behaviors that expose them to SARS-CoV-2 infection, and individuals who are infected despite vaccination could serve as sources of onward transmission to others. Vaccinated individuals, particularly those who may have high levels of community or occupational exposure to SARS-CoV-2, should be encouraged to continue frequent testing, especially when symptomatic, to limit community spread. Continued adherence to non-pharmaceutical interventions, such as masking and distancing, will remain important for both vaccinated and unvaccinated individuals because we cannot predict which vaccinated individuals will experience infections with high viral loads. While vaccines continue to provide outstanding protection against severe disease and mortality, the durability of this protection cannot be reliably predicted. Therefore, it is essential for public health policy to encourage vaccination while also planning for contingencies, including diminished long-term protection.

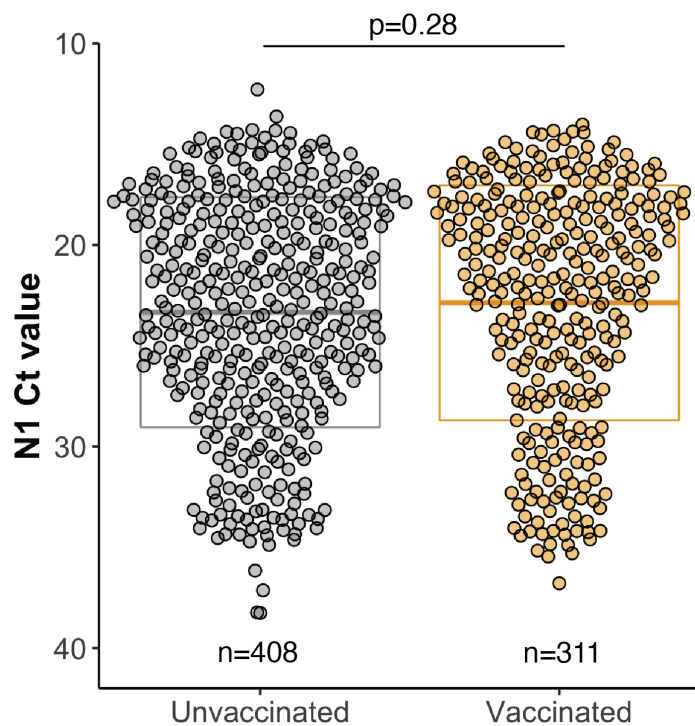


Figure 1. Distributions of SARS-CoV-2 PCR cycle threshold (Ct) values at the time of testing do not differ by vaccination status. N1 PCR Ct values for SARS-CoV-2-positive specimens grouped by vaccination status. Boxplots represent mean N1 Ct values  $\pm$  one standard deviation. P-values were calculated by comparing mean Ct values between the groups by Welch two-sample t-test.

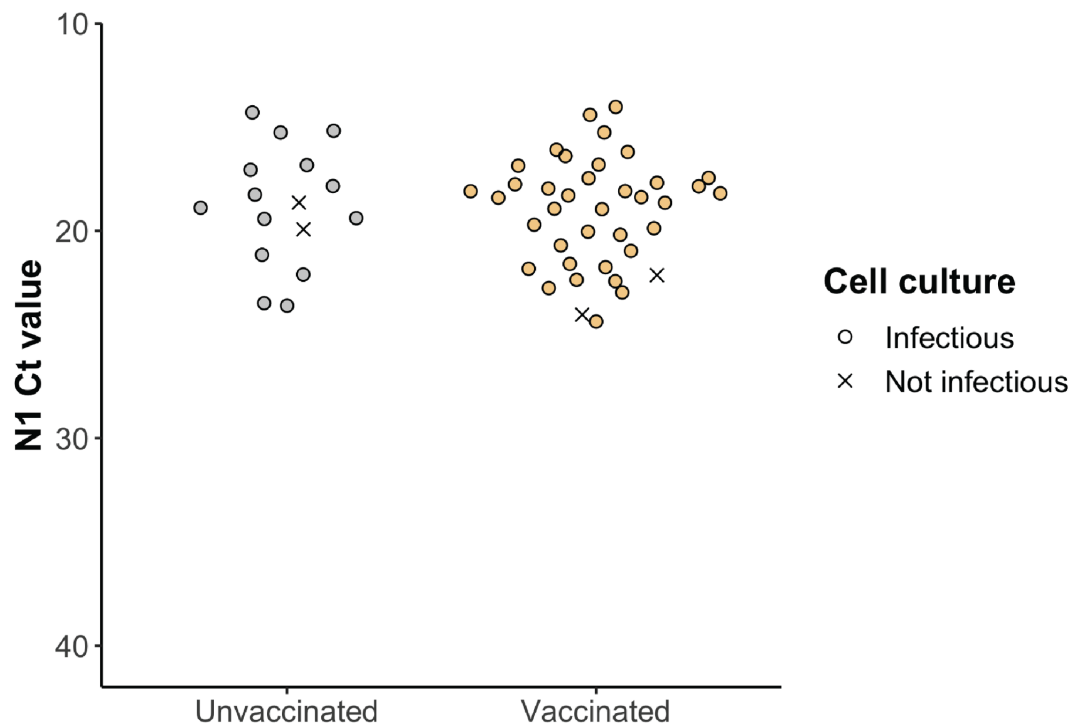


Figure 2. Infectious virus detected in nasal swab specimens from unvaccinated and fully vaccinated cases with Ct values < 25. Infectiousness was determined by the presence of cytopathic effects (CPE) after 5 days of replication in Vero E6 TMPRSS2 cells. Specimens with visually apparent CPE under a light microscope are represented by filled circles, and specimens without apparent CPE are represented by 'X'.

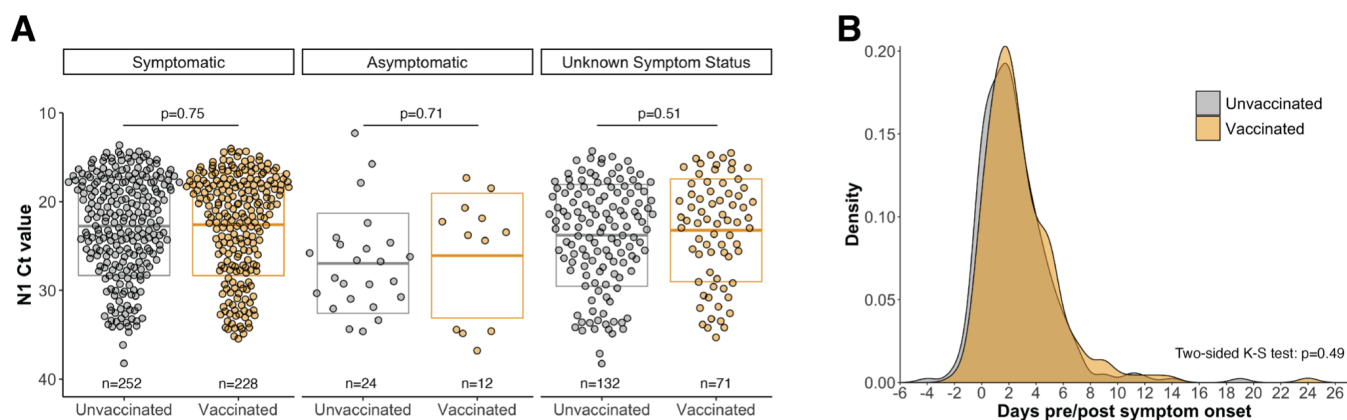


Figure 3. Symptom status does not affect distributions of SARS-CoV-2 PCR cycle threshold (Ct) values at the time of testing in vaccinated vs. unvaccinated persons. A) N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for symptomatic, asymptomatic, and unknown symptom status cases. Boxplots represent mean N1 Ct values  $\pm$  one standard deviation. P-values were calculated by comparing mean Ct values between groups by Welch two-sample t-tests. B) Density distributions of unvaccinated and vaccinated specimen collection dates by day since symptom onset. Day 0 on the x-axis denotes self-reported day of symptom onset. Negative values for days indicate specimen collection prior to symptom onset. Symptom onset data were available for n=249 unvaccinated cases and n=222 vaccinated cases.

# Acknowledgments

We would like to acknowledge the local health departments in Wisconsin who referred samples for SARS-CoV-2 testing. We gratefully acknowledge Shelby O'Connor and Hannah Segaloff for critical review of the manuscript and helpful discussion. We also acknowledge all Exact Sciences employees who contributed to sample testing. This work was supported by Centers for Disease Control and Prevention contracts 75D30120C09870 and 75D30121C11060 to D.H.O and T.C.F. The authors are also members of the Upper Midwest Regional Accelerator for Genomic Surveillance funded by the Rockefeller Foundation.

# Conflict of interest

The authors declare no conflicting interests.

# Ethics statement

Per the University of Wisconsin-Madison IRB, this project qualifies as public health surveillance activities as defined in the Common Rule, 45 CFR 46.102(l)(2). As such, the project is not deemed to be research regulated under the Common Rule and therefore, does not require University of Wisconsin-Madison IRB review and oversight.

# Data availability

Data and processing workflows are available at <https://go.wisc.edu/p22l16>. To protect potentially personally identifiable information, the publicly available dataset contains only PCR Ct values, vaccine status, symptom status, and days from symptom onset to testing for each specimen.

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[https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm?utm\\_source=mp-fotoscapes](https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm?utm_source=mp-fotoscapes)

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**From:** [Grande, Katarina](#)  
**To:** [Thomas Friedrich](#); [DAVID H O"CONNOR](#)  
**Subject:** FW: JAMA21-11227 Receipt of New Manuscript by JAMA  
**Date:** Wednesday, October 20, 2021 1:00:50 PM

---

Is the highlighted part an issue? Perhaps not since you disclosed in the cover letter?

---

**From:** lisa.hardin@jamanetwork.org <lisa.hardin@jamanetwork.org>  
**Sent:** Wednesday, October 20, 2021 12:59 PM  
**To:** Grande, Katarina <KGrande@publichealthmdc.com>  
**Subject:** JAMA21-11227 Receipt of New Manuscript by JAMA

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October 20, 2021

Dear Ms Grande:

Thank you for submitting your research letter, "Shedding of Infectious SARS-CoV-2 Despite Vaccination," received on October 20, 2021, to JAMA. Your research letter has been assigned the following manuscript number: JAMA21-11227. Please refer to the manuscript number and corresponding author in all subsequent communications.

You may check the status of this letter by selecting the Check Manuscript Status link on the following Web page:



Do not share this encrypted link with others, as it will automatically log you into your account for JAMA's Web-based system.

Every effort will be made to review your research letter quickly and to notify you of our decision as soon as possible. All research letters addressing the SARS-CoV-2 outbreak are being automatically prioritized. Please do not contact the editorial office to request expedited review.

We agree to consider your research letter with the understanding that its content, figures, and tables have not been published or submitted elsewhere in print or electronic format and will not be submitted elsewhere during the period of review by JAMA. If you have not already done so, please provide copies of any manuscripts on closely related topics or with possibly duplicative material that have been previously published or are under consideration for publication elsewhere. The information in your letter should not be distributed or released in hard copy or electronic form, except through presentation at scientific meetings, unless and until the letter is published.

Thank you for your interest in JAMA. If you have any questions about your letter please contact [Lisa.Hardin@jamanetwork.org](mailto:Lisa.Hardin@jamanetwork.org) or 312-464-2405.



Sincerely yours,

Jody W. Zylke, MD  
Deputy Editor, JAMA

Lisa Hardin, MBA, MHA  
Editorial Assistant II  
Email: [Lisa.Hardin@jamanetwork.org](mailto:Lisa.Hardin@jamanetwork.org)  
Phone: 312.464.2405  
Fax: 312.464.5989

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<https://ja.ma/JNEditorialProcess>

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**From:** [medicine@us.nature.com](mailto:medicine@us.nature.com)  
**To:** [DAVID H O'CONNOR](#)  
**Subject:** NMED-BC116676 Receipt of New Paper by Nature Medicine  
**Date:** Tuesday, November 2, 2021 2:05:08 PM

---

Dear Dr O'Connor,

Please note that you are listed as a co-author on the manuscript "Shedding of Infectious SARS-CoV-2 Despite Vaccination" (reference number: NMED-BC116676), which was recently submitted to Nature Medicine.

The corresponding author is solely responsible for communicating with the journal and managing communication between co-authors. Please contact the corresponding author directly with any queries you may have related to this manuscript.

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Many thanks,

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Nature Medicine  
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**\*Our flexible approach during the COVID-19 pandemic\***

*If you need more time at any stage of the peer-review process, please do let us know. While our systems will continue to remind you of the original timelines, we aim to be as flexible as possible during the current pandemic.*

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**To:** [DAVID H O'CONNOR](#)  
**Subject:** PLOS Pathogens: Please confirm your authorship - [EMID:a940ee4f0674d1f1]  
**Date:** Thursday, November 11, 2021 4:59:02 PM

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Dear O'Connor,

You are receiving this email because Ms. Katarina M Grande listed you as an author on the manuscript titled "Shedding of Infectious SARS-CoV-2 Despite Vaccination," recently submitted to PLOS Pathogens.

All co-authors MUST confirm their authorship before a manuscript can be accepted for publication.

Click this link to CONFIRM your authorship and/or add your ORCID to this submission now:

The Corresponding Author has entered your name into our online submission system as indicated below. Please ensure your name is entered correctly, as this impacts indexing. If your name is not entered correctly, please confirm your authorship and then email the journal office at [plospathogens@plos.org](mailto:plospathogens@plos.org).

First Name: David  
Middle Name: H.  
Last Name: O'Connor

Alternatively, if you are not aware of this submission, or if you should not be listed as a co-author, then please contact the journal office at [plospathogens@plos.org](mailto:plospathogens@plos.org).

We appreciate your timely response. The abstract follows below, for your reference.

Kind regards,

PLOS Pathogens Staff  
[plospathogens@plos.org](mailto:plospathogens@plos.org)

-----  
Manuscript Title:  
Shedding of Infectious SARS-CoV-2 Despite Vaccination

Article Type:  
Research Article

Authors:  
Katarina Maria Grande; Kasen K. Riemersma; Brittany E. Grogan; Amanda Kita-Yarbro; Peter J. Halfmann; Hannah E. Segaloff; Anna Kocharian; Kelsey R. Florek; Ryan Westergaard; Allen Bateman; Gunnar E. Jeppson; Yoshihiro Kawaoka; David H. O'Connor; Thomas C. Friedrich

Abstract:  
The SARS-CoV-2 Delta variant is highly transmissible and contains mutations that confer partial immune escape. We compared RT-PCR cycle threshold (Ct) data from 699 test-positive anterior nasal swab specimens from fully vaccinated (n = 310) or unvaccinated (n=389) individuals. We observed low Ct values (<25) in 212 of 310 fully vaccinated (68%) and 246 of 389 (63%) unvaccinated individuals. Testing a subset of these low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people. To determine whether infectious virus titers differed in vaccinated and unvaccinated persons, we performed plaque assays on an additional set of 48 samples with Ct <25, finding no difference in infectious virus titer between groups.

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**To:** [DAVID H O'CONNOR](#)  
**Subject:** PLOS Pathogens: Submission confirmation for PPATHOGENS-D-21-02286 - [EMID:afbd2b2acb21bb18]  
**Date:** Thursday, November 11, 2021 4:58:54 PM

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You are being carbon copied ("cc:'d") on an e-mail "To" "Katarina M Grande"  
[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)

CC: "Kasen K. Riemersma" [riemersma@wisc.edu](mailto:riemersma@wisc.edu), "Brittany E. Grogan"  
[bgrogan@publichealthmdc.com](mailto:bgrogan@publichealthmdc.com), "Amanda Kita-Yarbro" [akita@publichealthmdc.com](mailto:akita@publichealthmdc.com), "Peter  
J. Halfmann" [peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu), "Hannah E. Segaloff"  
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[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov), "Allen Bateman" [acbateman@wisc.edu](mailto:acbateman@wisc.edu), "Gunnar E.  
Jeppson" [gjeppson@exactsciences.com](mailto:gjeppson@exactsciences.com), "Yoshihiro Kawaoka" [yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu),  
"David H. O'Connor" [dhoconno@wisc.edu](mailto:dhoconno@wisc.edu), "Thomas C. Friedrich" [tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)

Dear Ms. Grande,

Your submission entitled "Shedding of Infectious SARS-CoV-2 Despite Vaccination" has been received by PLOS Pathogens. You will be able to check on the progress of your paper by logging on to Editorial Manager as an author. The URL is <https://www.editorialmanager.com/ppathogens/>.

Best,

PLOS Pathogens Staff  
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**From:** [Grande, Katarina](#)  
**To:** [DAVID H O'CONNOR](#); [Thomas Friedrich](#)  
**Subject:** RE: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)  
**Date:** Friday, October 22, 2021 2:13:39 PM

---

Haven't heard back yet!

---

**From:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
**Sent:** Friday, October 22, 2021 2:10 PM  
**To:** Thomas Friedrich <tfriedri@wisc.edu>; Grande, Katarina <KGrande@publichealthmdc.com>  
**Subject:** RE: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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Did you hear back from JAMA? If they are a hard no, I like the idea of submitting as-is to PLOS Medicine. Well, we should reformat references to PLOS standards, but otherwise submit as-is.

dave

---

<http://dho.pathology.wisc.edu>

On Oct 22, 2021, 2:03 PM -0500, Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, wrote:

That's a good idea. PLOS Med doesn't get cranky about pre-prints. They also have an article type called '[Perspectives](#),' 1000 word limit/12 ref...could be a decent enough fit. Straightforward cover letter draft attached. Login to submission is via ORCID.

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Friday, October 22, 2021 1:14 PM  
**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** Re: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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PLOS Med as-is, with a cover letter that indicates that we understand it isn't conventional format, but that we think it is the most appropriate one for this type of communication. And maybe something to the effect of "they have a high visibility journal where the contributions of all co-authors can be appropriately recognized"?

<http://dho.pathology.wisc.edu>

On Oct 22, 2021, 12:57 PM -0500, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>, wrote:

I agree it is a lousy and arbitrary policy. I would also be annoyed to be taken off a paper -- a bit still today, although less so than 10 years ago. So I am like 51% in favor of withdrawing, I think.

If we withdraw, where should this go instead?

-T

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Grande, Katarina wrote on 2021-10-22 11:25:

We'll have the same problem with JAMA Open Network it looks like:  
<image.jpg>

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Friday, October 22, 2021 11:21 AM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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I agree with points 1-3. I think we should see if JAMA Open Network does have the same firm limit then question 3 comes into play. If they will consider it with more authors at JAMA Open Network, I agree we have more decisions to balance.

I personally am at a place in my career where I can be easy going about authorships. But I can imagine that me from ten years ago would be really annoyed if a paper that I was involved with got published in a high impact journal but my contribution was rendered invisible.



Plus, it's a lousy policy.

dave

---

<http://dho.pathology.wisc.edu>

On Oct 22, 2021, 11:09 AM -0500, Thomas Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>, wrote:

I think we can also make an argument to limit to the 7 authors we already have. Before we pull the manuscript, I want to consider this more fully.

1. These findings are important and stand a good chance to be accepted in a high-impact journal.
2. I think we have an interest in getting this into a journal with a wide audience given the level of interest in the preprint and the degree to which it has been used by anti-vaxxers.
3. But, the longer we wait, the more the impact of this study will be reduced. Pulling this submission and submitting to another journal will cost us a week or so, as new editors decide whether to send it out.
4. I think we can honestly say that the 7 authors we have currently listed did the most work to generate, analyze, and interpret the data, and also write the manuscript. So we could keep these authors and acknowledge the others.

I am not saying that I am fully swayed by the above points that we should keep the paper at JAMA, but I think we need to carefully weigh these points. It would indeed be a bit uncomfortable to tell people who were authors before that we had to take them off. I think most of them would be more or less okay with it, but some may not.

What do you guys think of this?

-T

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas Friedrich wrote on 2021-10-22 11:02:

Wait -- quick counterpoint to follow

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas Friedrich wrote on 2021-10-22 10:58:

I agree that I would rather not take people off the paper at this stage. Let's ask about JAMA Network Open, but I bet the answer will be the same. So then I would think to take it to Plos Med or similar.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H O'CONNOR wrote on 2021-10-22 10:51:

Kat,

Can you ask whether their lower tier journal ("JAMA Network Open") also has the same restriction? As a matter of principle, I'm against the idea of removing authors from papers where people have made significant contributions. I could be overruled if others strenuously disagree, but my inclination is to say no to JAMA before arbitrarily

limiting authors.

I do know that I end up choosing quirky hills of principle to die on sometimes, though, so if this is one of those times, again, others can overrule.

dave

---

<http://dho.pathology.wisc.edu>

On Oct 22, 2021, 10:45 AM  
-0500, Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>,  
wrote:

They're not budging on our plea  
to extend beyond 7 authors.

Given the state focus, I'm happy  
to cede my spot to a state person  
—could swap one of you to  
corresponding slot and add in  
Anna or Ryan?  
Could look like?

1. Kasen
2. Peter
3. Hannah
4. Yoshi
5. Anna/Ryan
6. Tom
7. Dave

---

**From:**

[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)  
<[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>

**Sent:** Thursday, October 21, 2021  
5:02 PM

**To:** Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** JAMA21-11227  
(Shedding of Infectious SARS-  
CoV-2 Despite Vaccination)

---

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Dear Ms Grande:

Thanks for submitting a research letter to JAMA. The study is interesting and I would be willing to send it for peer review. However, research letters are limited to 7 authors, and we cannot make an exception.

Would you be willing to decrease the number of authors to 7? If not, we will not be able to consider your manuscript.

Sincerely,

Jody W Zylke, MD  
Deputy Editor, JAMA

Email:

[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)

**From:** [Grande, Katarina](#)  
**To:** [DAVID H O'CONNOR](#); [Thomas Friedrich](#)  
**Subject:** RE: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)  
**Date:** Friday, October 22, 2021 2:03:29 PM  
**Attachments:** [Plos Med cover letter.docx](#)

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That's a good idea. PLOS Med doesn't get cranky about pre-prints. They also have an article type called '[Perspectives](#),' 1000 word limit/12 ref...could be a decent enough fit. Straightforward cover letter draft attached. Login to submission is via ORCID.

---

**From:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
**Sent:** Friday, October 22, 2021 1:14 PM  
**To:** Grande, Katarina <KGrande@publichealthmdc.com>; Thomas Friedrich <tfriedri@wisc.edu>  
**Subject:** Re: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

Caution: This email was sent from an external source. Avoid unknown links and attachments.

PLOS Med as-is, with a cover letter that indicates that we understand it isn't conventional format, but that we think it is the most appropriate one for this type of communication. And maybe something to the effect of "they have a high visibility journal where the contributions of all co-authors can be appropriately recognized"?

---

<http://dho.pathology.wisc.edu>

On Oct 22, 2021, 12:57 PM -0500, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>, wrote:

I agree it is a lousy and arbitrary policy. I would also be annoyed to be taken off a paper -- a bit still today, although less so than 10 years ago. So I am like 51% in favor of withdrawing, I think.

If we withdraw, where should this go instead?

-T

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Grande, Katarina wrote on 2021-10-22 11:25:

We'll have the same problem with JAMA Open Network it looks like:  
<image.jpg>

---

**From:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Friday, October 22, 2021 11:21 AM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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I agree with points 1-3. I think we should see if JAMA Open Network does have the same firm limit then question 3 comes into play. If they will consider it with more authors at JAMA Open Network, I agree we have more decisions to balance.

I personally am at a place in my career where I can be easy going about authorships. But I can imagine that me from ten years ago would be really annoyed if a paper that I was involved with got published in a high impact journal but my contribution was rendered invisible.

Plus, it's a lousy policy.

dave

---

<http://dho.pathology.wisc.edu>

On Oct 22, 2021, 11:09 AM -0500, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>, wrote:

I think we can also make an argument to limit to the 7 authors we already have. Before we pull the manuscript, I want to consider this more fully.

1. These findings are important and stand a good chance to be accepted in a high-impact journal.
2. I think we have an interest in getting this into a journal with a wide audience given the level of interest in the preprint and the degree to which it has been used by anti-vaxxers.
3. But, the longer we wait, the more the impact of this study will be reduced. Pulling this submission and submitting to another journal will cost us a week or so, as new editors decide whether to send it out.

4. I think we can honestly say that the 7 authors we have currently listed did the most work to generate, analyze, and interpret the data, and also write the manuscript. So we could keep these authors and acknowledge the others.

I am not saying that I am fully swayed by the above points that we should keep the paper at JAMA, but I think we need to carefully weigh these points. It would indeed be a bit uncomfortable to tell people who were authors before that we had to take them off. I think most of them would be more or less okay with it, but some may not.

What do you guys think of this?

-T

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas Friedrich wrote on 2021-10-22 11:02:

Wait -- quick counterpoint to follow

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas Friedrich wrote on 2021-10-22 10:58:

I agree that I would rather not take people off the paper at this stage. Let's ask about JAMA Network Open, but I bet the answer will be the same. So then I would think to take it to Plos Med or similar.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H O'CONNOR wrote on 2021-10-22  
10:51:

Kat,

Can you ask whether their lower tier journal (“JAMA Network Open”) also has the same restriction? As a matter of principle, I’m against the idea of removing authors from papers where people have made significant contributions. I could be overruled if others strenuously disagree, but my inclination is to say no to JAMA before arbitrarily limiting authors.

I do know that I end up choosing quirky hills of principle to die on sometimes, though, so if this is one of those times, again, others can overrule.

dave

—  
<http://dho.pathology.wisc.edu>

On Oct 22, 2021, 10:45 AM -0500,  
Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>,  
wrote:

They’re not budging on our plea to extend beyond 7 authors.

Given the state focus, I’m happy to cede my spot to a state person— could swap one of you to corresponding slot and add in Anna or Ryan?



Could look like?

1. Kasen
2. Peter
3. Hannah
4. Yoshi
5. Anna/Ryan
6. Tom
7. Dave

---

**From:** [Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)

[<Jody.Zylke@jamanetwork.org>](mailto:Jody.Zylke@jamanetwork.org)

**Sent:** Thursday, October 21, 2021  
5:02 PM

**To:** Grande, Katarina

[<KGrande@publichealthmdc.com>](mailto:KGrande@publichealthmdc.com)

**Subject:** JAMA21-11227 (Shedding of  
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Dear Ms Grande:

Thanks for submitting a research  
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to send it for peer review.  
However, research letters are  
limited to 7 authors, and we  
cannot make an exception.

Would you be willing to decrease  
the number of authors to 7? If not,  
we will not be able to consider  
your manuscript.

Sincerely,

Jody W Zylke, MD  
Deputy Editor, JAMA

Email:

[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)

|

|

**From:** [Grande, Katarina](#)  
**To:** [Thomas Friedrich](#); [DAVID H O'CONNOR](#)  
**Subject:** RE: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)  
**Date:** Monday, October 25, 2021 9:20:46 AM  
**Attachments:** [image001.png](#)

---

Agree! And I scanned the authorship section and didn't see any immediate red flags. Let's go here. I can tell JAMA goodbye and cc you all.

---

**From:** Thomas Friedrich <tfriedri@wisc.edu>  
**Sent:** Monday, October 25, 2021 9:20 AM  
**To:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
**Cc:** Grande, Katarina <KGrande@publichealthmdc.com>  
**Subject:** Re: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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I think a Nat Med Brief Communication would require minimal reformatting:

## Brief Communication

A Brief Communication is a format intended for reporting of timely new results that, while limited in scope, are of substantial clinical or public health importance, and that therefore need to be quickly vetted and shared. Brief Communications begin with a unreferenced abstract (150 words) followed by the main text (a single section containing introduction, results and discussion). The main text can be up to 2000 words and contains no headings. Brief Communications can have 2 display items. Brief Communications include an online Methods section. As a guideline, Brief Communications allow up to 20 references. Additional 20 references can be included in the online Methods section.

Brief Communications are always peer reviewed and include received/accepted dates. They may be accompanied by supplementary information.

Thomas Friedrich

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Either one is fine with me, though I'd really like to submit as-is without a lengthy reformatting/modification. I'm happy to do this after we get some traction if requested by editors/reviewers, I just don't want to invest the time only to have another desk rejection.

dave

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Dave O'Connor | UW Medical Foundation Professor  
[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu) | ☎ +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

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-T

Thomas Friedrich

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@tcfriedrich  
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[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas Friedrich wrote on 2021-10-25 09:06:

Is PLOS Med format-neutral?

I know we looked at Lancet, but before we officially go to PLOS Med, is there any other high-impact journal we might want to consider?

Thomas Friedrich

Professor

Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H O'CONNOR wrote on 2021-10-25 08:46:

OK, Kat, can you please officially withdraw the paper from consideration at JAMA and we can revise the cover letter for PLOS? Unless you or Tom feel otherwise, I think we should submit as-is to PLOS Med.

dave

---

Dave O'Connor | UW Medical Foundation Professor  
[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu) | ☎ +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

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On Oct 25, 2021, 8:05 AM -0500, Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, wrote:

Off to PLOS we go!

---

**From:** Jody Zylke <[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>  
**Sent:** Saturday, October 23, 2021 5:11 AM  
**To:** Grande, Katarina  
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**Subject:** RE: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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Yes, all the JAMA Network journals have the same policies.

Jody

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**To:** Jody Zylke <[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>  
**Cc:** 'DAVID H O'CONNOR' <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>;  
Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** RE: JAMA21-11227 (Shedding of Infectious  
SARS-CoV-2 Despite Vaccination)

[Warning External Email]

Thanks for your response, Dr. Zylke. We're struggling with this since this endeavor was such a massive collaborative effort! Does JAMA Open Network have the same 7 author limit for a Research Letter submission?  
Thanks again for your time!

-Katarina

**KATARINA GRANDE, MPH** (pronouns:  
she/her/hers)  
**Public Health Supervisor/COVID-19 Data Team Lead**  
| [Public Health Madison & Dane County](#)  
2300 South Park St, Rm 2010, Madison, WI 53713  
Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608)  
266-4858

*Healthy People. Healthy Places.*



This email, including any attachments, may contain confidential or protected health information which is only for the intended recipient. If you received this email in error, please delete and notify the sender immediately. Emails sent or received by our agency are subject to open records requests and could be released to the public, unless there is an exception allowed by law.

<image002.png>

---

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Dear Ms Grande:

Thanks for submitting a research letter to JAMA. The study is interesting and I would be willing to send it for peer review. However, research letters are limited to 7 authors, and we cannot make an exception.

Would you be willing to decrease the number of authors to 7? If not, we will not be able to consider your manuscript.

Sincerely,

Jody W Zylke, MD  
Deputy Editor, JAMA  
Email: [Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)

**From:** [DAVID H O'CONNOR](#)  
**To:** [Thomas Friedrich](#); [Grande, Katarina](#)  
**Subject:** RE: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)  
**Date:** Monday, October 25, 2021 6:25:04 PM  
**Attachments:** [image001.png](#)

---

Yep!

dave

---

Dave O'Connor | UW Medical Foundation Professor  
dhoconno@wisc.edu | +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

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On Oct 25, 2021, 5:49 PM -0500, Grande, Katarina <KGrande@publichealthmdc.com>, wrote:

Sorry, got pulled in to infinite meetings today! Will try to highlight a few papers tomorrow—didn't Gage's group post one last week finding transmission indeed occurring from vax'ed in Provincetown?

---

**From:** Thomas Friedrich <tfriedri@wisc.edu>  
**Sent:** Monday, October 25, 2021 9:25 AM  
**To:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
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Just because it can be 2000 words doesn't mean it needs to have 2000 words.

Exactly.

We will want to edit the abstract you had in the medrxiv version, because IIRC it just repeats a lot of the language in the paper itself.

We should also add a sentence or two to the discussion so we can cite a few more recent papers. Kat, could you possibly take a stab at that? You could even just suggest a few talking points that we could wordsmith collaboratively.



Dave, should we still edit the SharePoint version?

-T

Thomas Friedrich

Professor  
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@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H O'CONNOR wrote on 2021-10-25 09:22:

Alrighty. Just because it can be 2000 words doesn't mean it needs to have 2000 words.

If you look at the Medrxiv version, I had to create an abstract or else they don't accept the submission, so we can use that as a start. I'm on this WHO webinar all morning but could help later.

dave

—

Dave O'Connor | UW Medical Foundation Professor

[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu) | ☎ +1 [REDACTED]

<http://dho.pathology.wisc.edu>

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On Oct 25, 2021, 9:19 AM -0500, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>, wrote:

|

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Thanks again for your time!

-Katarina

**KATARINA GRANDE, MPH**  
(pronouns: she/her/hers)

**Public Health Supervisor/COVID-19  
Data Team Lead** | [Public Health  
Madison & Dane County](#)

2300 South Park St, Rm 2010,  
Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED]  
[REDACTED] | Fax: (608) 266-4858

*Healthy People. Healthy Places.*



This email, including any attachments, may contain confidential or protected health information which is only for the intended recipient. If you received this email in error, please delete and notify the sender immediately. Emails

sent or received by our agency are subject to open records requests and could be released to the public, unless there is an exception allowed by law.

<image002.png>

---

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**To:** [DAVID H O'CONNOR](#); [Thomas Friedrich](#)  
**Subject:** RE: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)  
**Date:** Friday, October 22, 2021 11:42:34 AM

---

Sure, can do and will cc you all.

---

**From:** DAVID H O'CONNOR <dhoconno@wisc.edu>  
**Sent:** Friday, October 22, 2021 11:39 AM  
**To:** Thomas Friedrich <tfriedri@wisc.edu>; Grande, Katarina <KGrande@publichealthmdc.com>  
**Subject:** RE: FW: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

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It says that, but does it mean that? Can you ask the editor via email to double-check, just so that we are sure? It will also have the beneficial effect of saying that we are willing to go somewhere besides JAMA with this paper if push comes to shove.

dave

—  
<http://dho.pathology.wisc.edu>

On Oct 22, 2021, 11:25 AM -0500, Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, wrote:

We'll have the same problem with JAMA Open Network it looks like:  
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Plus, it's a lousy policy.

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3. But, the longer we wait, the more the impact of this study will be reduced. Pulling this submission and submitting to another journal will cost us a week or so, as new editors decide whether to send it out.
4. I think we can honestly say that the 7 authors we have currently listed did the most work to generate, analyze, and interpret the data, and also write the manuscript. So we could keep these authors and acknowledge the others.

I am not saying that I am fully swayed by the above points that we should keep the paper at JAMA, but I think we need to carefully weigh these points. It would indeed be a bit uncomfortable to tell people who were authors before that we had to take them off. I think most of them would be more or less okay with it, but some may not.

What do you guys think of this?

-T

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas Friedrich wrote on 2021-10-22 11:02:

Wait -- quick counterpoint to follow

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas Friedrich wrote on 2021-10-22 10:58:

I agree that I would rather not take people off the paper at this stage. Let's ask about JAMA Network Open, but I bet the answer will be the same. So then I would think to take it to Plos Med or similar.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H O'CONNOR wrote on 2021-10-22 10:51:

Kat,

Can you ask whether their lower tier journal ("JAMA Network Open") also has the same restriction? As a matter of principle, I'm against the idea of removing authors from papers where people have made significant contributions. I could be overruled if others strenuously disagree, but my inclination is to say no to JAMA before arbitrarily limiting authors.

I do know that I end up choosing quirky hills of principle to die on sometimes, though, so if this is one of those times, again, others can overrule.

dave

—  
<http://dho.pathology.wisc.edu>

On Oct 22, 2021, 10:45 AM -0500, Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, wrote:

They're not budging on our plea to extend beyond 7 authors.

Given the state focus, I'm happy to cede my spot to a state person—could swap one of you to corresponding slot and add in Anna or Ryan? Could look like?

1. Kasen
2. Peter
3. Hannah
4. Yoshi
5. Anna/Ryan
6. Tom
7. Dave

---

**From:** [Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)  
<[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>

**Sent:** Thursday, October 21, 2021 5:02 PM

**To:** Grande, Katarina

<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

Caution: This email was sent from an external source.  
Avoid unknown links and attachments.

Dear Ms Grande:

Thanks for submitting a research letter to JAMA. The study is interesting and I would be willing to send it for peer review. However, research letters are limited to 7 authors, and we cannot make an exception.

Would you be willing to decrease the number of authors to 7? If not, we will not be able to consider your manuscript.

Sincerely,

Jody W Zylke, MD  
Deputy Editor, JAMA  
Email: [Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)

**From:** [Grande, Katarina](#)  
**To:** ["Chris Miller"](#)  
**Cc:** [Gilly Regev](#); [DAVID H O"CONNOR](#)  
**Subject:** RE: Interesting Article Collaboration?  
**Date:** Wednesday, August 25, 2021 2:01:22 PM  
**Attachments:** [image002.png](#)  
[image003.png](#)

---

Hi Dr. Miller,

Thanks for your interest and inquiry. We are not interested at this time, but wish you the best on your research endeavor!

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

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**There's strength in numbers.**  
**Join me! #GetVaccinated**

**From:** Chris Miller <[chris@sanotize.com](mailto:chris@sanotize.com)>  
**Sent:** Tuesday, August 24, 2021 7:26 PM  
**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Cc:** Gilly Regev <[gilly@sanotize.com](mailto:gilly@sanotize.com)>  
**Subject:** Interesting Article Collaboration?

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Hello Dr Grande,

We read your pre-print article entitled "Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021" with interest. We have developed a nitric oxide based nasal spray (NONS) and currently in Phase III clinical trials. We believe we can make an impact on mild infection and prevention of COVID-19 regardless of the variant of concern. We have shown in a Phase II trial in the UK that NONS

IR#0682H\_000398

reduces the viral load significantly during the first 24 -72hours.

With the new data emerging and as your article adeptly demonstrates, fully vaccinated, healthy individuals can be highly infectious.

We would be interested to rapidly conduct a study to test our hypothesis that NONS can rapidly reduce the SARS-CoV-2 viral load to below infectious levels.

Would you be interested in being the PI and site for this study?

If so, what might this look like from your perspective from a timing and budget perspective?

As you know COVID waits for no one, so your candid response is appreciated.

Thanks,

Chris

--

Chris Miller, Ph.D.

Co-founder / CSO

[www.saNOtize.com](http://www.saNOtize.com)

8755 Ash St., Suite #1

Vancouver, BC V6P-6T3

Canada

Phone: 778-899-0607

email: [chris@sanotize.com](mailto:chris@sanotize.com)

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**From:** [Grande, Katarina](#)  
**To:** [Thomas Friedrich](#)  
**Cc:** [DAVID H O"CONNOR](#)  
**Subject:** RE: JAMA cover letter  
**Date:** Tuesday, October 19, 2021 10:17:00 AM  
**Attachments:** [JAMA cover letter1.pdf](#)

---

I like that. New letter attached!

---

**From:** Thomas Friedrich <tfriedri@wisc.edu>  
**Sent:** Tuesday, October 19, 2021 8:41 AM  
**To:** Grande, Katarina <KGrande@publichealthmdc.com>  
**Cc:** Dave O'Connor <dhoconno@wisc.edu>  
**Subject:** Re: JAMA cover letter

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Hey Kat.

Thanks for sending this through. I discussed the author issue briefly with Dave. How about this. Let's say in the cover letter that this work required coordination and analysis of lots of complex data and therefore more than 7 people contributed to these findings. We will leave the author list as-is in the submission and say we wish for all authors to be credited. I drafted a new paragraph in the cover letter Google Doc to reflect this.

Could you take a quick look, and if it looks good to you, sign that one on letterhead?

Meanwhile, I have cued up the submission with the following authors in the form:

1. Kasen
2. Peter
3. Hannah
4. Yoshi
5. Dave
6. Me
7. You

How does that sound?

-T

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)



Grande, Katarina wrote on 2021-10-19 08:06:

PDF'ed letter is attached!

7 authors, oh geez. It's a state-wide analysis, so it feels weird to boot out state folks. And the novel part is all about the plaque assays, so it feels weird to boot out the lab folks...

For sure:

Kasen

Dave

Tom

Probably:

Hannah

Peter

Yoshihiro

Maybe:

Kat

Brittany

Served in a consultant role:

Amanda

Anna

Ryan

Allen

Gunnar

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Sent:** Monday, October 18, 2021 10:34 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Cc:** Dave O'Connor <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>

**Subject:** Re: JAMA cover letter

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Also, the system only allows me to enter info for 7 authors. We have a total of 14. What to do?

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Thomas Friedrich wrote on 2021-10-18 22:27:

Hi Kat.

So, turns out JAMA requires a full-on cover letter, even for Research Letters.

I've drafted one for you [here](#). Could you please edit as you see fit, add your contact info including preferred email, phone, and physical address, and then put it on letterhead and return it to me?

Thanks!

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

219 October 2021

Dear JAMA editors,

Please consider our article, "Shedding of Infectious SARS-CoV-2 Despite Vaccination," as a Research Letter for publication in JAMA. Our study of nasal swab specimens collected from individuals with community-acquired infections in Wisconsin shows that, at a time of high prevalence of the Delta variant, people infected with SARS-CoV-2 despite being fully vaccinated had levels of viral RNA and of infectious SARS-CoV-2 in nasal secretions that were indistinguishable from those present in unvaccinated individuals. Our study is valuable to JAMA readers because it directly compares infectious virus loads in vaccinated and unvaccinated individuals, demonstrating the potential for those infected despite vaccination to transmit virus to others. Thus, our data help support recommendations that vaccinated individuals continue to practice SARS-CoV-2 risk mitigation and seek booster vaccinations that reduce the risk of infection.

Our study has been posted to medrxiv, but has not been published in a peer-reviewed journal. The medrxiv link is: <https://www.medrxiv.org/content/10.1101/2021.07.31.21261387v5>

Finally, please note that our manuscript includes 14 authors. We understand that Research Letters are typically limited to 7 authors, and we have listed 7 authors in the online form. However, because this study involved data sharing and analysis across state and local public health agencies in addition to laboratory studies, each of the 14 individuals listed as authors in the manuscript file made contributions to this study that fit the definition of authorship. We therefore ask you to list all authors as shown in the manuscript if this paper should be accepted for publication at JAMA or a sister journal.

Thank you for your consideration of our manuscript.

Sincerely,



Katarina Grande

Phone: [REDACTED]

2300 South Park Street, Room 2010

Madison, WI 53713

**From:** [Lisa Hardin](#)  
**To:** [Grande, Katarina](#)  
**Cc:** [Thomas Friedrich](#); [DAVID H O"CONNOR](#)  
**Subject:** RE: JAMA21-11227 Receipt of New Manuscript by JAMA  
**Date:** Wednesday, October 20, 2021 3:48:10 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)

---

Hello,

You are very welcome.

Lisa

---

**From:** Grande, Katarina <KGrande@publichealthmdc.com>  
**Sent:** Wednesday, October 20, 2021 3:09 PM  
**To:** Lisa Hardin <Lisa.Hardin@jamanetwork.org>  
**Cc:** 'Thomas Friedrich' <tfriedri@wisc.edu>; Dave O'Connor <dhoconno@wisc.edu>  
**Subject:** RE: JAMA21-11227 Receipt of New Manuscript by JAMA

[Warning External Email]

[Thank you for the confirmation of receipt, Lisa!](#)

Per our cover letter, "Our study has been posted to medrxiv, but has not been published in a peer-reviewed journal. The medrxiv link is:  
<https://www.medrxiv.org/content/10.1101/2021.07.31.21261387v5>" Hopefully that addresses the note regarding publication elsewhere.

Thanks again for your time.

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

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IR#0682H\_000404



**From:** [lisa.hardin@jamanetwork.org](mailto:lisa.hardin@jamanetwork.org) <[lisa.hardin@jamanetwork.org](mailto:lisa.hardin@jamanetwork.org)>

**Sent:** Wednesday, October 20, 2021 12:59 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** JAMA21-11227 Receipt of New Manuscript by JAMA

Caution: This email was sent from an external source. Avoid unknown links and attachments.

October 20, 2021

Dear Ms Grande:

Thank you for submitting your research letter, "Shedding of Infectious SARS-CoV-2 Despite Vaccination," received on October 20, 2021, to JAMA. Your research letter has been assigned the following manuscript number: JAMA21-11227. Please refer to the manuscript number and corresponding author in all subsequent communications.

You may check the status of this letter by selecting the Check Manuscript Status link on the following Web page:



Do not share this encrypted link with others, as it will automatically log you into your account for JAMA's Web-based system.

Every effort will be made to review your research letter quickly and to notify you of our decision as soon as possible. All research letters addressing the SARS-CoV-2 outbreak are being automatically prioritized. Please do not contact the editorial office to request expedited review.

We agree to consider your research letter with the understanding that its content, figures, and tables have not been published or submitted elsewhere in print or electronic format and will not be submitted elsewhere during the period of review by JAMA. If you have not already done so, please provide copies of any manuscripts on closely related topics or with possibly duplicative material that have been previously published or are under consideration for publication elsewhere. The information in your letter should not be distributed or released in hard copy or electronic form, except through presentation at scientific meetings, unless and until the letter is published.

Thank you for your interest in JAMA. If you have any questions about your letter please contact [Lisa.Hardin@jamanetwork.org](mailto:Lisa.Hardin@jamanetwork.org) or 312-464-2405.

Sincerely yours,

Jody W. Zylke, MD  
Deputy Editor, JAMA

Lisa Hardin, MBA, MHA  
Editorial Assistant II  
Email: [Lisa.Hardin@jamanetwork.org](mailto:Lisa.Hardin@jamanetwork.org)  
Phone: 312.464.2405  
Fax: 312.464.5989

Access the following link to view a short video on the JAMA Network editorial process:

<https://ja.ma/JNEditorialProcess>

Confidentiality Note: This communication, including any attachments, is solely for the use of the addressee, may contain privileged, confidential or proprietary information, and may not be redistributed in any way without the sender's consent. Thank you.

**From:** [Grande, Katarina](#)  
**To:** [DAVID H O'CONNOR](#)  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Monday, August 23, 2021 1:30:32 PM

---

Username: [REDACTED]

Password: [REDACTED]

---

**From:** Dave O'Connor <dhoconno@wisc.edu>  
**Sent:** Monday, August 23, 2021 1:19 PM  
**To:** Grande, Katarina <KGrande@publichealthmdc.com>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Hi Kat,

Do you have login credentials for NEJM? I thought Tom said he shared them with both of us but I can't find them.

Thanks,

dave

Grande, Katarina wrote on 8/23/21 12:06 PM:

Thanks, Hannah!

Dave, you have everything you need to submit to the portal? I can lend a hand if you need anything.

-Kat

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday, August 23, 2021 11:53 AM  
**To:** Kasen Riemersma <[kriemersma@wisc.edu](mailto:kriemersma@wisc.edu)>; Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** FW: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Hi all,

IR#0682H\_000407

We are cleared! There are some extremely tiny comments to incorporate/consider. Once we submit they just want me to send a final copy for their records. Note that I made two additional small changes (added "qualitative in two places and deleted one word to keep it in the word count) without sending it back to facilitate quick review- so you may want to upload this version.

Thanks for your patience with this painful process!

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Monday, August 23, 2021 11:47 AM  
**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah:

The attached document has been cleared by JIC with comments.

**Once you have addressed the reviewer's feedback, please send us a clean and final document, so we can provide it to JIC for their records.**

**JIC OS Content Comment.**

- **Very informative study. It is approved with minor comments, see attached**

Thanks,

Audrey



CDC IMS 2019-nCoV Lab Task Force Clearance

[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

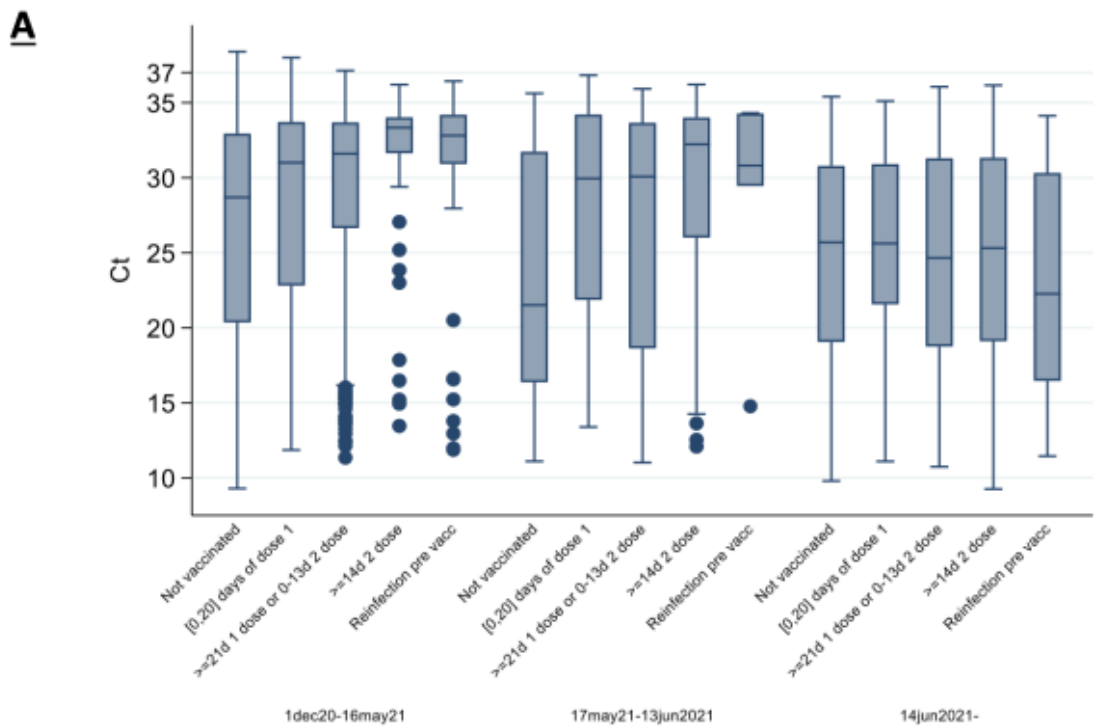
Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

**From:** [Dave O'Connor](#)  
**To:** [Grande, Katarina](#)  
**Cc:** [Kasen Riemersma](#); [Thomas Friedrich](#)  
**Subject:** Re: A question regarding your paper  
**Date:** Wednesday, August 25, 2021 2:17:03 PM  
**Attachments:** [image.png](#)

---

Hi Kat,

No, I don't think that data gets captured in the analysis. Though the UK study I shared earlier showed a \*lower\* Ct in people who were reinfected than in those who were vaccinated, in line with the idea that vaccines provide better immunity than natural infection.



Grande, Katarina wrote on 8/25/21 1:58 PM:

We don't have these data/didn't look at this—anything additional to add in a response to Jon, team?

---

**From:** Jon Poling [jjpoling@athensneuro.com](mailto:jjpoling@athensneuro.com)  
**Sent:** Wednesday, August 25, 2021 12:43 PM  
**To:** Grande, Katarina [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)  
**Subject:** A question regarding your paper  
**Importance:** High

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Dr. Grande,

IR#0682H\_000410

I read with interest your manuscript entitled--Shedding of Infectious SARS-CoV-2 Despite Vaccination. Do you have data on shedding of infectious SARS COV2 in patients who have recovered from prior ancestral COVID19? In other words, does natural mucosal immunity provide better protection against transmissible virus in this wave of Delta or other VOCs? Thank-you in advance for your attention to my question.

Regards,

Jon S. Poling MD/PhD

Department Chair of Neurology/Neurosurgery, Piedmont ARMC Hospital

Clinical Asst Professor AU/GRU School of Medicine

Athens Neurological Assoc. PC

Board Certified in Neurology, Neuromuscular Medicine, and Neuroimaging

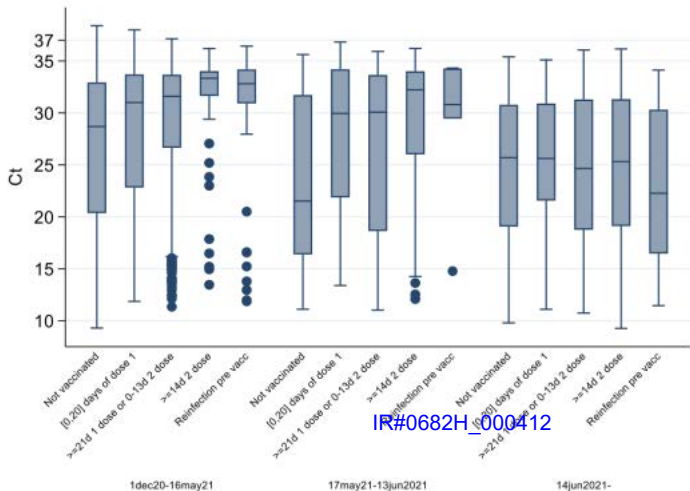
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**A**

**From:** [Dave O'Connor](#)  
**To:** [Thomas Friedrich](#)  
**Cc:** [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com); [Kasen Riemersma](#)  
**Subject:** Re: FW: Cov-2 in vaccinated infectious?  
**Date:** Thursday, September 16, 2021 11:30:28 AM

---

Me neither - guess he only wrote Kat.

d

Thomas Friedrich wrote on 9/16/21 9:54 AM:

[REDACTED]

Did anyone respond to Mr. Neeper? I never saw that email before Kat's forward yesterday.

-T

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Dave O'Connor wrote on 2021-09-15 17:02:

[REDACTED]

[REDACTED]

dave

[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com) wrote on 9/15/21 4:55 PM:

Did this email/question get bounced to you all?

[REDACTED]

-Kat

---

**From:** Michael Neeper <[REDACTED]>  
**Sent:** Wednesday, September 8, 2021 9:31 AM  
**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Cov-2 in vaccinated infectious?

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Hi Dr. Grande,  
In your below-listed article, you state that infectious Cov-2 virus levels were detected in both vaccinated and unvaccinated individuals at similar levels, but the only data presented was that of RT-PCR, which does not reflect infectious virus. Can you show me where I might find data indicating the virus was infectious? How was this determined if these studies were performed?  
I am a retired molecular biologist just trying to understand what is going on regarding Covid, not trying to criticize, so please let me know of any evidence that vaccinated individuals carry high levels of infectious virus. Even if it is the publication of others.  
I am mystified how this virus can be producing infectious particles in the presence of neutralizing antibodies.  
Thank you,  
Michael Neeper  
[REDACTED]

## **Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021**

--  
<http://dho.pathology.wisc.edu>  
[@dho](mailto:@dho) • 608-890-0845

**From:** [Dave O'Connor](#)  
**To:** [Grande, Katarina](#)  
**Cc:** [Kasen Riemersma](#); [Thomas Friedrich](#)  
**Subject:** Re: FW: Interesting Article Collaboration?  
**Date:** Wednesday, August 25, 2021 9:08:37 AM

---

Nope from me too. And I'm guessing that Tom would say the same.

dave

Grande, Katarina wrote on 8/25/21 8:06 AM:

A no from me, but passing along in case of interest!

**From:** Chris Miller [<chris@sanotize.com>](mailto:chris@sanotize.com)  
**Sent:** Tuesday, August 24, 2021 7:26 PM  
**To:** Grande, Katarina [<KGrande@publichealthmdc.com>](mailto:KGrande@publichealthmdc.com)  
**Cc:** Gilly Regev [<gilly@sanotize.com>](mailto:gilly@sanotize.com)  
**Subject:** Interesting Article Collaboration?

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Hello Dr Grande,

We read your pre-print article entitled "Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021" with interest.

We have developed a nitric oxide based nasal spray (NONS) and currently in Phase III clinical trials. We believe we can make an impact on mild infection and prevention of COVID-19 regardless of the variant of concern. We have shown in a Phase II trial in the UK that NONS reduces the viral load significantly during the first 24 -72hours.

With the new data emerging and as your article adeptly demonstrates, fully vaccinated, healthy individuals can be highly infectious.

We would be interested to rapidly conduct a study to test our hypothesis that NONS can rapidly reduce the SARS-CoV-2 viral load to below infectious levels. Would you be interested in being the PI and site for this study?

If so, what might this look like from your perspective from a timing and budget perspective? As you know COVID waits for no one, so your candid response is appreciated.

Thanks,  
Chris

--

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Co-founder / CSO  
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**From:** [Dave O'Connor](#)  
**To:** [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)  
**Cc:** [YOSHIHIRO KAWAOKA](#); [Peter Halfmann](#); [Thomas Friedrich](#)  
**Subject:** Re: FW: Preprint: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021  
**Date:** Monday, August 16, 2021 8:41:32 AM  
**Attachments:** [image.png](#)  
[image.png](#)

---

Hi Kat,

I already responded to him yesterday!

dave

[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com) wrote on 8/16/21 8:37 AM:

Hi Yoshi and Peter,  
Would you please response to Daniel when you have a moment? I believe the answer to the question is "nope, no real time monitoring or quantification as of now, but it is something we're working on." But in case Daniel has more technical questions, best if you answer. Thanks!

-Kat

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

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**There's strength in numbers.**  
**Join me! #GetVaccinated**

---

**From:** Griffin, Daniel [<dg2810@cumc.columbia.edu>](mailto:dg2810@cumc.columbia.edu)

**Sent:** Saturday, August 14, 2021 9:44 PM

**To:** Grande, Katarina [<KGrande@publichealthmdc.com>](mailto:KGrande@publichealthmdc.com)

**Subject:** Preprint: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the

IR#0682H\_000417

Delta Variant is Prevalent - Wisconsin, July 2021

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Dr Grande,

I hope this email finds you well. I was hoping to ask a few questions about the preprint **Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021.**

You report "Infectious SARS-CoV-2 was isolated from 14 of 16 specimens (88%) from unvaccinated individuals and 37 of 39 specimens (95%) from vaccinated people."

In figure 2 According to figure 2 Infectiousness was determined by the presence of cytopathic effects (CPE) after 5 days of replication in Vero E6 TMPRSS2 cells with visually apparent CPE under a light microscope. Any real time monitoring or quantification?

Sincerely,

Daniel Griffin, MD PhD CTropMed CTH  
Chief, Division of Infectious Disease - ProHEALTH, an OPTUM Company  
Senior Fellow for Infectious Disease - UHG Research and Development  
Clinical Instructor of Medicine - Columbia University College of Physicians and Surgeons  
Department of Medicine-Division of Infectious Diseases  
President -Parasites Without Borders  
1 Dakota Drive Suite 205  
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Office Tel: (516)-656-6500  
Cell: [REDACTED]  
Email: [REDACTED]  
[www.parasiteswithoutborders.com](http://www.parasiteswithoutborders.com)  
[www.microbe.tv](http://www.microbe.tv)  
Twitter @DanielGriffinMD

--

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**From:** [Dave O'Connor](#)  
**To:** [Segaloff, Hannah E - DHS](#)  
**Cc:** [Kasen Riemersma](#); [Katarina Grande](#); [Thomas Friedrich](#)  
**Subject:** Re: FW: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Monday, August 23, 2021 1:25:37 PM

---

Hi Hannah,

Thanks much - I'll upload as soon as I get the login credentials from Kat (or Tom, if he happens to be eavesdropping from up north).

dave

Segaloff, Hannah E - DHS wrote on 8/23/21 11:52 AM:

Hi all,

We are cleared! There are some extremely tiny comments to incorporate/consider. Once we submit they just want me to send a final copy for their records. Note that I made two additional small changes (added "qualitative in two places and deleted one word to keep it in the word count) without sending it back to facilitate quick review- so you may want to upload this version.

Thanks for your patience with this painful process!

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance [<eocevent216@cdc.gov>](mailto:eocevent216@cdc.gov)  
**Sent:** Monday, August 23, 2021 11:47 AM  
**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) [<qdz0@cdc.gov>](mailto:qdz0@cdc.gov)  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance [<eocevent216@cdc.gov>](mailto:eocevent216@cdc.gov)  
**Subject:** Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah:

The attached document has been cleared by JIC with comments.

**Once you have addressed the reviewer's feedback, please send us a clean and final document, so we can provide it to JIC for their records.**

**JIC OS Content Comment.**

- **Very informative study. It is approved with minor comments, see attached**

Thanks,

Audrey

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

**From:** [Dave O'Connor](#)  
**To:** [REDACTED]  
**Cc:** [Goldberg, Rachel](#); [Grande, Katarina](#)  
**Subject:** Re: Introducing your school K-12 COVID-19 Testing Program Vendor  
**Date:** Tuesday, August 10, 2021 5:51:32 PM  
**Attachments:** [Viral loads in vaccinees\\_Medrxiv 10 Aug 2021-3.pdf](#)

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Rachel,

Here is the preprint we chatted about earlier. Again, I suggest asking Kat for more details about the symptoms and testing and such. It should be online tomorrow morning, so showing some of this data in your Thursday meeting should be fine.

dave

[REDACTED] wrote on 8/10/21 5:07 PM:

Ok, new thought. The ESSER II program: <https://dpi.wi.gov/crrsaa/esser-ii>

Can we apply to that if we want to do a Dane County program?

Sorry, just thinking out loud here.

shelby

On Aug 10, 2021, at 4:56 PM, SHELBY L O'CONNOR <[slfeinberg@wisc.edu](mailto:slfeinberg@wisc.edu)> wrote:

Hi Rachel —

I was talking to Andy over at EAGLE today and he mentioned to me that they were able to receive funding through the EANS program. (Attached). That looks to be for non-public schools. On page 4, point G, it looks like funds could be used to

G. expanding capacity to administer coronavirus testing to effectively monitor and suppress coronavirus, to conduct surveillance and contact tracing activities, and to support other activities related to coronavirus testing for students, teachers, and staff at the non-public school;

That sounds like surveillance projects could be funded, right? Do you know if there is a parallel source of funding for public schools? I'm wondering if we could try to dip into this pot of money to support air sampling.

Thoughts? Or, am I being crazy?

Shelby

<Wisconsin-EANS-CnA-Redacted.pdf>

On Aug 10, 2021, at 2:50 PM, Goldberg, Rachel  
<[RGoldberg@publichealthmdc.com](mailto:RGoldberg@publichealthmdc.com)> wrote:

**RACHEL GOLDBERG, MPH** (pronouns: she/her/hers)

**Public Health Specialist/COVID-19 School & Child Care Liaison** | [Public Health Madison & Dane County](#)

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IR#0682H\_000421

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[<image003.png>](#)

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[<image006.png>](#)

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**From:** Heinrich, Janel <[JHeinrich@publichealthmdc.com](mailto:JHeinrich@publichealthmdc.com)>

**Sent:** Thursday, August 5, 2021 2:14 PM

**To:** Van Horn, Kenneth B <[KVanHorn@publichealthmdc.com](mailto:KVanHorn@publichealthmdc.com)>; Goldberg, Rachel <[RGoldberg@publichealthmdc.com](mailto:RGoldberg@publichealthmdc.com)>

**Subject:** FW: Introducing your school K-12 COVID-19 Testing Program Vendor

---

**From:** Dreyer, Amanda C - DHS <[amanda.dreyer@dhs.wisconsin.gov](mailto:amanda.dreyer@dhs.wisconsin.gov)>

**Sent:** Thursday, August 5, 2021 2:10 PM

**To:** [beckert@deerfield.k12.wi.us](mailto:beckert@deerfield.k12.wi.us)

**Cc:** Noah Clinical Laboratory <[support@noahclinicallaboratory.com](mailto:support@noahclinicallaboratory.com)>; Heinrich, Janel <[JHeinrich@publichealthmdc.com](mailto:JHeinrich@publichealthmdc.com)>

**Subject:** Introducing your school K-12 COVID-19 Testing Program Vendor

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Dear Deerfield Community School District,

We'd like to introduce you to **NOAH Clinical Laboratories**, the vendor who will help support your school COVID-19 Testing Program.

Next up, you and your vendor will decide the details of the testing program that meets your needs. You can expect a request for a kickoff meeting for:

- Introductions
- Important information about your school, community, and testing needs
- Testing model(s) you will implement as school begins
  - Note that DHS shared your initial survey response for testing models with your vendor.
  - Consult with your local public health department will help you implement testing that meets your needs, considering local conditions.
  - Review the CDC Schools guidance:  
<https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-guidance.html>.
- Important details and processes for how to safely and effectively conduct testing, for example:
  - Identify possible spaces where testing may occur at your school.
  - The days/times when the vendor will have staff on site at your school for testing,
  - How to facilitate consent.
- Additional questions and next steps

Thank you for your work to help assure the health and safety of your school

IR#0682H\_000422

community. Thanks to you, we are making COVID-19 testing available to nearly 1 million students, staff, teachers and their families.

<image007.png>Amanda Dreyer  
*Testing Task Force Lead, COVID-19 Response Team*  
*Deputy Administrator, Division of Enterprise Services*  
**Wisconsin Department of Health Services**  
C: [REDACTED] | [amanda.dreyer@dhs.wisconsin.gov](mailto:amanda.dreyer@dhs.wisconsin.gov)

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# Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Kasen K. Riemersma, DVM, PhD<sup>1</sup>; Brittany E. Grogan, MPH<sup>2</sup>; Amanda Kita-Yarbro, MPH<sup>2</sup>; Peter Halfmann, PhD<sup>1</sup>; Anna Kocharian, MS<sup>3</sup>; Kelsey R. Florek, PhD<sup>4</sup>; Ryan Westergaard, MD, PhD<sup>3,5</sup>; Allen Bateman, PhD<sup>4</sup>; Gunnar E. Jeppson, BS<sup>6</sup>; Yoshihiro Kawaoka, DVM, PhD<sup>1</sup>; David H. O'Connor, PhD<sup>7</sup>; Thomas C. Friedrich, PhD<sup>1</sup>; Katarina M. Grande, MPH<sup>2</sup>

<sup>1</sup> Department of Pathobiological Sciences, University of Wisconsin-Madison, Madison, WI, USA; <sup>2</sup> Public Health Madison & Dane County, Madison, WI, USA; <sup>3</sup> Wisconsin Department of Health Services; <sup>4</sup> Wisconsin State Laboratory of Hygiene; <sup>5</sup> Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin; <sup>6</sup> Exact Sciences, Madison, WI, USA; <sup>7</sup> Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, USA.

<sup>^</sup> Author to whom all correspondence should be addressed. E-mail: KGrande@publichealthmdc.com

## Abstract

The SARS-CoV-2 Delta variant and its sublineages (B.1.617.2, AY.1, AY.2, AY.3; [1]) can cause high viral loads, are highly transmissible, and contain mutations that confer partial immune escape [2,3]. Using PCR threshold cycle (Ct) data from a single large contract laboratory, we show that individuals in Wisconsin, USA had similar viral loads in nasal swabs, irrespective of vaccine status, during a time of high and increasing prevalence of the Delta variant. Infectious SARS-CoV-2 was isolated from 51 of 55 specimens (93%) with Ct <25 from both vaccinated and unvaccinated persons, indicating that most individuals with Ct values in this range (Wilson 95% CI 83%-97%) shed infectious virus regardless of vaccine status. Notably, 68% of individuals infected despite vaccination tested positive with Ct <25, including at least 8 who were asymptomatic at the time of testing. Our data substantiate the idea that vaccinated individuals who become infected with the Delta variant may have the potential to transmit SARS-CoV-2 to others. Vaccinated individuals should continue to wear face coverings in indoor and congregate settings, while also being tested for SARS-CoV-2 if they are exposed or experience COVID-like symptoms.

## Main text

We analyzed respiratory specimens from 719 individuals collected between 29 June 2021 and 31 July 2021. Delta and its sublineages accounted for 69% of all Wisconsin sequences in GISAID in the week beginning 27 June 2021; this proportion increased to 95% for the week ending 24 July, the most recent date for which data are available [4]. We recovered viral genome sequences from 122 of the specimens analyzed in this report; 110 of 122 (90%) belonged to Delta lineages. The high and increasing prevalence of Delta-lineage viruses during the study period, and high proportion of Delta-lineage



viruses among our sequenced samples, together suggest that most infections in our dataset were caused by Delta, though this cannot be directly confirmed.

We defined fully vaccinated individuals as those who received a final vaccine dose at least 2 weeks prior to testing positive. Of the 719 individuals, vaccination status at the time of testing was available in the Wisconsin Immunization Registry and Wisconsin Electronic Disease Surveillance System for 322 (293 vaccinated and 29 unvaccinated), while self-reported vaccination status was available for the remaining 397 (18 vaccinated and 379 unvaccinated). We compared Ct values in specimens from these fully vaccinated and unvaccinated individuals at the time of testing ([Figure 1](#)). We detected no significant differences in Ct values by vaccination status. Notably, 212 of 311 (68%) of individuals with infection despite full vaccination had extremely low Ct values <25, consistent with high viral loads.

While a given Ct value cannot be used to infer infectiousness, previous studies suggested that infectious SARS-CoV-2 can frequently be recovered from specimens with Ct values of 25-30 or lower [5]. To determine whether high viral loads might indicate the presence of infectious SARS-CoV-2, we attempted to culture infectious virus from a subset of 55 specimens with Ct values <25 ([Figure 2](#)). Infectious SARS-CoV-2 was isolated from 14 of 16 specimens (88%) from unvaccinated individuals and 37 of 39 specimens (95%) from vaccinated people, suggesting that Ct <25 is frequently associated with the capacity to shed infectious SARS-CoV-2, even in fully vaccinated persons.

Data on symptom status were available from 516 of the 719 individuals evaluated here, so we further compared Ct values in test-positive specimens according to vaccination and symptom status ([Figure 3A](#)). For symptomatic cases, there was no significant difference in the time elapsed between symptom onset and testing for vaccinated vs. unvaccinated individuals (two-sample K-S test,  $p=0.49$ ; [Figure 3B](#)). Full vaccination did not affect Ct values observed in infected individuals, either with or without symptoms, at the time of testing. Among those for whom symptom status is known, 252 of 276 individuals who were not fully vaccinated (91%) reported symptoms at the time of testing, while 228 of 240 people who were fully vaccinated (95%) reported symptoms. Among individuals who were asymptomatic at the time of testing, Ct values <25 were detected in 7 of 24 unvaccinated individuals (29%; CI: 13-51%) and in 8 of 12 individuals who were infected despite being fully vaccinated (67%; CI: 35-90%). Infectious virus was detected in the sole specimen tested from an asymptomatic fully vaccinated individual. Although the number of asymptomatic individuals sampled is small, these results indicate that some individuals who are infected despite vaccination can have high viral loads and shed infectious virus even while being asymptomatic. Additional virus isolation data are needed to determine the frequency of infectious virus shedding in asymptomatic cases.

Our findings are consistent with other recent reports detecting high virus loads in some individuals infected despite vaccination in England [6] and Singapore [7]. Our detection of infectious virus in 93% of samples with Ct <25 indicates that high viral loads are consistent with the potential to transmit SARS-CoV-2, regardless of the individual's vaccination status. Notably, transmission of Delta from vaccinated healthcare workers to their household contacts was recently documented in an investigation of a hospital-associated outbreak in Finland [8]. An outbreak in Barnstable County, MA associated with large gatherings also involved a substantial proportion of fully vaccinated individuals [9]. The co-circulation of viruses belonging to Pango lineages B.1.617.2, AY.2, and AY.3, as well as the broad geographic distribution of our specimens, indicate that the infections analyzed here are not associated with any single large outbreak, and that Delta-lineage SARS-CoV-2 can achieve high viral loads consistent with transmissibility in fully vaccinated individuals across a range of exposure settings. Taken

together, these studies indicate that individuals infected with Delta variants despite vaccination have the capacity to transmit infection to others.

Our study has at least three important limitations. First, we have only one specimen from most individuals, and therefore we cannot know the trajectory of viral loads at the time of testing. Indeed, a study of Delta infection dynamics suggests that viral loads decline more rapidly in vaccinated vs. unvaccinated individuals, as one might expect [7]. However, that study also indicates that viral loads in vaccinated and unvaccinated individuals remain similarly high for 5-6 days after illness onset, before declining more rapidly in vaccinated people. In our study, 91% of specimens from symptomatic cases were collected from 0-6 days after illness onset and the timing of tests relative to illness onset did not differ by vaccination status. These observations suggest that the Ct value comparisons in our study are likely not biased by the time of testing. A second limitation is that there may be differences in the populations of vaccinated and unvaccinated persons seeking testing that bias our results. Vaccinated individuals may not perceive a high risk of COVID-19 disease, and may be less likely to seek testing than unvaccinated people. It is difficult to determine from our data whether vaccinated and unvaccinated people experienced symptoms of similar severity. Thus, we cannot determine the extent to which our sampling failed to detect asymptomatic or paucisymptomatic infections. Such mild infections may be more frequent among vaccinated than unvaccinated individuals infected with Delta. Consistent with this, a recent report from England detected a substantially greater proportion of low-positive tests with Ct values between 35 and 40 in vaccinated individuals than in the unvaccinated [6]. Importantly, our study was not designed to estimate the rate of infection despite vaccination, but rather to determine whether individuals infected despite vaccination could have high viral loads consistent with the potential to transmit SARS-CoV-2. Finally, there is inherent variability in PCR Ct values due to specimen variability that can be impacted by collection technique and other variables outside of our control.

The finding of high SARS-CoV-2 viral loads and replication-competent virus in vaccinated individuals has important implications for risk assessment and mitigation. The impact of Delta variants on vaccine effectiveness is currently being evaluated (see, e.g., [10]). Risk disinhibition may lead vaccinated people to increase behaviors that expose them to SARS-CoV-2 infection, and individuals who are infected despite vaccination could serve as sources of onward transmission to others. Vaccinated individuals, particularly those who may have high levels of community or occupational exposure to SARS-CoV-2, should be encouraged to continue frequent testing, especially when symptomatic, to limit community spread. Continued adherence to non-pharmaceutical interventions, such as masking and distancing, will remain important for both vaccinated and unvaccinated individuals because we cannot predict which vaccinated individuals will experience infections with high viral loads. While vaccines continue to provide outstanding protection against severe disease and mortality, the durability of this protection cannot be reliably predicted. Therefore, it is essential for public health policy to encourage vaccination while also planning for contingencies, including diminished long-term protection.

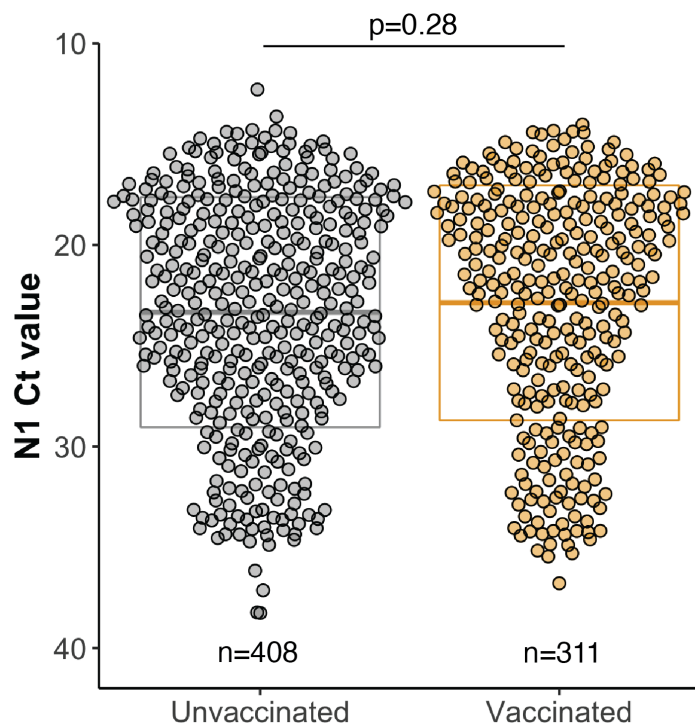


Figure 1. Distributions of SARS-CoV-2 PCR cycle threshold (Ct) values at the time of testing do not differ by vaccination status. N1 PCR Ct values for SARS-CoV-2-positive specimens grouped by vaccination status. Boxplots represent mean N1 Ct values  $\pm$  one standard deviation. P-values were calculated by comparing mean Ct values between the groups by Welch two-sample t-test.

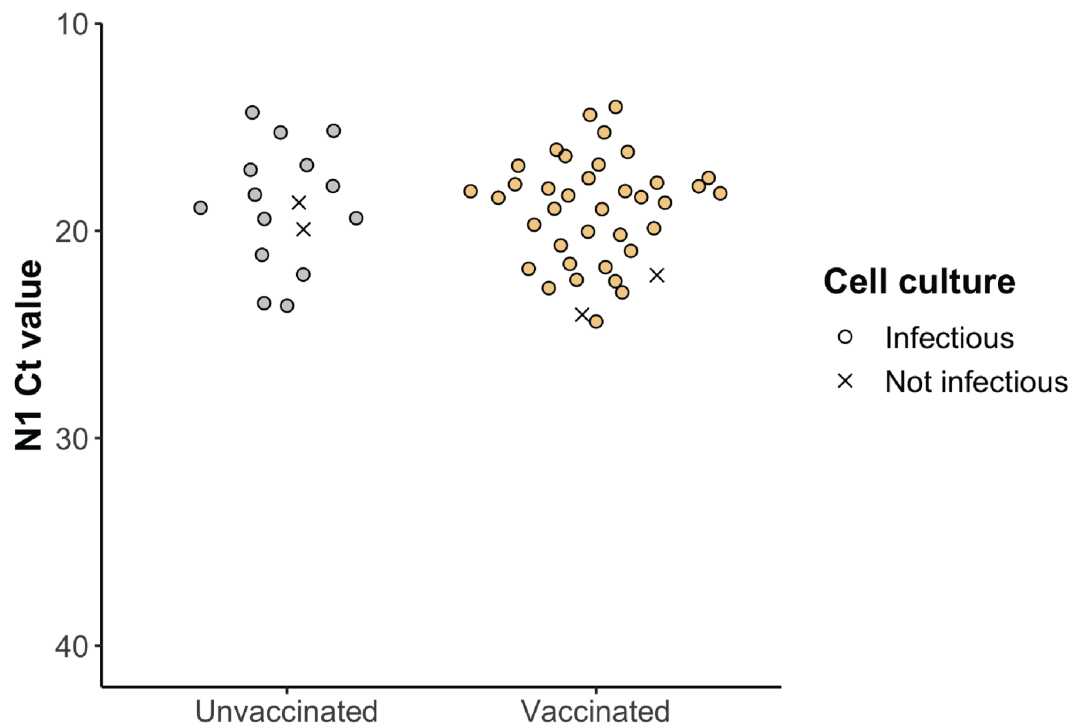


Figure 2. Infectious virus detected in nasal swab specimens from unvaccinated and fully vaccinated cases with Ct values < 25. Infectiousness was determined by the presence of cytopathic effects (CPE) after 5 days of replication in Vero E6 TMPRSS2 cells. Specimens with visually apparent CPE under a light microscope are represented by filled circles, and specimens without apparent CPE are represented by 'X'.

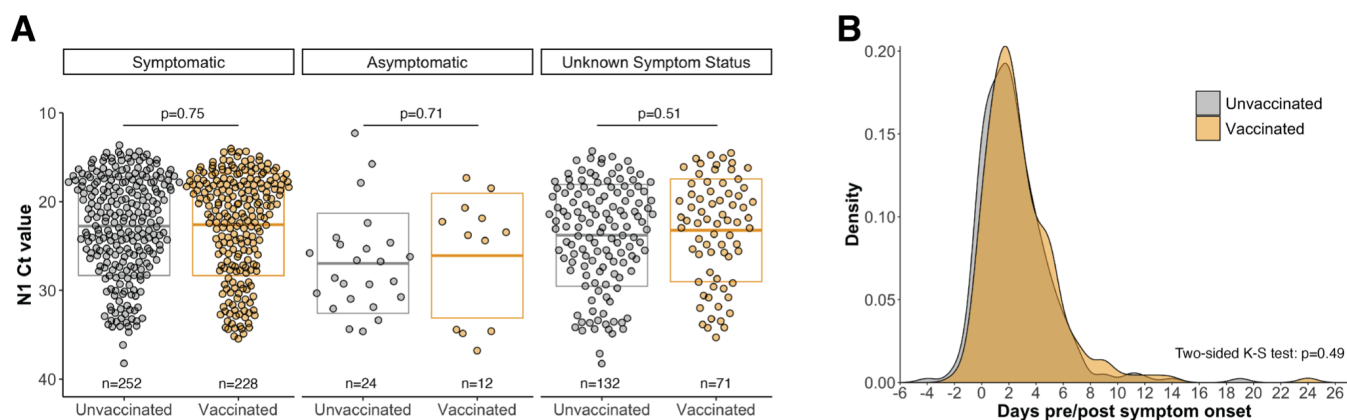


Figure 3. Symptom status does not affect distributions of SARS-CoV-2 PCR cycle threshold (Ct) values at the time of testing in vaccinated vs. unvaccinated persons. A) N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for symptomatic, asymptomatic, and unknown symptom status cases. Boxplots represent mean N1 Ct values  $\pm$  one standard deviation. P-values were calculated by comparing mean Ct values between groups by Welch two-sample t-tests. B) Density distributions of unvaccinated and vaccinated specimen collection dates by day since symptom onset. Day 0 on the x-axis denotes self-reported day of symptom onset. Negative values for days indicate specimen collection prior to symptom onset. Symptom onset data were available for n=249 unvaccinated cases and n=222 vaccinated cases.

# Acknowledgments

We would like to acknowledge the local health departments in Wisconsin who referred samples for SARS-CoV-2 testing. We gratefully acknowledge Shelby O'Connor and Hannah Segaloff for critical review of the manuscript and helpful discussion. We also acknowledge all Exact Sciences employees who contributed to sample testing. This work was supported by Centers for Disease Control and Prevention contracts 75D30120C09870 and 75D30121C11060 to D.H.O and T.C.F. The authors are also members of the Upper Midwest Regional Accelerator for Genomic Surveillance funded by the Rockefeller Foundation.

# Conflict of interest

The authors declare no conflicting interests.

# Ethics statement

Per the University of Wisconsin-Madison IRB, this project qualifies as public health surveillance activities as defined in the Common Rule, 45 CFR 46.102(l)(2). As such, the project is not deemed to be research regulated under the Common Rule and therefore, does not require University of Wisconsin-Madison IRB review and oversight.

# Data availability

Data and processing workflows are available at <https://go.wisc.edu/p22l16>. To protect potentially personally identifiable information, the publicly available dataset contains only PCR Ct values, vaccine status, symptom status, and days from symptom onset to testing for each specimen.

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[https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm?utm\\_source=mp-fotoscapes](https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm?utm_source=mp-fotoscapes)

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**From:** [DAVID H O'CONNOR](#)  
**To:** [Thomas Friedrich](#)  
**Cc:** [Grande, Katarina](#)  
**Subject:** Re: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)  
**Date:** Monday, October 25, 2021 10:23:52 AM  
**Attachments:** [image.png](#)

---

Oops.

dave

---

Dave O'Connor | UW Medical Foundation Professor  
[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu) | +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

*I choose to work flexibly & send emails outside normal office hours. No need to respond to my emails outside yours.*

On Oct 25, 2021, 10:21 AM -0500, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>, wrote:

Taking the JAMA editor off. :)

I fully agree on bringing it back to Google Docs.

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

DAVID H O'CONNOR wrote on 2021-10-25 09:55:

A point on process - I really think we should bring it back into gDocs. Doing this in Word was a huge PITA and required excessive formatting to get right at the end. Would be much better to edit collaboratively in gDocs and export to Word at the very end.

dave

---

Dave O'Connor | UW Medical Foundation Professor  
[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu) | +1 [REDACTED]  
<http://dho.pathology.wisc.edu>

*I choose to work flexibly & send emails outside normal office hours. No need to respond to my emails outside yours.*

On Oct 25, 2021, 9:29 AM -0500, Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, wrote:

Thanks, Jody, we appreciate your response. Given this, we'd like to withdraw our submission from consideration.

Thanks again for your time, we hope you have a nice week!

-Katarina

---

**From:** Jody Zylke <[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>  
**Sent:** Saturday, October 23, 2021 5:11 AM  
**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** RE: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Yes, all the JAMA Network journals have the same policies.

Jody

---

**From:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Sent:** Friday, October 22, 2021 11:45 AM  
**To:** Jody Zylke <[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>  
**Cc:** 'DAVID H O'CONNOR' <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** RE: JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite Vaccination)

[Warning External Email]

Thanks for your response, Dr. Zylke. We're struggling with this since this endeavor was such a massive collaborative effort! Does JAMA Open Network have the same 7 author limit for a Research Letter submission?

Thanks again for your time!

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

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This email, including any attachments, may contain confidential or protected health information which is only for the intended recipient. If you received this email in error, please delete and notify the sender immediately. Emails sent or received by our agency are subject to open records requests and could be released to the public, unless there is an exception allowed by law.

<image002.png>

---

**From:** [Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org) <[Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)>

**Sent:** Thursday, October 21, 2021 5:02 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** JAMA21-11227 (Shedding of Infectious SARS-CoV-2 Despite

Vaccination)

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Ms Grande:

Thanks for submitting a research letter to JAMA. The study is interesting and I would be willing to send it for peer review. However, research letters are limited to 7 authors, and we cannot make an exception.

Would you be willing to decrease the number of authors to 7? If not, we will not be able to consider your manuscript.

Sincerely,

Jody W Zylke, MD  
Deputy Editor, JAMA  
Email: [Jody.Zylke@jamanetwork.org](mailto:Jody.Zylke@jamanetwork.org)

**From:** [Dave O'Connor](#)  
**To:** [Letter](#)  
**Cc:** [Thomas Friedrich](#)  
**Subject:** Re: New England Journal of Medicine - 21-14060  
**Date:** Tuesday, September 28, 2021 11:29:47 AM

---

Sure, can we get it to you by COB tomorrow? It will take a day or so to remake the figures and update the text.

dave

Letter wrote on 9/28/21 10:58 AM:

Hello Dr. O'Connor,

You can send the manuscript to me via email as a word doc. I can upload it to your submission. This way, you will not need to start a new submission. Let me know what you prefer.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** Dave O'Connor [<dhocconno@wisc.edu>](mailto:dhocconno@wisc.edu)  
**Sent:** Tuesday, September 28, 2021 11:56 AM  
**To:** Letter [<letter@nejm.org>](mailto:letter@nejm.org)  
**Cc:** Thomas Friedrich [<tfriedri@wisc.edu>](mailto:tfriedri@wisc.edu)  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Vivian,

In the month that we've been under review, we've collected additional data that strengthens the paper. We didn't anticipate this kind of lengthy delay in reviewing a short note. Is there any easy way that we can add this new data to the manuscript without having it compromise our position in the queue, especially if the editor has not yet read the version that is currently queued up?

If not, no worries, but we figure it wouldn't hurt to ask.

Thanks,

dave

Letter wrote on 9/28/21 9:43 AM:

Hello Dr. O'Connor,

We are still waiting for a decision from the editor. He is one of the editors chiefly handling Covid-19 submissions at the Journal and his response time is slower than usual due to the volume of submissions. I apologize for the delay. I have sent an additional reminder to the editor for a decision. You'll receive an email from us with a decision as soon as possible.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** Dave O'Connor <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Monday, September 27, 2021 3:59 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Cc:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Vivian,

Thanks for checking in with the editor about two weeks ago. Given that our short letter has now been with the editor under internal review for more than a month (August 23), I'm hoping this bodes well for a favorable outcome.

Thanks again for any updates you can provide,

dave

Dave O'Connor wrote on 9/14/21 4:01 PM:

Thanks Vivian for sending the reminder. Please let us know if you need additional information from us.

Best,

dave

Letter wrote on 9/14/21 3:32 PM:

Hello Dr. O'Connor,

Thank you for your email. Unfortunately a decision has not be made regarding your letter. An additional reminder has been sent to the editor for a decision. An exact date for a decision cannot be provided given the increased volume in covid-related submissions but know that we strive to give authors as timely a decision as possible. We apologize for the delay, and thank you for your interest in the Journal.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** Dave O'Connor <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Tuesday, September 14, 2021 4:26 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Cc:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Vivian,

I apologize for asking again, but it has now been another week and a half that the 400 word letter has been with the editor. Do you have an update on when we might receive a final editorial decision?

Thanks again,

dave

Letter wrote on 9/3/21 2:05 PM:

Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** NEJM Editorial  
<[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Sent:** Friday, September 3, 2021  
2:58 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Subject:** FW: New England Journal  
of Medicine - 21-14060

---

**From:** Dave O'Connor  
<[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Friday, September 3, 2021  
10:17 AM  
**To:** NEJM Editorial  
<[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Subject:** Re: New England Journal  
of Medicine - 21-14060

To whom it may concern,

I am writing on behalf of our co-authors to ask if there are any updates on the status of the 400



word correspondence we submitted to NEJM on August 23. We are keenly aware that this is timely data given the current landscape of SARS-CoV-2 infection despite vaccination.

One small note: some vocal scientists have criticized our work on social media. The primary claim they make is that virus culture in low Ct samples does not mean that there is similar amounts of replication-competent virus in these samples. Subsequent to our August 23 submission, we re-thawed these samples and showed that virus titers are similar in those who are unvaccinated and infected despite infection (see attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine  
wrote on 8/23/21 1:39 PM:

Dear Ms. Grande  
and co-authors,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination" to the New England Journal of Medicine.

Your manuscript has been

forwarded to  
members of our  
editorial staff,  
who will make an  
initial  
evaluation and  
decide whether  
it merits  
further  
consideration.  
You will be  
notified of the  
decision as soon  
as possible.

Your manuscript  
ID is 21-14060.

Please mention  
the above  
manuscript ID in  
all future  
correspondence  
or when calling  
the office for  
questions. If  
there are any  
changes in your  
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submitted for  
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the period of  
review.

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you or your  
coauthors  
addressing

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related research  
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are in  
preparation or  
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consideration at  
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connection with  
scientific  
meetings or to  
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based on  
presentations at  
such meetings.

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policy is  
explained more  
fully at  
<https://www.nejm.org/about-nejm/editorial-policies>.

Please call us  
at 617-734-9800  
if you have any  
questions.

Sincerely,

New England  
Journal of  
Medicine  
10 Shattuck  
Street  
Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-  
9864  
<http://www.nejm.org>

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[@dho • 608-890-0845](mailto:@dho • 608-890-0845)

**From:** [Dave O'Connor](#)  
**To:** [Letter](#)  
**Cc:** [Thomas Friedrich](#)  
**Subject:** Re: New England Journal of Medicine - 21-14060  
**Date:** Thursday, September 30, 2021 7:03:56 AM  
**Attachments:** [EOC\\_Riemersma\\_Viral loads in vaccinees\\_NEJM\\_revised\\_2021-09-29.docx](#)

---

Hi Vivian,

Please find attached an updated version of our NEJM submission. The key change (denoted with track changes in case it is helpful) is that the virus culture data is now shown with quantitative titers.

Thanks again in advance for your consideration,

dave

Letter wrote on 9/28/21 2:35 PM:

That would be fine.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** Dave O'Connor [<dhocconno@wisc.edu>](mailto:dhocconno@wisc.edu)  
**Sent:** Tuesday, September 28, 2021 12:30 PM  
**To:** Letter [<letter@nejm.org>](mailto:letter@nejm.org)  
**Cc:** Thomas Friedrich [<tfriedri@wisc.edu>](mailto:tfriedri@wisc.edu)  
**Subject:** Re: New England Journal of Medicine - 21-14060

Sure, can we get it to you by COB tomorrow? It will take a day or so to remake the figures and update the text.

dave

Letter wrote on 9/28/21 10:58 AM:

Hello Dr. O'Connor,

You can send the manuscript to me via email as a word doc. I can upload it to your submission. This way, you will not need to start a new

submission. Let me know what you prefer.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

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**Cc:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Vivian,

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If not, no worries, but we figure it wouldn't hurt to ask.

Thanks,

dave

Letter wrote on 9/28/21 9:43 AM:

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Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** Dave O'Connor <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Monday, September 27, 2021 3:59 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Cc:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Vivian,

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Given that our short letter has now been with the editor  
under internal review for more than a month (August 23),  
I'm hoping this bodes well for a favorable outcome.

Thanks again for any updates you can provide,

dave

Dave O'Connor wrote on 9/14/21 4:01 PM:

Thanks Vivian for sending the reminder. Please  
let us know if you need additional information  
from us.

Best,

dave

Letter wrote on 9/14/21 3:32 PM:

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additional reminder has been sent



to the editor for a decision. An exact date for a decision cannot be provided given the increased volume in covid-related submissions but know that we strive to give authors as timely a decision as possible. We apologize for the delay, and thank you for your interest in the Journal.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

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**From:** Dave O'Connor  
<[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Tuesday, September 14, 2021 4:26 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Cc:** Thomas Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

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Thanks again,

dave

Letter wrote on 9/3/21 2:05 PM:

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Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal  
of Medicine*

---

**From:** NEJM Editorial  
[<editorial@nejm.org>](mailto:editorial@nejm.org)

[>](#)

**Sent:** Friday,  
September 3, 2021  
2:58 PM

**To:** Letter  
[<letter@nejm.org>](mailto:letter@nejm.org)

**Subject:** FW: New  
England Journal of  
Medicine - 21-14060

---

**From:** Dave  
O'Connor  
[<dhocconno@wisc.edu>](mailto:dhocconno@wisc.edu)

[u>](#)

**Sent:** Friday,  
September 3, 2021  
10:17 AM

**To:** NEJM Editorial  
<[editorial@nejm.org](mailto:editorial@nejm.org)>

**Subject:** Re: New  
England Journal of  
Medicine - 21-14060

To whom it may  
concern,

I am writing on  
behalf of our co-  
authors to ask if  
there are any  
updates on the  
status of the 400  
word  
correspondence we  
submitted to NEJM  
on August 23. We  
are keenly aware  
that this is timely  
data given the  
current landscape of  
SARS-CoV-2 infection  
despite vaccination.

One small note:  
some vocal scientists  
have criticized our  
work on social  
media. The primary  
claim they make is  
that virus culture in  
low Ct samples does  
not mean that there  
is similar amounts of  
replication-  
competent virus in  
these samples.  
Subsequent to our  
August 23  
submission, we re-  
thawed these  
samples and showed

that virus titers are similar in those who are unvaccinated and infected despite infection (see attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine wrote on 8/23/21 1:39 PM:

Dear  
Ms.  
Grande  
and  
co-  
author  
s,

Thank  
you  
for  
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# Shedding of Infectious SARS-CoV-2 Despite Vaccination

Kasen K. Riemersma, DVM, PhD<sup>1</sup>; Brittany E. Grogan, MPH<sup>2</sup>; Amanda Kita-Yarbro, MPH<sup>2</sup>; Peter J. Halfmann, PhD<sup>1</sup>; Hannah E. Segaloff, PhD<sup>3</sup>; Anna Kocharian, MS<sup>4</sup>; Kelsey R. Florek, MPH, PhD<sup>5</sup>; Ryan Westergaard, MD, PhD<sup>6</sup>; Allen Bateman, PhD<sup>5</sup>; Gunnar E. Jeppson, BS<sup>7</sup>; Yoshihiro Kawaoka, DVM, PhD<sup>1</sup>; David H. O'Connor, PhD<sup>8</sup>; Thomas C. Friedrich, PhD<sup>1</sup>; Katarina M. Grande, MPH<sup>2</sup>

<sup>1</sup> Department of Pathobiological Sciences, University of Wisconsin-Madison, Madison, WI, USA

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<sup>3</sup> Epidemic Intelligence Service, CDC, Atlanta, GA, USA

<sup>3</sup> Wisconsin Department of Health Services, Madison, WI, USA

<sup>5</sup> Wisconsin State Laboratory of Hygiene, Madison, WI, USA

<sup>6</sup> Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, WI, USA

<sup>7</sup> Exact Sciences, Madison, WI, USA

<sup>8</sup> Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, USA

<sup>^</sup>These authors contributed equally. Correspondence can be addressed to:

Katarina Grande [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)

## Main text (39~~59~~ words; limit 400)

The SARS-CoV-2 Delta variant might cause high viral loads, is highly transmissible, and contains mutations that confer partial immune escape <sup>1,2</sup>. Outbreak investigations suggest that vaccinated persons can spread Delta <sup>3,4</sup>. We compared RT-PCR cycle threshold (Ct) data from 699 swab specimens collected in Wisconsin 29 June through 31 July 2021 and tested with a qualitative assay by a single contract laboratory. Specimens came from residents of 36 counties, most in southern and southeastern Wisconsin, and 81% of cases were not associated with an outbreak. During this time, estimated prevalence of Delta variants in Wisconsin increased from 69% to over 95%. Vaccination status was determined via self-reporting and state immunization records ([Supplemental Figure 1](#)).

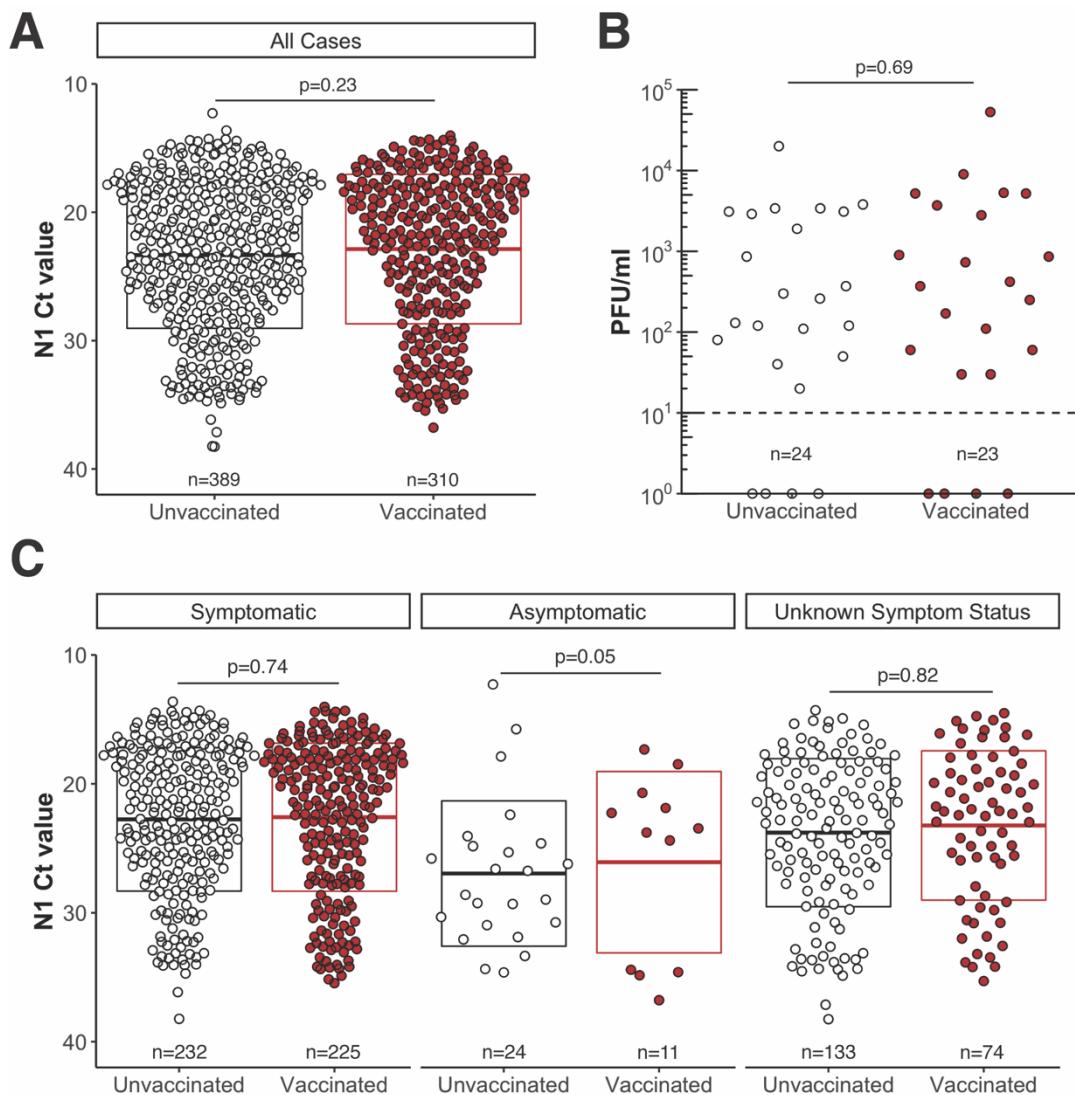
We observed low Ct values (<25) in 212 of 310 fully vaccinated (68%; [Figure 1A](#)) and 246 of 389 (63%) unvaccinated individuals. Testing a subset of such low-Ct samples revealed ~~infectious that~~ infectious SARS-CoV-2 was present at similar levels in vaccinated and unvaccinated persons in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people ([Figure 1B](#)).

Low Ct values were detected in vaccinated people regardless of symptoms at the time of testing ([Figure 1C](#)). Ct values <25 were detected in 7 of 24 unvaccinated (29%; CI: 13-51%) and 9 of 11 fully vaccinated asymptomatic individuals (82%; CI: 48-97%), and 158 of 232 unvaccinated (68%, CI: 62-74%) and 156 of 225 fully vaccinated (69%; CI: 63-75%) symptomatic individuals. Time from symptom onset to testing did not vary by vaccination status ( $p=0.40$ ; [Supplemental Figure 2](#)). Infectious virus was detected in the sole specimen tested from an asymptomatic fully vaccinated individual. Although few asymptomatic individuals were sampled, these results indicate that even asymptomatic, fully vaccinated people might shed infectious virus.

Combined with other studies <sup>2-5</sup>, these data indicate that both vaccinated and unvaccinated individuals infected with the Delta variant might transmit infection. Importantly, we show that infectious SARS-CoV-2 is frequently found even in vaccinated persons when specimen Ct values are low. The inclusion of viruses from Pango lineages B.1.617.2, AY.2, and AY.3, and multiple counties without a linking

outbreak, indicate that Delta-lineage SARS-CoV-2 can achieve low Ct values consistent with transmissibility in fully vaccinated individuals across a range of settings. Vaccinated and unvaccinated persons should get tested when symptomatic or after close contact with someone with suspected or confirmed COVID-19. Continued adherence to non-pharmaceutical interventions during periods of high community transmission to mitigate spread of COVID-19 remain important for both vaccinated and unvaccinated individuals.

# Figure

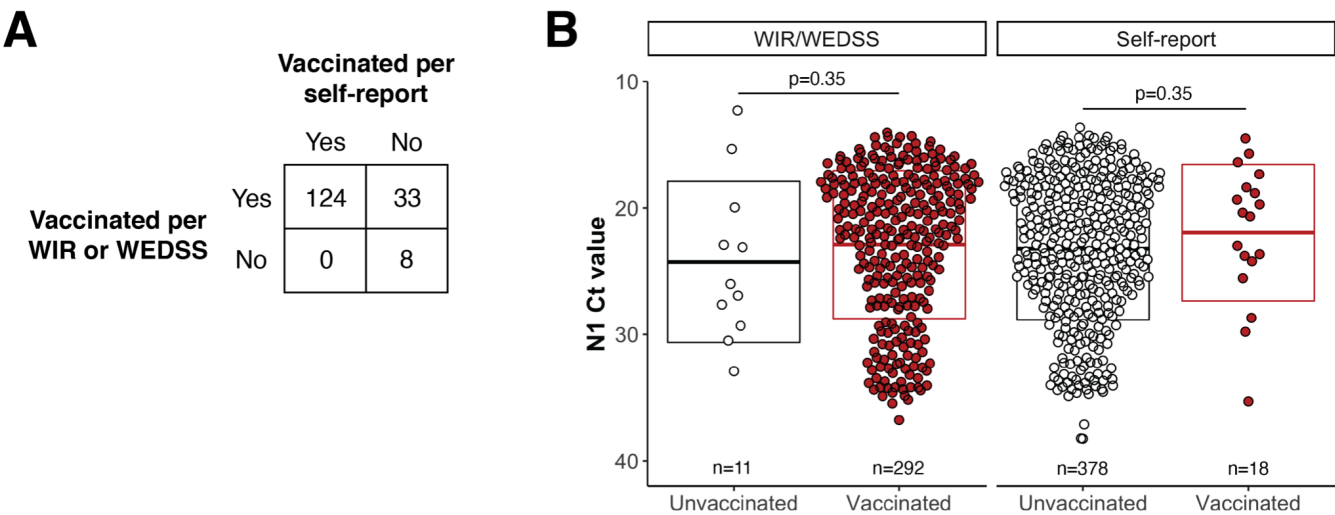


**Figure 1. Individuals infected with SARS-CoV-2 despite full vaccination have low Ct values and shed infectious virus.** **A.** Ct values for SARS-CoV-2-positive specimens grouped by vaccination status. RT-PCR was performed by Exact Sciences Corporation, responsible for over 10% of all PCR tests in Wisconsin during this period, using a qualitative diagnostic assay targeting the SARS-CoV-2 N gene (oligonucleotides identical to CDC's N1 primer and probe set) that has been authorized for emergency use by FDA (<https://www.fda.gov/media/138328/download>). **B.** ~~Infectiousness was determined for~~We performed plaque assays on Vero E6 TMPRSS2 cells on a subset of N1-Ct-matched specimens ~~with Ct <25, by inoculation onto Vero E6 TMPRSS2 cells and determining presence of cytopathic effects (CPE) after 5 days in culture.~~ Specimens ~~were~~ selected by N1 Ct-matching between fully vaccinated and ~~not fully un~~vaccinated persons, then specimens from persons with unknown vaccination status were excluded from the analysis. ~~Circles indicate presence of CPE; 'X' indicates no CPE detected~~Infectious titers are expressed as plaque-forming units (pfu) per milliliter specimen. Specimens underwent a freeze-thaw cycle prior to virus titration. **C.** N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for individuals who were symptomatic or asymptomatic, or those whose symptom status was not determined, at the time of testing. In **A** and **C**,

boxplots represent mean N1 Ct values +/- one standard deviation. P-values were calculated by comparing mean Ct values by independent two-group Mann-Whitney U tests.

# Supplemental materials

## Supplemental figure 1



Supplemental figure 1. Concordance between self-reported vaccination status and the Wisconsin Immunization Registry (WIR) or Wisconsin Electronic Disease Surveillance System (WEDSS). For all individuals, vaccination status was determined using WIR/WEDSS electronic registries when data were available. Individuals were identified as unvaccinated at the time of testing if WIR/WEDSS data indicated receipt of a first SARS-CoV-2 vaccine dose after the test date.

Individuals were considered fully vaccinated based on WIR/WEDSS data if the registries indicated receipt of a final vaccine dose at least 14 days prior to testing. For individuals whose vaccination status could not be verified in WIR/WEDSS, self-reported data collected at the time of testing were used. Individuals were considered unvaccinated based on self-report only if there was an explicit declaration of unvaccinated status in the self-reported data. Individuals were considered fully vaccinated based on self-report if they fulfilled all of the following criteria: (1) indicated that they had received a COVID vaccine prior to testing; (2) indicated that they did not require another vaccine dose; and (3) reported a date of last vaccine dose that was at least 14 days prior to testing.

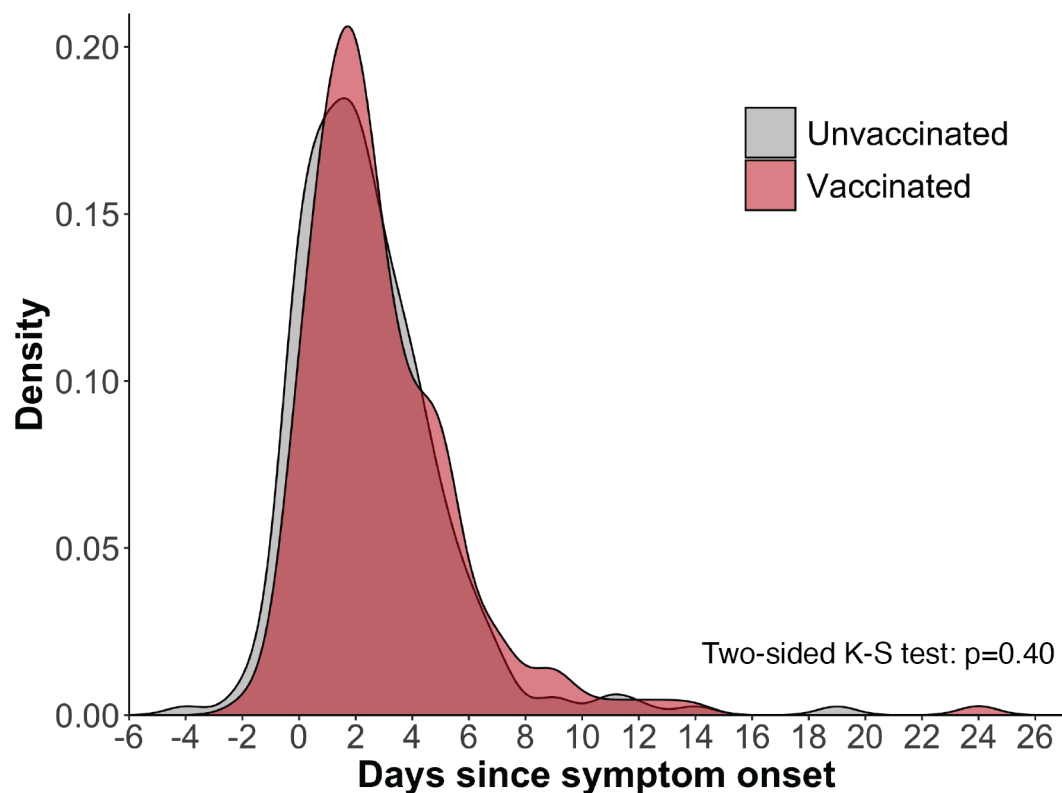
Specimens lacking data on vaccination status were excluded from the study. Specimens from partially vaccinated individuals (incomplete vaccine series, or <14 days post-final dose) were also excluded. Fully vaccinated status was determined by WIR/WEDSS for 292 specimens and by self-reported data for 18. Unvaccinated status was determined by WIR/WEDSS for 11 and by self-reported data by 378.

**A.** Of the 699 specimens with vaccination status available from at least one source, 165 specimens had data available from both sources. For self-reporting, under-reporting of full vaccination status (33/157) was more common than over-reporting (0/124). **B.** N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for individuals whose vaccination status was determined by WIR/WEDSS or by self-reported data. Boxplots represent mean N1 Ct values +/- one standard



deviation. P-values were calculated by comparing mean Ct values by independent two-group Mann-Whitney U tests.

## Supplemental figure 2



Supplemental figure 2. Density distributions of unvaccinated and vaccinated specimen collection dates by day since symptom onset. Day 0 on the x-axis denotes self-reported day of symptom onset. Negative values for days indicate specimen collection prior to symptom onset. Symptom onset data were available for n=263 unvaccinated cases and n=232 vaccinated cases.

## Conflict of interest

The authors declare no conflicting interests.

## Ethics statement

Per the University of Wisconsin-Madison IRB, this project qualifies as public health surveillance activities as defined in the Common Rule, 45 CFR 46.102(l)(2). As such, the project is not deemed to be research regulated under the Common Rule and therefore, does not require University of Wisconsin-Madison IRB review and oversight.

The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the Centers for Disease Control and Prevention or the institutions with which the authors are affiliated.

## Data availability

Data and processing workflows are available at <https://go.wisc.edu/p22l16>. To protect potentially personally identifiable information, the publicly available dataset contains only PCR Ct values, vaccine status, symptom status, and days from symptom onset to testing for each specimen.

# References

1. Planas D, Veyer D, Baidaliuk A, et al. Reduced sensitivity of SARS-CoV-2 variant Delta to antibody neutralization. *Nature* [Internet] 2021 [cited 2021 Jul 28];1–7. Available from: <https://www.nature.com/articles/s41586-021-03777-9>
2. Mlcochova P, Kemp S, Dhar MS, et al. SARS-CoV-2 B.1.617.2 Delta variant replication, sensitivity to neutralising antibodies and vaccine breakthrough [Internet]. *bioRxiv*. 2021 [cited 2021 Aug 15];2021.05.08.443253. Available from: <https://www.biorxiv.org/content/10.1101/2021.05.08.443253v5>
3. Brown CM, Vostok J, Johnson H, et al. Outbreak of SARS-CoV-2 infections, including COVID-19 vaccine breakthrough infections, associated with large public gatherings - Barnstable County, Massachusetts, July 2021. *MMWR Morb Mortal Wkly Rep* [Internet] 2021;70(31):1059–62. Available from: [https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm?utm\\_source=mp-fotoscapes](https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm?utm_source=mp-fotoscapes)
4. Hetemäki I, Kääriäinen S, Alho P, et al. An outbreak caused by the SARS-CoV-2 Delta variant (B.1.617.2) in a secondary care hospital in Finland, May 2021. *Euro Surveill* [Internet] 2021;26(30). Available from: <http://dx.doi.org/10.2807/1560-7917.ES.2021.26.30.2100636>
5. Chia PY, Xiang Ong SW, Chiew CJ, et al. Virological and serological kinetics of SARS-CoV-2 Delta variant vaccine-breakthrough infections: a multi-center cohort study [Internet]. *bioRxiv*. 2021; Available from: <http://medrxiv.org/lookup/doi/10.1101/2021.07.28.21261295>

**From:** [DAVID H O"CONNOR](#)  
**To:** [editorial@nejm.org](mailto:editorial@nejm.org)  
**Subject:** Re: New England Journal of Medicine - 21-14060  
**Date:** Friday, September 3, 2021 9:17:26 AM  
**Attachments:** [Culture titers.pdf](#)

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To whom it may concern,

I am writing on behalf of our co-authors to ask if there are any updates on the status of the 400 word correspondence we submitted to NEJM on August 23. We are keenly aware that this is timely data given the current landscape of SARS-CoV-2 infection despite vaccination.

One small note: some vocal scientists have criticized our work on social media. The primary claim they make is that virus culture in low Ct samples does not mean that there is similar amounts of replication-competent virus in these samples. Subsequent to our August 23 submission, we re-thawed these samples and showed that virus titers are similar in those who are unvaccinated and infected despite infection (see attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine wrote on 8/23/21 1:39 PM:

Dear Ms. Grande and co-authors,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination" to the New England Journal of Medicine.

Your manuscript has been forwarded to members of our editorial staff, who will make an initial evaluation and decide whether it merits further consideration. You will be notified of the decision as soon as possible.

Your manuscript ID is 21-14060.

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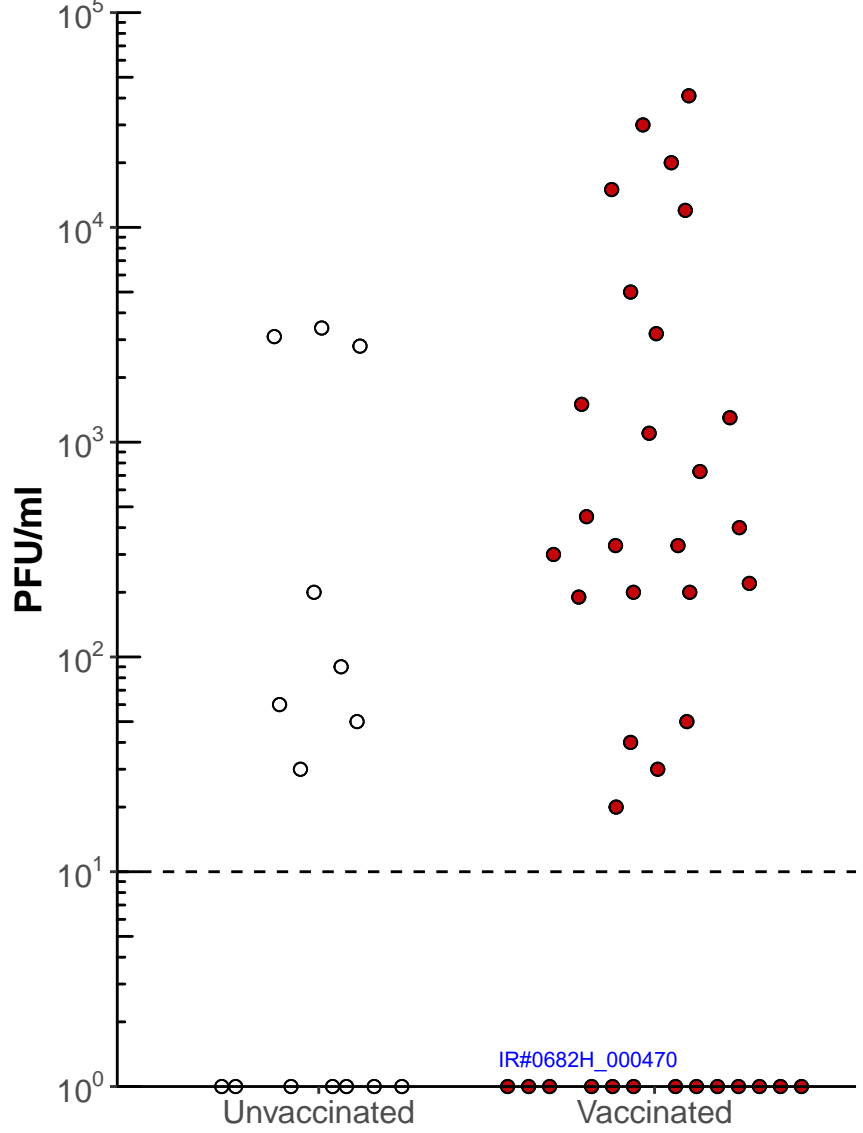
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Sincerely,

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**From:** [DAVID H O'CONNOR](#)  
**To:** [Nidhi Subbaraman](#); [Thomas Friedrich](#)  
**Cc:** [Katarina Grande](#)  
**Subject:** Re: News query from Nature - vaccines and Delta  
**Date:** Wednesday, August 11, 2021 1:35:40 PM

---

Also, Nidhi, we posted an update of our preprint this morning that strengthens the findings by including more people and showing that the majority of high viral load samples we tested have replication-competent virus. <https://www.medrxiv.org/content/10.1101/2021.07.31.21261387v2> (the correct abstract is in the PDF - we're working to update the one in the medrxiv summary page).

## Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021 | medRxiv

SARS-CoV-2 variant B.1.617.2 (delta) is associated with higher viral loads [1] and increased transmissibility relative to other variants, as well as partial escape from polyclonal and monoclonal antibodies [2]. The emergence of the delta variant has been associated with increasing case counts and test-positivity rates, indicative of rapid community spread. Since early July 2021, SARS-CoV-2 ...

[www.medrxiv.org](http://www.medrxiv.org)

dave

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**From:** Nidhi Subbaraman <nidhi.subbaraman@us.nature.com>  
**Sent:** Wednesday, August 11, 2021 13:22  
**To:** Thomas Friedrich <tfriedri@wisc.edu>; DAVID H O'CONNOR <dhoconno@wisc.edu>  
**Cc:** Katarina Grande <kgrande@publichealthmdc.com>  
**Subject:** Re: News query from Nature - vaccines and Delta

Hi everyone, Thanks for the Zoom call the other day. Is one of you available for a 5 min fact check this afternoon? I got edits back on the story and have a few minor things to iron out.

Perhaps Dr Katarina Grande, if you're available – missed you the other day since you were out.

In any case, just let me know what number to call! Thanks, Nidhi

--

Nidhi Subbaraman (she/her)

Senior reporter, *Nature*

<https://www.nature.com/news>

O: +1 202 626 2523 | C: + [REDACTED] | [@nidhisubs](#)

---

**From:** Thomas Friedrich <tfriedri@wisc.edu>

**Date:** Wednesday, August 4, 2021 at 8:41 AM

**To:** DAVID H O'CONNOR <dhoconno@wisc.edu>

**Cc:** Nidhi Subbaraman <nidhi.subbaraman@us.nature.com>, Katarina Grande <kgrande@publichealthmdc.com>

**Subject:** Re: News query from Nature - vaccines and Delta

**[External - Use Caution]**

Great. Nidhi, if you could send a calendar invitation for a Zoom call at 13:30 CDT that would be great.

Thanks,

T

Sent from my iPhone

On Aug 4, 2021, at 07:10, DAVID H O'CONNOR <dhoconno@wisc.edu> wrote:

Yep, 1:30 PM is good for me.

dave

Nidhi Subbaraman wrote on 8/4/21 7:05 AM:

Thanks very much. How about the 13:30-1400 slot? I can send a zoom link or call, whatever's best for you. Thanks!

-

Nidhi Subbaraman (she)

Senior reporter, Nature



Cell: + [REDACTED]

Sent from my phone

On Aug 4, 2021, at 8:00 AM, Thomas Friedrich  
[<tfriedri@wisc.edu>](mailto:tfriedri@wisc.edu) wrote:

**[External - Use Caution]**

Hi Nidhi.

Looping in my colleagues Dave O'Connor and Kat Grande here. I think Kat is away today, but Dave and/or I should have time to talk.

How about:

11:30-noon CDT

13:30-14:00 CDT

Best,

Tom

Sent from my iPhone

On Aug 3, 2021, at 23:24, Nidhi Subbaraman  
[<nidhi.subbaraman@us.nature.com>](mailto:nidhi.subbaraman@us.nature.com) wrote:

Prof Friedrich, I report on biomedical research for the news team at Nature. I'm working on a story about vaccines and the Delta variant and had a few questions about your recent preprint on this topic:

<https://www.medrxiv.org/content/10.1101/2021.07.31.21261387v1>

Would you be free for a phone conversation about this on Weds.? Let me know there are any windows that work, and thanks so much for considering this,

Nidhi

--

Nidhi Subbaraman (she/her)

Senior reporter, *Nature*

<https://www.nature.com/news>

O: +1 202 626 2523 | C: +

| [@nidhisubs](#)

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**From:** [Dave O'Connor](#)  
**To:** [Tyler Cardon](#)  
**Cc:** [Grande, Katarina](#); [Thomas Friedrich](#)  
**Subject:** Re: Question re Shedding of Infectious SARS-CoV-2 Despite Vaccination  
**Date:** Wednesday, September 22, 2021 2:55:59 PM  
**Attachments:** [image.png](#)  
[image.png](#)

---

No. Because presenting the data numerically like that implies that there is enough data to make a robust comparison - there isn't in this case.

dave

Tyler Cardon wrote on 9/22/21 1:58 PM:

Thanks, Dave! I hadn't seen the snapshots. What a great resource for Dane County, and very well presented, too.

After reading your response to my question in the first bullet below, I realized I could have phrased it more clearly. My question is not whether the low CT values at which infectious virus was detected on the vaccinated asymptomatic specimens described in your paper provides sufficient support to make any sort of broad assertion. Acknowledging limitations due to small sample size, my question is whether the following is a *fair interpretation* of the data regarding the asymptomatic specimens you described in the paper:

Given that low CT values are associated with higher viral loads and increased transmissibility, the fact that virus was detected at a lower average CT value on specimens from the asymptomatic vaccinated group (23.64) than the asymptomatic unvaccinated group (27.23) indicates that the asymptomatic vaccinated group, on average, carried ~8 to 16x higher viral loads than the asymptomatic unvaccinated group.

Again, the sample size is too small to draw any conclusions from these results alone, but do you consider the above a fair interpretation of the data on asymptomatic specimens presented in your paper? If not, what am I missing?

Thanks again for your time.

---

**From:** Dave O'Connor <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Date:** Tuesday, September 21, 2021 at 2:04 PM  
**To:** Tyler Cardon <[tcardon@blazemedia.com](mailto:tcardon@blazemedia.com)>  
**Cc:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** Re: Question re Shedding of Infectious SARS-CoV-2 Despite Vaccination

Yep, typo. Should read, "...is important for transmission"

The benefit of vaccination of rate of infection in this same population comes from the PHMDC data snapshots maintained by Kat and her team

([https://publichealthmdc.com/documents/2021-09-16\\_data\\_snapshot.pdf](https://publichealthmdc.com/documents/2021-09-16_data_snapshot.pdf)) The rate fluctuates from week to week, but infections among unvaccinated occur about 3x as often. Kat can provide more info.

Per questions to group:

1. No, you can't make the assertion in the first bullet point. Sample size of asymptomatics is far too small for this particular analysis.
2. Asymptomatic vs. symptomatic is hard to compare since self-reporting is subjective, and someone who is asymptomatic at time of testing could go on to develop symptoms later that aren't captured in the data. It is something we will continue to look at periodically, but with so many other competing demands on our time, it isn't a priority at the moment.

dave

Tyler Cardon wrote on 9/21/21 1:36 PM:

Thanks for the quick responses, Dave and Katarina! Very much appreciated. I've included a couple of quick follow up questions for you below:

Question for the group:

- One of the most surprising results from your study was the low CT values on your vaccinated asymptomatic group. Given that each cycle represents a doubling, and the average variance between asymptomatic vaccinated and asymptomatic unvaccinated appears to be 3-4 cycles, is it fair to say that the average viral load in the asymptomatic vaccinated group in your study was 8-16x higher than the asymptomatic unvaccinated group?
- Given the small sample size of asymptomatic vaccinated specimens (11), are you planning on doing a follow up study to confirm this surprising result?

Question for Katarina:

- Did you select for vaccination status when determining which specimens from the convenience sample to include in the study described in the paper? In other words, were the 699 specimens

randomly selected from the convenience sample and the respective vaccination status for each determined later?

- For context, I was surprised (perhaps I shouldn't be) to see roughly as many specimens in the vaccinated group (310) as the unvaccinated group (389), which made me wonder whether you selected for vaccination status to compare roughly the same number of specimens for each group.

Questions for Dave:

- Did you mean to write, "What is happening in the nose **is** important for transmission ..."? You wrote "isn't", but that strikes me as inconsistent with the conclusion of your paper and my own understanding, limited though it is, so I wanted to double check.
- In citing the comparative data regarding the relative likelihood of infection, disease, hospitalization, etc., between unvaccinated and vaccinated persons, you're referring to the best/most recent information available, and not the results of the research you and your colleagues described in the paper, correct? Unless I missed it, I didn't see discussion on the relative likelihood of SARS-CoV-2 infection between the two groups in your paper.

---

**From:** Dave O'Connor <[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)>

**Date:** Tuesday, September 21, 2021 at 9:25 AM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Cc:** Tyler Cardon <[tcardon@blazemedia.com](mailto:tcardon@blazemedia.com)>, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Subject:** Re: Question re Shedding of Infectious SARS-CoV-2 Despite Vaccination

Only that it is essential to remember that those who are unvaccinated are ~3x more likely to become infected and much, much more likely to develop severe disease and require hospitalization, even though the amount of virus we detect in the noses of both groups are similar. What is happening in the nose isn't important for transmission but doesn't tell the whole story. Much of the disease pathology happens in the lower respiratory tract which is not evaluated in our study.

dave

Grande, Katarina wrote on 9/21/21 7:53 AM:

Hi Tyler,

The specimens were a convenience sample, representing samples we were already sequencing as part of public health practice to identify clusters and conduct variant surveillance. Anything to add, Tom and Dave?

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

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This email, including any attachments, may contain confidential or protected health information which is only for the intended recipient. If you received this email in error, please delete and notify the sender immediately. Emails sent or received by our agency are subject to open records requests and could be released to the public, unless there is an exception allowed by law.



**There's strength in numbers.  
Join me! #GetVaccinated**

---

**From:** Tyler Cardon <[tcardon@blazemedia.com](mailto:tcardon@blazemedia.com)>

**Sent:** Monday, September 20, 2021 6:02 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** Question re Shedding of Infectious SARS-CoV-2  
Despite Vaccination

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Hi Katarina,

Kudos on the important paper. I hope it's progressing through the peer review process, as it contains important information that policy makers and public health officials

should be taking into account as they consider how to best respond to Delta.

Quick question for you: How were the 699 swab specimens selected for the study? Did you and the other authors ask Exact Sciences for samples below a certain threshold and the distribution between vaccinated and unvaccinated was random? Or did you specifically request that Exact Sciences provide relatively equal numbers of specimens from vaccinated and unvaccinated groups?

Many thanks,

**Tyler Cardon**  
CEO  
Blaze Media

--

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[@dho](mailto:@dho) • 608-890-0845

--

<http://dho.pathology.wisc.edu>  
[@dho](mailto:@dho) • 608-890-0845

**From:** [Dave O'Connor](#)  
**To:** [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)  
**Cc:** "Sanjay Mishra"; [Kasen Riemersma](#); [Thomas Friedrich](#)  
**Subject:** Re: Request to interview from National Geographic  
**Date:** Thursday, August 12, 2021 2:37:58 PM  
**Attachments:** [image.png](#)  
[image.png](#)

---

I can chat after 4:30 CDT, or go ahead without me!

dave

[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com) wrote on 8/12/21 2:36 PM:

Hi Dr. Mishra,

Thanks for reaching out. I could jump on a call after 3:30pm. I'm cc'ing my co-authors, who are the true scientists on the paper—I'm the applied public health person of the bunch. So depending on your angle, it may be helpful to link with them, or see if we could jump on a call together.

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

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**There's strength in numbers.**  
**Join me! #GetVaccinated**

---

**From:** Sanjay Mishra [<mishra.sanjay@outlook.com>](mailto:mishra.sanjay@outlook.com)  
**Sent:** Thursday, August 12, 2021 2:07 PM  
**To:** Grande, Katarina [<KGrande@publichealthmdc.com>](mailto:KGrande@publichealthmdc.com)  
**Subject:** Request to interview from National Geographic  
**Importance:** High



Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Katarina

I read your preprint posted earlier today with alarm: "Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021"

Can I urgently talk to you since I am pitching this as story to my editor at National Geographic, as a follow up to my recent stories on Delta variant, value of masking and breakthrough infections:

In National Geographic:

1. [Why is Delta more infectious and deadly? New research holds answers](#). (August 6, 2021)
2. [How dangerous is the new Delta Plus variant? Here's what we know](#). (July 2, 2021)
3. [The Delta variant is serious. Here's why it's on the rise](#). (June 16, 2021); updated:
  - a. [The Delta variant is spreading fast, especially where vaccination rates are low](#) (July 8, 2021)
4. [This 'double mutant' variant is adding fuel to India's COVID-19 crisis](#) (April 28, 2021)

In The Conversation:

1. [What is a breakthrough infection? 6 questions answered about catching COVID-19 after vaccination](#) (July 28, 2021)
2. [Can people vaccinated against COVID-19 still spread the coronavirus?](#) (May 25, 2021)

I and the readers of National Geographic will highly appreciate it

*Sanjay Mishra, MS, PhD*

*Nashville, TN 37221; USA*

[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) | [@Ecquis](#) | +1 (615) 829 6563

[LinkedIn](#) | [Google Scholar](#) | [Contently](#) | [Skype](#)

--

<http://dho.pathology.wisc.edu>

[@dho](#) • 608-890-0845

**From:** [Dave O'Connor](#)  
**To:** [Segaloff, Hannah E - DHS](#)  
**Cc:** [Kasen Riemersma](#); [Thomas Friedrich](#); [Katarina Grande](#)  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Thursday, August 19, 2021 11:17:05 AM

---

No worries - we ported the comments into Google Drive and should be able to run a clean and tracked version from there by the end of the day.

dave

Segaloff, Hannah E - DHS wrote on 8/19/21 10:15 AM:

They do but it's in sharepoint that non-CDC authors can't access.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Dave O'Connor [<dhoconno@wisc.edu>](mailto:dhoconno@wisc.edu)  
**Sent:** Thursday, August 19, 2021 10:05 AM  
**To:** Segaloff, Hannah E - DHS [<hannah.segaloff@dhs.wisconsin.gov>](mailto:hannah.segaloff@dhs.wisconsin.gov)  
**Cc:** Kasen Riemersma [<kriemersma@wisc.edu>](mailto:kriemersma@wisc.edu); Thomas Friedrich [<tfriedri@wisc.edu>](mailto:tfriedri@wisc.edu); Katarina Grande [<kgrande@publichealthmdc.com>](mailto:kgrande@publichealthmdc.com)  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah,

We're trying to merge in the comments with the Google Drive version now. Can the CDC team that does review work out of Google Docs to have a single, live, synchronous version instead of Word?

dave

Segaloff, Hannah E - DHS wrote on 8/19/21 9:58 AM:

We will need to provide a tracked changes and clean version.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service

IR#0682H\_000482

Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS  
**Sent:** Thursday, August 19, 2021 9:41 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; 'Thomas Friedrich' <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** FW: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi All,

Here are the first round of comments. We should get all responses within 24 to 48 hours of our submission. It looks like this needs to be approved by Lab TF, cross clearance and the response.  
Let me know if I can help with comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)


---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Thursday, August 19, 2021 9:24 AM  
**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Hi Hannah,

Please address the mandatory comments and return for re-review.

 [Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>

**Sent:** Wednesday, August 18, 2021 9:18 AM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hello,

Thank you for the quick work getting this approved for DIM expedited clearance. I haven't had a manuscript in expedited clearance before. Does it have the same steps as standard? How much time should I anticipate for the clearance process?

Thank you!  
Hannah

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 11:51 AM

**To:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

NP! Glad we were able to turn this around so quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:47 PM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:43 PM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Afternoon,

This has been approved for expedited clearance.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:40 PM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thank you. I approve expedited clearance.

Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:16 PM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey Stephanie,

Please see attached for the updated draft.

Thanks,  
Shelbi Davis

Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 11:05 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Sure thing, working on the updated draft now.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:56 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Yes, please request an updated draft with Hannah's name on it and then I approve it going for expedited clearance.

Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:56 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey Stephanie,

From correspondence with ADS and STLT Hannah was inadvertently left off the manuscript but WI has confirmed that she is a co-author but her name is not on this draft. Should we request an updated draft with Hannah information on there as the co-author?

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:51 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey,

I am working on getting clarification as we speak, update to follow.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]



**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:49 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hannah Segaloff EISO is listed on the clearance request form as an author but not on the manuscript. Can you clarify that she indeed and author? If so, then my approval for expedited clearance stands.

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:40 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thanks for the speedy response!

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [cocevent503@cdc.gov](mailto:cocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:39 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

I approve.

Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response

CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:38 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Morning Stephanie,

Happy Tuesday! We would like to request DIM1 expedited approval for the attached manuscript. Please refer to the email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:32 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance on this item or wait until you receive the DIM approval ?

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 9:59 AM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance

<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)

<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Cc:** Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>;

Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon,

Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; Llewellyn, Anna C.

(CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Segaloff, Hannah

(CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>

**Subject:** Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Good Morning,

You may have heard but our task force was asked by STLT, and we agreed, to sponsor this manuscript through clearance. The authors are targeting NEJM and are requesting our task force to request IM approval for expedited clearance. Our main POC for this manuscript is our CDC EISO Hannah Segaloff (Cc'd). Let me know if you have any questions.

Hannah- our clearance team can help shepherd your paper through clearance. I would anticipate our laboratory SMEs to have some questions for your team.

Best regards,

John

John Kools

ADS, Laboratory & Testing Task Force

CDC COVID-19 Response

Phone: [REDACTED]

---

**From:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 4:51 AM  
**To:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Subject:** FW: Follow up on your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: [REDACTED]

---

**From:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>  
**Sent:** Monday, August 16, 2021 3:35 PM  
**To:** Segaloff, Hannah (CDC dhs.wisconsin.gov) <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan (CDC dhs.wisconsin.gov) <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard, Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Ricaldi Camahuali, Jessica (CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>; Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS 2019 NCOV Response STLT ADS <[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>; CDC IMS 2019 NCOV Response Lab Task Force <[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>  
**Subject:** Re: Follow up on your results

Dear Hannah,

Thank you for these additional documents. Due to this manuscript's

focus on laboratory data, our Laboratory and Testing Task Force colleagues have agreed to be the sponsoring task force for CDC COVID-19 Response clearance. John Kools is the Lab TF ADS and can assist with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for Science  
State, Tribal, Local, and Territorial Support Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Office: 404-639-1538 | Cell: [REDACTED]  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday, August 16, 2021 3:13 PM  
**To:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>;  
Westergaard, Ryan (CDC dhs.wisconsin.gov)  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard, Kris  
(CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Ricaldi  
Camahuali, Jessica (CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>  
**Subject:** RE: Follow up on your results

Thank you. I have attached the concept proposal that was approved from the original MMWR submission as well as a clearance request form.

Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

--  
[http://dho.pathology.wisc.edu](http://dho.pathology.wisc.edu@dho)  
[@dho • 608-890-0845](http://dho.pathology.wisc.edu@dho)

--  
<http://dho.pathology.wisc.edu>  
[@dho • 608-890-0845](http://dho.pathology.wisc.edu)

**From:** [Dave O'Connor](#)  
**To:** [Segaloff, Hannah E - DHS](#)  
**Cc:** [Thomas Friedrich](#); [Kasen Riemersma](#); [Katarina Grande](#); [Westergaard, Ryan P - DHS](#)  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Friday, August 20, 2021 4:14:32 PM

---

Looks fine to me Hannah. Thanks for taking care of the edits.

dave

Segaloff, Hannah E - DHS wrote on 8/20/21 4:12 PM:

Sorry for the repeat emails. I can just send this version back if you all agree since changes were so minor.

-Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, August 20, 2021 3:44 PM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Do you have any updates on the CDC clearance process? Can you see if others have been able to look at the paper?

Thanks,

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)

@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 18:51, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Okay, fingers crossed!

Sent from my iPhone

On Aug 19, 2021, at 18:02, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Though on second thought I can see that the STLT TF is reviewing now-  
so maybe this is moving faster than I thought.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 5:44 PM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande  
<[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination  
when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on  
links or open attachments unless you recognize the sender.**

Thanks Hannah.

I really hope they can return comments tomorrow so we can submit.  
[REDACTED] on Saturday and won't have WiFi for a  
week. Do you think that is at all possible?

Best,

Tom

Sent from my iPhone

On Aug 19, 2021, at 15:20, Segaloff, Hannah E - DHS



<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Thanks Tom,

I will send these along and the note. I'm hoping we can switch over to a Google drive format for comments.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 3:05 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Attached please find clean (well, clean-ish) and tracked versions of the revised manuscript. We addressed all the comments and made the changes requested. I hope this can be approved quickly.

Note: As you know, to edit collaboratively, we uploaded the Word doc with CDC comments to Google Drive. I re-downloaded the edited version as a Word doc — this is the “clean” version and preserves CDC comments and our responses. To make the “tracked” version I had to compare that downloaded document to the Word doc you forwarded from CDC. When I did that I noticed that it duplicated several comments from CDC folk. For the sake of readability I tried to delete duplicates, but there are still a lot of comments in a small space. It also appears that replies within comments were not recognized, so now they just appear

as comments on top of other comments. I hope that all makes sense.

If these copies do not come through, you can download them from the shared Google drive here:



Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 09:41, Segaloff,  
Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
wrote:

Hi All,

Here are the first round of comments. We should get all responses within 24 to 48 hours of our submission. It looks like this needs to be approved by Lab TF, cross clearance and the response.  
Let me know if I can help with comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---


**From:** CDC IMS 2019 NCOV Response Lab TF  
Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Sent:** Thursday, August 19, 2021 9:24 AM  
**To:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF  
Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah,

Please address the mandatory comments and return for re-review.

 [Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force  
Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>  
**Sent:** Wednesday, August 18, 2021 9:18 AM  
**To:** CDC IMS 2019 NCOV Response Lab TF  
Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hello,

Thank you for the quick work getting this approved for DIM expedited clearance. I haven't had a manuscript in expedited clearance before. Does it have the same steps as standard? How much time should I anticipate for the clearance process?

Thank you!

Hannah

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 11:51 AM  
**To:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>  
**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

NP! Glad we were able to turn this around so quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:47 PM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>  
**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-  
2 Despite Vaccination when the Delta Variant  
is Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:43 PM  
**To:** CDC IMS 2019 NCOV Response Lab TF  
Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Kools,  
John J. (CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>  
**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-  
CoV-2 Despite Vaccination when the Delta  
Variant is Prevalent

Afternoon,

This has been approved for expedited clearance.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:40 PM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[gqv9@cdc.gov](mailto:gqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thank you. I approve expedited clearance.  
Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[gqv9@cdc.gov](mailto:gqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:16 PM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey Stephanie,

Please see attached for the updated draft.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 11:05 AM

**To:** Bialek, Stephanie R.

(CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela H.

(CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;

Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)

<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Sure thing, working on the updated draft now.

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and Prevention

Lab TF Communications

Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.

(CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 10:56 AM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela H.

(CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;

Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)

<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Yes, please request an updated draft with Hannah's name on it and then I approve it going for expedited clearance.

Stephanie

Stephanie R. Bialek MD MPH

Deputy Incident Manager

COVID-19 Response

CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<qqv9@cdc.gov>

**Sent:** Tuesday, August 17, 2021 10:56 AM

**To:** Bialek, Stephanie R.

(CDC/DDID/NCIRD/DVD) <zqg7@cdc.gov>

**Cc:** Fisher, Angela H.

(CDC/DDPHSS/CSELS/OD) <iwg7@cdc.gov>;

Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)

<xhg9@cdc.gov>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey Stephanie,

From correspondence with ADS and STLT Hannah was inadvertently left off the manuscript but WI has confirmed that she is a co-author but her name is not on this draft. Should we request an updated draft with Hannah information on there as the co-author?

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and Prevention

Lab TF Communications

Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<qqv9@cdc.gov>

**Sent:** Tuesday, August 17, 2021 10:51 AM

**To:** Bialek, Stephanie R.

(CDC/DDID/NCIRD/DVD) <zqg7@cdc.gov>

**Cc:** Fisher, Angela H.

(CDC/DDPHSS/CSELS/OD) <iwg7@cdc.gov>;

Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)

<xhg9@cdc.gov>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey,

I am working on getting clarification as we speak, update to follow.

Thanks,

Shelbi Davis

Communication Lead



Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:49 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hannah Segaloff EISO is listed on the clearance request form as an author but not on the manuscript. Can you clarify that she indeed and author? If so, then my approval for expedited clearance stands.

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:40 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thanks for the speedy response!

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:39 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

I approve.

Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:38 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Morning Stephanie,

Happy Tuesday! We would like to request DIM1 expedited approval for the attached manuscript. Please refer to the email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:32 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance on this item or wait until you receive the DIM approval ?

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force  
Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 9:59 AM  
**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI)

<[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>

**Subject:** Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Good Morning,

You may have heard but our task force was asked by STLT, and we agreed, to sponsor this manuscript through clearance. The authors are targeting NEJM and are requesting our task force to request IM approval for expedited clearance. Our main POC for this manuscript is our CDC EISO Hannah Segaloff (Cc'd). Let me know if you have any questions.

Hannah- our clearance team can help shepherd your paper through clearance. I would anticipate our laboratory SMEs to have some questions for your team.

Best regards,

John

John Kools  
ADS, Laboratory & Testing Task Force  
CDC COVID-19 Response  
Phone: [REDACTED]

---

**From:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI)  
<[jdo8@cdc.gov](mailto:jdo8@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 4:51 AM  
**To:** Kools, John J. (CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Subject:** FW: Follow up on your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues

with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: [REDACTED]

---

**From:** Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>  
**Sent:** Monday, August 16, 2021 3:35 PM  
**To:** Segaloff, Hannah (CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Rose, Dale A. (CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan  
(CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>;  
Bisgard, Kris (CDC/DDPHSS/CSELS/DSEPD)  
<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Ricaldi Camahual, Jessica  
(CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>;  
Kools, John J. (CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Limbago, Brandi  
(CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>;  
Moon, Jonathan L. (CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS 2019 NCOV  
Response STLT ADS <[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>;  
CDC IMS 2019 NCOV Response Lab Task Force  
<[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>  
**Subject:** Re: Follow up on your results

Dear Hannah,

Thank you for these additional documents. Due to this manuscript's focus on laboratory data, our Laboratory and Testing Task Force colleagues have agreed to be the sponsoring task force for CDC COVID-19 Response clearance. John Kools

is the Lab TF ADS and can assist with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for Science  
State, Tribal, Local, and Territorial Support Task  
Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Office: 404-639-1538 | Cell: [REDACTED]  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday, August 16, 2021 3:13 PM  
**To:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan  
(CDC [dhs.wisconsin.gov](http://dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>;  
Bisgard, Kris (CDC/DDPHSS/CSELS/DSEPD)  
<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>;  
Ricaldi Camahuali, Jessica  
(CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>  
**Subject:** RE: Follow up on your results

Thank you. I have attached the concept proposal that was approved from the original MMWR submission as well as a clearance request form.

Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

<Reimersma\_Viral loads in vaccinees\_  
NEJM\_editedauthorlist\_LABTFCOMMENTS.docx>

--

<http://dho.pathology.wisc.edu>  
[@dho • 608-890-0845](mailto:dho@pathology.wisc.edu)

**From:** [Dave O'Connor](#)  
**To:** [dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu)  
**Cc:** [Thomas Friedrich](#); [Peter Halfmann](#)  
**Subject:** Re: [EXTERNAL] Automatic reply: Preprint: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021  
**Date:** Sunday, August 15, 2021 12:56:22 PM

---

Yeah, Tom and I were on TWIV a few times several years back. At that time we were talking about predicting future pandemic threats and coping with Zika virus with real-time data sharing. In this era of preprints and what not, it seems both quaint and forever ago!

dave

[dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu) wrote on 8/15/21 12:45 PM:

Dave,

Appreciate the information. I am planning on discussing your preprint on our next TWIV so would look forward to the quantitative data! Not sure if you are a listener to any of our podcasts. <https://www.microbe.tv>

Daniel

On Aug 15, 2021, at 10:58 AM, DAVID H O'CONNOR  
<[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)> wrote:

Hi Daniel,

Not yet. Hopefully Peter from Yoshi's lab will have quantitative data later this coming week or next week. Initial goal was to simply address the criticism that the high PCR levels didn't correspond to replication competent virus.

Cheers,

Dave

Get [Outlook for iOS](#)

---

**From:** [dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu) <[dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu)>  
**Sent:** Sunday, August 15, 2021 7:22 AM  
**To:** DAVID H O'CONNOR  
**Subject:** Fwd: [EXTERNAL] Automatic reply: Preprint: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Dr O'Connor,



I forwarded my email you way as suggested by Dr Grande,

Look forward to your response

-----

I hope this email finds you well. I was hoping to ask a few questions about the preprint **Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021.**

You report "Infectious SARS-CoV-2 was isolated from 14 of 16 specimens (88%) from unvaccinated individuals and 37 of 39 specimens (95%) from vaccinated people.'

In figure 2 According to figure 2 Infectiousness was determined by the presence of cytopathic effects (CPE) after 5 days of replication in Vero E6 TMPRSS2 cells with visually apparent CPE under a light microscope. Any real time monitoring or quantification?

Sincerely,

Daniel Griffin, MD PhD CTropMed CTH  
Chief, Division of Infectious Disease - ProHEALTH, an OPTUM Company  
Senior Fellow for Infectious Disease - UHG Research and Development  
Clinical Instructor of Medicine - Columbia University College of Physicians and Surgeons  
Department of Medicine-Division of Infectious Diseases  
President -Parasites Without Borders  
1 Dakota Drive Suite 205  
New Hyde Park, NY 11042  
Office Tel: (516)-656-6500  
Cell: [REDACTED]  
[Email: danielgriffinmd@gmail.com](mailto:danielgriffinmd@gmail.com)  
[www.parasiteswithoutborders.com](http://www.parasiteswithoutborders.com)  
[www.microbe.tv](http://www.microbe.tv)  
Twitter @DanielGriffinMD

Begin forwarded message:

**From:** "Grande, Katarina"  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** [EXTERNAL] Automatic reply: Preprint:  
**Shedding of Infectious SARS-CoV-2 Despite**

**Vaccination when the Delta Variant is Prevalent -  
Wisconsin, July 2021**

**Date:** August 14, 2021 at 10:43:41 PM EDT

**To:** "Griffin, Daniel" <[dg2810@cumc.columbia.edu](mailto:dg2810@cumc.columbia.edu)>

I will return to the office on Monday, August 16.

For public health COVID data questions, please reach out to Brittany Grogan, Manjari Ojha, or Crystal Gibson.

For questions related to the medRxiv pre-print, please contact Tom Friedrich [[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)] or Dave O'Connor [[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)]

If you need to reach someone at Public Health Madison & Dane County more urgently, please call 608-266-4821 to speak with a receptionist.

--

<http://dho.pathology.wisc.edu>

[@dho](mailto:@dho) • 608-890-0845

**From:** [Thomas Friedrich](#)  
**To:** [Katarina Grande](#)  
**Cc:** [DAVID H O'CONNOR](#)  
**Subject:** Re: medRxiv -- Manuscript Screened  
**Date:** Wednesday, August 11, 2021 3:50:38 PM

---

And, to be totally clear, I suspect they will not view those 2 things as sufficiently novelty-inducing.

So my expectation is that we'll submit elsewhere, perhaps to Nature Med or Nature Communications.

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

> On 11 Aug 2021, at 15:47, Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)> wrote:

>

> Totally fair! Got it.

>

>

> -----Original Message-----

> From: Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

> Sent: Wednesday, August 11, 2021 3:45 PM

> To: Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

> Cc: DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>

> Subject: Re: medRxiv -- Manuscript Screened

> Importance: High

>

>

>

> Caution: This email was sent from an external source. Avoid unknown links and attachments.

>

>

> The data are already up, it's just that the main page for the preprint was still showing the old abstract. So too late.

>

> Between us, I think MMWR is way behind the times on that. My gut feeling is that we should go ahead and submit elsewhere, unless they accept a few extra tidbits of new data that would make the manuscript novel. These could be:

>

> 1. Expand cell culture data to include the 14 samples from partially vaxed people.

> 2. Include description of Ct values in 53 serial samples.

>

> I would not do any new experiments now to satisfy MMWR requirements, because they have already burned us once. There is no guarantee that they will take it, or that they will move with any speed faster than glacial, even if they agree to consider it.

>

> -T

>

> Thomas Friedrich  
>  
> Professor  
> Dept. Pathobiological Sciences  
> University of Wisconsin  
> School of Veterinary Medicine  
> @tcfriedrich  
> @tcf-lab  
> www.vetmed.wisc.edu/friedrichlab  
>  
>> On 11 Aug 2021, at 15:33, Grande, Katarina <KGrande@publichealthmdc.com> wrote:  
>>  
>> Should we intervene/revoke given MMWR just said they don't allow data shared in a pre-print???  
>>  
>>  
>> -----Original Message-----  
>> From: medrxiv@cshlbp.org <medrxiv@cshlbp.org>  
>> Sent: Wednesday, August 11, 2021 3:33 PM  
>> To: dhocconno@wisc.edu; Grande, Katarina <KGrande@publichealthmdc.com>  
>> Subject: medRxiv -- Manuscript Screened  
>>  
>>  
>>  
>> Caution: This email was sent from an external source. Avoid unknown links and attachments.  
>>  
>>  
>> MS ID#: MEDRXIV/2021/261387  
>> MS TITLE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021  
>>  
>> Dear Dr. Grande,  
>>  
>> We are pleased to inform you that the above manuscript has passed screening and will be online shortly. Processing typically completes same or next day (occasionally longer if over a weekend or a holiday).  
>>  
>> Once an article is published in a journal, medRxiv will automatically update the preprint with a link to the published version. Depending on the journal, this process may take up to two weeks.  
>>  
>> The medRxiv team  
>

**From:** [DAVID H O'CONNOR](#)  
**To:** [Grande, Katarina](#)  
**Cc:** [Thomas Friedrich](#)  
**Subject:** Re: medRxiv -- Manuscript Screened  
**Date:** Wednesday, August 11, 2021 3:43:30 PM

---

Nope, our previous experience with MMWR was not positive. CDC can take our data if they want it for MMWR. If they don't, that's OK too. Their preprint policy is backwards and nonsensical.

dave

Grande, Katarina wrote on 8/11/21 3:33 PM:

Should we intervene/revoke given MMWR just said they don't allow data shared in a pre-print???

-----Original Message-----

From: [medrxiv@cshlbp.org](mailto:medrxiv@cshlbp.org) <[medrxiv@cshlbp.org](mailto:medrxiv@cshlbp.org)>  
Sent: Wednesday, August 11, 2021 3:33 PM  
To: [dhoconno@wisc.edu](mailto:dhoconno@wisc.edu); Grande, Katarina  
<[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
Subject: medRxiv -- Manuscript Screened

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MS ID#: MEDRXIV/2021/261387  
MS TITLE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Dear Dr. Grande,

We are pleased to inform you that the above manuscript has passed screening and will be online shortly. Processing typically completes same or next day (occasionally longer if over a weekend or a holiday).

Once an article is published in a journal, medRxiv will automatically update the preprint with a link to the published version. Depending on the journal, this process may take up to two weeks.

The medRxiv team

--

<http://dho.pathology.wisc.edu>  
[@dho](mailto:dho@pathology.wisc.edu) • 608-890-0845

**From:** [Thomas Friedrich \(Google Docs\)](#)  
**To:** [DAVID H O'CONNOR](#)  
**Subject:** Shedding of Infec... - An additional relatively recent one (...)  
**Date:** Wednesday, October 27, 2021 5:55:16 PM

---

Thomas Friedrich resolved a comment in the following document



Shedding of Infectious SARS-CoV-2 Despite Vaccination

Bergwerk et al. 2021



Katarina Grande

An additional relatively recent one (9/8) to cite may be: <https://www.nejm.org/doi/full/10.1056/NEJMc2106757>

"We provide empirical evidence suggesting that vaccination may reduce transmission by showing that vaccination of health care workers is associated with a decrease in documented cases of Covid-19 among members of their households."



Thomas Friedrich

New

*Marked as resolved*

[Open](#)

Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043, USA

You have received this email because you are subscribed to all discussions on [Shedding of Infectious SARS-CoV-2 Despite Vaccination](#). [Change what Google Docs sends you](#). You can reply to this email to reply to the discussion.



**From:** [Thomas Friedrich \(Google Docs\)](#)  
**To:** [DAVID H O'CONNOR](#)  
**Subject:** Shedding of Infec... - Instead of Eyre who found that vaccin...  
**Date:** Wednesday, October 27, 2021 4:21:41 PM

---

## Thomas Friedrich resolved a comment in the following document



Shedding of Infectious SARS-CoV-2 Despite Vaccination

Eyre et al. 2021



Katarina Grande

Instead of Eyre who found that vaccination lowered the odds of transmitting to contacts, how about citing Gage's new lab's paper that looked at genomic and epi data from P-

town: <https://www.medrxiv.org/content/10.1101/2021.10.20.21265137v1.full-text> conclusion: "Together, genomic epidemiology provides a high-resolution picture of the Provincetown outbreak, revealing multiple cases of transmission of Delta from fully vaccinated individuals. However, despite its magnitude, the outbreak was restricted in its onward impact in MA and the US, likely due to high vaccination rates and a robust public health response."



Thomas Friedrich

New

*Marked as resolved*

[Open](#)

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**From:** [Thomas Friedrich \(Google Docs\)](#)  
**To:** [DAVID H O'CONNOR](#)  
**Subject:** Shedding of Infec... - This study (updated 10/5 on medrix) c...  
**Date:** Wednesday, October 27, 2021 5:35:32 PM

---

Thomas Friedrich resolved a comment in the following document



Shedding of Infectious SARS-CoV-2 Despite Vaccination

other studies



Katarina Grande

This study (updated 10/5 on medrix) cited ours: <https://www.medrxiv.org/content/10.1101/2021.09.28.21264262v2.full-text>

and basically had the same findings and conclusions as our study.



Thomas Friedrich

New

*Marked as resolved*

[Open](#)

Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043, USA

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**From:** [Katarina Grande \(Google Docs\)](#)  
**To:** [DAVID H O"CONNOR](#)  
**Subject:** Shedding of Infec... - This study (updated 10/5 on medrix) c...  
**Date:** Tuesday, October 26, 2021 5:32:48 PM

---

## Katarina Grande added a comment to the following document



Shedding of Infectious SARS-CoV-2 Despite Vaccination

other studies



Katarina Grande

New

This study (updated 10/5 on medrix) cited  
ours: <https://www.medrxiv.org/content/10.1101/2021.09.28.21264262v2.full-text>

and basically had the same findings and conclusions as our study.

[Open](#)

Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043,  
USA

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discussions on [Shedding of Infectious SARS-CoV-2 Despite  
Vaccination](#). [Change what Google Docs sends you](#). You can reply to this  
email to reply to the discussion.



**From:** [Thomas Friedrich \(Google Docs\)](#)  
**To:** [DAVID H O"CONNOR](#)  
**Subject:** Viral loads in va... - Edited to comply with 75-character li...  
**Date:** Tuesday, August 17, 2021 2:50:23 PM

---

Thomas Friedrich added a comment to the following document



Viral loads in vaccinees: NEJM

Shedding of Infectious SARS-CoV-2 Despite Vaccination



Thomas Friedrich

New

Edited to comply with 75-character limit. This is 53 characters.

[Open](#)

Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043, USA

You have received this email because you are subscribed to all discussions on [Viral loads in vaccinees: NEJM](#). [Change what Google Docs sends you](#). You can reply to this email to reply to the discussion.



**From:** [medrxiv@cshlbp.org](mailto:medrxiv@cshlbp.org)  
**To:** [DAVID H O"CONNOR](#); [kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)  
**Subject:** medRxiv -- Manuscript Screened  
**Date:** Wednesday, August 25, 2021 1:41:54 AM

---

MS ID#: MEDRXIV/2021/261387

MS TITLE: Shedding of Infectious SARS-CoV-2 Despite Vaccination

Dear Dr. Grande,

We are pleased to inform you that the above manuscript has passed screening and will be online shortly. Processing typically completes same or next day (occasionally longer if over a weekend or a holiday).

Once an article is published in a journal, medRxiv will automatically update the preprint with a link to the published version. Depending on the journal, this process may take up to two weeks.

The medRxiv team

**From:** [medrxiv@cshlbp.org](mailto:medrxiv@cshlbp.org)  
**To:** [DAVID H O"CONNOR](#)  
**Cc:** [kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)  
**Subject:** medRxiv -- Please Approve Your Submission  
**Date:** Friday, November 5, 2021 5:17:12 PM

---

This is an automatic notification that the file(s) for manuscript MEDRXIV/2021/261387 ("Shedding of Infectious SARS-CoV-2 Despite Vaccination" by Katarina M Grande) have been successfully uploaded and converted to PDF format. This DOES NOT mean that the manuscript has been submitted.

To complete the submission process, please click on <https://submit.medrxiv.org/submission/submit?msid=MEDRXIV/2021/261387>. (Alternatively, log into <https://submit.medrxiv.org>, enter your "Author Area," and click on "Ready for You to Proof.") Once you have approved your submission, you will receive an email message confirming it.

Please note that only an author on the paper can complete the submission. If you are not an author on the paper and the corresponding author does not yet have a medRxiv account, then they will need to create an account first, using the email address included in the submission. The paper then will appear in their Author Area at <https://submit.medrxiv.org>.

Thank you for your submission.

The medRxiv team

**From:** [medrxiv@cshlbp.org](mailto:medrxiv@cshlbp.org)  
**To:** [DAVID H O"CONNOR](#)  
**Cc:** [kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)  
**Subject:** medRxiv -- Please Approve Your Submission  
**Date:** Wednesday, August 11, 2021 11:03:16 AM

---

This is an automatic notification that the file(s) for manuscript MEDRXIV/2021/261387 ("Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021" by Katarina M Grande) have been successfully uploaded and converted to PDF format. This DOES NOT mean that the manuscript has been submitted.

To complete the submission process, please click on <https://submit.medrxiv.org/submission/submit?msid=MEDRXIV/2021/261387>. (Alternatively, log into <https://submit.medrxiv.org>, enter your "Author Area," and click on "Ready for You to Proof.") Once you have approved your submission, you will receive an email message confirming it.

Please note that only an author on the paper can complete the submission. If you are not an author on the paper and the corresponding author does not yet have a medRxiv account, then they will need to create an account first, using the email address included in the submission. The paper then will appear in their Author Area at <https://submit.medrxiv.org>.

Thank you for your submission.

The medRxiv team

**From:** [medrxiv@cshlbp.org](mailto:medrxiv@cshlbp.org)  
**To:** [DAVID H O"CONNOR](#)  
**Cc:** [kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)  
**Subject:** medRxiv -- Revision Acknowledgment  
**Date:** Tuesday, August 10, 2021 5:47:03 PM

---

MS ID#: MEDRXIV/2021/261387

MS TITLE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021

Dear Dr. Grande,

This is to acknowledge the receipt of your revised paper.

If you would like to make changes to your revision submission prior to it being approved for posting on medRxiv, please contact medRxiv at [medrxiv@cshl.edu](mailto:medrxiv@cshl.edu) and we will return your submission. Do not create a new submission to update your manuscript as this will create a duplicate submission and will significantly delay the screening of your manuscript.

Be certain to visit <https://submit.medrxiv.org> and login to the "author area." Once logged in, you may check on the status of your manuscript.

The medRxiv team

**From:** [medrxiv@cshlbp.org](mailto:medrxiv@cshlbp.org)  
**To:** [DAVID H O"CONNOR](#)  
**Cc:** [kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)  
**Subject:** medRxiv -- Revision Acknowledgment  
**Date:** Monday, August 23, 2021 2:02:20 PM

---

MS ID#: MEDRXIV/2021/261387

MS TITLE: Shedding of Infectious SARS-CoV-2 Despite Vaccination

Dear Dr. Grande,

This is to acknowledge the receipt of your revised paper.

If you would like to make changes to your revision submission prior to it being approved for posting on medRxiv, please contact medRxiv at [medrxiv@cshl.edu](mailto:medrxiv@cshl.edu) and we will return your submission. Do not create a new submission to update your manuscript as this will create a duplicate submission and will significantly delay the screening of your manuscript.

Be certain to visit <https://submit.medrxiv.org> and login to the "author area." Once logged in, you may check on the status of your manuscript.

The medRxiv team

**From:** [Segaloff, Hannah E - DHS](#)  
**To:** [Kasen Riemersma](#); [Katarina Grande](#); [DAVID H O"CONNOR](#); [Thomas Friedrich](#)  
**Subject:** FW: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Monday, August 23, 2021 11:52:52 AM  
**Attachments:** [COPY EOC Riemersma Viral loads in vaccinees NEJM revised 8 21 resubmission to JIC clearance FOR OS OS.docx](#)

---

Hi all,

We are cleared! There are some extremely tiny comments to incorporate/consider. Once we submit they just want me to send a final copy for their records. Note that I made two additional small changes ( [REDACTED] ) without sending it back to facilitate quick review- so you may want to upload this version.

Thanks for your patience with this painful process!

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Monday, August 23, 2021 11:47 AM  
**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah:

The attached document has been cleared by JIC with comments.

**Once you have addressed the reviewer's feedback, please send us a clean and final document, so we can provide it to JIC for their records.**

**JIC OS Content Comment.**

- **Very informative study. It is approved with minor comments, see attached**



Thanks,

Audrey

CDC IMS 2019-nCoV Lab Task Force Clearance

[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

**From:** [Segaloff, Hannah E - DHS](#)  
**To:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Thomas Friedrich](#); [Katarina Grande](#)  
**Subject:** FW: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Thursday, August 19, 2021 9:41:38 AM  
**Attachments:** [Reimersma Viral loads in vaccinees\\_NEJM\\_editedauthorlist\\_LABTFCOMMENTS.docx](#)

---

Hi All,

Here are the first round of comments. We should get all responses within 24 to 48 hours of our submission. It looks like this needs to be approved by Lab TF, cross clearance and the response. Let me know if I can help with comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Thursday, August 19, 2021 9:24 AM  
**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Hi Hannah,

Please address the mandatory comments and return for re-review.



[Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance

[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>

**Sent:** Wednesday, August 18, 2021 9:18 AM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hello,

Thank you for the quick work getting this approved for DIM expedited clearance. I haven't had a manuscript in expedited clearance before. Does it have the same steps as standard? How much time should I anticipate for the clearance process?

Thank you!

Hannah

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 11:51 AM

**To:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

NP! Glad we were able to turn this around so quickly.

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and Prevention

Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:47 PM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:43 PM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Afternoon,

This has been approved for expedited clearance.

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and Prevention

Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:40 PM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thank you. I approve expedited clearance.

Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:16 PM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey Stephanie,

Please see attached for the updated draft.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 11:05 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Sure thing, working on the updated draft now.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention

Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:56 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Yes, please request an updated draft with Hannah's name on it and then I approve it going for expedited clearance.

Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:56 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey Stephanie,

From correspondence with ADS and STLT Hannah was inadvertently left off the manuscript but WI has confirmed that she is a co-author but her name is not on this draft. Should we request an updated draft with Hannah information on there as the co-author?

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:51 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey,

I am working on getting clarification as we speak, update to follow.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:49 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hannah Segaloff EISO is listed on the clearance request form as an author but not on the manuscript. Can you clarify that she indeed and author? If so, then my approval for expedited clearance stands.

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:40 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thanks for the speedy response!

Thanks,  
Shelbi Davis

Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:39 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

I approve.

Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:38 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Morning Stephanie,

Happy Tuesday! We would like to request DIM1 expedited approval for the attached manuscript. Please refer to the email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]



---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:32 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance on this item or wait until you receive the DIM approval ?

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 9:59 AM  
**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Subject:** Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Good Morning,

You may have heard but our task force was asked by STLT, and we agreed, to sponsor this manuscript through clearance. The authors are targeting NEJM and are requesting our task force to request IM approval for expedited clearance. Our main POC for this manuscript is our CDC EISO Hannah Segaloff (Cc'd). Let me know if you have any questions.

Hannah- our clearance team can help shepherd your paper through clearance. I would anticipate our

laboratory SMEs to have some questions for your team.

Best regards,

John

John Kools  
ADS, Laboratory & Testing Task Force  
CDC COVID-19 Response  
Phone: 404-217-7258

---

**From:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 4:51 AM  
**To:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Subject:** FW: Follow up on your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: [REDACTED]

---

**From:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>  
**Sent:** Monday, August 16, 2021 3:35 PM  
**To:** Segaloff, Hannah (CDC dhs.wisconsin.gov) <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan (CDC dhs.wisconsin.gov) <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard, Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Ricaldi Camahuali, Jessica (CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>; Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bb17@cdc.gov](mailto:bb17@cdc.gov)>;

Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS 2019 NCOV Response STLT ADS <[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>; CDC IMS 2019 NCOV Response Lab Task Force <[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>

**Subject:** Re: Follow up on your results

Dear Hannah,

Thank you for these additional documents. Due to this manuscript's focus on laboratory data, our Laboratory and Testing Task Force colleagues have agreed to be the sponsoring task force for CDC COVID-19 Response clearance. John Kools is the Lab TF ADS and can assist with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for Science  
State, Tribal, Local, and Territorial Support Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Office: 404-639-1538 | Cell: [REDACTED]  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>

**Sent:** Monday, August 16, 2021 3:13 PM

**To:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan (CDC dhs.wisconsin.gov) <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard, Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>

**Cc:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Ricaldi Camahuali, Jessica (CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>

**Subject:** RE: Follow up on your results

Thank you. I have attached the concept proposal that was approved from the original MMWR submission as well as a clearance request form.

Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking

IR#0682H\_000539

Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

**From:** [medicine@us.nature.com](mailto:medicine@us.nature.com)  
**To:** [Kasen Riemersma](#)  
**Subject:** NMED-BC116676 Receipt of New Paper by Nature Medicine  
**Date:** Tuesday, November 2, 2021 2:05:05 PM

---

Dear Dr. Riemersma,

Please note that you are listed as a co-author on the manuscript "Shedding of Infectious SARS-CoV-2 Despite Vaccination" (reference number: NMED-BC116676), which was recently submitted to Nature Medicine.

The corresponding author is solely responsible for communicating with the journal and managing communication between co-authors. Please contact the corresponding author directly with any queries you may have related to this manuscript.

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[REDACTED] ">these instructions. Please note that it must be linked prior to acceptance, it will not be possible to add/modify ORCIDs at proof, and you may not receive further notification before an accept decision is made. Please ensure the ORCID is linked to your account associated with this manuscript, and not to any other account you may have on our system.

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Many thanks,

Editorial Assistant  
Nature Medicine  
[medicine@us.nature.com](mailto:medicine@us.nature.com)

**\*Our flexible approach during the COVID-19 pandemic\***

*If you need more time at any stage of the peer-review process, please do let us know. While our systems will continue to remind you of the original timelines, we aim to be as flexible as possible during the current pandemic.*

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**From:** [onbehalf@manuscriptcentral.com](mailto:onbehalf@manuscriptcentral.com)  
**To:** [Kasen Riemersma](#)  
**Subject:** New England Journal of Medicine Letter NOT about NEJM Article 21-14060: Account Created for you in ScholarOne Manuscripts  
**Date:** Monday, August 23, 2021 1:39:11 PM

---

Dear Dr. Riemersma:

A submission entitled Shedding of Infectious SARS-CoV-2 Despite Vaccination (21-14060) has been submitted by Ms. Katarina Grande to the New England Journal of Medicine.

You are listed as a co-author for this manuscript. The online peer-review system, ScholarOne Manuscripts, automatically created a user account for you. Your USER ID and PASSWORD for your account is as follows:

Site URL: <https://mc05.manuscriptcentral.com/nejm>

USER ID: [REDACTED]

PASSWORD: For security reasons your password is not contained in this e-mail. To set your password click the link below.

[REDACTED]

You can use the above USER ID and PASSWORD (once set) to log in to the site and check the status of papers you have authored/co-authored. Please log in to [REDACTED] to update your account information via the edit account tab at the top right.

If you believe you already have an account with us and this is a duplicate account, or if you do not wish to have an account with the New England Journal of Medicine, please contact us and we will be happy to assist you.

Thank you for your participation.

Sincerely,

Editorial Office

New England Journal of Medicine

10 Shattuck Street

Boston, MA 02115

(617) 734-9800

Fax: (617) 739-9864

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**From:** [em.ppathogens.0.77467c.eff3e03c@editorialmanager.com](mailto:em.ppathogens.0.77467c.eff3e03c@editorialmanager.com) on behalf of [PLOS Pathogens](#)  
**To:** [Kasen Riemersma](#)  
**Subject:** PLOS Pathogens: Please confirm your authorship - [EMID:7906952a92501deb]  
**Date:** Thursday, November 11, 2021 4:58:55 PM

---

Dear Riemersma,

You are receiving this email because Ms. Katarina M Grande listed you as an author on the manuscript titled "Shedding of Infectious SARS-CoV-2 Despite Vaccination," recently submitted to PLOS Pathogens.

All co-authors MUST confirm their authorship before a manuscript can be accepted for publication.

Click this link to CONFIRM your authorship and/or add your ORCID to this submission now:



The Corresponding Author has entered your name into our online submission system as indicated below. Please ensure your name is entered correctly, as this impacts indexing. If your name is not entered correctly, please confirm your authorship and then email the journal office at [plospathogens@plos.org](mailto:plospathogens@plos.org).

First Name: Kasen  
Middle Name: K.  
Last Name: Riemersma

Alternatively, if you are not aware of this submission, or if you should not be listed as a co-author, then please contact the journal office at [plospathogens@plos.org](mailto:plospathogens@plos.org).

We appreciate your timely response. The abstract follows below, for your reference.

Kind regards,

PLOS Pathogens Staff  
[plospathogens@plos.org](mailto:plospathogens@plos.org)


-----  
Manuscript Title:  
Shedding of Infectious SARS-CoV-2 Despite Vaccination

Article Type:  
Research Article

Authors:  
Katarina Maria Grande; Kasen K. Riemersma; Brittany E. Grogan; Amanda Kita-Yarbro; Peter J. Halfmann; Hannah E. Segaloff; Anna Kocharian; Kelsey R. Florek; Ryan Westergaard; Allen Bateman; Gunnar E. Jeppson; Yoshihiro Kawaoka; David H. O'Connor; Thomas C. Friedrich

Abstract:  
The SARS-CoV-2 Delta variant is highly transmissible and contains mutations that confer partial immune escape. We compared RT-PCR cycle threshold (Ct) data from 699 test-positive anterior nasal swab specimens from fully vaccinated (n = 310) or unvaccinated (n=389) individuals. We observed low Ct values (<25) in 212 of 310 fully vaccinated (68%) and 246 of 389 (63%) unvaccinated individuals. Testing a subset of these low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people. To determine whether infectious virus titers differed in vaccinated and unvaccinated persons, we performed plaque assays on an additional set of 48 samples with Ct <25, finding no difference in infectious virus titer between groups.





---

In compliance with data protection regulations, you may request that we remove your personal registration details at any time. (Use the following URL: <https://www.editorialmanager.com/ppathogens/login.asp?a=r>). Please contact the publication office if you have any questions.

**From:** [Grande, Katarina](#)  
**To:** "Jon Poling"  
**Cc:** [DAVID H O"CONNOR](#); [Kasen Riemersma](#); [Thomas Friedrich](#)  
**Subject:** RE: A question regarding your paper  
**Date:** Wednesday, August 25, 2021 4:36:36 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)

---

Hi Dr. Poling,

Thank you for your email. We do not have these data, but this is a good question. Did you see [this recent pre-print](#) out of the UK?

Dr. O'Connor noted, in regard to your question, that this study showed a **\*lower\*** Ct in people who were reinfected than in those who were vaccinated, in line with the idea that vaccines provide better immunity than natural infection.

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

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**There's strength in numbers.**  
**Join me! #GetVaccinated**

---

**From:** Jon Poling <jpoling@athensneuro.com>  
**Sent:** Wednesday, August 25, 2021 12:43 PM  
**To:** Grande, Katarina <KGrande@publichealthmdc.com>  
**Subject:** A question regarding your paper  
**Importance:** High

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Dr. Grande,

I read with interest your manuscript entitled--Shedding of Infectious SARS-CoV-2 Despite

IR#0682H\_000546

Vaccination. Do you have data on shedding of infectious SARS COV2 in patients who have recovered from prior ancestral COVID19? In other words, does natural mucosal immunity provide better protection against transmissible virus in this wave of Delta or other VOCs? Thank-you in advance for your attention to my question.

Regards,

Jon S. Poling MD/PhD

Department Chair of Neurology/Neurosurgery, Piedmont ARMC Hospital

Clinical Asst Professor AU/GRU School of Medicine

Athens Neurological Assoc. PC

Board Certified in Neurology, Neuromuscular Medicine, and Neuroimaging

[www.athensneuro.com](http://www.athensneuro.com)

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**From:** [Grande, Katarina](#)  
**To:** [DAVID H O'CONNOR](#)  
**Cc:** [Kasen Riemersma](#); [Thomas Friedrich](#)  
**Subject:** RE: A question regarding your paper  
**Date:** Wednesday, August 25, 2021 2:51:12 PM  
**Attachments:** [image001.png](#)

---

Ok great, will respond and cc you all.

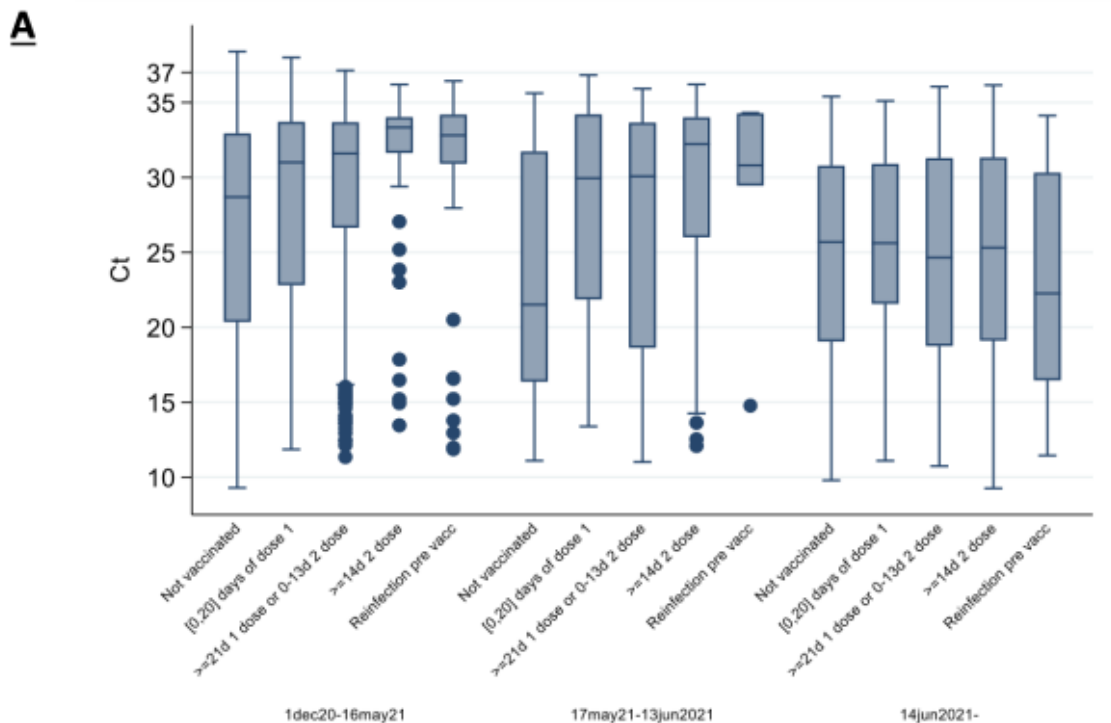
---

**From:** Dave O'Connor <dhoconno@wisc.edu>  
**Sent:** Wednesday, August 25, 2021 2:17 PM  
**To:** Grande, Katarina <KGrande@publichealthmdc.com>  
**Cc:** Kasen Riemersma <riemersma@wisc.edu>; Thomas Friedrich <tfriedri@wisc.edu>  
**Subject:** Re: A question regarding your paper

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Hi Kat,

No, I don't think that data gets captured in the analysis. Though the UK study I shared earlier showed a \*lower\* Ct in people who were reinfected than in those who were vaccinated, in line with the idea that vaccines provide better immunity than natural infection.



Grande, Katarina wrote on 8/25/21 1:58 PM:

We don't have these data/didn't look at this—anything additional to add in a response to Jon, team?

---

**From:** Jon Poling <[jjpoling@athensneuro.com](mailto:jjpoling@athensneuro.com)>  
**Sent:** Wednesday, August 25, 2021 12:43 PM  
**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** A question regarding your paper  
**Importance:** High

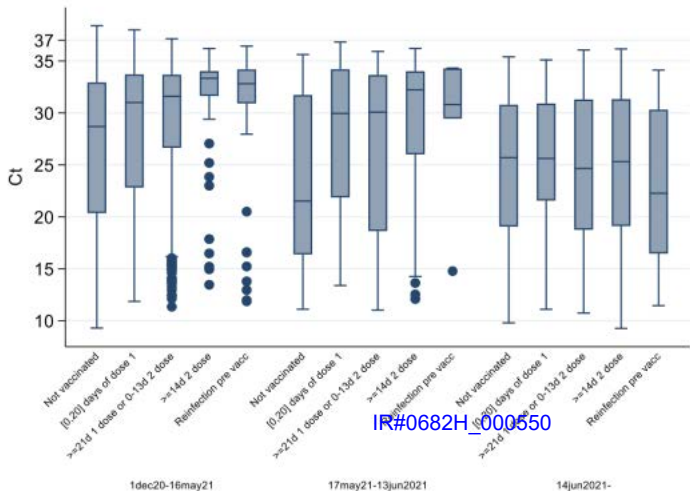
Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Dr. Grande,  
I read with interest your manuscript entitled--Shedding of Infectious SARS-CoV-2 Despite Vaccination. Do you have data on shedding of infectious SARS COV2 in patients who have recovered from prior ancestral COVID19? In other words, does natural mucosal immunity provide better protection against transmissible virus in this wave of Delta or other VOCs? Thank-you in advance for your attention to my question.  
Regards,

Jon S. Poling MD/PhD  
Department Chair of Neurology/Neurosurgery, Piedmont ARMC Hospital  
Clinical Asst Professor AU/GRU School of Medicine  
Athens Neurological Assoc. PC  
Board Certified in Neurology, Neuromuscular Medicine, and Neuroimaging  
[www.athensneuro.com](http://www.athensneuro.com)

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--  
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**A**

**From:** [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)  
**To:** [Thomas Friedrich](#)  
**Cc:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Grogan, Brittany](#)  
**Subject:** RE: Request to interview from National Geographic  
**Date:** Thursday, August 12, 2021 4:01:45 PM

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Heads up, I just chatted with Sanjay who had some public health policy questions. He plans to talk to y'all tomorrow! [REDACTED] but if there's an emergent interview that needs a public health voice, Brittany is back and ready to be that voice!

Also Eric Topol tweeted the paper and the Nature coverage.

---

**From:** Sanjay Mishra <mishra.sanjay@outlook.com>  
**Sent:** Thursday, August 12, 2021 3:26 PM  
**To:** Thomas Friedrich <tfriedri@wisc.edu>  
**Cc:** Kasen Riemersma <riemersma@wisc.edu>; DAVID H O'CONNOR <dhoconno@wisc.edu>; Grande, Katarina <KGrande@publichealthmdc.com>  
**Subject:** RE: Request to interview from National Geographic

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Tom, David and Kasen

I have been given go ahead to interview and write the story. Please suggest time(s) and what number(s) should I call? Anytime until 1 pm Central or after 4:30 Central would be fantastic.

Regards

Sanjay

*Sanjay Mishra, MS, PhD*  
Nashville, TN 37221; USA  
[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) | [@Ecquis](#) | +1 (615) 829 6563  
[LinkedIn](#) | [Google Scholar](#) | [Contently](#) | [Skype](#)

---

**From:** [Thomas Friedrich](#)  
**Sent:** Thursday, August 12, 2021 3:20 PM  
**To:** [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)  
**Cc:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Katarina Grande](#)  
**Subject:** Re: Request to interview from National Geographic

Hi Sanjay.

A follow up tomorrow sounds good. I am in meetings most of the rest of today anyway.

Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 12 Aug 2021, at 15:00, [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) wrote:

Dear All

I really appreciate your reply. I will love to talk to you today, but I am still negotiating with my editors on how important and urgent your work is.

Can I reach out tomorrow, because I will hate to take your busy time in interviewing, but not being able to write about it.

I will love to talk to you today, if you prefer! Please advise.

Sanjay

*Sanjay Mishra, MS, PhD*  
*Nashville, TN 37221; USA*  
[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) | [@Ecquis](#) | +1 (615) 829 6563  
[LinkedIn](#) | [Google Scholar](#) | [Contently](#) | [Skype](#)

---

**From:** [Kasen Riemersma](#)

**Sent:** Thursday, August 12, 2021 2:56 PM

**To:** [DAVID H O'CONNOR](#); [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)

**Cc:** '[Sanjay Mishra](#)'; [Thomas Friedrich](#)

**Subject:** Re: Request to interview from National Geographic

I am unfortunately unavailable until tomorrow, but could chat anytime from 10-2 CDT then.

Kasen

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>



**Date:** Thursday, August 12, 2021 at 2:37 PM

**To:** [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com) <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>

**Cc:** 'Sanjay Mishra' <[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Subject:** Re: Request to interview from National Geographic

I can chat after 4:30 CDT, or go ahead without me!

dave

[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com) wrote on 8/12/21 2:36 PM:

Hi Dr. Mishra,

Thanks for reaching out. I could jump on a call after 3:30pm. I'm cc'ing my co-authors, who are the true scientists on the paper—I'm the applied public health person of the bunch. So depending on your angle, it may be helpful to link with them, or see if we could jump on a call together.

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

*Healthy People. Healthy Places.*

<image001.png>

This email, including any attachments, may contain confidential or protected health information which is only for the intended recipient. If you received this email in error, please delete and notify the sender immediately. Emails sent or received by our agency are subject to open records requests and could be released to the public, unless there is an exception allowed by law.

<image002.png>

---

**From:** Sanjay Mishra <[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)>

**Sent:** Thursday, August 12, 2021 2:07 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** Request to interview from National Geographic

**Importance:** High

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Dear Katarina

I read your preprint posted earlier today with alarm: "Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021"

Can I urgently talk to you since I am pitching this as story to my editor at National Geographic, as a follow up to my recent stories on Delta variant, value of masking and breakthrough infections:

In National Geographic:

1. [Why is Delta more infectious and deadly? New research holds answers.](#) (August 6, 2021)
2. [How dangerous is the new Delta Plus variant? Here's what we know.](#) (July 2, 2021)
3. [The Delta variant is serious. Here's why it's on the rise.](#) (June 16, 2021); updated:
  - a. [The Delta variant is spreading fast, especially where vaccination rates are low](#) (July 8, 2021)
4. [This 'double mutant' variant is adding fuel to India's COVID-19 crisis](#) (April 28, 2021)

In The Conversation:

1. [What is a breakthrough infection? 6 questions answered about catching COVID-19 after vaccination](#) (July 28, 2021)
2. [Can people vaccinated against COVID-19 still spread the coronavirus?](#) (May 25, 2021)

I and the readers of National Geographic will highly appreciate it

*Sanjay Mishra, MS, PhD*

*Nashville, TN 37221; USA*

[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) | [@Ecquis](#) | +1 (615) 829 6563

[LinkedIn](#) | [Google Scholar](#) | [Contently](#) | [Skype](#)

--

<http://dho.pathology.wisc.edu>  
[@dho](#) • 608-890-0845

**From:** [Grande, Katarina](#)  
**To:** [Segaloff, Hannah E - DHS](#); [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Thomas Friedrich](#); [bgrogan](#)  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Monday, August 23, 2021 12:07:01 PM

---

Thanks, Hannah!

Dave, you have everything you need to submit to the portal? I can lend a hand if you need anything.

-Kat

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday, August 23, 2021 11:53 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Subject:** FW: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Hi all,

We are cleared! There are some extremely tiny comments to incorporate/consider. Once we submit they just want me to send a final copy for their records. Note that I made two additional small changes (added "qualitative in two places and deleted one word to keep it in the word count) without sending it back to facilitate quick review- so you many want to upload this version.

Thanks for your patience with this painful process!

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Monday, August 23, 2021 11:47 AM  
**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah:

The attached document has been cleared by JIC with comments.

**Once you have addressed the reviewer's feedback, please send us a clean and final document, so we can provide it to JIC for their records.**

**JIC OS Content Comment.**

- **Very informative study. It is approved with minor comments, see attached**

Thanks,

Audrey

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

**From:** [Segaloff, Hannah E - DHS](#)  
**To:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Thomas Friedrich](#)  
**Cc:** [Katarina Grande](#); [Westergaard, Ryan P - DHS](#)  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Saturday, August 21, 2021 4:33:45 PM  
**Attachments:** [Riemersma Viral loads in vaccinees\\_NEJM\\_revised\\_8\\_20\\_clean\\_JICclearance-MDA\\_MGG\\_HScomments.docx](#)

---

Sorry! I managed to not save my work before sending...

Use this one.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS  
**Sent:** Saturday, August 21, 2021 4:32 PM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thanks Kasen,

That was exactly what I needed.

I've addressed the comments I believe. I had to change some wording to fit in the words but changes are tracked if you don't like what I did.

Kasen, there's a few things I couldn't do or need you to check:

[REDACTED]

Unless they are feeling super prickly once we get this sent back we should get an approval, hopefully without comments but likely with a few.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]

IR#0682H\_000557

[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>

**Sent:** Saturday, August 21, 2021 3:30 PM

**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Cc:** Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hey Hannah,

The folder with the publicly shared dataset is currently restricted to UW addresses which is why it's denying you, but the files in the folder haven't been updated yet anyways. I've attached the updated dataset here. I tried to just include the data needed to address the questions so that it's easier to parse, but let me know if you need any other info. Also, I think the column names should be straightforward, but let me know if you have any questions.

Thanks for addressing the reviewer comments!

Kasen

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>

**Date:** Saturday, August 21, 2021 at 2:26 PM

**To:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Cc:** Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

I don't seem to have access to the data that was used for this. Can someone grant me access? It may just be google acting up but my request to view the shared folder keeps was denied.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>

**Sent:** Saturday, August 21, 2021 12:47 PM

**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Cc:** Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Hi Hannah,

I'm still not sure I understand. Why are there new comments now after we responded to the ones that were issued

IR#0682H\_000558

yesterday? If there are edits that can fit in the 400 word limit that's fine but I worry that the request for more information is at odds with the word count.

Do you want to take a crack at these edits since you know how to write these things on the way that the clearance process expects?

Cheers,

Dave

Get [Outlook for iOS](#)

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Saturday, August 21, 2021 11:49:15 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi All,

This was not cleared by the JIC- they want to see the new version before clearance. However, comments don't seem too extensive.

I can work on the comments about the statewide perspective.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, August 20, 2021 4:32 PM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>; Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Thanks, Hannah!

Kasen

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Date:** Friday, August 20, 2021 at 4:25 PM  
**To:** Segaloff, Hannah E - DHS <[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Sweet, thanks Hannah!

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 20 Aug 2021, at 16:24, Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

It's back in. Fingers crossed that we get this back quickly. It looks like the on call clearance coordinator has email check-ins over the weekend at 10am and 3pm so those are the times that you are likely to hear Saturday or Sunday.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, August 20, 2021 4:18 PM  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Cc:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Oops, just saw this. I think we should go with Hannah's version since she addresses the question about the CDC ethics statement.

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)



On 20 Aug 2021, at 16:14, DAVID H O'CONNOR <[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)> wrote:

Looks fine to me Hannah. Thanks for taking care of the edits.

dave

Segaloff, Hannah E - DHS wrote on 8/20/21 4:12 PM:

Sorry for the repeat emails. I can just send this version back if you all agree since changes were so minor.

-Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, August 20, 2021 3:44 PM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhocunno@wisc.edu](mailto:dhocunno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Hi Hannah.

Do you have any updates on the CDC clearance process? Can you see if others have been able to look at the paper?

Thanks,

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 18:51, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Okay, fingers crossed!

Sent from my iPhone

On Aug 19, 2021, at 18:02, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Though on second thought I can see that the STLT TF is reviewing now- so maybe this is moving faster than I thought.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 5:44 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Thanks Hannah.

I really hope they can return comments tomorrow so we can submit. [REDACTED]  
[REDACTED]. Do you think that is at all possible?

Best,

Tom

Sent from my iPhone

On Aug 19, 2021, at 15:20, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Thanks Tom,

I will send these along and the note. I'm hoping we can switch over to a Google drive format for comments.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 3:05 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma  
<[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande  
<[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Attached please find clean (well, clean-ish) and tracked versions of the revised manuscript. We addressed all the comments and made the changes requested. I hope this can be approved quickly.

Note: As you know, to edit collaboratively, we uploaded the Word doc with CDC comments to Google Drive. I re-downloaded the edited version as a Word doc — this is the “clean” version and preserves CDC comments and our responses. To make the “tracked” version I had to compare that downloaded document to the Word doc you forwarded from CDC. When I did that I noticed that it duplicated several comments from CDC folk. For the sake of readability I tried to delete duplicates, but there are still a lot of comments in a small space. It also appears that replies within comments were not recognized, so now they just appear as comments on top of other comments. I hope that all makes sense.

If these copies do not come through, you can download them from the shared Google drive here:

[REDACTED]

Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 09:41,  
Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
wrote:

Hi All,

Here are the first round of  
comments. We should get all  
responses within 24 to 48 hours  
of our submission. It looks like  
this needs to be approved by  
Lab TF, cross clearance and the  
response.  
Let me know if I can help with  
comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public  
Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and  
Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---


**From:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Thursday, August 19, 2021  
9:24 AM  
**To:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite

Vaccination when the Delta  
Variant is Prevalent

**Caution: Message from  
external sender. Do not  
click on links or open  
attachments unless you  
recognize the sender.**

Hi Hannah,

Please address the mandatory  
comments and return for re-  
review.

 [Shedding of Infectious  
SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task  
Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call  
(Check Ins at 10 AM & 3 PM)

**From:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>

**Sent:** Wednesday, August 18,  
2021 9:18 AM

**To:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hello,

Thank you for the quick work  
getting this approved for DIM  
expedited clearance. I haven't

had a manuscript in expedited clearance before. Does it have the same steps as standard? How much time should I anticipate for the clearance process?

Thank you!  
Hannah

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021  
11:51 AM

**To:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; CDC IMS 2019  
NCOV Response Lab TF  
Clearance

<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

NP! Glad we were able to turn this  
around so quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Kools, John J.

(CDC/DDID/NCEZID/OD)

<[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021  
12:47 PM

**To:** Davis, Shelbi

(CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; CDC IMS 2019

NCOV Response Lab TF

Clearance

<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;

Dunworth, Soumya

(CDC/DDPHSS/CSELS/OD)

<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi

(CDC/DDID/NCIRD/OD)

<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR)

<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff,

Hannah

(CDC/DDPHSS/CSELS/DSEPD)

<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon,

Jonathan L.

(CDC/DDID/NCEZID/DSR)

<[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi

(CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021  
12:43 PM

**To:** CDC IMS 2019 NCOV  
Response Lab TF Clearance

<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Kools,

John J. (CDC/DDID/NCEZID/OD)

<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Dunworth,

Soumya

(CDC/DDPHSS/CSELS/OD)

<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi

(CDC/DDID/NCIRD/OD)

<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR)

<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff,

Hannah

(CDC/DDPHSS/CSELS/DSEPD)

<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon,

Jonathan L.

(CDC/DDID/NCEZID/DSR)

<[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Fw: Shedding of

Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Afternoon,

This has been approved for expedited  
clearance.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
12:40 PM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Thank you. I approve  
expedited clearance.  
Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
12:16 PM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>



**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hey Stephanie,

Please see attached for the updated  
draft.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
11:05 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Sure thing, working on the updated  
draft now.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:56 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Yes, please request an  
updated draft with Hannah's  
name on it and then I approve  
it going for expedited  
clearance.

Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:56 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hey Stephanie,

From correspondence with ADS and  
STLT Hannah was inadvertently left  
off the manuscript but WI has  
confirmed that she is a co-author but

her name is not on this draft. Should we request an updated draft with Hannah information on there as the co-author?

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:51 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hey,

I am working on getting clarification  
as we speak, update to follow.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:49 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hannah Segaloff EISO is listed  
on the clearance request form  
as an author but not on the  
manuscript. Can you clarify  
that she indeed and author? If  
so, then my approval for  
expedited clearance stands.

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:40 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Thanks for the speedy response!

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:39 AM

**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

I approve.

Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:38 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Fw: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Morning Stephanie,

Happy Tuesday! We would like to  
request DIM1 expedited approval for  
the attached manuscript. Please  
refer to the email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:32 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Fw: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance on  
this item or wait until you  
receive the DIM approval ?

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab  
Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**  
Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call  
(Check Ins at 10 AM & 3 PM)

**From:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
9:59 AM  
**To:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Davis,  
Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>; Limbago,  
Brandi (CDC/DDID/NCIRD/OD)

<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>; Llewellyn, Anna  
C. (CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Subject:** Shedding of Infectious  
SARS-CoV-2 Despite Vaccination  
when the Delta Variant is  
Prevalent

Good Morning,

You may have heard but our task  
force was asked by STLT, and we  
agreed, to sponsor this  
manuscript through clearance.  
The authors are targeting NEJM  
and are requesting our task  
force to request IM approval for  
expedited clearance. Our main  
POC for this manuscript is our  
CDC EISO Hannah Segaloff  
(Cc'd). Let me know if you have  
any questions.

Hannah- our clearance team can  
help shepherd your paper  
through clearance. I would  
anticipate our laboratory SMEs  
to have some questions for your  
team.

Best regards,

John

John Kools  
ADS, Laboratory & Testing Task Force  
CDC COVID-19 Response  
Phone: 404-217-7258

---

**From:** Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
4:51 AM  
**To:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Subject:** FW: Follow up on your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: [REDACTED]

---

**From:** Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>  
**Sent:** Monday, August 16, 2021  
3:35 PM  
**To:** Segaloff, Hannah  
(CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov))  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>;  
Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard,  
Ryan (CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>;  
Bisgard, Kris  
(CDC/DDPHSS/CSELS/DSEPD)  
<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Ricaldi Camahuali, Jessica  
(CDC/DDID/NCEZID/DPEI)  
<[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>; Kools, John J.



(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Limbago,  
Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS 2019  
NCOV Response STLT ADS  
<[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>; CDC  
IMS 2019 NCOV Response Lab  
Task Force  
<[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>  
**Subject:** Re: Follow up on your  
results

Dear Hannah,

Thank you for these additional  
documents. Due to this  
manuscript's focus on  
laboratory data, our  
Laboratory and Testing Task  
Force colleagues have agreed  
to be the sponsoring task  
force for CDC COVID-19  
Response clearance. John  
Kools is the Lab TF ADS and  
can assist with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for Science  
State, Tribal, Local, and Territorial  
Support Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Office: 404-639-1538 | Cell: [REDACTED]  
[REDACTED]  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

**From:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday, August 16, 2021  
3:13 PM  
**To:** Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard,  
Ryan (CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>;  
Bisgard, Kris  
(CDC/DDPHSS/CSELS/DSEPD)

<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>

**Cc:** Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI)

<[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Ricaldi  
Camahual, Jessica  
(CDC/DDID/NCEZID/DPEI)

<[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>

**Subject:** RE: Follow up on your  
results

Thank you. I have attached the  
concept proposal that was  
approved from the original  
MMWR submission as well as a  
clearance request form.

Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public  
Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and  
Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

<Reimersma\_Viral loads in  
vaccinees\_  
NEJM\_editedauthorlist\_LABTFComments.docx>

--  
<http://dho.pathology.wisc.edu>  
[@dho](mailto:@dho) • 608-890-0845

**From:** [Segaloff, Hannah E - DHS](#)  
**To:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Thomas Friedrich](#)  
**Cc:** [Katarina Grande](#); [Westergaard, Ryan P - DHS](#)  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Saturday, August 21, 2021 9:26:50 PM

---

Thanks Kasen,

I sent it back into clearance. Hopefully this is the last step!

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Saturday, August 21, 2021 9:11 PM  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>; Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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[REDACTED]

[REDACTED]

Kasen

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Date:** Saturday, August 21, 2021 at 5:23 PM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>, Segaloff, Hannah E - DHS <[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Yep, that's my plan. Once we have the NEJM submitted I figured I'd take everything and create a v3 of the Medrxiv paper.

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---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Saturday, August 21, 2021 5:19:25 PM  
**To:** Segaloff, Hannah E - DHS <[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Okay, thanks Hannah. I agree these are fair points, but it is indeed challenging to address everything you might want to say in 400 words.

[REDACTED]

IR#0682H\_000579

Kasen and Dave, once all these revisions are made we should update the preprint with the new dataset.

T

Sent from my iPhone

On Aug 21, 2021, at 16:39, Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Hi Tom,

Most of the comments were about either what evidence we had that these specimens were representative of more than one event/outbreak and one reviewer who wanted the proportions of things for comparison groups to be included. I think that they were all fair comments and potentially things we would hear at the editor/peer review level, but extremely difficult to work into the word limit.

I think it is very likely this will be approved at the next pass through either with a few comments or no comments, though honestly who can predict CDC clearance? They are required to get back to use within 48 hours and they seem to be operating on a <24 hour turnaround, so I think it is pretty likely we'll hear tomorrow or Monday morning at the very latest. Fingers crossed that this process is over.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Sent:** Saturday, August 21, 2021 4:31 PM

**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>

**Cc:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Hi all. [REDACTED]. Thanks to Hannah for addressing the comments.

I can't see the comments on my phone—can you briefly summarize what the concerns are?

Is there any chance we can submit tomorrow?

T

Thanks to Hannah

Sent from my iPhone

On Aug 21, 2021, at 15:30, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)> wrote:

Hey Hannah,

The folder with the publicly shared dataset is currently restricted to UW addresses which is why it's denying you, but the files in the folder haven't been updated yet anyways. I've attached the updated dataset here. I tried to just include the data needed to address the questions so that it's easier to parse, but let me know if you need

any other info. Also, I think the column names should be straightforward, but let me know if you have any questions.

Thanks for addressing the reviewer comments!

Kasen

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Date:** Saturday, August 21, 2021 at 2:26 PM  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

I don't seem to have access to the data that was used for this. Can someone grant me access? It may just be google acting up but my request to view the shared folder keeps was denied.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[QdzQ@cdc.gov](mailto:QdzQ@cdc.gov)

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Saturday, August 21, 2021 12:47 PM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Hi Hannah,

I'm still not sure I understand. Why are there new comments now after we responded to the ones that were issued yesterday? If there are edits that can fit in the 400 word limit that's fine but I worry that the request for more information is at odds with the word count.

Do you want to take a crack at these edits since you know how to write these things on the way that the clearance process expects?

Cheers,

Dave

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---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Saturday, August 21, 2021 11:49:15 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi All,

This was not cleared by the JIC- they want to see the new version before clearance. However, comments don't seem too extensive.

IR#0682H\_000581

I can work on the comments about the statewide perspective.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, August 20, 2021 4:32 PM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>; Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>;  
Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Thanks, Hannah!

Kasen

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Date:** Friday, August 20, 2021 at 4:25 PM  
**To:** Segaloff, Hannah E - DHS <[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Sweet, thanks Hannah!

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 20 Aug 2021, at 16:24, Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

It's back in. Fingers crossed that we get this back quickly. It looks like the on call clearance coordinator has email check-ins over the weekend at 10am and 3pm so those are the times that you are likely to hear Saturday or Sunday.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases

IR#0682H\_000582

Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, August 20, 2021 4:18 PM  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Cc:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Oops, just saw this. I think we should go with Hannah's version since she addresses the question about the CDC ethics statement.

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 20 Aug 2021, at 16:14, DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)> wrote:

Looks fine to me Hannah. Thanks for taking care of the edits.

dave

Segaloff, Hannah E - DHS wrote on 8/20/21 4:12 PM:

Sorry for the repeat emails. I can just send this version back if you all agree since changes were so minor.

-Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, August 20, 2021 3:44 PM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

---

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Hi Hannah.

Do you have any updates on the CDC clearance process? Can you see if others have been able to look at the paper?

Thanks,

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 18:51, Thomas Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Okay, fingers crossed!

Sent from my iPhone

On Aug 19, 2021, at 18:02, Segaloff, Hannah E -  
DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Though on second thought I can see that the  
STLT TF is reviewing now- so maybe this is  
moving faster than I thought.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 5:44 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma  
<[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande  
<[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Thanks Hannah.

I really hope they can return comments



tomorrow so we can submit. I will be heading up north on Saturday and won't have WiFi for a week. Do you think that is at all possible?

Best,

Tom

Sent from my iPhone

On Aug 19, 2021, at 15:20,  
Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
wrote:

Thanks Tom,

I will send these along and the note. I'm hoping we can switch over to a Google drive format for comments.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public  
Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and  
Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich  
<[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021  
3:05 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma  
<[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID  
H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>;  
Katarina Grande  
<[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

**Caution: Message from  
external sender. Do not  
click on links or open  
attachments unless you  
recognize the sender.**

Hi Hannah.

Attached please find clean  
(well, clean-ish) and tracked  
versions of the revised

manuscript. We addressed all the comments and made the changes requested. I hope this can be approved quickly.

Note: As you know, to edit collaboratively, we uploaded the Word doc with CDC comments to Google Drive. I re-downloaded the edited version as a Word doc — this is the “clean” version and preserves CDC comments and our responses. To make the “tracked” version I had to compare that downloaded document to the Word doc you forwarded from CDC. When I did that I noticed that it duplicated several comments from CDC folk. For the sake of readability I tried to delete duplicates, but there are still a lot of comments in a small space. It also appears that replies within comments were not recognized, so now they just appear as comments on top of other comments. I hope that all makes sense.

If these copies do not come through, you can download them from the shared Google drive here:



Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological  
Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021,  
at 09:41, Segaloff,  
Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
wrote:

Hi All,

Here are the first  
round of  
comments. We  
should get all  
responses within

24 to 48 hours of  
our submission. It  
looks like this  
needs to be  
approved by Lab  
TF, cross clearance  
and the response.  
Let me know if I  
can help with  
comments.

Hannah

Hannah Segaloff, PhD,  
MPH | LT, U.S. Public  
Health Service  
Epidemic Intelligence  
Service Officer  
U.S. Centers for Disease  
Control and Prevention

Bureau of Communicable  
Diseases  
Wisconsin Department of  
Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** CDC IMS  
2019 NCOV  
Response Lab TF  
Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Sent:** Thursday,  
August 19, 2021  
9:24 AM

**To:** Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>

**Cc:** CDC IMS 2019  
NCOV Response  
Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Re:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

**Caution:**  
**Message from**  
**external**  
**sender. Do not**  
**click on links or**  
**open**  
**attachments**  
**unless you**  
**recognize the**  
**sender.**

Hi Hannah,

Please address  
the mandatory  
comments and  
return for re-  
review.

 [Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant  
is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-  
nCoV Lab Task  
Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of  
Operation:**

Monday-Friday 9  
AM - 6 PM EST  
Saturday & Sunday  
On Call (Check Ins  
at 10 AM & 3 PM)

**From:** Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>

**Sent:** Wednesday,  
August 18, 2021  
9:18 AM

**To:** CDC IMS 2019  
NCOV Response  
Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Re:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Hello,

Thank you for the  
quick work getting  
this approved for  
DIM expedited

clearance. I  
haven't had a  
manuscript in  
expedited  
clearance before.  
Does it have the  
same steps as  
standard? How  
much time should  
I anticipate for the  
clearance  
process?

Thank you!  
Hannah

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday,  
August 17, 2021  
11:51 AM

**To:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>;  
CDC IMS 2019  
NCOV Response  
Lab TF Clearance

<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago,  
Brandi  
(CDC/DDID/NCIRD/OD)  
<[bb17@cdc.gov](mailto:bb17@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;  
Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>;  
Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Re:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

NP! Glad we were able  
to turn this around so  
quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health

Communication Specialist  
Laboratory and  
Testing Task Force  
COVID-19 Emergency  
Response  
Centers for Disease  
Control and  
Prevention  
Lab TF  
Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Kools, John  
J.

(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Sent:** Tuesday,  
August 17, 2021  
12:47 PM

**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>;  
CDC IMS 2019  
NCOV Response  
Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago,  
Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;  
Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>;  
Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** RE:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday,  
August 17, 2021  
12:43 PM

**To:** CDC IMS 2019  
NCOV Response

Lab TF Clearance

<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;

Kools, John J.

(CDC/DDID/NCEZID/OD)

<[czk7@cdc.gov](mailto:czk7@cdc.gov)>;

Dunworth, Soumya

(CDC/DDPHSS/CSELS/OD)

<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago,

Brandi

(CDC/DDID/NCIRD/OD)

<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>;

Gartin, Jarrett

(CDC/DDID/NCIRD/OD)

(CTR)

<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;

Segaloff, Hannah

(CDC/DDPHSS/CSELS/DSEPD)

<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>;

Moon, Jonathan L.

(CDC/DDID/NCEZID/DSR)

<[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Fw:

Shedding of

Infectious SARS-

CoV-2 Despite

Vaccination when

the Delta Variant is

Prevalent

Afternoon,

This has been  
approved for  
expedited clearance.

Thanks,

Shelbi Davis

Communication Lead

Health

Communication Specialist

Laboratory and

Testing Task Force

COVID-19

Emergency Response

Centers for Disease

Control and

Prevention

Lab TF

Communications

Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

**From:** Bialek,

Stephanie R.

(CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday,

August 17, 2021

12:40 PM

**To:** Davis, Shelbi

(CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela

H.

(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Thank you. I  
approve  
expedited  
clearance.  
Stephanie  
Stephanie R. Bialek  
MD MPH  
Deputy Incident  
Manager  
COVID-19  
Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday,  
August 17, 2021  
12:16 PM  
**To:** Bialek,  
Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela  
H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Hey Stephanie,

Please see attached  
for the updated draft.

Thanks,  
Shelbi Davis



Communication Lead  
Health  
Communication Specialist  
Laboratory and  
Testing Task Force  
COVID-19  
Emergency Response  
Centers for Disease  
Control and  
Prevention  
Lab TF  
Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday,  
August 17, 2021  
11:05 AM

**To:** Bialek,  
Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela  
H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Sure thing, working on  
the updated draft  
now.

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and  
Testing Task Force  
COVID-19  
Emergency Response  
Centers for Disease  
Control and  
Prevention  
Lab TF  
Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Bialek,  
Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday,  
August 17, 2021  
10:56 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela  
H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Yes, please  
request an  
updated draft  
with Hannah's  
name on it and  
then I approve it  
going for  
expedited  
clearance.  
Stephanie  
Stephanie R. Bialek  
MD MPH  
Deputy Incident  
Manager  
COVID-19  
Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday,  
August 17, 2021  
10:56 AM  
**To:** Bialek,  
Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zg7@cdc.gov](mailto:zg7@cdc.gov)>  
**Cc:** Fisher, Angela  
H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re:

Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Hey Stephanie,

From correspondence  
with ADS and STLT  
Hannah was  
inadvertently left off  
the manuscript but WI  
has confirmed that  
she is a co-author but  
her name is not on  
this draft. Should we  
request an updated  
draft with Hannah  
information on there  
as the co-author?

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and  
Testing Task Force  
COVID-19  
Emergency Response  
Centers for Disease  
Control and  
Prevention  
Lab TF  
Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday,  
August 17, 2021  
10:51 AM  
**To:** Bialek,  
Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela  
H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Hey,

I am working on getting clarification as we speak, update to follow.

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and  
Testing Task Force  
COVID-19  
Emergency Response  
Centers for Disease  
Control and  
Prevention  
Lab TF  
Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Bialek,  
Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday,  
August 17, 2021  
10:49 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela  
H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Hannah Segaloff  
EISO is listed on  
the clearance  
request form as  
an author but not  
on the  
manuscript. Can  
you clarify that  
she indeed and  
author? If so, then  
my approval for  
expedited  
clearance stands.

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday,  
August 17, 2021  
10:40 AM

**To:** Bialek,  
Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela  
H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Thanks for the speedy  
response!

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and  
Testing Task Force  
COVID-19  
Emergency Response  
Centers for Disease  
Control and  
Prevention  
Lab TF  
Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek,  
Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday,  
August 17, 2021  
10:39 AM

**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela  
H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)

[<xhg9@cdc.gov>](mailto:xhg9@cdc.gov)

**Subject:** RE:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

I approve.

Stephanie R. Bialek  
MD MPH  
Deputy Incident  
Manager  
COVID-19  
Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
[<qqv9@cdc.gov>](mailto:qqv9@cdc.gov)

**Sent:** Tuesday,  
August 17, 2021  
10:38 AM

**To:** Bialek,  
Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
[<zqg7@cdc.gov>](mailto:zqg7@cdc.gov)

**Cc:** Fisher, Angela  
H.  
(CDC/DDPHSS/CSELS/OD)  
[<iwg7@cdc.gov>](mailto:iwg7@cdc.gov);  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
[<xhg9@cdc.gov>](mailto:xhg9@cdc.gov)

**Subject:** Fw:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Morning Stephanie,

Happy Tuesday! We  
would like to request  
DIM1 expedited  
approval for the  
attached manuscript.  
Please refer to the  
email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health  
Communication Specialist  
Laboratory and

IR#0682H\_000598

Testing Task Force  
COVID-19  
Emergency Response  
Centers for Disease  
Control and  
Prevention  
Lab TF  
Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** CDC IMS  
2019 NCOV  
Response Lab TF  
Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Sent:** Tuesday,  
August 17, 2021  
10:32 AM

**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Cc:** CDC IMS 2019  
NCOV Response  
Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Fw:  
Shedding of  
Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Hi Shelbi and  
Jarrett,

Should I begin  
clearance on this  
item or wait until  
you receive the  
DIM approval ?

Thank you,  
Alexis

CDC IMS 2019-  
nCoV Lab Task  
Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of  
Operation:**  
Monday-Friday 9  
AM - 6 PM EST  
Saturday & Sunday  
On Call (Check Ins  
at 10 AM & 3 PM)

**From:** Kools, John  
J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday,  
August 17, 2021  
9:59 AM  
**To:** CDC IMS 2019  
NCOV Response  
Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>;  
Gartin, Jarrett  
(CDC/DDID/NCIRD/OD)  
(CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** Dunworth,  
Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>;  
Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>;  
Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>;  
Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>;  
Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Subject:** Shedding  
of Infectious SARS-  
CoV-2 Despite  
Vaccination when  
the Delta Variant is  
Prevalent

Good Morning,

You may have  
heard but our task  
force was asked by  
STLT, and we  
agreed, to sponsor  
this manuscript  
through clearance.  
The authors are  
targeting NEJM and  
are requesting our  
task force to  
request IM  
approval for  
expedited  
clearance. Our  
main POC for this  
manuscript is our



CDC EISO Hannah  
Segaloff (Cc'd). Let  
me know if you  
have any  
questions.

Hannah- our  
clearance team can  
help shepherd your  
paper through  
clearance. I would  
anticipate our  
laboratory SMEs to  
have some  
questions for your  
team.

Best regards,

John

John Kools  
ADS, Laboratory &  
Testing Task Force  
CDC COVID-19  
Response  
Phone: 404-217-7258

---

**From:** Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>  
**Sent:** Tuesday,  
August 17, 2021  
4:51 AM  
**To:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Subject:** FW:  
Follow up on your  
results

Morning John!  
Thanks for taking  
this on. We had  
intensive  
discussions with  
WI, IM, and  
MMWR last week  
about this.  
There's strong  
interest in  
supporting and  
moving this  
forward quickly in  
clearance,  
including securing  
approval for  
expedited

clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task  
Force  
Cell: [REDACTED]

---

**From:** Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>  
**Sent:** Monday, August 16, 2021 3:35 PM  
**To:** Segaloff, Hannah  
(CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov))  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>;  
Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>;  
Westergaard, Ryan  
(CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>;  
Bisgard, Kris  
(CDC/DDPHSS/CSELS/DSEPD)  
<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Ricaldi  
Camahual, Jessica  
(CDC/DDID/NCEZID/DPEI)  
<[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>;  
Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>;  
Limbago, Brandi  
(CDC/DDID/NCIRD/OD)

<bbl7@cdc.gov>;  
Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<iki5@cdc.gov>;  
CDC IMS 2019  
NCOV Response  
STLT ADS  
<eocevent410@cdc.gov>;  
CDC IMS 2019  
NCOV Response  
Lab Task Force  
<eocevent177@cdc.gov>  
**Subject:** Re: Follow  
up on your results

Dear Hannah,

Thank you for  
these additional  
documents. Due  
to this  
manuscript's  
focus on  
laboratory data,  
our Laboratory  
and Testing Task  
Force colleagues  
have agreed to be  
the sponsoring  
task force for CDC  
COVID-19  
Response  
clearance. John  
Kools is the Lab TF  
ADS and can assist  
with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for  
Science  
State, Tribal, Local,  
and Territorial  
Support Task Force  
COVID-19  
Emergency Response  
Centers for Disease  
Control and  
Prevention  
Office: 404-639-  
1538 | Cell: [REDACTED]  
[REDACTED]  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

**From:** Segaloff,  
Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday,

IR#0682H\_000603

August 16, 2021

3:13 PM

**To:** Rose, Dale A.

(CDC/DDID/NCEZID/DPEI)

<[ido8@cdc.gov](mailto:ido8@cdc.gov)>;

Westergaard, Ryan

(CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))

<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>;

Bisgard, Kris

(CDC/DDPHSS/CSELS/DSEPD)

<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>

**Cc:** Llewellyn, Anna

C.

(CDC/DDID/NCEZID/DPEI)

<[gif7@cdc.gov](mailto:gif7@cdc.gov)>;

Ricaldi Camahuali,

Jessica

(CDC/DDID/NCEZID/DPEI)

<[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>

**Subject:** RE: Follow  
up on your results

Thank you. I have  
attached the  
concept proposal  
that was approved  
from the original  
MMWR submission  
as well as a  
clearance request  
form.

Sincerely,  
Hannah

Hannah Segaloff, PhD,  
MPH | LT, U.S. Public  
Health Service  
Epidemic Intelligence  
Service Officer  
U.S. Centers for Disease  
Control and Prevention

Bureau of Communicable  
Diseases  
Wisconsin Department of  
Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

<Reimersma\_Viral  
loads in  
vaccinees  
NEJM\_editedauthorlist\_LABTFCOMMENTS.docx>

--  
<http://dho.pathology.wisc.edu>  
[@dho](mailto:@dho) • 608-890-0845

<N1\_Ct\_updated\_Hannah.csv>

IR#0682H\_000604

**From:** [Segaloff, Hannah E - DHS](#)  
**To:** [DAVID H O'CONNOR](#); [Kasen Riemersma](#); [Thomas Friedrich](#)  
**Cc:** [Katarina Grande](#); [Westergaard, Ryan P - DHS](#)  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Saturday, August 21, 2021 1:26:12 PM

---

Hi Dave,

There are 3 clearance steps: main task force (for use was lab), cross clearance from other task forces (STLT for us) and then response level. This is the final level, yesterday was cross clearance. I think they suggested addressing things in the supplement due to the word limit. I'm happy to take a stab at the comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Saturday, August 21, 2021 12:47 PM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah,

I'm still not sure I understand. Why are there new comments now after we responded to the ones that were issued yesterday? If there are edits that can fit in the 400 word limit that's fine but I worry that the request for more information is at odds with the word count.

Do you want to take a crack at these edits since you know how to write these things on the way that the clearance process expects?

Cheers,

Dave

Get [Outlook for iOS](#)

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Saturday, August 21, 2021 11:49:15 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi All,

This was not cleared by the JIC- they want to see the new version before clearance. However, comments don't seem too extensive.

IR#0682H\_000605

I can work on the comments about the statewide perspective.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, August 20, 2021 4:32 PM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>; Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Thanks, Hannah!

Kasen

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Date:** Friday, August 20, 2021 at 4:25 PM  
**To:** Segaloff, Hannah E - DHS <[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Sweet, thanks Hannah!

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 20 Aug 2021, at 16:24, Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

It's back in. Fingers crossed that we get this back quickly. It looks like the on call clearance coordinator has email check-ins over the weekend at 10am and 3pm so those are the times that you are likely to hear Saturday or Sunday.

IR#0682H\_000606

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, August 20, 2021 4:18 PM  
**To:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Cc:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Oops, just saw this. I think we should go with Hannah's version since she addresses the question about the CDC ethics statement.

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 20 Aug 2021, at 16:14, DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)> wrote:

Looks fine to me Hannah. Thanks for taking care of the edits.

dave

Segaloff, Hannah E - DHS wrote on 8/20/21 4:12 PM:

Sorry for the repeat emails. I can just send this version back if you all agree since changes were so minor.

-Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

IR#0682H\_000607

**Sent:** Friday, August 20, 2021 3:44 PM

**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>

**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H

O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina

Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>; Westergaard, Ryan P -

DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Hi Hannah.

Do you have any updates on the CDC clearance process? Can you see if others have been able to look at the paper?

Thanks,

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 18:51, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Okay, fingers crossed!

Sent from my iPhone

On Aug 19, 2021, at 18:02, Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Though on second thought I can see that the STLT TF is reviewing now- so maybe this is moving faster than I thought.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Sent:** Thursday, August 19, 2021 5:44 PM

IR#0682H\_000608



**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Thanks Hannah.

I really hope they can return comments tomorrow so we can submit. I will be heading up north on Saturday and won't have WiFi for a week. Do you think that is at all possible?

Best,

Tom

Sent from my iPhone

On Aug 19, 2021, at 15:20, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
wrote:

Thanks Tom,

I will send these along and the note. I'm hoping we can switch over to a Google drive format for comments.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 3:05 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma  
<[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande  
<[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Attached please find clean (well, clean-ish) and tracked versions of the revised manuscript. We addressed all the comments and made the changes requested. I hope this can be approved quickly.

Note: As you know, to edit collaboratively, we uploaded the Word doc with CDC comments to Google Drive. I re-downloaded the edited version as a Word doc — this is the “clean” version and preserves CDC comments and our responses. To make the “tracked” version I had to compare that downloaded document to the Word doc you forwarded from CDC. When I did that I noticed that it duplicated several comments from CDC folk. For the sake of readability I tried to delete duplicates, but there are still a lot of comments in a small space. It also appears that replies within comments were not recognized, so now they just appear as comments on top of other comments. I hope that all makes sense.

If these copies do not come through, you can download them from the shared Google drive here:

[REDACTED]

Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 09:41,  
Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
wrote:

Hi All,

Here are the first round of  
comments. We should get all  
responses within 24 to 48 hours  
of our submission. It looks like  
this needs to be approved by  
Lab TF, cross clearance and the  
response.  
Let me know if I can help with  
comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public  
Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and  
Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---


**From:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Thursday, August 19, 2021  
9:24 AM  
**To:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

**Caution: Message from  
external sender. Do not  
click on links or open  
attachments unless you  
recognize the sender.**

Hi Hannah,

Please address the mandatory  
comments and return for re-

review.

 [Shedding of Infectious  
SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task  
Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call  
(Check Ins at 10 AM & 3 PM)

---

**From:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>

**Sent:** Wednesday, August 18,  
2021 9:18 AM

**To:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hello,

Thank you for the quick work  
getting this approved for DIM  
expedited clearance. I haven't  
had a manuscript in expedited  
clearance before. Does it have  
the same steps as standard?  
How much time should I  
anticipate for the clearance  
process?

Thank you!  
Hannah

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021  
11:51 AM

**To:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; CDC IMS 2019  
NCOV Response Lab TF  
Clearance

<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

NP! Glad we were able to turn this  
around so quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021  
12:47 PM

**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; CDC IMS 2019  
NCOV Response Lab TF  
Clearance

<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi

(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
12:43 PM  
**To:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Kools,  
John J. (CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Dunworth,  
Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>  
**Cc:** Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>  
**Subject:** Fw: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Afternoon,

This has been approved for expedited  
clearance.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and

Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
12:40 PM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Thank you. I approve  
expedited clearance.  
Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
12:16 PM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hey Stephanie,

Please see attached for the updated  
draft.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
11:05 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Sure thing, working on the updated  
draft now.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:56 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of



Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Yes, please request an  
updated draft with Hannah's  
name on it and then I approve  
it going for expedited  
clearance.

Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:56 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[wg7@cdc.gov](mailto:wg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hey Stephanie,

From correspondence with ADS and  
STLT Hannah was inadvertently left  
off the manuscript but WI has  
confirmed that she is a co-author but  
her name is not on this draft. Should  
we request an updated draft with  
Hannah information on there as the  
co-author?

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:51 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hey,

I am working on getting clarification  
as we speak, update to follow.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:49 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hannah Segaloff EISO is listed  
on the clearance request form  
as an author but not on the  
manuscript. Can you clarify

that she indeed and author? If  
so, then my approval for  
expedited clearance stands.

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:40 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Thanks for the speedy response!

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:39 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

I approve.

Stephanie R. Bialek MD MPH

Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:38 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Fw: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Morning Stephanie,

Happy Tuesday! We would like to  
request DIM1 expedited approval for  
the attached manuscript. Please  
refer to the email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:32 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Fw: Shedding of

Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance on  
this item or wait until you  
receive the DIM approval ?

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab  
Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call  
(Check Ins at 10 AM & 3 PM)

---

**From:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
9:59 AM  
**To:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Davis,  
Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>; Limbago,  
Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>; Llewellyn, Anna  
C. (CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Subject:** Shedding of Infectious  
SARS-CoV-2 Despite Vaccination  
when the Delta Variant is  
Prevalent

Good Morning,

You may have heard but our task force was asked by STLT, and we agreed, to sponsor this manuscript through clearance. The authors are targeting NEJM and are requesting our task force to request IM approval for expedited clearance. Our main POC for this manuscript is our CDC EISO Hannah Segaloff (Cc'd). Let me know if you have any questions.

Hannah- our clearance team can help shepherd your paper through clearance. I would anticipate our laboratory SMEs to have some questions for your team.

Best regards,

John

John Kools  
ADS, Laboratory & Testing Task Force  
CDC COVID-19 Response  
Phone: 404-217-7258

---

**From:** Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
4:51 AM  
**To:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Subject:** FW: Follow up on your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you

anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: [REDACTED]

---

**From:** Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>  
**Sent:** Monday, August 16, 2021  
3:35 PM  
**To:** Segaloff, Hannah  
(CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov))  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>;  
Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard,  
Ryan (CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>;  
Bisgard, Kris  
(CDC/DDPHSS/CSELS/DSEPD)  
<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Ricaldi Camahual, Jessica  
(CDC/DDID/NCEZID/DPEI)  
<[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>; Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Limbago,  
Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS 2019  
NCOV Response STLT ADS  
<[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>; CDC  
IMS 2019 NCOV Response Lab  
Task Force  
<[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>  
**Subject:** Re: Follow up on your results

Dear Hannah,

Thank you for these additional documents. Due to this manuscript's focus on laboratory data, our Laboratory and Testing Task Force colleagues have agreed to be the sponsoring task force for CDC COVID-19 Response clearance. John Kools is the Lab TF ADS and can assist with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for Science  
State, Tribal, Local, and Territorial  
Support Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Office: 404-639-1538 | Cell: [REDACTED]  
[REDACTED]  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday, August 16, 2021  
3:13 PM  
**To:** Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard,  
Ryan (CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>;  
Bisgard, Kris  
(CDC/DDPHSS/CSELS/DSEPD)  
<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Ricaldi  
Camahualj, Jessica  
(CDC/DDID/NCEZID/DPEI)  
<[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>  
**Subject:** RE: Follow up on your  
results

Thank you. I have attached the concept proposal that was approved from the original MMWR submission as well as a clearance request form.



Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public  
Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and  
Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

<Reimersma\_Viral loads in  
vaccinees\_  
NEJM\_editedauthorlist\_LABTFComments.docx>

--  
<http://dho.pathology.wisc.edu>  
[@dho](mailto:@dho) • 608-890-0845

**From:** [Segaloff, Hannah E - DHS](#)  
**To:** [Thomas Friedrich](#)  
**Cc:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Katarina Grande](#); [Westergaard, Ryan P - DHS](#)  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Friday, August 20, 2021 4:12:15 PM  
**Attachments:** [Riemersma\\_Viral loads in vaccinees\\_NEJM\\_revised\\_8\\_20\\_tracked.docx](#)

---

Sorry for the repeat emails. I can just send this version back if you all agree since changes were so minor.

-Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <tfriedri@wisc.edu>  
**Sent:** Friday, August 20, 2021 3:44 PM  
**To:** Segaloff, Hannah E - DHS <hannah.segaloff@dhs.wisconsin.gov>  
**Cc:** Kasen Riemersma <riemersma@wisc.edu>; DAVID H O'CONNOR <dhoconno@wisc.edu>; Katarina Grande <kgrande@publichealthmdc.com>; Westergaard, Ryan P - DHS <ryan.westergaard@dhs.wisconsin.gov>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Do you have any updates on the CDC clearance process? Can you see if others have been able to look at the paper?

Thanks,

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 18:51, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Okay, fingers crossed!

Sent from my iPhone

On Aug 19, 2021, at 18:02, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Though on second thought I can see that the STLT TF is reviewing now- so maybe this is moving faster than I thought.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 5:44 PM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Thanks Hannah.

I really hope they can return comments tomorrow so we can submit. I will be heading up north on Saturday and won't have WiFi for a week. Do you think that is at all possible?

Best,

Tom

Sent from my iPhone

On Aug 19, 2021, at 15:20, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Thanks Tom,

I will send these along and the note. I'm hoping we can switch over to a Google drive format for comments.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 3:05 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H  
O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande  
<[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite  
Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Attached please find clean (well, clean-ish) and tracked versions of the revised manuscript. We addressed all the comments and made the changes requested. I hope this can be approved quickly.

Note: As you know, to edit collaboratively, we uploaded the Word doc with CDC comments to Google Drive. I re-downloaded the edited version as a Word doc — this is the “clean” version and preserves CDC comments and our responses. To make the “tracked” version I had to compare that downloaded document to the Word doc you forwarded from CDC. When I did that I noticed that it duplicated several comments from CDC folk. For the sake of readability I tried to delete duplicates, but there are still a lot of comments in a small space. It also appears that replies within comments were not recognized, so now they just appear as comments on top of other comments. I hope that all makes sense.

If these copies do not come through, you can download them from the shared Google drive here:

Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 09:41, Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Hi All,

Here are the first round of comments. We should get all responses within 24 to 48 hours of our submission. It looks like this needs to be approved by Lab TF, cross clearance and the response. Let me know if I can help with comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---


**From:** CDC IMS 2019 NCOV Response Lab TF  
Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Thursday, August 19, 2021 9:24 AM

**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah,

Please address the mandatory comments and  
return for re-review.

 [Shedding of Infectious SARS-CoV-2 Despite  
Vaccination when the Delta Variant is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call (Check Ins at 10 AM & 3  
PM)

---

**From:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>  
**Sent:** Wednesday, August 18, 2021 9:18 AM  
**To:** CDC IMS 2019 NCOV Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Hello,

Thank you for the quick work getting this approved for DIM expedited clearance. I haven't had a manuscript in expedited clearance before. Does it have the same steps as standard? How much time should I anticipate for the clearance process?

Thank you!  
Hannah

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 11:51 AM  
**To:** Kools, John J. (CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; CDC IMS 2019 NCOV Response Lab  
TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth,  
Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>  
**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;  
Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

NP! Glad we were able to turn this around so quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:47 PM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; CDC IMS 2019 NCOV Response  
Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Dunworth, Soumya (CDC/DDPHSS/CSELS/OD)

<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;  
Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[gqv9@cdc.gov](mailto:gqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:43 PM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Kools, John J.  
(CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>;  
Dunworth, Soumya (CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;  
Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Fw: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Afternoon,

This has been approved for expedited clearance.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:40 PM



**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Thank you. I approve expedited clearance.  
Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:16 PM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Hey Stephanie,

Please see attached for the updated draft.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 11:05 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Sure thing, working on the updated draft now.

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and Prevention

Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 10:56 AM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Yes, please request an updated draft with  
Hannah's name on it and then I approve it going  
for expedited clearance.

Stephanie

Stephanie R. Bialek MD MPH

Deputy Incident Manager

COVID-19 Response

CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 10:56 AM

**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Hey Stephanie,

From correspondence with ADS and STLT Hannah was  
inadvertently left off the manuscript but WI has confirmed  
that she is a co-author but her name is not on this draft.  
Should we request an updated draft with Hannah  
information on there as the co-author?

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and Prevention

Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 10:51 AM

**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Hey,

I am working on getting clarification as we speak, update to  
follow.

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and Prevention

Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:49 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Hannah Segaloff EISO is listed on the clearance request form as an author but not on the manuscript. Can you clarify that she indeed and author? If so, then my approval for expedited clearance stands.

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:40 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Thanks for the speedy response!

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:39 AM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

I approve.

Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:38 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Morning Stephanie,

Happy Tuesday! We would like to request DIM1 expedited approval for the attached manuscript. Please refer to the email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** CDC IMS 2019 NCOV Response Lab TF  
Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 10:32 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance on this item or wait until  
you receive the DIM approval ?

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call (Check Ins at 10 AM & 3  
PM)

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 9:59 AM  
**To:** CDC IMS 2019 NCOV Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Davis, Shelbi  
(CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin,  
Jarrett (CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** Dunworth, Soumya (CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>; Limbago, Brandi  
(CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon,  
Jonathan L. (CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>; Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Segaloff,  
Hannah (CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>  
**Subject:** Shedding of Infectious SARS-CoV-2 Despite  
Vaccination when the Delta Variant is Prevalent

Good Morning,

You may have heard but our task force was asked by STLT, and we agreed, to sponsor this manuscript through clearance. The authors are targeting NEJM and are requesting our task force to request IM approval for expedited clearance. Our main POC for this manuscript is our CDC EISO Hannah Segaloff (Cc'd). Let me know if you have any questions.

Hannah- our clearance team can help shepherd your paper through clearance. I would anticipate our laboratory SMEs to have some questions for your team.

Best regards,

John

John Kools  
ADS, Laboratory & Testing Task Force  
CDC COVID-19 Response  
Phone: 404-217-7258

---

**From:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 4:51 AM  
**To:** Kools, John J. (CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Subject:** FW: Follow up on your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: [REDACTED]

---

**From:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>

**Sent:** Monday, August 16, 2021 3:35 PM

**To:** Segaloff, Hannah (CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov))  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Rose, Dale  
A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>;  
Westergaard, Ryan (CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard,  
Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>

**Cc:** Ricaldi Camahuali, Jessica  
(CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>; Kools,  
John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>;  
Limbago, Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS  
2019 NCOV Response STLT ADS  
<[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>; CDC IMS 2019 NCOV  
Response Lab Task Force <[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>

**Subject:** Re: Follow up on your results

Dear Hannah,

Thank you for these additional documents. Due to this manuscript's focus on laboratory data, our Laboratory and Testing Task Force colleagues have agreed to be the sponsoring task force for CDC COVID-19 Response clearance. John Kools is the Lab TF ADS and can assist with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for Science  
State, Tribal, Local, and Territorial Support Task Force  
COVID-19 Emergency Response



Centers for Disease Control and Prevention  
Office: 404-639-1538 | Cell: [REDACTED]  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday, August 16, 2021 3:13 PM  
**To:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan  
(CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard,  
Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Ricaldi Camahuali, Jessica  
(CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>  
**Subject:** RE: Follow up on your results

Thank you. I have attached the concept proposal  
that was approved from the original MMWR  
submission as well as a clearance request form.

Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
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[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

<Reimersma\_Viral loads in vaccinees\_  
NEJM\_editedauthorlist\_LABTFCOMMENTS.docx>

# Shedding of Infectious SARS-CoV-2 Despite Vaccination

Kasen K. Riemersma, DVM, PhD<sup>1</sup>; Brittany E. Grogan, MPH<sup>2</sup>; Amanda Kita-Yarbro, MPH<sup>2</sup>; Peter J. Halfmann, PhD<sup>1</sup>; Hannah E. Segaloff, PhD<sup>3</sup>; Anna Kocharian, MS<sup>4</sup>; Kelsey R. Florek, MPH, PhD<sup>5</sup>; Ryan Westergaard, MD, PhD<sup>6</sup>; Allen Bateman, PhD<sup>5</sup>; Gunnar E. Jeppson, BS<sup>7</sup>; Yoshihiro Kawaoka, DVM, PhD<sup>1</sup>; David H. O'Connor, PhD<sup>8</sup>; Thomas C. Friedrich, PhD<sup>1</sup>; Katarina M. Grande, MPH<sup>2</sup>

<sup>1</sup> Department of Pathobiological Sciences, University of Wisconsin-Madison, Madison, WI, USA

<sup>2</sup> Public Health Madison & Dane County, Madison, WI, USA

<sup>3</sup> Epidemic Intelligence Service, CDC, Atlanta, GA, USA

<sup>3</sup> Wisconsin Department of Health Services, Madison, WI, USA

<sup>5</sup> Wisconsin State Laboratory of Hygiene, Madison, WI, USA

<sup>6</sup> Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, WI, USA

<sup>7</sup> Exact Sciences, Madison, WI, USA

<sup>8</sup> Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, USA

<sup>^</sup>These authors contributed equally. Correspondence can be addressed to:

Katarina Grande [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)

## Main text (400 words; limit 400)

The SARS-CoV-2 Delta variant ~~can~~ might cause high viral loads, is highly transmissible, and contains mutations that confer partial immune escape <sup>1,2</sup>. Outbreak investigations suggest that vaccinated persons can spread Delta <sup>3,4</sup>. We compared RT-qPCR cycle threshold (Ct) data from 699 swab specimens collected in Wisconsin 29 June through 31 July 2021 and tested by a single contract laboratory. During this time, estimated prevalence of Delta variants in Wisconsin increased from 69% to over 95%. Vaccination status was determined via self-reporting and state immunization records (Supplemental Figure 1).

We observed low Ct values (Ct <25) in 212 of 310 individuals infected despite full vaccination (68%; Figure 1A). Testing a subset of low-Ct samples revealed infectious SARS-CoV-2 in 15 of 17 specimens (88%) from unvaccinated individuals and 37 of 39 (95%) from vaccinated people (Figure 1B).

Ct values were similar in vaccinated and unvaccinated people whether or not they reported symptoms at the time of testing (Figure 1C). Among asymptomatic individuals, Ct values <25 were detected in 7 of 24 unvaccinated (29%; CI: 13-51%) and 9 of 11 fully vaccinated individuals (82%; CI: 52-95%). There was no significant difference in time from symptom onset to testing for vaccinated vs. unvaccinated individuals (two-sample K-S test, p=0.40; Supplemental Figure 2). Infectious virus was detected in the sole specimen tested from an asymptomatic fully vaccinated individual. Although the number of asymptomatic individuals sampled is small, these results indicate that people infected despite vaccination may have low Ct values and shed infectious virus even while asymptomatic.

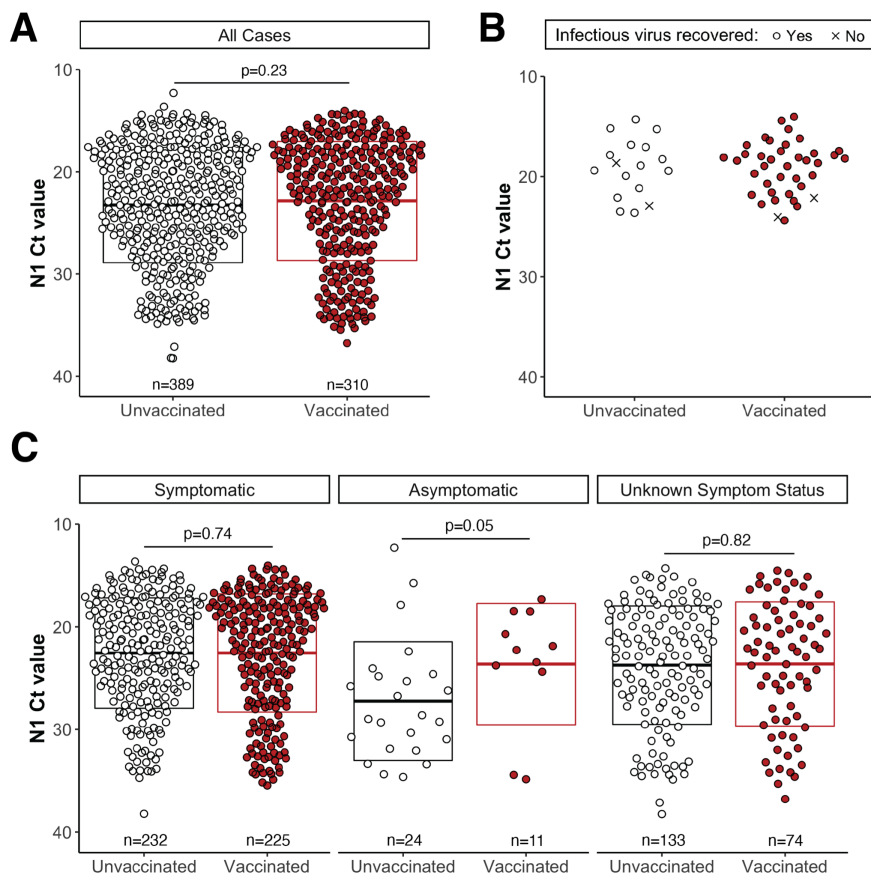
Combined with other studies <sup>2-5</sup>, these data indicate that vaccinated individuals infected with the Delta variant may transmit infection to others. Importantly, we show that infectious SARS-CoV-2 is frequently found even in vaccinated persons when specimen Ct values are low. The co-circulation of viruses from Pango lineages B.1.617.2, AY.2, and AY.3, and the wide geographic area sampled, indicate that the infections analyzed here are not associated with any single large outbreak, and that Delta-lineage SARS-CoV-2 can achieve low Ct values consistent with transmissibility in fully vaccinated individuals

**Commented [D(1)]:** Lab TF ADS: L2, suggest "may" because this is based on Ct values.

**Commented [D(2)]:** Lab TF ADS: L1 mandatory, RT-PCR here and throughout. RT-qPCR suggests that this assay was quantitative.

across a range of exposure settings. Vaccinated persons should be encouraged to get tested when symptomatic or after close contact with someone with suspected or confirmed COVID-19. Continued adherence to non-pharmaceutical interventions during periods of high community transmission will remain important for both vaccinated and unvaccinated individuals to help contain the spread of COVID-19.

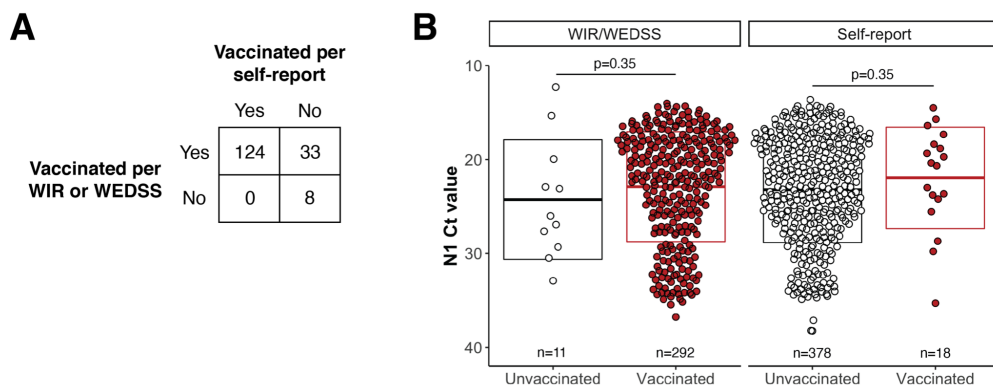
## Figure



**Figure 1. Individuals infected with SARS-CoV-2 despite full vaccination have low Ct values and shed infectious virus. A.** Ct values for SARS-CoV-2-positive specimens grouped by vaccination status. RT-qPCR was performed by Exact Sciences Corporation using a diagnostic assay targeting the SARS-CoV-2 N gene (oligonucleotides identical to CDC's N1 primer and probe set) that has been authorized for emergency use by FDA (<https://www.fda.gov/media/138328/download>). **B.** Infectiousness was determined for a subset of specimens with Ct <25 by inoculation onto Vero E6 TMPRSS2 cells and determining presence of cytopathic effects (CPE) after 5 days in culture. Circles indicate presence of CPE; 'X' indicates no CPE detected. **C.** N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for individuals who were symptomatic or asymptomatic, or those whose symptom status was not determined, at the time of testing. In **A** and **C**, boxplots represent mean N1 Ct values +/- one standard deviation. P-values were calculated by comparing mean Ct values by independent two-group Mann-Whitney U tests.

## Supplemental materials

### Supplemental figure 1



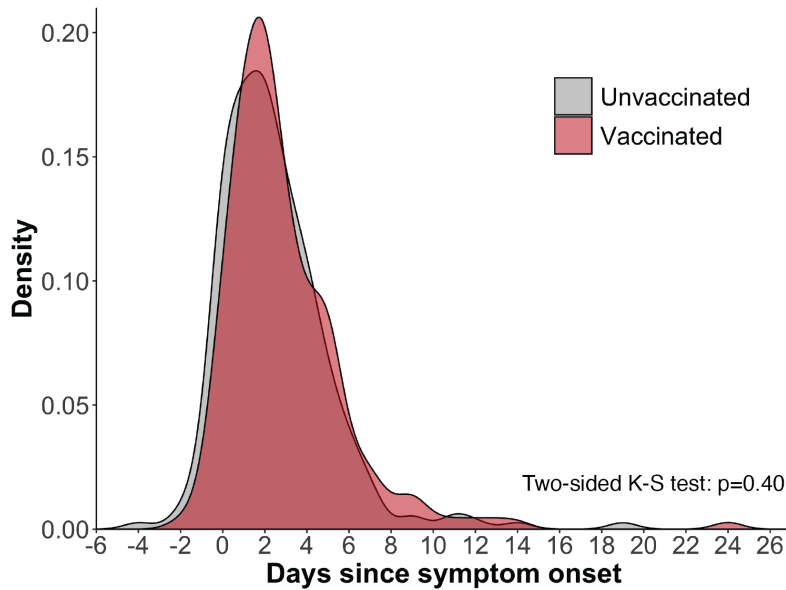
Supplemental figure 1. Concordance between self-reported vaccination status and the Wisconsin Immunization Registry (WIR) or Wisconsin Electronic Disease Surveillance System (WEDSS). For all individuals, vaccination status was determined using WIR/WEDSS electronic registries when data was available. Individuals were identified as unvaccinated at the time of testing if WIR/WEDSS data indicated receipt of a first SARS-CoV-2 vaccine dose after the test date.

Individuals were considered fully vaccinated based on WIR/WEDSS data if the registries indicated receipt of a final vaccine dose at least 14 days prior to testing. For individuals whose vaccination status could not be verified in WIR/WEDSS, self-reported data collected at the time of testing was used. Individuals were considered unvaccinated based on self-report only if there was an explicit declaration of unvaccinated status in the self-reported data. Individuals were considered fully vaccinated based on self-report if they fulfilled all of the following criteria: (1) indicated that they had received a COVID vaccine prior to testing; (2) indicated that they did not require another vaccine dose; and (3) reported a date of last vaccine dose that was at least 14 days prior to testing.

Specimens lacking data on vaccination status were excluded from the study. Specimens from partially vaccinated individuals (incomplete vaccine series, or <14 days post-final dose) were also excluded. Fully vaccinated status was determined by WIR/WEDSS for 292 specimens and by self-reported data for 18. Unvaccinated status was determined by WIR/WEDSS for 11 and by self-reported data by 378.

**A.** Of the 699 specimens with vaccination status available from at least one source, 165 specimens had data available from both sources. For self-reporting, under-reporting of full vaccination status (33/157) was more common than over-reporting (0/124). **B.** N1 Ct values for SARS-CoV-2-positive specimens grouped by vaccination status for individuals whose vaccination status was determined by WIR/WEDSS or by self-reported data. Boxplots represent mean N1 Ct values  $\pm$  one standard deviation. P-values were calculated by comparing mean Ct values by independent two-group Mann-Whitney U tests.

Supplemental figure 2



Supplemental figure 2. Density distributions of unvaccinated and vaccinated specimen collection dates by day since symptom onset. Day 0 on the x-axis denotes self-reported day of symptom onset. Negative values for days indicate specimen collection prior to symptom onset. Symptom onset data were available for n=263 unvaccinated cases and n=232 vaccinated cases.

## Conflict of interest

The authors declare no conflicting interests.

## Ethics statement

Per the University of Wisconsin-Madison IRB, this project qualifies as public health surveillance activities as defined in the Common Rule, 45 CFR 46.102(l)(2). As such, the project is not deemed to be research regulated under the Common Rule and therefore, does not require University of Wisconsin-Madison IRB review and oversight. The opinions expressed by authors contributing to this journal do not necessarily reflect the opinions of the Centers for Disease Control and Prevention or the institutions with which the authors are affiliated.

## Data availability

Data and processing workflows are available at <https://go.wisc.edu/p22l16>. To protect potentially personally identifiable information, the publicly available dataset contains only PCR Ct values, vaccine status, symptom status, and days from symptom onset to testing for each specimen.

**Commented [L3]:** STLT ADS - Defer to rADS, but doesn't this also need the CDC ethics statement?

"This activity was reviewed by CDC and was conducted consistent with applicable federal law and CDC policy.  
§  
§See e.g., 45 C.F.R. part 46, 21 C.F.R. part 56; 42 U.S.C. §241(d); 5 U.S.C. §552a; 44 U.S.C. §3501 et seq.  
"

**Commented [SHE-D4R3]:** Happy to change this but this specific activity was not reviewed by CDC (I have a broad covid outbreak concept proposal that this falls under).



## References

1. Planas D, Veyer D, Baidaliuk A, et al. Reduced sensitivity of SARS-CoV-2 variant Delta to antibody neutralization. *Nature* [Internet] 2021 [cited 2021 Jul 28];1–7. Available from: <https://www.nature.com/articles/s41586-021-03777-9>
2. Mlcochova P, Kemp S, Dhar MS, et al. SARS-CoV-2 B.1.617.2 Delta variant replication, sensitivity to neutralising antibodies and vaccine breakthrough [Internet]. *bioRxiv*. 2021 [cited 2021 Aug 15];2021.05.08.443253. Available from: <https://www.biorxiv.org/content/10.1101/2021.05.08.443253v5>
3. Brown CM, Vostok J, Johnson H, et al. Outbreak of SARS-CoV-2 infections, including COVID-19 vaccine breakthrough infections, associated with large public gatherings - Barnstable County, Massachusetts, July 2021. *MMWR Morb Mortal Wkly Rep* [Internet] 2021;70(31):1059–62. Available from: [https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm?utm\\_source=mp-fotoscapes](https://www.cdc.gov/mmwr/volumes/70/wr/mm7031e2.htm?utm_source=mp-fotoscapes)
4. Hetemäki I, Kääriäinen S, Alho P, et al. An outbreak caused by the SARS-CoV-2 Delta variant (B.1.617.2) in a secondary care hospital in Finland, May 2021. *Euro Surveill* [Internet] 2021;26(30). Available from: <http://dx.doi.org/10.2807/1560-7917.ES.2021.26.30.2100636>
5. Chia PY, Xiang Ong SW, Chiew CJ, et al. Virological and serological kinetics of SARS-CoV-2 Delta variant vaccine-breakthrough infections: a multi-center cohort study [Internet]. *bioRxiv*. 2021; Available from: <http://medrxiv.org/lookup/doi/10.1101/2021.07.28.21261295>

**From:** [Segaloff, Hannah E - DHS](#)  
**To:** [Thomas Friedrich](#)  
**Cc:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Katarina Grande](#); [Westergaard, Ryan P - DHS](#)  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Friday, August 20, 2021 4:06:49 PM  
**Attachments:** [Riemersma\\_Viral loads in vaccinees\\_NEJM\\_revised\\_CLEAN\\_2021-08-19.docx](#)

---

Perfect timing- just got it back- very minimal comments. This is cleared with comments so it goes to the final level of clearance once we are done. If you can just send me the word doc with comments and then change in google docs it will probably be fastest. I'm not sure if will make it before your vacation but we may get this back tomorrow.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
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---

**From:** Thomas Friedrich <tfriedri@wisc.edu>  
**Sent:** Friday, August 20, 2021 3:44 PM  
**To:** Segaloff, Hannah E - DHS <hannah.segaloff@dhs.wisconsin.gov>  
**Cc:** Kasen Riemersma <riemersma@wisc.edu>; DAVID H O'CONNOR <dhoconno@wisc.edu>; Katarina Grande <kgrande@publichealthmdc.com>; Westergaard, Ryan P - DHS <ryan.westergaard@dhs.wisconsin.gov>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Do you have any updates on the CDC clearance process? Can you see if others have been able to look at the paper?

Thanks,

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)

@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 18:51, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Okay, fingers crossed!

Sent from my iPhone

On Aug 19, 2021, at 18:02, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Though on second thought I can see that the STLT TF is reviewing now- so  
maybe this is moving faster than I thought.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
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---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 5:44 PM  
**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the  
Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or  
open attachments unless you recognize the sender.**

Thanks Hannah.

I really hope they can return comments tomorrow so we can submit. I will  
be heading up north on Saturday and won't have WiFi for a week. Do you  
think that is at all possible?

Best,

Tom

Sent from my iPhone

On Aug 19, 2021, at 15:20, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Thanks Tom,

I will send these along and the note. I'm hoping we can switch over to a Google drive format for comments.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

**Sent:** Thursday, August 19, 2021 3:05 PM

**To:** Segaloff, Hannah E - DHS

<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>

**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H  
O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande  
<[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite  
Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Attached please find clean (well, clean-ish) and tracked versions of the revised manuscript. We addressed all the comments and made the changes requested. I hope this can be approved quickly.

Note: As you know, to edit collaboratively, we uploaded the Word doc with CDC comments to Google Drive. I re-downloaded the edited version as a Word doc — this is the “clean” version and preserves CDC comments and our responses. To make the “tracked” version I had to compare that downloaded document to the Word doc you forwarded from CDC. When I did that I noticed that it duplicated several comments from CDC folk. For the sake of readability I tried

to delete duplicates, but there are still a lot of comments in a small space. It also appears that replies within comments were not recognized, so now they just appear as comments on top of other comments. I hope that all makes sense.

If these copies do not come through, you can download them from the shared Google drive here:



Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 09:41, Segaloff, Hannah E -  
DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
wrote:

Hi All,

Here are the first round of comments. We should get all responses within 24 to 48 hours of our submission. It looks like this needs to be approved by Lab TF, cross clearance and the response. Let me know if I can help with comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention


Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Thursday, August 19, 2021 9:24 AM  
**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah,

Please address the mandatory comments and return for re-review.

 [Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>  
**Sent:** Wednesday, August 18, 2021 9:18 AM  
**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is

Prevalent

Hello,

Thank you for the quick work getting this approved for DIM expedited clearance. I haven't had a manuscript in expedited clearance before. Does it have the same steps as standard? How much time should I anticipate for the clearance process?

Thank you!

Hannah

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[gqv9@cdc.gov](mailto:gqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 11:51 AM  
**To:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>  
**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

NP! Glad we were able to turn this around so quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:47 PM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[gqv9@cdc.gov](mailto:gqv9@cdc.gov)>; CDC IMS 2019 NCOV Response  
Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Dunworth, Soumya (CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;  
Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[gqv9@cdc.gov](mailto:gqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:43 PM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Kools, John J.  
(CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>;  
Dunworth, Soumya (CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>;  
Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Fw: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Afternoon,

This has been approved for expedited clearance.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]



**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:40 PM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Thank you. I approve expedited clearance.  
Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:16 PM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Hey Stephanie,

Please see attached for the updated draft.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 11:05 AM

**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Sure thing, working on the updated draft now.

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and Prevention

Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 10:56 AM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Yes, please request an updated draft with  
Hannah's name on it and then I approve it going  
for expedited clearance.

Stephanie

Stephanie R. Bialek MD MPH

Deputy Incident Manager

COVID-19 Response

CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 10:56 AM

**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Hey Stephanie,

From correspondence with ADS and STLT Hannah was  
inadvertently left off the manuscript but WI has confirmed  
that she is a co-author but her name is not on this draft.  
Should we request an updated draft with Hannah  
information on there as the co-author?

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and Prevention

Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 10:51 AM

**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Hey,

I am working on getting clarification as we speak, update to  
follow.

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:49 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Hannah Segaloff EISO is listed on the clearance request form as an author but not on the manuscript. Can you clarify that she indeed and author? If so, then my approval for expedited clearance stands.

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:40 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Thanks for the speedy response!

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:39 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

I approve.

Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:38 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

Morning Stephanie,

Happy Tuesday! We would like to request DIM1 expedited approval for the attached manuscript. Please refer to the email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:32 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance on this item or wait until you receive the DIM approval ?

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 9:59 AM  
**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>

**Subject:** Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Good Morning,

You may have heard but our task force was asked by STLT, and we agreed, to sponsor this manuscript through clearance. The authors are targeting NEJM and are requesting our task force to request IM approval for expedited clearance. Our main POC for this manuscript is our CDC EISO Hannah Segaloff (Cc'd). Let me know if you have any questions.

Hannah- our clearance team can help shepherd your paper through clearance. I would anticipate our laboratory SMEs to have some questions for your team.

Best regards,

John

John Kools  
ADS, Laboratory & Testing Task Force  
CDC COVID-19 Response  
Phone: 404-217-7258

---

**From:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI)

[<ido8@cdc.gov>](mailto:ido8@cdc.gov)

**Sent:** Tuesday, August 17, 2021 4:51 AM

**To:** Kools, John J. (CDC/DDID/NCEZID/OD)

[<czk7@cdc.gov>](mailto:czk7@cdc.gov)

**Subject:** FW: Follow up on your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're

aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: [REDACTED]

---

**From:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>

**Sent:** Monday, August 16, 2021 3:35 PM

**To:** Segaloff, Hannah (CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Rose, Dale  
A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>;  
Westergaard, Ryan (CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard,  
Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>

**Cc:** Ricaldi Camahuali, Jessica  
(CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>; Kools,  
John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>;  
Limbago, Brandi (CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan L.  
(CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS  
2019 NCOV Response STLT ADS  
<[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>; CDC IMS 2019 NCOV  
Response Lab Task Force <[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>

**Subject:** Re: Follow up on your results

Dear Hannah,

Thank you for these additional documents. Due to this manuscript's focus on laboratory data, our Laboratory and Testing Task Force colleagues have agreed to be the sponsoring task force for CDC COVID-19 Response clearance. John Kools is the Lab TF ADS and can assist with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD



Associate Director for Science  
State, Tribal, Local, and Territorial Support Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Office: 404-639-1538 | Cell: [REDACTED]  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday, August 16, 2021 3:13 PM  
**To:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan  
(CDC [dhs.wisconsin.gov](mailto:dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard,  
Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Ricaldi Camahuali, Jessica  
(CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>  
**Subject:** RE: Follow up on your results

Thank you. I have attached the concept proposal  
that was approved from the original MMWR  
submission as well as a clearance request form.

Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

<Reimersma\_Viral loads in vaccinees\_  
NEJM\_editedauthorlist\_LABTFComments.docx>

**From:** [Segaloff, Hannah E - DHS](#)  
**To:** [Thomas Friedrich](#)  
**Cc:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Katarina Grande](#)  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Thursday, August 19, 2021 3:20:19 PM

---

Thanks Tom,

I will send these along and the note. I'm hoping we can switch over to a Google drive format for comments.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <tfriedri@wisc.edu>  
**Sent:** Thursday, August 19, 2021 3:05 PM  
**To:** Segaloff, Hannah E - DHS <hannah.segaloff@dhs.wisconsin.gov>  
**Cc:** Kasen Riemersma <riemersma@wisc.edu>; DAVID H O'CONNOR <dhoconno@wisc.edu>; Katarina Grande <kgrande@publichealthmdc.com>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Attached please find clean (well, clean-ish) and tracked versions of the revised manuscript. We addressed all the comments and made the changes requested. I hope this can be approved quickly.

Note: As you know, to edit collaboratively, we uploaded the Word doc with CDC comments to Google Drive. I re-downloaded the edited version as a Word doc — this is the “clean” version and preserves CDC comments and our responses. To make the “tracked” version I had to compare that downloaded document to the Word doc you forwarded from CDC. When I did that I noticed that it duplicated several comments from CDC folk. For the sake of readability I tried to delete duplicates, but there are still a lot of comments in a small space. It also appears that replies within comments were not recognized, so now they just appear as comments on top of other comments. I hope that all makes sense.

If these copies do not come through, you can download them from the shared Google drive here:



Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 09:41, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Hi All,

Here are the first round of comments. We should get all responses within 24 to 48 hours of our submission. It looks like this needs to be approved by Lab TF, cross clearance and the response.  
Let me know if I can help with comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Sent:** Thursday, August 19, 2021 9:24 AM

**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>


**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah,

Please address the mandatory comments and return for re-review.

 [Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>  
**Sent:** Wednesday, August 18, 2021 9:18 AM  
**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hello,

Thank you for the quick work getting this approved for DIM expedited clearance. I haven't had a manuscript in expedited clearance before. Does it have the same steps as standard? How much time should I anticipate for the clearance process?

Thank you!  
Hannah

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 11:51 AM  
**To:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; CDC IMS 2019 NCOV

Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

NP! Glad we were able to turn this around so quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:47 PM

**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 12:43 PM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>

**Cc:** Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta

Variant is Prevalent

Afternoon,

This has been approved for expedited clearance.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:40 PM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thank you. I approve expedited clearance.

Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 12:16 PM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey Stephanie,

Please see attached for the updated draft.

Thanks,

Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 11:05 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Sure thing, working on the updated draft now.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:56 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Yes, please request an updated draft with Hannah's name on it and then I approve it going for expedited clearance.

Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:56 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey Stephanie,

From correspondence with ADS and STLT Hannah was inadvertently left off the manuscript but WI has confirmed that she is a co-author but her name is not on this draft. Should we request an updated draft with Hannah information on there as the co-author?

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:51 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hey,

I am working on getting clarification as we speak, update to follow.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---



**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:49 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hannah Segaloff EISO is listed on the clearance request form as an author but not on the manuscript. Can you clarify that she indeed and author? If so, then my approval for expedited clearance stands.

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:40 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Thanks for the speedy response!

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [cocevent503@cdc.gov](mailto:cocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:39 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

I approve.

Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response

CDC

---

**From:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:38 AM  
**To:** Bialek, Stephanie R. (CDC/DDID/NCIRD/DVD) <[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H. (CDC/DDPHSS/CSELS/OD) <[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Morning Stephanie,

Happy Tuesday! We would like to request DIM1 expedited approval for the attached manuscript. Please refer to the email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Lab TF Communications Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021 10:32 AM  
**To:** Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Fw: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance on this item or wait until you receive the DIM approval ?

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

IR#0682H\_000674

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

---

**From:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 9:59 AM

**To:** CDC IMS 2019 NCOV Response Lab TF Clearance <[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Davis, Shelbi (CDC/DDID/NCIRD/DVD) <[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; Gartin, Jarrett (CDC/DDID/NCIRD/OD) (CTR) <[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Cc:** Dunworth, Soumya (CDC/DDPHSS/CSELS/OD) <[kya6@cdc.gov](mailto:kya6@cdc.gov)>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) <[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>

**Subject:** Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

Good Morning,

You may have heard but our task force was asked by STLT, and we agreed, to sponsor this manuscript through clearance. The authors are targeting NEJM and are requesting our task force to request IM approval for expedited clearance. Our main POC for this manuscript is our CDC EISO Hannah Segaloff (Cc'd). Let me know if you have any questions.

Hannah- our clearance team can help shepherd your paper through clearance. I would anticipate our laboratory SMEs to have some questions for your team.

Best regards,

John

John Kools  
ADS, Laboratory & Testing Task Force  
CDC COVID-19 Response  
Phone: 404-217-7258

---

**From:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>

**Sent:** Tuesday, August 17, 2021 4:51 AM

**To:** Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>

**Subject:** FW: Follow up on your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: [REDACTED]

---

**From:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>  
**Sent:** Monday, August 16, 2021 3:35 PM  
**To:** Segaloff, Hannah (CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov)) <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan (CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov)) <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard, Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Ricaldi Camahuali, Jessica (CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>; Kools, John J. (CDC/DDID/NCEZID/OD) <[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Limbago, Brandi (CDC/DDID/NCIRD/OD) <[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan L. (CDC/DDID/NCEZID/DSR) <[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS 2019 NCOV Response STLT ADS <[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>; CDC IMS 2019 NCOV Response Lab Task Force <[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>  
**Subject:** Re: Follow up on your results

Dear Hannah,

Thank you for these additional documents. Due to this manuscript's focus on laboratory data, our Laboratory and Testing Task Force colleagues have agreed to be the sponsoring task force for CDC COVID-19 Response clearance. John Kools is the Lab TF ADS and can assist with next steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for Science

State, Tribal, Local, and Territorial Support Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and Prevention  
Office: 404-639-1538 | Cell: [REDACTED]  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Sent:** Monday, August 16, 2021 3:13 PM  
**To:** Rose, Dale A. (CDC/DDID/NCEZID/DPEI) <[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan (CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov)) <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard, Kris (CDC/DDPHSS/CSELS/DSEPD) <[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Llewellyn, Anna C. (CDC/DDID/NCEZID/DPEI) <[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Ricaldi Camahuali, Jessica (CDC/DDID/NCEZID/DPEI) <[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>  
**Subject:** RE: Follow up on your results

Thank you. I have attached the concept proposal that was approved from the original MMWR submission as well as a clearance request form.

Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

<Reimersma\_Viral loads in vaccinees\_  
NEJM\_editedauthorlist\_LABTFComments.docx>

**From:** [KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)  
**To:** [Thomas Friedrich](#); [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)  
**Cc:** [DAVID H O'CONNOR](#); [Kasen Riemersma](#)  
**Subject:** RE: [Nat Geo] Evidence mounts that people with breakthrough infections can spread Delta easily  
**Date:** Friday, August 20, 2021 1:23:04 PM

---

Thanks for sharing, Sanjay!

-Katarina

---

**From:** Thomas Friedrich <tfriedri@wisc.edu>  
**Sent:** Friday, August 20, 2021 12:34 PM  
**To:** [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)  
**Cc:** Grande, Katarina <KGrande@publichealthmdc.com>; DAVID H O'CONNOR <dhoconno@wisc.edu>; Kasen Riemersma <riemersma@wisc.edu>  
**Subject:** Re: [Nat Geo] Evidence mounts that people with breakthrough infections can spread Delta easily

Caution: This email was sent from an external source. Avoid unknown links and attachments.

Thanks Sanjay — the story looks great! I am glad to see Kasen and Kat featured.

Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 20 Aug 2021, at 12:12, [mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) wrote:

Dear Katrina, Kasen, Tom

My article is online

now: <https://www.nationalgeographic.com/science/article/evidence-mounts-that-people-with-breakthrough-infections-can-spread-delta-easily>

Dear Tom,

I apologize none of your wonderful quotes made it to the final story. Editors are tough

critics.

I really appreciate your time and help in getting this story out. I can only hope that these articles make even a tiny difference in convincing some fence sitters and help others to stay cautious.

Sanjay

---

**From:** [Grande, Katarina](#)

**Sent:** Thursday, August 12, 2021 2:36 PM

**To:** '[Sanjay Mishra](#)'

**Cc:** [DAVID H O'CONNOR](#); '[Kasen Riemersma](#)'; [Thomas Friedrich](#)

**Subject:** RE: Request to interview from National Geographic

Hi Dr. Mishra,

Thanks for reaching out. I could jump on a call after 3:30pm. I'm cc'ing my co-authors, who are the true scientists on the paper—I'm the applied public health person of the bunch. So depending on your angle, it may be helpful to link with them, or see if we could jump on a call together.

-Katarina

**KATARINA GRANDE, MPH** (pronouns: she/her/hers)

**Public Health Supervisor/COVID-19 Data Team Lead** | [Public Health Madison & Dane County](#)

2300 South Park St, Rm 2010, Madison, WI 53713

Phone: (608) 243-0409 | Cell: [REDACTED] | Fax: (608) 266-4858

*Healthy People. Healthy Places.*

[<image001.png>](#)

This email, including any attachments, may contain confidential or protected health information which is only for the intended recipient. If you received this email in error, please delete and notify the sender immediately. Emails sent or received by our agency are subject to open records requests and could be released to the public, unless there is an exception allowed by law.

[<image002.png>](#)

---

**From:** Sanjay Mishra <[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com)>

**Sent:** Thursday, August 12, 2021 2:07 PM

**To:** Grande, Katarina <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>

**Subject:** Request to interview from National Geographic

**Importance:** High

Caution: This email was sent from an external source. Avoid unknown links and attachments.

IR#0682H\_000679

Dear Katarina

I read your preprint posted earlier today with alarm: “Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent - Wisconsin, July 2021”

Can I urgently talk to you since I am pitching this as story to my editor at National Geographic, as a follow up to my recent stories on Delta variant, value of masking and breakthrough infections:

In National Geographic:

1. [Why is Delta more infectious and deadly? New research holds answers](#). (August 6, 2021)
2. [How dangerous is the new Delta Plus variant? Here's what we know](#). (July 2, 2021)
3. [The Delta variant is serious. Here's why it's on the rise](#). (June 16, 2021); updated:
  - a. [The Delta variant is spreading fast, especially where vaccination rates are low](#) (July 8, 2021)
4. [This 'double mutant' variant is adding fuel to India's COVID-19 crisis](#) (April 28, 2021)

In The Conversation:

1. [What is a breakthrough infection? 6 questions answered about catching COVID-19 after vaccination](#) (July 28, 2021)
2. [Can people vaccinated against COVID-19 still spread the coronavirus?](#) (May 25, 2021)

I and the readers of National Geographic will highly appreciate it

*Sanjay Mishra, MS, PhD*

*Nashville, TN 37221; USA*

[mishra.sanjay@outlook.com](mailto:mishra.sanjay@outlook.com) | [@Ecquis](#) | +1 (615) 829 6563

[LinkedIn](#) | [Google Scholar](#) | [Contently](#) | [Skype](#)



**From:** [DAVID H O'CONNOR](#)  
**To:** [Segaloff, Hannah E - DHS](#)  
**Cc:** [Kasen Riemersma](#); [Katarina Grande](#); [Thomas Friedrich](#)  
**Subject:** Re: FW: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Monday, August 23, 2021 1:25:37 PM

---

Hi Hannah,

Thanks much - I'll upload as soon as I get the login credentials from Kat (or Tom, if he happens to be eavesdropping from up north).

dave

Segaloff, Hannah E - DHS wrote on 8/23/21 11:52 AM:

Hi all,

We are cleared! There are some extremely tiny comments to incorporate/consider. Once we submit they just want me to send a final copy for their records. Note that I made two additional small changes (added "qualitative in two places and deleted one word to keep it in the word count) without sending it back to facilitate quick review- so you may want to upload this version.

Thanks for your patience with this painful process!

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** CDC IMS 2019 NCOV Response Lab TF Clearance [<eocevent216@cdc.gov>](mailto:eocevent216@cdc.gov)  
**Sent:** Monday, August 23, 2021 11:47 AM  
**To:** Segaloff, Hannah (CDC/DDPHSS/CSELS/DSEPD) [<qdz0@cdc.gov>](mailto:qdz0@cdc.gov)  
**Cc:** CDC IMS 2019 NCOV Response Lab TF Clearance [<eocevent216@cdc.gov>](mailto:eocevent216@cdc.gov)  
**Subject:** Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah:

The attached document has been cleared by JIC with comments.

**Once you have addressed the reviewer's feedback, please send us a clean and final document, so we can provide it to JIC for their records.**

**JIC OS Content Comment.**

- **Very informative study. It is approved with minor comments, see attached**

Thanks,

Audrey

CDC IMS 2019-nCoV Lab Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST

Saturday & Sunday On Call (Check Ins at 10 AM & 3 PM)

**From:** [Kasen Riemersma](#)  
**To:** [Peter Halfmann](#)  
**Subject:** Re: New England Journal of Medicine - 21-14060  
**Date:** Friday, September 10, 2021 9:28:24 AM  
**Attachments:** [Specimens for culture 20210910.xlsx](#)

---

I handed them off at the door, so hopefully they make their way to you. I've attached the full specimen manifest with both sets of 24.

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Friday, September 10, 2021 at 9:04 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

If you leave them by the door that's fine - thanks

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, September 10, 2021 9:04 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Peter, I'm about to walk over the second set of 24 specimens for virus titration. Please let me know if I should come at a different time.

Thanks,  
Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Thursday, September 9, 2021 at 9:12 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Got them; thanks! Sounds good.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Thursday, September 9, 2021 9:05 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hey Peter,

I'm about to walk over with the first set of 24 more recent specimens. I need a bit more time today to pull the set of 24 older specimens, but will get them to you by the end of the day or first thing tomorrow morning.

I've attached the specimen manifest for the first set of 24.

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Tuesday, September 7, 2021 at 2:30 PM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Early Thursday is good; thanks

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Tuesday, September 7, 2021 2:30 PM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks, Peter! Would you prefer I drop off the 48 specimens on Wednesday or early Thursday?

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Tuesday, September 7, 2021 at 12:02 PM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>, Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>, YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

We can do 24 samples on Thursday and another 24 samples on Friday.

On Sep 7, 2021, at 9:39 AM, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Like Dave, I can see this going either way. Perhaps we could do a set of specimens from within the same time period that is covered in the submitted paper, and then also a more recent batch? This would cover our bases. However, I don't want to burden Peter too much, so I think he and Yoshi should comment also.

Best,

-Tom

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Dave O'Connor wrote on 2021-09-07 08:42:

Hi all,

I could see it going either way. I don't think we need to add them to the existing dataset. It might even be better to use recent samples because it shows that the trend is stable over time. But I don't feel strongly about it.

dave

Kasen Riemersma wrote on 9/7/21 8:40 AM:

Hi all,

I can definitely provide more samples for Peter to test. Peter, once I know how many you can process, I should be able to send them over quickly.

Tom, if these culture data may be added to our study, I'm inclined to select specimens from the same study period instead of more recent specimens. Do you agree?

Cheers,  
Kasen

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Date:** Sunday, September 5, 2021 at 12:43 PM  
**To:** YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Kasen Riemersma <[kriemersma@wisc.edu](mailto:kriemersma@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi all.

Okay, I agree with all this. In our emails last week, I was not sure whether you guys wanted to respond to Vincent as soon as possible. I completely agree that we would need to generate new titration data with samples that have not undergone multiple freeze-thaw cycles.

Luckily we are getting a large number of samples from Exact each week.

Kasen, can we identify a set of fresh samples that can be aliquoted for Peter to test?

Peter, what is a good number of samples for you to receive?

Best,

-Tom

YOSHIHIRO KAWAOKA wrote on 2021-09-03 19:33:

If we are going to respond to Vincent by sharing our new data, we should do the virus isolation with new samples that have not been thawed several times. I am concerned about the data showing that the number of no-virus-recovery samples from vaccinated individuals is higher than that from unvaccinated individuals. He will criticize this point if we send him the current data.

Best,  
Yoshi

---

**From:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Saturday, September 4, 2021 8:11 AM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Tom,

I updated Medrxiv with the NEJM submission. I didn't update with this week's data. I suggest waiting until we get a disposition on the NEJM paper before updating Medrxiv again.

In terms of Vincent, I'm fine if someone else wants to connect with him and Daniel on the data. I'm not enthusiastic about doing it myself.

dave

--

I often work on email outside of work hours, but you don't have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>

608.890.0845

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Friday, September 3, 2021 18:04  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks Dave.

Did we update the medrxiv paper with the titration data? If so I can update my Twitter thread on the paper and include it. As you guys have said, even though the samples have undergone multiple freeze-thaw cycles, it is clear that titers are not systematically lower in vaccinees vs. unvaccinated.

Would you guys also email Daniel and Vincent directly to call their attention to these data?

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 3 Sep 2021, at 17:15, DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)> wrote:

What will come first, an NEJM decision on a 400 word letter or Kat's return from Iceland? Nonetheless, I pinged the editor (see below) and offered the titer data should it be helpful.

dave

--

I often work on email outside of work hours, but you don't

have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>  
608.890.0845

---

**From:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Sent:** Friday, September 3, 2021 14:05  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Sent:** Friday, September 3, 2021 2:58 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Subject:** FW: New England Journal of Medicine - 21-14060

---

**From:** Dave O'Connor <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Friday, September 3, 2021 10:17 AM  
**To:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

To whom it may concern,

I am writing on behalf of our co-authors to ask if there are any updates on the status of the 400 word correspondence we submitted to NEJM on August 23. We are keenly aware that this is timely data given the current landscape of SARS-CoV-2 infection despite vaccination.

One small note: some vocal scientists have criticized our work on social media. The primary claim they make is that virus culture in low Ct samples does not mean that there is similar amounts of replication-competent virus in these samples. Subsequent to our August 23 submission, we re-thawed these samples and showed that virus titers are similar in those who are unvaccinated and infected despite infection (see attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine wrote on 8/23/21 1:39 PM:

Dear Ms. Grande and co-authors,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination" to the New England Journal of Medicine.

Your manuscript has been forwarded to members of our editorial staff, who will make an initial evaluation and decide whether it merits further consideration. You will be notified of the decision as soon as possible.

Your manuscript ID is 21-14060.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in

appropriate. You may also view the status of your manuscript at any time by checking For Authors section of the site.

We are undertaking evaluation of your manuscript with the understanding that neither the substance of the article nor the figures or tables have been published or will be submitted for publication elsewhere during the period of review.

Please provide the editors with copies of other manuscripts by you or your coauthors addressing similar or related research questions that are in preparation or under consideration at other journals. This does not apply to abstracts published in connection with scientific meetings or to news reports based on presentations at such meetings.

The Journal's policy is explained more fully at <https://www.nejm.org/about-nejm/editorial-policies>.

Please call us at 617-734-9800 if you have any questions.

Sincerely,

New England Journal of Medicine  
10 Shattuck Street  
Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-9864  
<http://www.nejm.org>

--

[@dho • 608-890-0845](http://dho.pathology.wisc.edu)

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IR#0682H\_000688





Tube_ID	N1_Ct	Collection_Date
1THKW	15.06350109	9/2/2021 11:07
1THGD	19.98705395	9/2/2021 10:58
1THI1	19.58691028	9/2/2021 14:57
1THG9	18.32912604	9/2/2021 11:19
1TFJR	21.29209604	9/2/2021 14:36
1TFDI	24.51859995	9/2/2021 12:05
1TF0Q	15.51073314	9/2/2021 14:14
1TEX4	19.44054682	9/2/2021 12:51
1TF3W	19.56405534	9/2/2021 15:00
1TFLC	24.50682463	9/2/2021 17:35
1TGOH	24.9468493	9/2/2021 14:02
1TNRP	17.43160031	9/5/2021 17:21
1THFG	17.66851405	9/2/2021 9:36
1TEC7	19.42473556	9/2/2021 13:21
1TMU0	18.79827618	9/4/2021 11:44
1TMUL	19.8440396	9/4/2021 9:43
1TKJP	25.03431554	9/3/2021 9:52
1TKWD	19.85761006	9/3/2021 11:34
1TKV7	16.62752271	9/3/2021 10:02
1TN5K	18.54030436	9/4/2021 11:33
1TJZ5	19.31552845	9/3/2021 12:34
1TJWD	20.73535029	9/3/2021 11:21
1TJUV	15.49592228	9/3/2021 16:23
1TJUA	16.47786494	9/3/2021 16:04
1SEH2	21.08310128	8/24/2021 8:47
1SHM6	21.58934574	8/24/2021 12:38
1SHPW	21.54627886	8/24/2021 13:12
1SE2X	15.7339903	8/24/2021 9:41
1SHRU	16.50421287	8/24/2021 17:01
1SHSV	18.87103606	8/24/2021 16:51
1SHJN	18.28345724	8/24/2021 12:10
1SHS3	21.74136158	8/24/2021 16:57
1SHJV	12.59247242	8/24/2021 13:20
1SHFS	18.57897209	8/24/2021 13:41
1SHLF	14.6042653	8/24/2021 13:21
1SHLU	24.83442105	8/24/2021 12:40
1SHKY	17.43457586	8/24/2021 12:37
1SHAK	23.66621923	8/24/2021 13:54
1SHIC	16.69530582	8/24/2021 16:49
1SJEK	15.23684453	8/25/2021 12:33
1SIY5	21.10522528	8/25/2021 14:22
1SDYB	20.30754385	8/24/2021 13:43
1SHPG	15.97163045	8/24/2021 14:08
1SIZF	15.64100204	8/25/2021 14:41
1SKHE	18.25545253	8/25/2021 9:55
1SIX6	19.99673466	8/24/2021 9:28
1SJ6J	22.95399616	8/25/2021 10:07
1SIZP	17.3381538	8/25/2021 10:47

**From:** [Kasen Riemersma](#)  
**To:** [Peter Halfmann](#)  
**Cc:** [YOSHIHIRO KAWAOKA](#)  
**Subject:** Re: New England Journal of Medicine - 21-14060  
**Date:** Wednesday, September 15, 2021 12:42:17 PM

---

Ok, sounds good. Thanks for clarifying.

Kasen

Sent from my iPhone

On Sep 15, 2021, at 12:39 PM, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)> wrote:

We got that sample; from what the wells look like there was (bacterial) contamination so I don't to say it was negative.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Wednesday, September 15, 2021 12:37 PM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Cc:** YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks, Peter! Was the specimen whose titer was "ND" missing from the drop off?

Cheers,  
Kasen

Sent from my iPhone

On Sep 15, 2021, at 12:31 PM, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)> wrote:

Kasen,  
Here are the titers for the 2<sup>nd</sup> group of samples.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, September 10, 2021 9:28 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

I handed them off at the door, so hopefully they make their way to you. I've attached the full specimen manifest with both sets of 24.

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Friday, September 10, 2021 at 9:04 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

If you leave them by the door that's fine - thanks

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Friday, September 10, 2021 9:04 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi Peter, I'm about to walk over the second set of 24 specimens for virus titration. Please let me know if I should come at a different time.

Thanks,  
Kasen

IR#0682H\_000691

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Thursday, September 9, 2021 at 9:12 AM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Got them; thanks! Sounds good.

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Sent:** Thursday, September 9, 2021 9:05 AM  
**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hey Peter,

I'm about to walk over with the first set of 24 more recent specimens. I need a bit more time today to pull the set of 24 older specimens, but will get them to you by the end of the day or first thing tomorrow morning.

I've attached the specimen manifest for the first set of 24.

Kasen

---

**From:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Date:** Tuesday, September 7, 2021 at 2:30 PM  
**To:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-14060

Early Thursday is good; thanks

---

**From:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>  
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**To:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks, Peter! Would you prefer I drop off the 48 specimens on Wednesday or early Thursday?

Kasen

---

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**Subject:** Re: New England Journal of Medicine - 21-14060

We can do 24 samples on Thursday and another 24 samples on Friday.

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Like Dave, I can see this going either way. Perhaps we could do a set of specimens from within the same time period that is covered in the submitted paper, and then also a more recent batch? This would cover our bases. However, I don't want to burden Peter too much, so I think he and Yoshi should comment also.

Best,

-Tom

Thomas Friedrich

Professor  
Dept. of Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

Dave O'Connor wrote on 2021-09-07 08:42:

Hi all,

I could see it going either way. I don't think we need to add them to the existing dataset. It might even be better to use recent samples because it shows that the trend is stable over time. But I don't feel strongly about it.

dave

Kasen Riemersma wrote on 9/7/21 8:40 AM:

Hi all,

I can definitely provide more samples for Peter to test. Peter, once I know how many you can process, I should be able to send them over quickly.

Tom, if these culture data may be added to our study, I'm inclined to select specimens from the same study period instead of more recent specimens. Do you agree?

Cheers,  
Kasen

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**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Date:** Sunday, September 5, 2021 at 12:43 PM  
**To:** YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>  
**Cc:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>, Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>, Kasen Riemersma <[kriemersma@wisc.edu](mailto:kriemersma@wisc.edu)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Hi all.

Okay, I agree with all this. In our emails last week, I was not sure whether you guys wanted to respond to Vincent as soon as possible. I completely agree that we would need to generate new titration data with samples that have not undergone multiple freeze-thaw cycles.

Luckily we are getting a large number of samples from Exact each week.

Kasen, can we identify a set of fresh samples that can be aliquoted for Peter to test?

Peter, what is a good number of samples for you to receive?

Best,

-Tom

YOSHIHIRO KAWAOKA wrote on 2021-09-03 19:33:

If we are going to respond to Vincent by sharing our new data, we should do the virus isolation with new samples that have

not been thawed several times. I am concerned about the data showing that the number of no-virus-recovery samples from vaccinated individuals is higher than that from unvaccinated individuals. He will criticize this point if we send him the current data.

Best,  
Yoshi

---

**From:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Sent:** Saturday, September 4, 2021 8:11 AM  
**To:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
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Hi Tom,

I updated Medrxiv with the NEJM submission. I didn't update with this week's data. I suggest waiting until we get a disposition on the NEJM paper before updating Medrxiv again.

In terms of Vincent, I'm fine if someone else wants to connect with him and Daniel on the data. I'm not enthusiastic about doing it myself.

dave

--

I often work on email outside of work hours, but you don't have to! If you're receiving this outside of your work hours, I don't expect a response until you are back in the office.

<http://dho.pathology.wisc.edu>

608.890.0845

---

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**Sent:** Friday, September 3, 2021 18:04  
**To:** DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

Thanks Dave.

Did we update the medrxiv paper with the titration data? If so I can update my Twitter thread on the paper and include it. As you guys have said, even though the samples have undergone multiple freeze-thaw cycles, it is clear that titers are not systematically lower in vaccinees vs. unvaccinated.

Would you guys also email Daniel and Vincent directly to call their attention to these data?

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Thomas Friedrich

Professor  
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@tcf-lab  
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On 3 Sep 2021, at 17:15, DAVID H O'CONNOR  
<[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)> wrote:

What will come first, an NEJM decision on a 400  
word letter or Kat's return from Iceland?  
Nonetheless, I pinged the editor (see below) and  
offered the titer data should it be helpful.

dave

--

I often work on email outside of work hours, but  
you don't have to! If you're receiving this outside  
of your work hours, I don't expect a response  
until you are back in the office.

<http://dho.pathology.wisc.edu>  
608.890.0845

---

**From:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Sent:** Friday, September 3, 2021 14:05  
**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Subject:** RE: New England Journal of Medicine - 21-  
14060

Hello Dr. O'Connor,

Thank you for your email. Your letter is currently  
with the editor and a decision regarding possible  
publication has not yet been made. You will be  
informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

**From:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Sent:** Friday, September 3, 2021 2:58 PM  
**To:** Letter <[letter@nejm.org](mailto:letter@nejm.org)>  
**Subject:** FW: New England Journal of Medicine - 21-  
14060

---

**From:** Dave O'Connor <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Friday, September 3, 2021 10:17 AM  
**To:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>

**Subject:** Re: New England Journal of Medicine - 21-14060

To whom it may concern,

I am writing on behalf of our co-authors to ask if there are any updates on the status of the 400 word correspondence we submitted to NEJM on August 23. We are keenly aware that this is timely data given the current landscape of SARS-CoV-2 infection despite vaccination.

One small note: some vocal scientists have criticized our work on social media. The primary claim they make is that virus culture in low Ct samples does not mean that there is similar amounts of replication-competent virus in these samples. Subsequent to our August 23 submission, we re-thawed these samples and showed that virus titers are similar in those who are unvaccinated and infected despite infection (see attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine wrote on 8/23/21 1:39 PM:

Dear Ms. Grande and co-authors,

Thank you for submitting your manuscript, "Shedding of Infectious SARS-CoV-2 Despite Vaccination" to the New England Journal of Medicine.

Your manuscript has been forwarded to members of our editorial staff, who will make an initial evaluation and decide whether it merits further consideration. You will be notified of the decision as soon as possible.

Your manuscript ID is 21-14060.

Please mention the above manuscript ID in all future correspondence or when calling the office for questions. If there are any changes in your street address or e-mail address, please log in to

information as appropriate. You may also view the status of your manuscript at any time by checking For Authors section of the site.

We are undertaking evaluation of your manuscript with the understanding that neither the substance of the article nor the figures or tables have been published or will be submitted for publication elsewhere during the period of review.

Please provide the editors with copies of other manuscripts by you or your coauthors addressing similar or related research questions that are in preparation or under consideration at other



journals. This does not apply to abstracts published in connection with scientific meetings or to news reports based on presentations at such meetings.

The Journal's policy is explained more fully at <https://www.nejm.org/about-nejm/editorial-policies>.

Please call us at 617-734-9800 if you have any questions.

Sincerely,

New England Journal of  
Medicine  
10 Shattuck Street  
Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-9864  
<http://www.nejm.org>

--  
[@dho • 608-890-0845](http://dho.pathology.wisc.edu)

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<Copy of Specimens\_for\_culture\_20210910 PH.xlsx>

**From:** [Kasen Riemersma](#)  
**To:** [Thomas Friedrich](#)  
**Cc:** [Peter Halfmann](#); [DAVID H O'CONNOR](#); [YOSHIHIRO KAWAOKA](#); [Katarina Grande](#)  
**Subject:** Re: New England Journal of Medicine - 21-14060  
**Date:** Tuesday, September 7, 2021 10:05:35 PM

---

Yep, will do.

Kasen

On Sep 7, 2021, at 9:49 PM, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Okay, Kasen, can you and Luis identify 2 batches of 24 samples for Peter to test Thursday and Friday?

T

Sent from my iPhone

On Sep 7, 2021, at 12:02, Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)> wrote:

We can do 24 samples on Thursday and another 24 samples on Friday.

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Best,

-Tom

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<http://dho.pathology.wisc.edu>

608.890.0845

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**To:** DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Cc:** Peter Halfmann <[peter.halfmann@wisc.edu](mailto:peter.halfmann@wisc.edu)>; YOSHIHIRO KAWAOKA <[yoshihiro.kawaoka@wisc.edu](mailto:yoshihiro.kawaoka@wisc.edu)>; Katarina Grande <[KGrande@publichealthmdc.com](mailto:KGrande@publichealthmdc.com)>  
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**Subject:** RE: New England Journal of Medicine - 21-14060

Hello Dr. O'Connor,

Thank you for your email. Your letter is currently with the editor and a decision regarding possible publication has not yet been made. You will be informed of the final editorial decision via e-mail.

Best,

Vivian Vu  
Editorial Assistant  
*New England Journal of Medicine*

---

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**From:** Dave O'Connor <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>  
**Sent:** Friday, September 3, 2021 10:17 AM  
**To:** NEJM Editorial <[editorial@nejm.org](mailto:editorial@nejm.org)>  
**Subject:** Re: New England Journal of Medicine - 21-14060

To whom it may concern,

I am writing on behalf of our co-authors to ask if there are any updates on the status of the 400 word correspondence we submitted to NEJM on August 23. We are keenly aware that this is timely data given the current landscape of SARS-CoV-2 infection despite vaccination.

One small note: some vocal scientists have criticized our work on social media. The primary claim they make is that virus culture in low Ct samples does not mean that there is similar amounts of replication-competent virus in these samples. Subsequent to our August 23 submission, we re-thawed these samples and showed that virus titers are similar in those who are unvaccinated and infected despite infection (see attached), generally tracking with PCR RNA levels. We would likely want to include a version of this plot in a revised NEJM correspondence to silence this inaccurate criticism.

Thanks in advance for your consideration,

dave

New England Journal of Medicine wrote on 8/23/21  
1:39 PM:

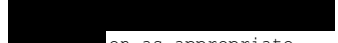
Dear Ms. Grande and co-  
authors,

Thank you for submitting your  
manuscript, "Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination" to the New  
England Journal of Medicine.

Your manuscript has been  
forwarded to members of our  
editorial staff, who will make  
an initial evaluation and  
decide whether it merits  
further consideration. You  
will be notified of the  
decision as soon as possible.

Your manuscript ID is 21-  
14060.

Please mention the above  
manuscript ID in all future  
correspondence or when calling  
the office for questions. If  
there are any changes in your  
street address or e-mail  
address, please log in to

  
on as appropriate.  
You may also view the status  
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We are undertaking evaluation  
of your manuscript with the  
understanding that neither the  
substance of the article nor  
the figures or tables have  
been published or will be  
submitted for publication  
elsewhere during the period of  
review.

Please provide the editors  
with copies of other  
manuscripts by you or your  
coauthors addressing similar  
or related research questions  
that are in preparation or  
under consideration at other  
journals. This does not apply  
to abstracts published in  
connection with scientific  
meetings or to news reports  
based on presentations at such  
meetings.

The Journal's policy is  
explained more fully at  
[https://www.nejm.org/about-  
nejm/editorial-policies](https://www.nejm.org/about-nejm/editorial-policies).

Please call us at 617-734-9800  
if you have any questions.

Sincerely,

New England Journal of  
Medicine  
10 Shattuck Street  
Boston, MA 02115  
(617) 734-9800  
Fax: (617) 739-9864  
<http://www.nejm.org>

--

[@dho • 608-890-0845](http://dho.pathology.wisc.edu)

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IR#0682H\_000702

email and delete the original message from all computer systems. Thank you.

**From:** [Thomas Friedrich](#)  
**To:** [Segaloff, Hannah E - DHS](#)  
**Cc:** [Kasen Riemersma](#); [DAVID H O'CONNOR](#); [Katarina Grande](#); [Westergaard, Ryan P - DHS](#)  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent  
**Date:** Friday, August 20, 2021 4:15:49 PM  
**Attachments:** [Riemersma\\_Viral loads in vaccinees\\_NEJM\\_revised\\_2\\_tracked\\_2021-08-20.docx](#)

---

Hi Hannah.

The comments were indeed minimal. I have made the requested changes in the attached document.

The one comment I don't know how to address is the one asking whether the CDC ethics statement should be included. I do not feel comfortable adding it in if CDC has not in fact done this review. Do you have advice on that?

Best,

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 20 Aug 2021, at 16:07, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Also noteworthy that the clearance coordinators are on call over the weekend but only in the office official until 6pm eastern so best bet is getting this back to them in the next ~30 min.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>

IR#0682H\_000704



**Sent:** Friday, August 20, 2021 3:44 PM

**To:** Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>

**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>;

Westergaard, Ryan P - DHS <[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>

**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Do you have any updates on the CDC clearance process? Can you see if others have been able to look at the paper?

Thanks,

-T

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
[@tcfriedrich](mailto:@tcfriedrich)  
[@tcf-lab](mailto:@tcf-lab)  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 18:51, Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)> wrote:

Okay, fingers crossed!

Sent from my iPhone

On Aug 19, 2021, at 18:02, Segaloff, Hannah E - DHS <[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Though on second thought I can see that the STLT TF is reviewing now- so maybe this is moving faster than I thought.

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

IR#0682H\_000705

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 5:44 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>; DAVID H O'CONNOR <[dhocconno@wisc.edu](mailto:dhocconno@wisc.edu)>; Katarina Grande <[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2 Despite Vaccination when the Delta Variant is Prevalent

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Thanks Hannah.

I really hope they can return comments tomorrow so we can submit. I will be heading up north on Saturday and won't have WiFi for a week. Do you think that is at all possible?

Best,

Tom

Sent from my iPhone

On Aug 19, 2021, at 15:20, Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
wrote:

Thanks Tom,

I will send these along and the note. I'm hoping we can switch over to a Google drive format for comments.

Best,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

---

**From:** Thomas Friedrich <[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu)>  
**Sent:** Thursday, August 19, 2021 3:05 PM  
**To:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>  
**Cc:** Kasen Riemersma <[riemersma@wisc.edu](mailto:riemersma@wisc.edu)>;  
DAVID H O'CONNOR <[dhoconno@wisc.edu](mailto:dhoconno@wisc.edu)>;  
Katarina Grande  
<[kgrande@publichealthmdc.com](mailto:kgrande@publichealthmdc.com)>  
**Subject:** Re: Shedding of Infectious SARS-CoV-2  
Despite Vaccination when the Delta Variant is  
Prevalent

**Caution: Message from external sender. Do not click on links or open attachments unless you recognize the sender.**

Hi Hannah.

Attached please find clean (well, clean-ish) and tracked versions of the revised manuscript. We addressed all the comments and made the changes requested. I hope this can be approved quickly.

Note: As you know, to edit collaboratively, we uploaded the Word doc with CDC comments to Google Drive. I re-downloaded the edited version as a Word doc — this is the “clean” version and preserves CDC comments and our responses. To make the “tracked” version I had to compare that downloaded document to the Word doc you forwarded from CDC. When I did that I noticed that it duplicated several comments from CDC folk. For the sake of readability I

tried to delete duplicates, but there are still a lot of comments in a small space. It also appears that replies within comments were not recognized, so now they just appear as comments on top of other comments. I hope that all makes sense.

If these copies do not come through, you can download them from the shared Google drive here:



Best,

-Tom

Thomas Friedrich

Professor  
Dept. Pathobiological Sciences  
University of Wisconsin  
School of Veterinary Medicine  
@tcfriedrich  
@tcf-lab  
[www.vetmed.wisc.edu/friedrichlab](http://www.vetmed.wisc.edu/friedrichlab)

On 19 Aug 2021, at 09:41,  
Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)> wrote:

Hi All,

Here are the first round of comments. We should get all responses within 24 to 48 hours of our submission. It looks like this needs to be approved by Lab TF, cross clearance and the response. Let me know if I can help with comments.

Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public  
Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and  
Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)


---

**From:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Thursday, August 19, 2021  
9:24 AM  
**To:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response  
Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

**Caution: Message from  
external sender. Do not  
click on links or open  
attachments unless you  
recognize the sender.**

Hi Hannah,

Please address the mandatory  
comments and return for re-  
review.

 [Shedding of Infectious SARS-  
CoV-2 Despite Vaccination  
when the Delta Variant is  
Prevalent](#)

Thank you,  
Alexis

CDC IMS 2019-nCoV Lab Task  
Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call (Check  
Ins at 10 AM & 3 PM)

---

**From:** Segaloff, Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>

**Sent:** Wednesday, August 18,  
2021 9:18 AM

**To:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hello,

Thank you for the quick work  
getting this approved for DIM  
expedited clearance. I haven't  
had a manuscript in expedited  
clearance before. Does it have  
the same steps as standard?  
How much time should I  
anticipate for the clearance  
process?

Thank you!  
Hannah

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)

[<qqv9@cdc.gov>](mailto:qqv9@cdc.gov)

**Sent:** Tuesday, August 17, 2021  
11:51 AM

**To:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
[<czk7@cdc.gov>](mailto:czk7@cdc.gov); CDC IMS 2019  
NCOV Response Lab TF Clearance  
[<eocevent216@cdc.gov>](mailto:eocevent216@cdc.gov);  
Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
[<kya6@cdc.gov>](mailto:kya6@cdc.gov)

**Cc:** Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
[<bbl7@cdc.gov>](mailto:bbl7@cdc.gov); Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
[<xhg9@cdc.gov>](mailto:xhg9@cdc.gov); Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
[<qdz0@cdc.gov>](mailto:qdz0@cdc.gov); Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
[<iki5@cdc.gov>](mailto:iki5@cdc.gov)

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

NP! Glad we were able to turn this  
around so quickly.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
[<czk7@cdc.gov>](mailto:czk7@cdc.gov)  
**Sent:** Tuesday, August 17, 2021

12:47 PM

**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>; CDC IMS 2019  
NCOV Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>;  
Dunworth, Soumya  
(CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>  
**Cc:** Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff,  
Hannah  
(CDC/DDPHSS/CSELS/DSEPD)  
<[qdz0@cdc.gov](mailto:qdz0@cdc.gov)>; Moon,  
Jonathan L.  
(CDC/DDID/NCEZID/DSR)  
<[iki5@cdc.gov](mailto:iki5@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Thanks Shelbi!

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
12:43 PM  
**To:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>; Kools,  
John J. (CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Dunworth,  
Soumya (CDC/DDPHSS/CSELS/OD)  
<[kya6@cdc.gov](mailto:kya6@cdc.gov)>  
**Cc:** Limbago, Brandi  
(CDC/DDID/NCIRD/OD)  
<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>; Segaloff,  
Hannah



(CDC/DDPHSS/CSELS/DSEPD)

<[gdz0@cdc.gov](mailto:gdz0@cdc.gov)>; Moon,

Jonathan L.

(CDC/DDID/NCEZID/DSR)

<[iki5@cdc.gov](mailto:iki5@cdc.gov)>

**Subject:** Fw: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Afternoon,

This has been approved for expedited  
clearance.

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and  
Prevention

Lab TF Communications

Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.

(CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021  
12:40 PM

**To:** Davis, Shelbi

(CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela H.

(CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR)

<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Thank you. I approve expedited  
clearance.

Stephanie  
Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
12:16 PM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hey Stephanie,

Please see attached for the updated  
draft.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021

11:05 AM

**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela H.

(CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)

<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Sure thing, working on the updated  
draft now.

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and  
Prevention

Lab TF Communications

Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)

Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)

<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Sent:** Tuesday, August 17, 2021  
10:56 AM

**To:** Davis, Shelbi

(CDC/DDID/NCIRD/DVD)

<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Cc:** Fisher, Angela H.

(CDC/DDPHSS/CSELS/OD)

<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)

<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Yes, please request an updated draft with Hannah's name on it and then I approve it going for expedited clearance.

Stephanie

Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>

**Sent:** Tuesday, August 17, 2021  
10:56 AM

**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>

**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hey Stephanie,

From correspondence with ADS and STLT Hannah was inadvertently left off the manuscript but WI has confirmed that she is a co-author but her name is not on this draft. Should we request an updated draft with Hannah information on there as the co-author?

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and

Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:51 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hey,

I am working on getting clarification as  
we speak, update to follow.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:49 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)

[<qqv9@cdc.gov>](mailto:qqv9@cdc.gov)

**Cc:** Fisher, Angela H.

(CDC/DDPHSS/CSELS/OD)

[<iwg7@cdc.gov>](mailto:iwg7@cdc.gov); Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR)

[<xhg9@cdc.gov>](mailto:xhg9@cdc.gov)

**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hannah Segaloff EISO is listed  
on the clearance request form  
as an author but not on the  
manuscript. Can you clarify that  
she indeed and author? If so,  
then my approval for expedited  
clearance stands.

---

**From:** Davis, Shelbi

(CDC/DDID/NCIRD/DVD)

[<qqv9@cdc.gov>](mailto:qqv9@cdc.gov)

**Sent:** Tuesday, August 17, 2021  
10:40 AM

**To:** Bialek, Stephanie R.

(CDC/DDID/NCIRD/DVD)

[<zqg7@cdc.gov>](mailto:zqg7@cdc.gov)

**Cc:** Fisher, Angela H.

(CDC/DDPHSS/CSELS/OD)

[<iwg7@cdc.gov>](mailto:iwg7@cdc.gov); Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR)

[<xhg9@cdc.gov>](mailto:xhg9@cdc.gov)

**Subject:** Re: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Thanks for the speedy response!

Thanks,

Shelbi Davis

Communication Lead

Health Communication Specialist

Laboratory and Testing Task Force

COVID-19 Emergency Response

Centers for Disease Control and

Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:39 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Subject:** RE: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

I approve.

Stephanie R. Bialek MD MPH  
Deputy Incident Manager  
COVID-19 Response  
CDC

---

**From:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[qqv9@cdc.gov](mailto:qqv9@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:38 AM  
**To:** Bialek, Stephanie R.  
(CDC/DDID/NCIRD/DVD)  
<[zqg7@cdc.gov](mailto:zqg7@cdc.gov)>  
**Cc:** Fisher, Angela H.  
(CDC/DDPHSS/CSELS/OD)  
<[iwg7@cdc.gov](mailto:iwg7@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>

**Subject:** Fw: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Morning Stephanie,

Happy Tuesday! We would like to  
request DIM1 expedited approval for  
the attached manuscript. Please refer  
to the email thread below.

Thanks,  
Shelbi Davis  
Communication Lead  
Health Communication Specialist  
Laboratory and Testing Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention  
Lab TF Communications  
Mailbox: [eocevent503@cdc.gov](mailto:eocevent503@cdc.gov)  
Cell: [REDACTED]

---

**From:** CDC IMS 2019 NCOV  
Response Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
10:32 AM  
**To:** Davis, Shelbi  
(CDC/DDID/NCIRD/DVD)  
<[gqv9@cdc.gov](mailto:gqv9@cdc.gov)>; Gartin, Jarrett  
(CDC/DDID/NCIRD/OD) (CTR)  
<[xhg9@cdc.gov](mailto:xhg9@cdc.gov)>  
**Cc:** CDC IMS 2019 NCOV Response  
Lab TF Clearance  
<[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)>  
**Subject:** Fw: Shedding of  
Infectious SARS-CoV-2 Despite  
Vaccination when the Delta  
Variant is Prevalent

Hi Shelbi and Jarrett,

Should I begin clearance on this  
item or wait until you receive  
the DIM approval ?



Thank you,  
Alexis

CDC IMS 2019-nCoV Lab  
Task Force Clearance  
[eocevent216@cdc.gov](mailto:eocevent216@cdc.gov)

**Hours of Operation:**

Monday-Friday 9 AM - 6 PM EST  
Saturday & Sunday On Call (Check  
Ins at 10 AM & 3 PM)

---

**From:** Kools, John J.

(CDC/DDID/NCEZID/OD)

[<czk7@cdc.gov>](mailto:czk7@cdc.gov)

**Sent:** Tuesday, August 17, 2021  
9:59 AM

**To:** CDC IMS 2019 NCOV

Response Lab TF Clearance

[<eocevent216@cdc.gov>](mailto:eocevent216@cdc.gov); Davis,

Shelbi (CDC/DDID/NCIRD/DVD)

[<gqv9@cdc.gov>](mailto:gqv9@cdc.gov); Gartin, Jarrett

(CDC/DDID/NCIRD/OD) (CTR)

[<xhg9@cdc.gov>](mailto:xhg9@cdc.gov)

**Cc:** Dunworth, Soumya

(CDC/DDPHSS/CSELS/OD)

[<kya6@cdc.gov>](mailto:kya6@cdc.gov); Limbago, Brandi

(CDC/DDID/NCIRD/OD)

[<bbl7@cdc.gov>](mailto:bbl7@cdc.gov); Moon, Jonathan

L. (CDC/DDID/NCEZID/DSR)

[<iki5@cdc.gov>](mailto:iki5@cdc.gov); Llewellyn, Anna

C. (CDC/DDID/NCEZID/DPEI)

[<gif7@cdc.gov>](mailto:gif7@cdc.gov); Segaloff, Hannah

(CDC/DDPHSS/CSELS/DSEPD)

[<qdz0@cdc.gov>](mailto:qdz0@cdc.gov)

**Subject:** Shedding of Infectious  
SARS-CoV-2 Despite Vaccination  
when the Delta Variant is  
Prevalent

Good Morning,

You may have heard but our task

force was asked by STLT, and we agreed, to sponsor this manuscript through clearance. The authors are targeting NEJM and are requesting our task force to request IM approval for expedited clearance. Our main POC for this manuscript is our CDC EISO Hannah Segaloff (Cc'd). Let me know if you have any questions.

Hannah- our clearance team can help shepherd your paper through clearance. I would anticipate our laboratory SMEs to have some questions for your team.

Best regards,

John

John Kools  
ADS, Laboratory & Testing Task Force  
CDC COVID-19 Response  
Phone: 404-217-7258

---

**From:** Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>  
**Sent:** Tuesday, August 17, 2021  
4:51 AM  
**To:** Kools, John J.  
(CDC/DDID/NCEZID/OD)  
<[czk7@cdc.gov](mailto:czk7@cdc.gov)>  
**Subject:** FW: Follow up on your results

Morning John! Thanks for taking this on. We had intensive discussions with WI, IM, and MMWR last week about this. There's strong interest in

supporting and moving this forward quickly in clearance, including securing approval for expedited clearance so it can quickly make it to NEJM for consideration. If you anticipate any issues with the content or timing, please do let me know as our TF is in routine conversation with the state epi and want to make sure we're aligned in our discussions.

Much appreciated, and I hope you are well!

Best,  
Dale

---

Dale Rose, Ph.D.  
STLT Support Task Force  
Cell: [REDACTED]

---

**From:** Llewellyn, Anna C.  
(CDC/DDID/NCEZID/DPEI)  
<[gif7@cdc.gov](mailto:gif7@cdc.gov)>  
**Sent:** Monday, August 16, 2021  
3:35 PM  
**To:** Segaloff, Hannah  
(CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov))  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>; Rose, Dale A.  
(CDC/DDID/NCEZID/DPEI)  
<[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard, Ryan (CDC [dhs.wisconsin.gov](https://dhs.wisconsin.gov))  
<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard, Kris  
(CDC/DDPHSS/CSELS/DSEPD)  
<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>  
**Cc:** Ricaldi Camahuali, Jessica  
(CDC/DDID/NCEZID/DPEI)  
<[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>; Kools, John J.  
(CDC/DDID/NCEZID/OD)

<[czk7@cdc.gov](mailto:czk7@cdc.gov)>; Limbago, Brandi  
(CDC/DDID/NCIRD/OD)

<[bbl7@cdc.gov](mailto:bbl7@cdc.gov)>; Moon, Jonathan  
L. (CDC/DDID/NCEZID/DSR)

<[iki5@cdc.gov](mailto:iki5@cdc.gov)>; CDC IMS 2019  
NCOV Response STLT ADS

<[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)>; CDC  
IMS 2019 NCOV Response Lab  
Task Force

<[eocevent177@cdc.gov](mailto:eocevent177@cdc.gov)>

**Subject:** Re: Follow up on your  
results

Dear Hannah,

Thank you for these additional  
documents. Due to this  
manuscript's focus on  
laboratory data, our Laboratory  
and Testing Task Force  
colleagues have agreed to be  
the sponsoring task force for  
CDC COVID-19 Response  
clearance. John Kools is the Lab  
TF ADS and can assist with next  
steps.

Best Regards,

Anna

Anna Llewellyn, PhD  
Associate Director for Science  
State, Tribal, Local, and Territorial  
Support Task Force  
COVID-19 Emergency Response  
Centers for Disease Control and  
Prevention

Office: 404-639-1538 | Cell: [REDACTED]

[REDACTED]  
[eocevent410@cdc.gov](mailto:eocevent410@cdc.gov)

---

**From:** Segaloff, Hannah E - DHS  
<[hannah.segaloff@dhs.wisconsin.gov](mailto:hannah.segaloff@dhs.wisconsin.gov)>

**Sent:** Monday, August 16, 2021

3:13 PM

**To:** Rose, Dale A.

(CDC/DDID/NCEZID/DPEI)

<[ido8@cdc.gov](mailto:ido8@cdc.gov)>; Westergaard,

Ryan (CDC [dhs.wisconsin.gov](http://dhs.wisconsin.gov))

<[ryan.westergaard@dhs.wisconsin.gov](mailto:ryan.westergaard@dhs.wisconsin.gov)>; Bisgard, Kris

(CDC/DDPHSS/CSELS/DSEPD)

<[kmb6@cdc.gov](mailto:kmb6@cdc.gov)>

**Cc:** Llewellyn, Anna C.

(CDC/DDID/NCEZID/DPEI)

<[gif7@cdc.gov](mailto:gif7@cdc.gov)>; Ricaldi

Camahuali, Jessica

(CDC/DDID/NCEZID/DPEI)

<[mpi7@cdc.gov](mailto:mpi7@cdc.gov)>

**Subject:** RE: Follow up on your results

Thank you. I have attached the concept proposal that was approved from the original MMWR submission as well as a clearance request form.

Sincerely,  
Hannah

Hannah Segaloff, PhD, MPH | LT, U.S. Public Health Service  
Epidemic Intelligence Service Officer  
U.S. Centers for Disease Control and Prevention

Bureau of Communicable Diseases  
Wisconsin Department of Health Services  
Currently Teleworking  
Cell: [REDACTED]  
[Hannah.Segaloff@dhs.wisconsin.gov](mailto:Hannah.Segaloff@dhs.wisconsin.gov)  
[Qdz0@cdc.gov](mailto:Qdz0@cdc.gov)

<Reimersma\_Viral loads in vaccinees\_  
NEJM\_editedauthorlist\_LABTF  
COMMENTS.docx>



**From:** [DAVID OCONNOR \(Google Docs\)](#)  
**To:** [Kasen Riemersma](#)  
**Subject:** Viral loads in va... - @tfriedri@wisc.edu I think the title ...  
**Date:** Tuesday, August 10, 2021 1:21:20 PM

---

DAVID OCONNOR marked an action item as done in the following document



Viral loads in vaccinees: MMWR

Infection with Replication-Competent



Kasen Riemersma

@[tfriedri@wisc.edu](mailto:tfriedri@wisc.edu) I think the title should say "Shedding of..." not "Infection with..." because our main takeaway is that vaccinated people can transmit, not that they can be infected. Also, I'm not a fan of "replication-competent" for a lay audience. How about "Shedding of Infectious SARS-CoV-2 Despite Vaccination..."?

*Assigned to Thomas Friedrich*



DAVID OCONNOR New

*Marked as done*

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Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043, USA

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**From:** [onbehalf@manuscriptcentral.com](mailto:onbehalf@manuscriptcentral.com)  
**To:** [RYAN WESTERGAARD](#)  
**Subject:** New England Journal of Medicine Letter NOT about NEJM Article 21-14060: Account Created for you in ScholarOne Manuscripts  
**Date:** Monday, August 23, 2021 1:39:09 PM

---

Dear Dr. Westergaard:

A submission entitled Shedding of Infectious SARS-CoV-2 Despite Vaccination (21-14060) has been submitted by Ms. Katarina Grande to the New England Journal of Medicine.

You are listed as a co-author for this manuscript. The online peer-review system, ScholarOne Manuscripts, automatically created a user account for you. Your USER ID and PASSWORD for your account is as follows:

Site URL: [REDACTED]

USER ID: [REDACTED]

PASSWORD: [REDACTED]  
[REDACTED]

[REDACTED]

You can use the above USER ID and PASSWORD (once set) to log in to the site and check the status of papers you have authored/co-authored. Please log in to [REDACTED] to update your account information via the edit account tab at the top right.

If you believe you already have an account with us and this is a duplicate account, or if you do not wish to have an account with the New England Journal of Medicine, please contact us and we will be happy to assist you.

Thank you for your participation.

Sincerely,

Editorial Office

New England Journal of Medicine

10 Shattuck Street

Boston, MA 02115

(617) 734-9800

Fax: (617) 739-9864

<http://www.nejm.org>

Log in to Remove This Account - [REDACTED]  
[REDACTED]



**From:** [medicine@us.nature.com](mailto:medicine@us.nature.com)  
**To:** [RYAN WESTERGAARD](#)  
**Subject:** NMED-BC116676 Receipt of New Paper by Nature Medicine  
**Date:** Tuesday, November 2, 2021 2:05:07 PM

---

Dear Dr. Westergaard,

Please note that you are listed as a co-author on the manuscript "Shedding of Infectious SARS-CoV-2 Despite Vaccination" (reference number: NMED-BC116676), which was recently submitted to Nature Medicine.

The corresponding author is solely responsible for communicating with the journal and managing communication between co-authors. Please contact the corresponding author directly with any queries you may have related to this manuscript.

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Should you wish to publish your ORCID with this manuscript, please use the link below to access your account listed as co-author and attach your ORCID following

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If you have any issues attaching an ORCID to your Manuscript Tracking System account, please contact the [Platform Support Helpdesk](#).

Many thanks,

Editorial Assistant  
Nature Medicine  
[medicine@us.nature.com](mailto:medicine@us.nature.com)

**\*Our flexible approach during the COVID-19 pandemic\***

*If you need more time at any stage of the peer-review process, please do let us know. While our systems will continue to remind you of the original timelines, we aim to be as flexible as possible during the current pandemic.*

This email has been sent through the Springer Nature Tracking System NY-610A-NPG&MTS

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