From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Tue, 27 Dec 2022 22:56:17 +0000
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ); Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: dhs data

Inbound International Air Travel Trend Assessment, China into the United States, November 2022 (Source: CBP Air Arrivals) (cdc.gov)

Henry Walke, MD, MPH (he/him)
Director, Center for Preparedness and Response (CPR)
CDC, HHS
+1-404-639-3582 (office)
+1-404-452-9624 (mobile)
hwalke@cdc.gov

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Wed, 28 Dec 2022 00:13:56 +0000
To: Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT)
Subject: do you have a minute?

Regarding the China pre-departure testing order. 404 452 9624.

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Director, Center for Preparedness and Response (CPR)
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+1-404-639-3582 (office)
+1-404-452-9624 (mobile)
hwalke@cdc.gov

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Wed, 28 Dec 2022 01:36:10 +0000
To: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Subject: draft email to send

In the midst of everything else I imagine we will be asked ((b)(5) we outlined in the paper. Acknowkeding that there is (b)(5)

(b)(5)

(b)(5)

(b)(5)

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CDC, HHS
+1-404-639-3582 (office)
+1-404-452-9624 (mobile)
hwalke@cdc.gov

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Wed, 28 Dec 2022 13:34:10 +0000
To: Botticella, Angela (HHS/IOS)
Cc: Berger, Sherri (CDC/OD/OCS)
Subject: Draft order
Attachments: DRAFT (b)(5) language requested.docx

Angela, see attached the draft order.

See comments on page 1 and 5. (b)(5) Once we have this guidance can inset in all relevant sections.

Page 1

(b)(5)

Henry

Henry Walke, MD, MPH (he/him)
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hwalke@cdc.gov

(b)(5)

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(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Thu, 29 Dec 2022 16:49:23 +0000
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ); Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: (b)(5)

(b)(5)

(b)(5) Could bring in Ryan and others for thoughts?

Would be good to lay out what we think is needed (b)(5)

(b)(5)

Lisa D. Rotz, MD, FIDSA
Acting Director
Division of Global Migration and Quarantine
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention

Email: LRotz@cdc.gov
Office: 404-639-4376
Mobile: 404-683-3832

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Mon, 26 Dec 2022 19:09:43 +0000
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: Fwd: IM slides_predeparture testing_final.pptx

Isn't that what I said originally ? ;)

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 1:06:16 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

Cindy R. Friedman, MD
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
National Center for Emerging Zoonotic and Infectious Diseases
Centers for Disease Control and Prevention
Atlanta, GA 30329

T: 404-639-1430\ C: 470-487-4373

From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Monday, December 26, 2022 2:03 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Ok, so (from the text) (b)(5)
(b)(5) What do you think?

Cindy, (b)(5)

Nicky.

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 1:56 PM

To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

Cindy R. Friedman, MD
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From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Monday, December 26, 2022 1:43 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Thanks, Nicky!

Henry, are you tracking what needs to go to into the paper?

From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Monday, December 26, 2022 1:41 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

Nicky.

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 1:23 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ)

<yyb1@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Subject: Re: IM slides_predeparture testing_final.pptx

Adding Nicky

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 12:17:09 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: IM slides_predeparture testing_final.pptx

(b)(5)

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 12:07:08 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

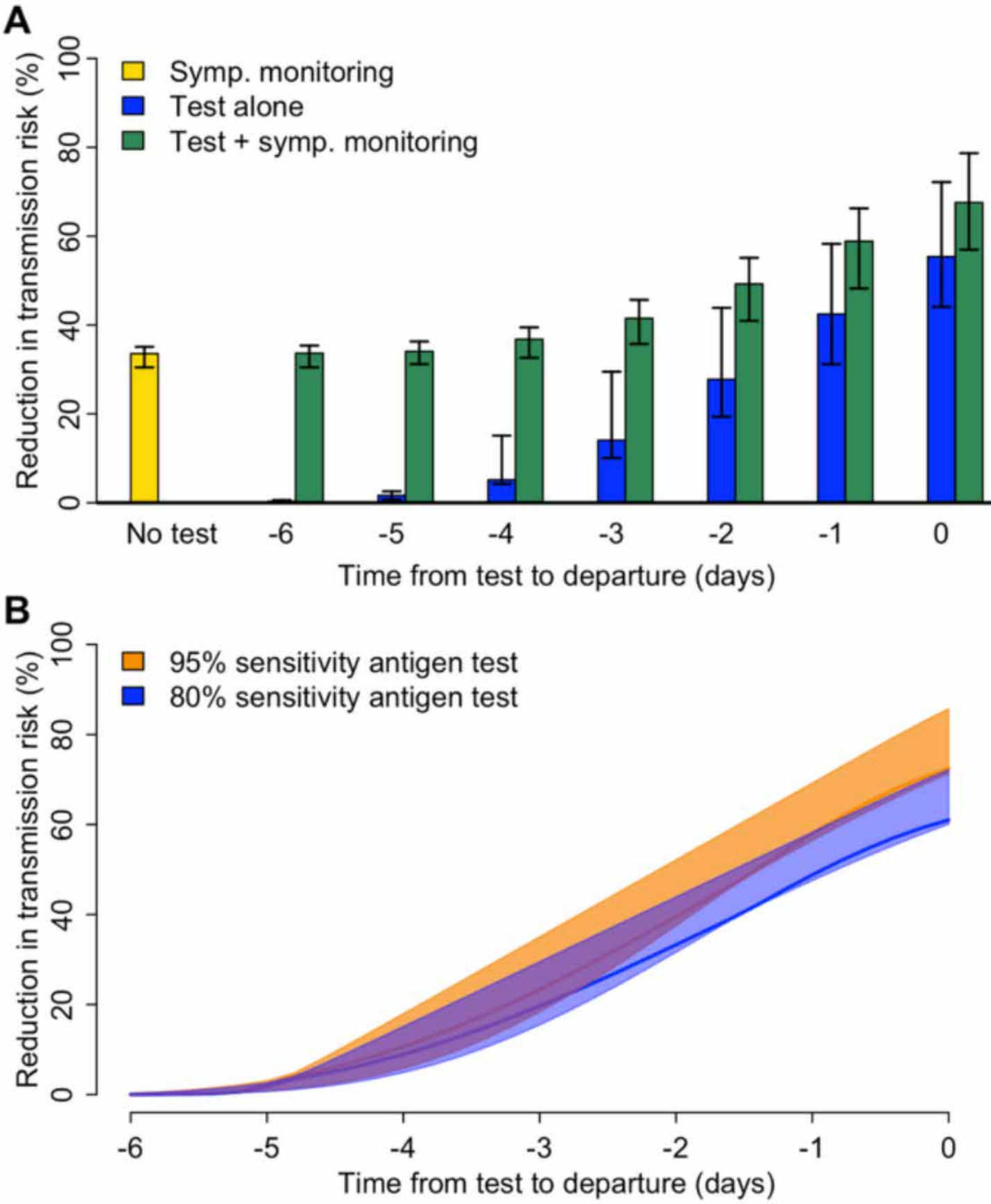
(b)(5)

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected

closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

Fig. 3


A
Reduction in transmission risk (%)
0
20
40
60
80
100
Symp. monitoring
Test alone
Test + symp. monitoring
No test
-6
-5
-4
-3
-2
-1
0
Time from test to departure (days)
B
Reduction in transmission risk (%)
0
20
40
60
80
100
95% sensitivity antigen test
80% sensitivity antigen test
-6
-5
-4
-3
-2
-1
0
Time from test to departure (days)

Reductions in SARS-CoV-2 transmission during travel. **a** Reduction in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel, stratified by method of risk reduction. Individuals developing symptoms are assumed to be isolated and therefore do not travel. **b** Reductions in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel comparing the antigen assays with 80% and 95% sensitivity. Ranges indicate uncertainty from the different infectiousness models

---

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 1:01 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

This page has what you want

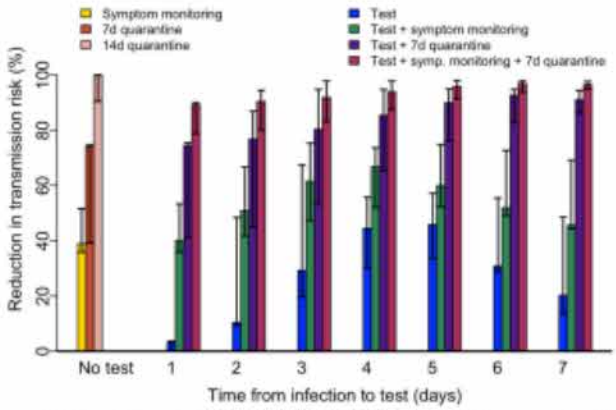


Fig. 2 Reductions in total average SARS-CoV-2 transmission risk after infection at a known high-risk exposure time (day 0) without considering travel. Transmission risk reductions are stratified by method of risk reduction including symptom monitoring, quarantine (7 or 14 days), and testing (test on days 1–7). Symptom monitoring is assumed to be ongoing regardless of the test date when implemented and either symptom onset or a positive test result is assumed to result in immediate isolation until the individual is no longer infectious. The bars represent the median estimates and the error bars show the ranges (minima and maxima) across the different infectiousness curves and test positivity curves (when testing was included)

effective at detecting infections; later testing means that while the test was more likely to be positive, the infectious period may begin prior to the test, leading to a smaller reduction in risk.

Combining symptom monitoring or quarantine with testing provided added benefit, leading to increased risk reduction, especially with a test at day 3–5 post-exposure with symptom monitoring (47–75% reduction with 30% never symptomatic or 39–73% with 50% never symptomatic) or a test at day 5–7 with a 7-day quarantine (76–95% reduction). A 7-day quarantine with symptom monitoring and a test at day 5–7 further increased the lower bound of likely risk reduction to 91–98% (with 30% never symptomatic, 86–97% with 50% never symptomatic). The effect of moderately different assumptions related to the proportion of infections that never result in symptoms had minimal impacts when symptom monitoring was combined with testing or quarantine, we therefore use the 30% value for this parameter in the following analyses.

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

We assessed the impact of test sensitivity relative to timing by comparing the antigen-type test model to the same model with higher sensitivity. With the same time-specific pattern but different sensitivity (80% vs. 95%, Fig. 3b), the higher sensitivity test gives a higher reduction in transmission risk if used at the same time. However, the importance of sensitivity is intertwined with timing. The lower sensitivity test was as effective or more effective than a higher sensitivity test if it was performed closer to the time of travel. For example, the test with 80% sensitivity performed 1 day prior to departure was 47–58% effective at reducing transmission risk during travel, while the test with 95% sensitivity performed 3 days prior to departure was 18–35% effective.

Transmission risk after travel

We then considered measures to reduce the risk of SARS-CoV-2 introduction to the destination location from travelers, i.e., transmission risk after traveling (Fig. 4). Assuming infection occurs at an unknown time within a 7-day exposure period prior to arrival (i.e., including possible infection while traveling), a single test on its own was most effective when performed 1- or 2-days post-arrival (29–53% and 29–51% reduction in transmission risk, respectively). This reduction in introduction risk was higher than reductions generated by

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From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 12:49 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Thank you, is it your impression (b)(5)
(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 12:46 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 12:42 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Cc: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Julia,
(b)(6) Can you work with Cindy to get the BLUF answer for Nancy K. question to add to the Sherri doc? (b)(5)
(b)(5)

(b)(5)

(b)(5)

L

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Monday, December 26, 2022 12:30 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: FW: IM slides_predeparture testing_final.pptx

Resending this to the top of your email box Henry. (b)(5)
(b)(5)
(b)(5) Cindy can confirm.

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Thursday, December 22, 2022 10:48 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: IM slides_predeparture testing_final.pptx

Henry,

Here are the slides from IM and an abstract for an upcoming mtg that is 90% cleared.

I would just highlight (b)(5)

(b)(5)

Some thoughts….

(b)(5)

Cindy

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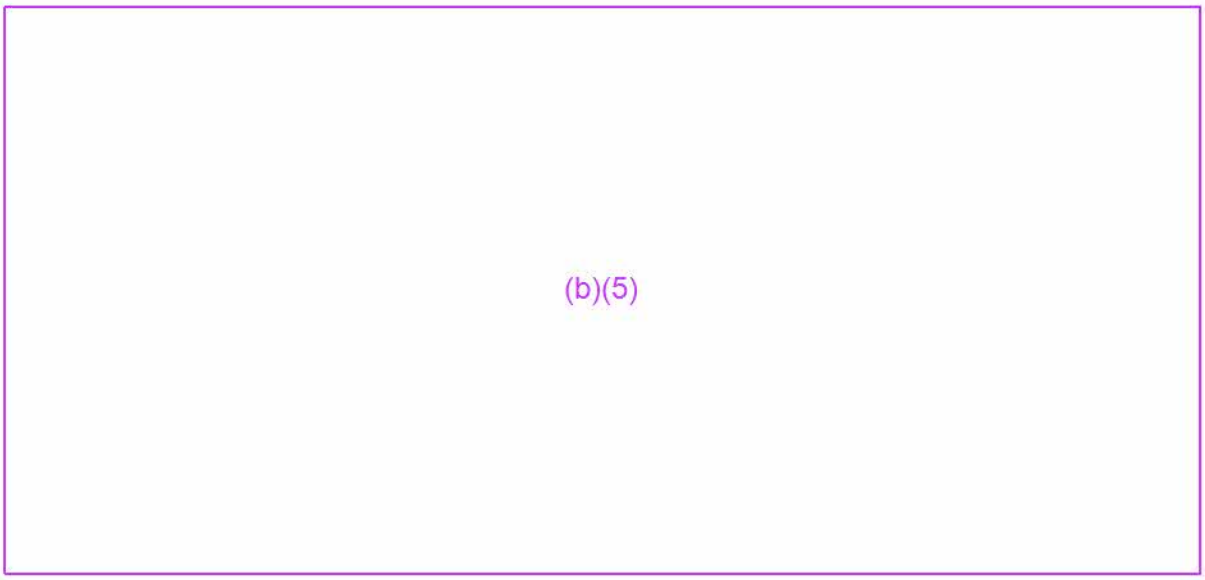
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
National Center for Emerging Zoonotic and Infectious Diseases
Centers for Disease Control and Prevention
Atlanta, GA 30329

T: 404-639-1430\ C: 470-487-4373

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Tue, 27 Dec 2022 01:30:05 +0000
Subject: Fwd: summary post call

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
Get Outlook for Android
From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Monday, December 26, 2022 5:36:53 PM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Lisa Rotz (CDC/OID/NCEZID) (ler8@cdc.gov) <ler8@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>
Subject: summary post call



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CDC, HHS
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+1-404-452-9624 (mobile)
hwalke@cdc.gov

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Wed, 28 Dec 2022 11:22:37 +0000
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Cc: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Subject: Fwd: Updated draft
Attachments: image00001.png

What else do we need to add in order to send a draft?

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
Get Outlook for Android

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Wednesday, December 28, 2022, 5:32 AM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: Re: Updated draft

Thank you!!!!
Lots of anxiety around how quickly we can get a draft up this morning
From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Tuesday, December 27, 2022 9:57:34 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: Updated draft

Sherri, Henry—

Per our conversation, here is our current draft order with (b)(5)
(b)(5)
(b)(5)

Thanks,
Julia

Julia Charles
(470) 217-9367
jcharles@cdc.gov

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 11:43:39 +0000
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: Fwd: Updated draft

Morning. I wasn't exactly sure but are we expecting someone else eg (b)(5)

(b)(5)

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Wednesday, December 28, 2022 5:32:55 AM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: Re: Updated draft

Thank you!!!!
Lots of anxiety around how quickly we can get a draft up this morning
From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Tuesday, December 27, 2022 9:57:34 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: Updated draft

Sherri, Henry—

Per our conversation, here is our current draft order with (b)(5)

(b)(5)

Thanks,
Julia

Julia Charles
(470) 217-9367
jcharles@cdc.gov

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 14:33:51 +0000
To: Walke, Henry (CDC/DDPHSIS/CPR/OD); Berger, Sherri (CDC/OD/OCS)
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: FW: attestation question

FYI,
Here is the (b)(5)

(b)(5)

From: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>
Sent: Wednesday, December 28, 2022 9:31 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: attestation question

Yes, from Barb McGarey

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Wednesday, December 28, 2022 9:29:08 AM
To: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: attestation question

Thanks. Is this the (b)(5)

From: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>
Sent: Wednesday, December 28, 2022 9:16 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: attestation question

I think the attestation (b)(5)

(b)(5)

(b)(5)

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 14:28:26 +0000
To: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: FW: attestation question

FYI

From: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>
Sent: Wednesday, December 28, 2022 9:16 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: attestation question

I think the attestation (b)(5)

(b)(5)

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 00:05:24 +0000
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: FW: Getting China Questions

(b)(6)

From: Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Sent: Tuesday, December 27, 2022 7:03 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: Re: Getting China Questions

Thanks, Lisa! Hope that the holidays are going well for you and that you were able to get where you were going last week.

Get Outlook for iOS

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Tuesday, December 27, 2022 3:01:49 PM
To: Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>
Cc: Houry, Debra E. (CDC/DDNID/NCIPC/OD) <vjz7@cdc.gov>
Subject: RE: Getting China Questions

Policy discussions underway now

From: Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Sent: Tuesday, December 27, 2022 6:51 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>
Cc: Houry, Debra E. (CDC/DDNID/NCIPC/OD) <vjz7@cdc.gov>
Subject: Getting China Questions

State has upped the Travel Advisory for China to Level 3 due to “arbitrary enforcement of local laws and COVID-19 restrictions”. (b)(5)

Get Outlook for iOS

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Mon, 26 Dec 2022 19:55:52 +0000
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: FW: IM slides_predeparture testing_final.pptx

Would just add the yellow highlights.

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Monday, December 26, 2022 2:13 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

I sent her this already. (b)(5)

(b)(5)

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Monday, December 26, 2022 2:03 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Ok, so (from the text) (b)(5)

(b)(5)

Nicky.

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 1:56 PM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

Cindy R. Friedman, MD
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
National Center for Emerging Zoonotic and Infectious Diseases
Centers for Disease Control and Prevention
Atlanta, GA 30329

T: 404-639-1430\ C: 470-487-4373

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Monday, December 26, 2022 1:43 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Thanks, Nicky!

Henry, are you tracking what needs to go to into the paper?

From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Monday, December 26, 2022 1:41 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

(b)(5)

Nicky.

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 1:23 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Subject: Re: IM slides_predeparture testing_final.pptx

Adding Nicky

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 12:17:09 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: IM slides_predeparture testing_final.pptx

(b)(5)

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

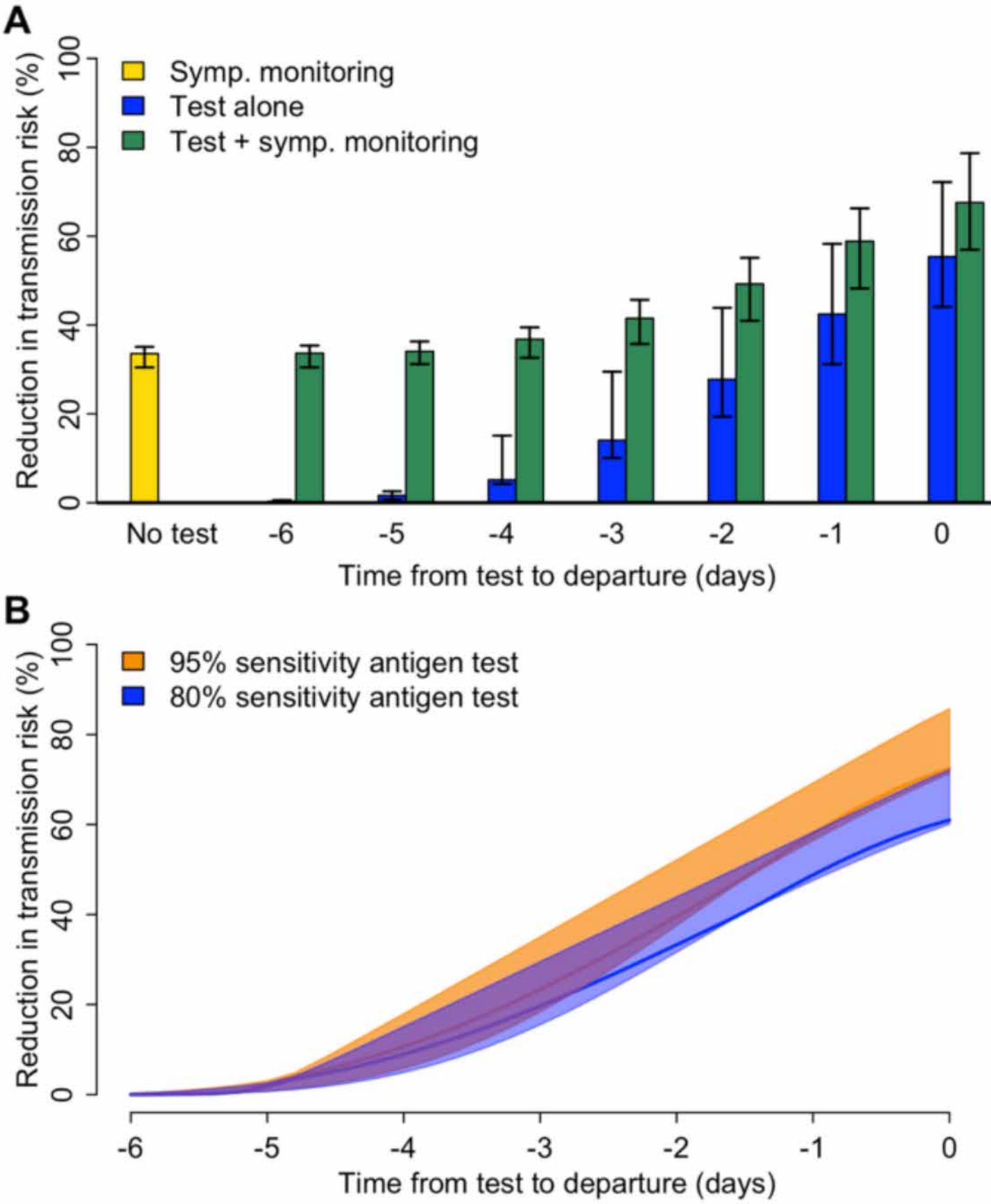
From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 12:07:08 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

Fig. 3


A
Reduction in transmission risk (%)
0
20
40
60
80
100
Symp. monitoring
Test alone
Test + symp. monitoring
No test
-6
-5
-4
-3
-2
-1
0
Time from test to departure (days)
B
Reduction in transmission risk (%)
0
20
40
60
80
100
95% sensitivity antigen test
80% sensitivity antigen test
-6
-5
-4
-3
-2
-1
0
Time from test to departure (days)

Reductions in SARS-CoV-2 transmission during travel. **a** Reduction in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel, stratified by method of risk reduction. Individuals developing symptoms are assumed to be isolated and therefore do not travel. **b** Reductions in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel comparing the antigen assays with 80% and 95% sensitivity. Ranges indicate uncertainty from the different infectiousness models

---

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 1:01 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

This page has what you want

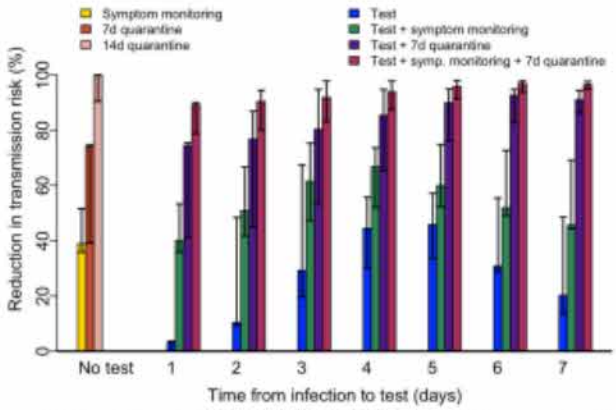


Fig. 2 Reductions in total average SARS-CoV-2 transmission risk after infection at a known high-risk exposure time (day 0) without considering travel. Transmission risk reductions are stratified by method of risk reduction including symptom monitoring, quarantine (7 or 14 days), and testing (test on days 1–7). Symptom monitoring is assumed to be ongoing regardless of the test date when implemented and either symptom onset or a positive test result is assumed to result in immediate isolation until the individual is no longer infectious. The bars represent the median estimates and the error bars show the ranges (minima and maxima) across the different infectiousness curves and test positivity curves (when testing was included)

effective at detecting infections; later testing means that while the test was more likely to be positive, the infectious period may begin prior to the test, leading to a smaller reduction in risk.

Combining symptom monitoring or quarantine with testing provided added benefit, leading to increased risk reduction, especially with a test at day 3–5 post-exposure with symptom monitoring (47–75% reduction with 30% never symptomatic or 39–73% with 50% never symptomatic) or a test at day 5–7 with a 7-day quarantine (76–95% reduction). A 7-day quarantine with symptom monitoring and a test at day 5–7 further increased the lower bound of likely risk reduction to 91–98% (with 30% never symptomatic, 86–97% with 50% never symptomatic). The effect of moderately different assumptions related to the proportion of infections that never result in symptoms had minimal impacts when symptom monitoring was combined with testing or quarantine, we therefore use the 30% value for this parameter in the following analyses.

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

We assessed the impact of test sensitivity relative to timing by comparing the antigen-type test model to the same model with higher sensitivity. With the same time-specific pattern but different sensitivity (80% vs. 95%, Fig. 3b), the higher sensitivity test gives a higher reduction in transmission risk if used at the same time. However, the importance of sensitivity is intertwined with timing. The lower sensitivity test was as effective or more effective than a higher sensitivity test if it was performed closer to the time of travel. For example, the test with 80% sensitivity performed 1 day prior to departure was 47–58% effective at reducing transmission risk during travel, while the test with 95% sensitivity performed 3 days prior to departure was 18–35% effective.

Transmission risk after travel

We then considered measures to reduce the risk of SARS-CoV-2 introduction to the destination location from travelers, i.e., transmission risk after traveling (Fig. 4). Assuming infection occurs at an unknown time within a 7-day exposure period prior to arrival (i.e., including possible infection while traveling), a single test on its own was most effective when performed 1- or 2-days post-arrival (29–53% and 29–51% reduction in transmission risk, respectively). This reduction in introduction risk was higher than reductions generated by

Cindy R. Friedman, MD

Chief, Travelers' Health Branch

Division of Global Migration and Quarantine

National Center for Emerging Zoonotic and Infectious Diseases

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T: 404-639-1430\ C: 470-487-4373

From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 12:49 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Thank you, (b)(5)

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 12:46 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

Cindy R. Friedman, MD
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
National Center for Emerging Zoonotic and Infectious Diseases
Centers for Disease Control and Prevention
Atlanta, GA 30329

T: 404-639-1430\ C: 470-487-4373

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 12:42 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Cc: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Julia,

(b)(6) Can you work with Cindy to get the BLUF answer for Nancy K. question to add to the Sherri doc? (b)(5)

(b)(5)

L

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Monday, December 26, 2022 12:30 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: FW: IM slides_predeparture testing_final.pptx

Resending this to the top of your email box Henry. (b)(5)
(b)(5)
(b)(5) Cindy can confirm.

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Thursday, December 22, 2022 10:48 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: IM slides_predeparture testing_final.pptx

Henry,

Here are the slides from IM and an abstract for an upcoming mtg that is 90% cleared.
I would just highlight that v (b)(5)

(b)(5)

Cindy

Cindy R. Friedman, MD
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
National Center for Emerging Zoonotic and Infectious Diseases
Centers for Disease Control and Prevention
Atlanta, GA 30329

T: 404-639-1430\ C: 470-487-4373

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Mon, 26 Dec 2022 17:30:28 +0000
To: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ); Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ)
Subject: FW: IM slides_predeparture testing_final.pptx
Attachments: IM slides_predeparture testing_final.pptx, predeparture testing abstract2.2 (2).docx

Resending this to the top of your email box Henry. (b)(5)
(b)(5)
(b)(5) Cindy can confirm.

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Thursday, December 22, 2022 10:48 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: IM slides_predeparture testing_final.pptx

Henry,

Here are the slides from IM and an abstract for an upcoming mtg that is 90% cleared.
I would just highlight (b)(5)

(b)(5)

(b)(5)

Cindy

Cindy R. Friedman, MD
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
National Center for Emerging Zoonotic and Infectious Diseases
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Atlanta, GA 30329

T: 404-639-1430\ C: 470-487-4373

(b)(5)

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(b)(5)

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(b)(5)

(b)(5)

(b)(5)

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Tue, 27 Dec 2022 18:51:17 +0000
To: Walensky, Rochelle (CDC/OD)
Cc: Berger, Sherri (CDC/OD/OCS)
Subject: FW: Info on new China sequences uploaded 25-26Dec

(b)(5)

From: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>
Sent: Tuesday, December 27, 2022 1:20 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Info on new China sequences uploaded 25-26Dec

(b)(5)

Ryan Novak, PhD | CAPT, U.S. Public Health Service
CGH COVID-19 Responsible Official
bnk4@cdc.gov | 404-992-2512

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 20:03:10 +0000
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: FW: Pre-departure Test for China

Now that Henry is (b)(5)

(b)(5)

From: Weatherdon, Neil (PHAC/ASPC) <Neil.Weatherdon@phac-aspc.gc.ca>
Sent: Wednesday, December 28, 2022 2:52 PM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Cc: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Brown, Jennifer (PHAC/ASPC) <jennifer.brown@phac-aspc.gc.ca>
Subject: RE: Pre-departure Test for China

Hi Julia – I have a number of meetings starting in about 10 mins. Would it be possible to seek clarity on the following: (b)(5)

(b)(5)

(b)(5) There are a lot of different messages being reported.

Many thanks,

Neil

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: 2022-12-28 11:46 AM
To: Weatherdon, Neil (PHAC/ASPC) <Neil.Weatherdon@phac-aspc.gc.ca>
Cc: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Brown, Jennifer (PHAC/ASPC) <jennifer.brown@phac-aspc.gc.ca>
Subject: RE: Pre-departure Test for China

Thanks—we may have to wait until a little later in the day. Please stand by. We appreciate your patience!!

From: Weatherdon, Neil (PHAC/ASPC) <Neil.Weatherdon@phac-aspc.gc.ca>
Sent: Wednesday, December 28, 2022 11:42 AM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Cc: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Brown, Jennifer (PHAC/ASPC) <jennifer.brown@phac-aspc.gc.ca>
Subject: RE: Pre-departure Test for China

For sure – I am available at 12:30pm. I will ask one member of the team to sit in.

Many thanks,

Neil

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: 2022-12-28 11:35 AM
To: Weatherdon, Neil (PHAC/ASPC) <Neil.Weatherdon@phac-aspc.gc.ca>
Cc: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: RE: Pre-departure Test for China

Just a follow up t (b)(5)

From: Weatherdon, Neil (PHAC/ASPC) <Neil.Weatherdon@phac-aspc.gc.ca>
Sent: Wednesday, December 28, 2022 11:29 AM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Pre-departure Test for China

Good morning Julia,

I hope you had a nice Christmas.

We have been advised that the US will be announcing, as early as today:

- A new PCR testing requirement 48 hours before flight, for all travelers en route to US from China, HK and Macau - to take effect Jan 3.
- A requirement for travelers who have been in the PRC within the prior ten days, traveling to the US from anywhere, to present a negative PCR test before flight boarding.

Are you able to 1) confirm that this will be announced, as well as timing; (b)(5)

(b)(5)

Many thanks,

Neil

Neil Weatherdon
Associate Director General | Directeur général associé
Centre for Border and Travel Health | Centre pour la santé aux frontières et aux voyages
Public Health Agency of Canada | Agence de la santé publique du Canada
neil.weatherdon@phac-aspc.gc.ca / Tel: 613-608-9238

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Tue, 27 Dec 2022 22:01:47 +0000
To: Lubar, Debra (CDC/DDID/NCEZID/OD)
Subject: FW: recent China call

fyi

From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Tuesday, December 27, 2022 4:56 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>
Subject: recent China call

(b)(5)

Henry Walke, MD, MPH (he/him)
Director, Center for Preparedness and Response (CPR)
CDC, HHS
+1-404-639-3582 (office)
+1-404-452-9624 (mobile)
hwalke@cdc.gov

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Thu, 29 Dec 2022 12:58:26 +0000
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ); Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ); Sood, Neha Jaggi (CDC/DDID/NCEZID/DGMQ)
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: FW: [EXTERNAL] RE: Text of Health Alert for COVID-19 Pre-Departure Testing Requirement and CDC Talking Points
Attachments: Alert - COVID Testing Required (CN Translation)_YM_LZY_edited.docx, New COVID-19 testing requirements for passengers from the PRC.docx

fyi

From: Yee, Sue Lin (CDC/DDPHSIS/CGH/DGHP) <sby9@cdc.gov>
Sent: Thursday, December 29, 2022 7:57 AM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Cc: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>; Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>
Subject: Fwd: [EXTERNAL] RE: Text of Health Alert for COVID-19 Pre-Departure Testing Requirement and CDC Talking Points

Hi, Julia and Lisa:

Not sure if HQ plans to post a Chinese version of the health alert, but here are the translated versions (short and long) that are on Embassy Beijing's page in case they are useful. Thanks!

Sue Lin

From: Sevy, Travis M (Beijing) <SevyTM@state.gov>
Sent: Thursday, December 29, 2022 5:10 PM
To: Yee, Sue Lin (CDC/DDPHSIS/CGH/DGHP) <sby9@cdc.gov>; Elvander, Erika D (Beijing) <ElvanderED@state.gov>; Chapman, Jonathan (FDA/OC) <Jonathan.Chapman@fda.hhs.gov>; Okwuje, Ifeoma M.F. (Beijing) <OkwujeIMF@state.gov>; Harrington, Maxwell S (Beijing) <HarringtonMS@state.gov>; Bistransky, William J (Beijing) <BistranskyWJ@state.gov>
Cc: Shaw-Dore, Vanessa (FDA/OC) <Vanessa.Shaw-Dore@fda.hhs.gov>; Meale, David (Beijing) <MealeD@state.gov>; Turner, Marybeth K (Beijing) <TurnerMK@state.gov>; Beijing EXEC Staffers <BeijingEXEC@state.gov>; Champlin, Meredith L (Beijing) <ChamplinML@state.gov>; Yee, SueLin (Beijing) <YeeSL@state.gov>; Guthrie, Phillip M (Beijing) <GuthriePM@state.gov>; Yang, Forest (Beijing) <yangjf@state.gov>; China Consular Chiefs <ChinaConsularChiefs2@state.gov>; China ACS Chiefs <ChinaACSChiefs@state.gov>; Beijing Press Office <BeijingPressOffice@state.gov>
Subject: RE: [EXTERNAL] RE: Text of Health Alert for COVID-19 Pre-Departure Testing Requirement and CDC Talking Points

Bilingual versions of the full Health Alert (directed at U.S. citizens) has gone out as a MASCOT message to all U.S. citizens in China registered in STEP. It's also been posted to the embassy website.

The shorter version from travel.state.gov (directed to non U.S. citizens) has been posted to our external visa appointment scheduling website.

Cleared Chinese language versions of both notices are attached.

Huge thanks to PAS for reviewing our translations and posting on the various sites!

Travis

卫生警报：美国疾病控制与预防中心（CDC）要求从中华人民共和国（包括香港特别行政区和澳门特别行政区）出发入境美国的航空旅客出示 COVID-19 新冠病毒阴性检测证明

事件：自美国东部时间 1 月 5 日 凌晨 12 点零 1 分起，美国疾病控制与预防中心 (CDC) 将要求从中华人民共和国（PRC）（包括香港和澳门特别行政区）出发飞往美国的两岁及以上的旅客提供出发前两天内进行的新冠病毒阴性检测证明或者 90 天内新冠康复证明。 此要求也适用于从仁川国际机场、温哥华国际机场或多伦多皮尔逊国际机场登机前往美国且在过去十天内有中国（包括香港或澳门特别行政区）旅居史的乘客。

这项公共卫生政策基于中国新冠病毒感染病例激增以及出现新冠病毒新变种的风险而制定的。 了解最新的 COVID-19 旅行指南，请关注美国驻华使团网站 U.S. Mission China、美国驻香港和澳门总领事馆网站 U.S. Consulate General Hong Kong & Macau 以及 CDC 的旅行健康信息网页 CDC’ s Travel Health Information。

这些要求适用于所有航空旅客，无论其疫苗接种状况或国籍为何。 这也将适用于从中国出发通过第三国转机的人员以及通过美国转机前往其他目的地的乘客。 乘客必须向航空公司出示以下其中一项文件，否则将面临被拒绝登机的风险：

• 登机前两天内取得的 COVID-19 检测阴性结果的纸质或电子副本。 请在 CDC 网站上查看符合检测要求的授权病毒检测列表 CDC website for a list of authorized viral tests，或者

•在登机前往美国 10 天以上至 90 天以内检测呈阳性的乘客的康复证明。 有关详细信息，请参阅 CDC 页面 See CDC page for details

只有在非常有限的情况下，当必须进行紧急旅行以保护某人的生命或健康免受严重威胁或危险时，才会免除这些检测要求。 联系 CDC 了解例外情况的标准。

如果您不确定此要求是否适用于您，并且您最近去过中国（包括香港特别行政区或澳门特别行政区），我们鼓励您在登上飞往美国的航班前两天内进行 COVID-19 检测。

采取行动：

• 有关出发前 COVID-19 检测要求的最新信息，请访问 CDC 网站 CDC website

• 向您的航空公司或旅行社咨询有关检测要求，包括测试结果或医生证明的语言要求，以及有关您的旅行计划和/或限制的任何更新信息，包括您过境国家/地区潜在的 COVID-19 疫苗或检测要求。

• 请注意，其他国家可能有自己的旅行限制和 COVID-19 检测、疫苗或检疫隔离要求。 请访问您前往或过境的国家/地区的大使馆/领事馆网页，了解更多信息。

• 访问 COVID-19 crisis page on travel.state.gov，了解与 COVID-19 相关的特定国家/地区信息。

• 有关您可以采取哪些措施来降低感染 COVID-19 的风险的信息，请参阅 CDC 的最新建议 CDC' s latest recommendations

• 访问美国驻北京大使馆关于 COVID-19 的网页 COVID-19 Information - U.S. Embassy & Consulates in China (usembassy-china.org.cn)，了解有关中华人民共和国情况的信息。访问美国驻港澳总领事馆关于 Covid-19 的网页 U.S. Consulate General Hong Kong & Macau' s webpage on Covid-19，了解有关香港和澳门的信息。

协助：

• 美国驻华大使馆
电话：+(86)(10) 8531-4000
非工作时段紧急电话：+(86)(10) 8531-4000
邮箱：BeijingACS@state.gov
网址：https://china.usembassy-china.org.cn/

• 美国驻广州总领事馆
电话：+(86)(20) 3814-5775
非工作时段紧急电话：+(86)(10) 8531-4000
邮箱：GuangzhouACS@state.gov

• 美国驻上海总领事馆
电话：+(86)(21) 8011-2400
非工作时段紧急电话：+(86)(10) 8531-4000
电子邮箱：ShanghaiACS@state.gov

• 美国驻沈阳总领事馆
电话：+(86)(24) 2322-1198
非工作时段紧急电话：+(86)(24) 2322-1198
邮箱：ShenyangACS@state.gov

• 美国武汉总领事馆（仅限美国公民紧急服务）

电话：+(86)(27) 8555-7791
非工作时段紧急电话：+(86)(10) 8531-4000
邮箱：WuhanACS@state.gov

• 美国驻香港总领事馆
电话：(852) 2841-2211
非工作时段紧急电话：(852) 2523-9011
电子邮件：ACSHK@state.gov

• 美国国务院 – 领事事务 – 888-407-4747 或 202-501-4444

- China Country Information
- Hong Kong Country Information
- Macau Country Information
- 加入“智能旅行者计划” Smart Traveler Enrollment Program (STEP)，获取警示信息。
- 在 Facebook 和 Twitter 上关注美国国务院。 在 Twitter、WeChat 和 Weibo 上关注美国大使馆。 关于香港和澳门的信息，在 Facebook、Instagram 和 Twitter 上关注美国领事馆。

COVID-19 Travel Information (state.gov)

COVID-19 旅行信息

从中华人民共和国（包括香港特别行政区和澳门特别行政区）进入美国的航空旅客需要进行 COVID-19 新冠病毒检测

从美国东部时间 1 月 5 日 凌晨 12:01 开始，美国疾病控制与预防中心 (CDC) 将要求从中华人民共和国（PRC）（包括香港和澳门特别行政区）飞往美国的两岁及以上旅客，在登机前向航空公司出示两日内新冠病毒阴性检测证明或者 90 天内新冠康复证明。此要求也将适用于从中国（包括香港特别行政区或澳门特别行政区）出发，通过第三国过境的旅客，以及通过美国转机前往其他目的地的旅客。 这些要求适用于所有航空旅客，无论其疫苗接种状况或国籍如何。 关注美国驻华使团和美国驻香港和澳门总领事馆的网站以及 CDC 旅行健康信息页面 Travel Health Information page ，了解最新的 COVID 19-旅行指南。

如果您在过去 10 天内没有去过中国，包括香港特别行政区和澳门特别行政区，则无需出示新冠病毒阴性检测结果或新冠康复证明文件。

CDC 要求非公民非移民旅客前往美国的疫苗接种证明的命令仍然有效。 如需更多信息，请参阅 CDC 网站关于航空旅客 COVID-19 疫苗接种证明要求 Requirement for Proof of COVID-19 Vaccination for Air Passengers。 请参阅 CDC 网站 CDC website 了解更多信息。

CDC 指南

CDC 建议您在国际旅行前接种最新的 COVID-19 疫苗。 在旅行之前、期间和之后遵循 CDC 的所有建议 CDC recommendations 。

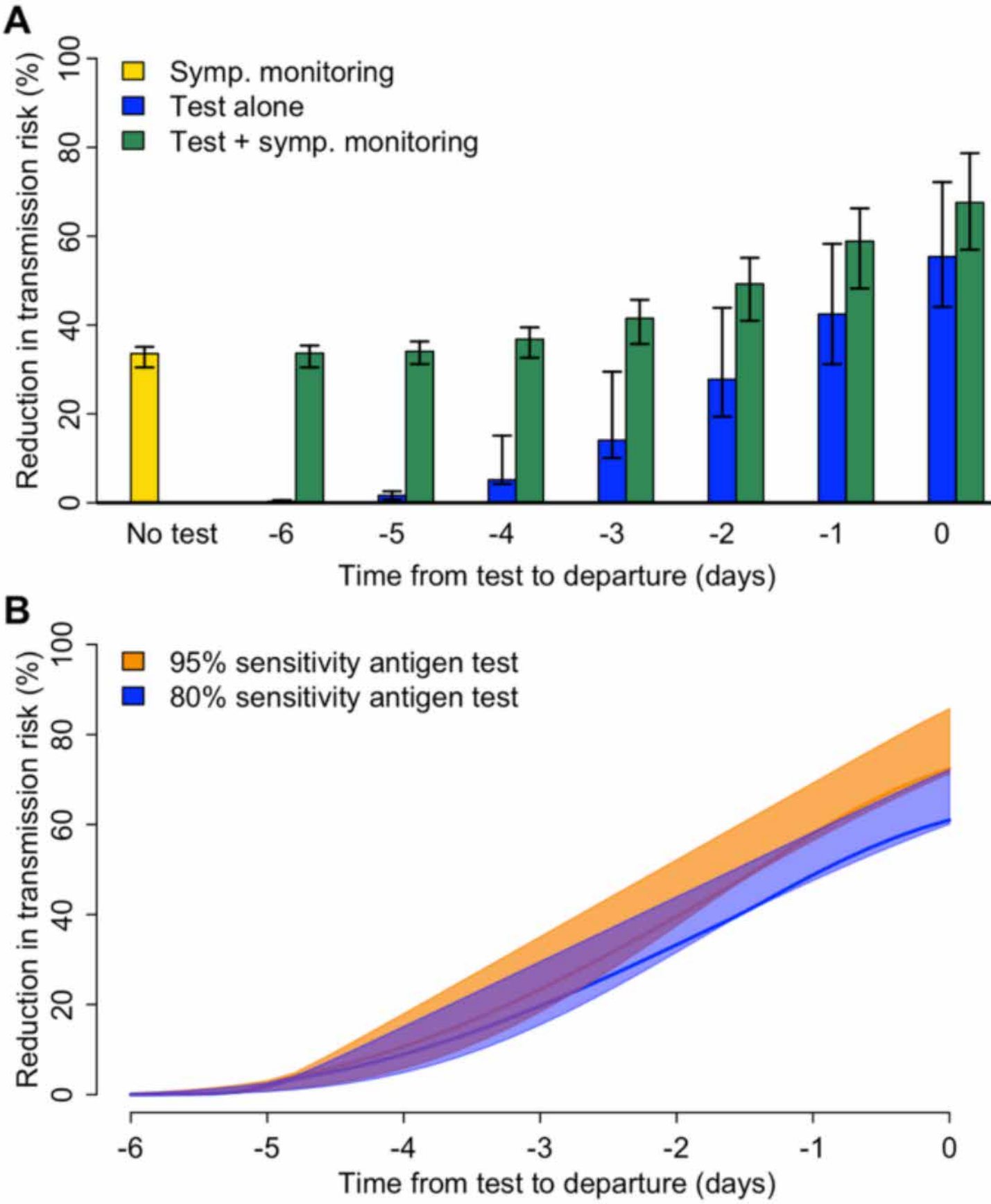
From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Mon, 26 Dec 2022 18:13:00 +0000
To: Walensky, Rochelle (CDC/OD)
Subject: predeparture testing_final.pptx
Attachments: Johannssen model paper.pdf

Testing closer to time of departure is better from modeling paper.

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

Fig. 3


A
Reduction in transmission risk (%)
0
20
40
60
80
100
Symp. monitoring
Test alone
Test + symp. monitoring
No test
-6
-5
-4
-3
-2
-1
0
Time from test to departure (days)
B
Reduction in transmission risk (%)
0
20
40
60
80
100
95% sensitivity antigen test
80% sensitivity antigen test
-6
-5
-4
-3
-2
-1
0
Time from test to departure (days)

Reductions in SARS-CoV-2 transmission during travel. **a** Reduction in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel, stratified by method of risk reduction. Individuals developing symptoms are assumed to be isolated and therefore do not travel. **b** Reductions in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel comparing the antigen assays with 80% and 95% sensitivity. Ranges indicate uncertainty from the different infectiousness models

---

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 1:01 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

This page has what you want

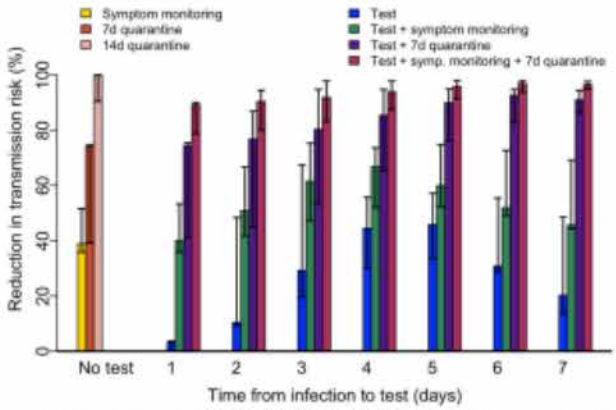


Fig. 2 Reductions in total average SARS-CoV-2 transmission risk after infection at a known high-risk exposure time (day 0) without considering travel. Transmission risk reductions are stratified by method of risk reduction including symptom monitoring, quarantine (7 or 14 days), and testing (test on days 1–7). Symptom monitoring is assumed to be ongoing regardless of the test date when implemented and either symptom onset or a positive test result is assumed to result in immediate isolation until the individual is no longer infectious. The bars represent the median estimates and the error bars show the ranges (minima and maxima) across the different infectiousness curves and test positivity curves (when testing was included)

effective at detecting infections; later testing means that while the test was more likely to be positive, the infectious period may begin prior to the test, leading to a smaller reduction in risk.

Combining symptom monitoring or quarantine with testing provided added benefit, leading to increased risk reduction, especially with a test at day 3–5 post-exposure with symptom monitoring (47–75% reduction with 30% never symptomatic or 39–73% with 50% never symptomatic) or a test at day 5–7 with a 7-day quarantine (76–95% reduction). A 7-day quarantine with symptom monitoring and a test at day 5–7 further increased the lower bound of likely risk reduction to 91–98% (with 30% never symptomatic, 86–97% with 50% never symptomatic). The effect of moderately different assumptions related to the proportion of infections that never result in symptoms had minimal impacts when symptom monitoring was combined with testing or quarantine, we therefore use the 30% value for this parameter in the following analyses.

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

We assessed the impact of test sensitivity relative to timing by comparing the antigen-type test model to the same model with higher sensitivity. With the same time-specific pattern but different sensitivity (80% vs. 95%, Fig. 3b), the higher sensitivity test gives a higher reduction in transmission risk if used at the same time. However, the importance of sensitivity is intertwined with timing. The lower sensitivity test was as effective or more effective than a higher sensitivity test if it was performed closer to the time of travel. For example, the test with 80% sensitivity performed 1 day prior to departure was 47–58% effective at reducing transmission risk during travel, while the test with 95% sensitivity performed 3 days prior to departure was 18–35% effective.

Transmission risk after travel

We then considered measures to reduce the risk of SARS-CoV-2 introduction to the destination location from travelers, i.e., transmission risk after traveling (Fig. 4). Assuming infection occurs at an unknown time within a 7-day exposure period prior to arrival (i.e., including possible infection while traveling), a single test on its own was most effective when performed 1- or 2-days post-arrival (29–53% and 29–51% reduction in transmission risk, respectively). This reduction in introduction risk was higher than reductions generated by

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From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 12:49 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Thank you, (b)(5)

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 12:46 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 12:42 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Cc: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Julia,

(b)(6) Can you work with Cindy to get the BLUF answer for Nancy K. question to add to the Sherri doc? (b)(5)

(b)(5)

(b)(5)

L

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Monday, December 26, 2022 12:30 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: FW: IM slides_predeparture testing_final.pptx

Resending this to the top of your email box Henry. (b)(5)
(b)(5)
(b)(5) Cindy can confirm.

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Thursday, December 22, 2022 10:48 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: IM slides_predeparture testing_final.pptx

Henry,

Here are the slides from IM and an abstract for an upcoming mtg that is 90% cleared.

I would just highlight that (b)(5)

(b)(5)

Cindy

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https://doi.org/10.1186/s12916-021-01975-w

BMC Medicine

RESEARCH ARTICLE Open Access

Reducing travel-related SARS-CoV-2 transmission with layered mitigation measures: symptom monitoring, quarantine, and testing

Michael A. Johansson*, Hannah Wolford, Prabasaj Paul, Pamela S. Diaz, Tai-Ho Chen, Clive M. Brown, Martin S. Cetron and Francisco Alvarado-Ramy

Abstract

Background: Balancing the control of SARS-CoV-2 transmission with the resumption of travel is a global priority. Current recommendations include mitigation measures before, during, and after travel. Pre- and post-travel strategies including symptom monitoring, antigen or nucleic acid amplification testing, and quarantine can be combined in multiple ways considering different trade-offs in feasibility, adherence, effectiveness, cost, and adverse consequences.

Methods: We used a mathematical model to analyze the expected effectiveness of symptom monitoring, testing, and quarantine under different estimates of the infectious period, test-positivity relative to time of infection, and test sensitivity to reduce the risk of transmission from infected travelers during and after travel.

Results: If infection occurs 0–7 days prior to travel, immediate isolation following symptom onset prior to or during travel reduces risk of transmission while traveling by 30–35%. Pre-departure testing can further reduce risk, with testing closer to the time of travel being optimal even if test sensitivity is lower than an earlier test. For example, testing on the day of departure can reduce risk while traveling by 44–72%. For transmission risk after travel with infection time up to 7 days prior to arrival at the destination, isolation based on symptom monitoring reduced introduction risk at the destination by 42–56%. A 14-day quarantine after arrival, without symptom monitoring or testing, can reduce post-travel risk by 96–100% on its own. However, a shorter quarantine of 7 days combined with symptom monitoring and a test on day 5–6 after arrival is also effective (97–100%) at reducing introduction risk and is less burdensome, which may improve adherence.

(Continued on next page)

* Correspondence: mjohansson@cdc.gov
The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention.
COVID-19 Response, Centers for Disease Control and Prevention, Atlanta, USA

(Continued from previous page)
Conclusions: Quarantine is an effective measure to reduce SARS-CoV-2 transmission risk from travelers and can be enhanced by the addition of symptom monitoring and testing. Optimal test timing depends on the effectiveness of quarantine: with low adherence or no quarantine, optimal test timing is close to the time of arrival; with effective quarantine, testing a few days later optimizes sensitivity to detect those infected immediately before or while traveling. These measures can complement recommendations such as social distancing, using masks, and hand hygiene, to further reduce risk during and after travel.

Keywords: SARS-CoV-2, COVID-19, Travel, Testing, Quarantine

Background

Coronavirus disease 2019 (COVID-19) was first recognized in late December 2019. By March 2020, the virus causing COVID-19, SARS-CoV-2, had reached 6 continents and almost 70 countries. In response to the global COVID-19 outbreak, governments implemented a variety of mitigation measures including unprecedented social distancing measures, travel health alerts, and travel restrictions at national and sub-national levels [1, 2]. These measures, as well as concern about exposures related to travel, led to major and prolonged reductions in air travel worldwide [3–7]. Spatiotemporally asynchronous waves of COVID-19 have led to dynamic risk and mitigation measures globally with an accompanying interest in identifying risk management steps for travel that can reduce the risk of transmission and address concerns of travelers, travel industry regulators, and public health authorities [8–10].

Initial policies for managing translocation of the virus from one destination to another relied on closing borders or restricting entry of travelers from countries with higher incidence rates [11, 12]. Although these approaches may have reduced the importation of some cases and preserved resources, they came with enormous economic and individual impacts [13, 14].

For travelers, personal mitigation actions include wearing masks, social distancing at least 6 ft from others when possible, frequent hand washing or use of alcohol-based hand sanitizer, not touching their face, and avoiding anyone who is sick. Governments, airlines, airports, and other businesses serving travelers have implemented or recommended measures to reduce the risk of COVID-19 associated with air travel [15, 16]. These measures have included enhanced disinfection procedures, employee health assessments, passenger health attestations, screening for fever, illness response protocols, increased spacing between passengers on flights, and other steps to reduce risk of transmission in airports and on conveyances [10, 17]. Symptom-based screening at airports has proven ineffective because those measures miss mild, afebrile, asymptomatic, and pre-symptomatic SARS-CoV-2 infections [18–21]. Asymptomatic persons may account for 20% to 40% of SARS-CoV-2 infections and can transmit the virus to others [22–27], and epidemiological data indicate that infectiousness begins prior to symptom onset for those who do develop symptoms [28–32].

In many destinations, arriving travelers, most of whom are asymptomatic with no specific known exposures, were asked to self-quarantine and reduce contacts as much as possible after arrival. The World Health Organization (WHO) defines quarantine as "the restriction of activities and/or separation from others of the suspect persons... who are not ill, in such a manner as to prevent the possible spread of infection" and indicates that quarantine may be considered for travelers based on risk assessment and local conditions. For known SARS-CoV-2 exposures, WHO recommends quarantine of 14 days from their last exposure based on the limit of the estimated incubation period for SARS-CoV-2 [33]. A 14-day quarantine alone, when implemented immediately post-exposure and strictly adhered to, approaches 100% reduction in post-exposure transmission risk [34, 35]. However, travelers may have little incentive to consistently adhere to these measures at their destinations unless there is the ability to reliably communicate with them, support their needs, and enforce these measures. Monitoring and enforcing adherence to quarantine measures requires tremendous effort and resources by public health entities that may only be feasible and appropriate in certain contexts [36, 37].

Inclusion of SARS-CoV-2 testing as a component of a multi-layered approach to risk-reduction is currently being implemented in various settings. Some businesses and educational institutions are incorporating SARS-CoV-2 screening strategies into their concepts of operations, sometimes including mandatory testing of employees and voluntary testing for customers [38–40]. While there is no current international standard for testing travelers, many countries and jurisdictions are requiring arriving travelers to be tested either prior to their departure or after arrival to identify infected persons who are asymptomatic so they can be isolated [41]. Current guidance or requirements vary from country to country, and from state to state within the USA, including the timing of the

test prior to or after travel, the type of test used (viral antigen, viral RNA), and the use of negative test results to alleviate additional public health measures, such as quarantine, at the destination [42, 43].

Currently available SARS-CoV-2 tests for detecting active infections include nucleic acid amplification tests (NAAT), such as reverse transcription polymerase chain reaction (RT-PCR) tests, rapid isothermal NAATs, and antigen-based tests. Time to deliver results is hours to days for RT-PCR and minutes to hours for antigen tests, which can also be processed without a specialized laboratory. Several antigen tests for SARS-CoV-2 are currently authorized in the United States for suspected SARS-CoV-2 infection [44, 45]. While rapid antigen tests have advantages over NAATs in terms of cost, simplicity, and turnaround time, they are less likely to detect a positive in individuals with low viral load, i.e., early or late in infection [46]. However, the limited available data on the efficacy of antigen testing in asymptomatic individuals suggests they may have high sensitivity for infectious individuals [46–49].

SARS-CoV-2 transmission risk related to travel can be viewed in two domains: transmission risk during travel (e.g., by infected travelers while at an airport or on aircraft) and after travel is completed (e.g., introduction or re-introduction of SARS-CoV-2 to the destination location). There is also overlap as transmission risk during travel can lead to new infections, which can increase post-travel risk. Data on strategies for reducing risk associated with travel are scant and there are many potential strategies (e.g., the optimal timing of pre-departure or post-arrival testing or the combination of testing and post-arrival quarantine) [39, 50–52]. Mathematical models have provided some insights to the potential impact of quarantine combined with testing [51, 53]. Here, we build upon those models, considering uncertainty in infectious periods and different testing options to assess a suite of possible combined pre- and post-travel strategies to reduce transmission risk from infected travelers.

Methods

First, we characterized component processes related to transmission risk during infection: the relative infectiousness over the course of infection, the proportion of infections resulting in symptoms, the timing of symptom onset for those who have symptoms, and the probability of testing positive over the course of infection.

We used three distinct models to characterize relative infectiousness over time, $I(t)$, specifying each as a density function of daily infectiousness such that the total infectiousness is equal to one and the curves only differ in the temporal distribution of transmission risk (Fig. 1a). We used a Gamma density function to approximate a 10-day infectious period with peak infectiousness on day 5 based on observations from numerous studies [27, 54–58]. We also replicated a within-host infection model by Goyal et al. [59] by simulating infections in 10,000 individuals and recording the probability of being infectious at time steps of 0.1 days. We then fitted a density function to the set of times when these individuals were infectious. This indicated that most people are infectious from days 3 to 7 after the time they were infected, with tapering afterwards. The final model characterizes simulated infectious periods from Clifford et al. [51], based on estimated latent periods (the delay between infection and becoming infectious) [54] and infectious periods [60]. We simulated 10,000 individual-level paired latent and infectious periods then fit an empirical density function to the infectious time points. The Gamma model represents a simple assumption that does not capture individual level variability; however, both the Goyal et al. and Clifford et al. infectiousness models capture the population-level impacts of individual-level variability such that estimates based on these models may more completely reflect the potential impact across many individuals.

We assumed that 70% of all infections result in symptomatic COVID-19 cases [25], σ_0, and provided several additional sensitivity estimates assuming that 50% of infections result in symptoms. For the incubation period, $\sigma(t)$, we used a meta-estimate with a median of 5 days and a Log-Normal distribution based on a meta-analysis by McAloon et al. [61].

For diagnostic testing, $\rho(t)$, we used two models: one directly estimating positivity by RT-PCR and one approximating an antigen detection assay (Fig. 1b). For the RT-PCR model, we used the model generated by Clifford et al. [51] based on data from Kucirka et al. [62]. To approximate an antigen detection assay, we assumed that the assay would have 80% sensitivity, s, for infectious individuals [46–49] and scaled the probability of testing, ρ, to match the time-course of each infectiousness curve with a peak at 80%:

$$\rho(t) = sI(t)/\max(I). \quad (1)$$

To assess the impact of test sensitivity we also compared this to a 95% sensitivity version of the same model.

We then constructed a model capturing these components to assess the impacts of testing, symptom monitoring, and quarantine (Table 1). Infections resulting in travel-related risk could occur before or during a trip and we use one of the infectiousness density functions described above, $I(t)$, which defines relative infectiousness at time t relative to travel based on infection at time τ relative to travel (prior to travel is negative):

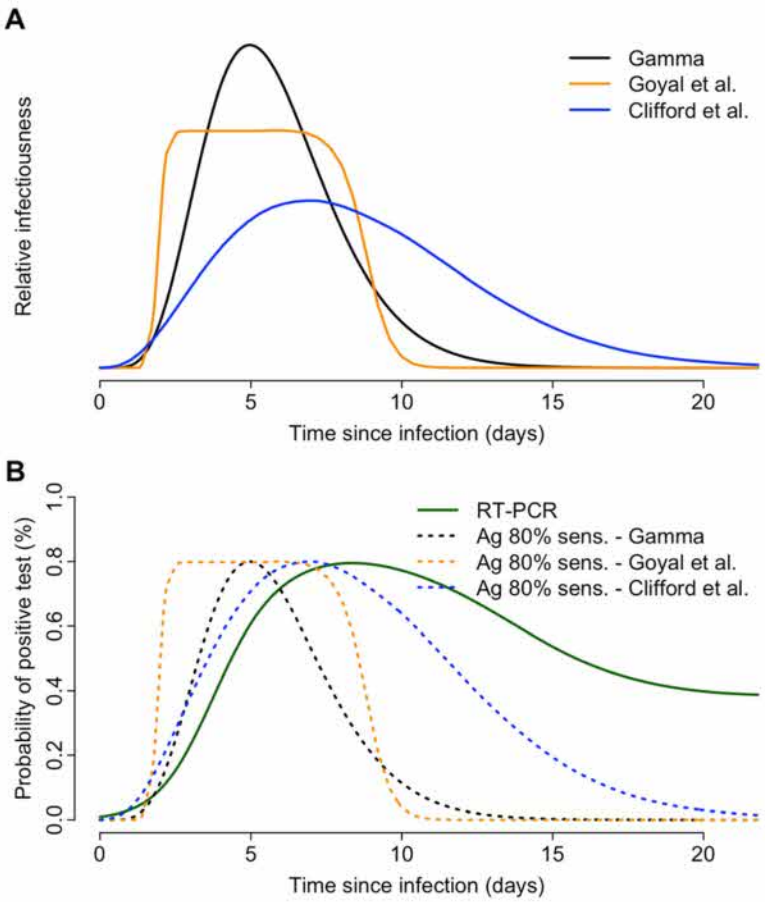

Fig. 1 Models of relative infectiousness and the probability of testing positive relative to time since SARS-CoV-2 infection. **a** Infectiousness density functions for a Gamma density function approximating a 10-day infectious period with a peak on day 5 [54–58], a host infection model adopted from Goyal et al. [59], and simulated infectious and latent periods adopted from Clifford et al. [51]. **b** Models of the probability of a positive test for SARS-CoV-2 relative to time since infection: a distribution estimating positivity by RT-PCR adopted from Clifford et al. [51] and antigen ("Ag") testing curves for each infectiousness curve (**a**) scaled such that test positivity tracks infectiousness with a maximum sensitivity of 80% at peak infectiousness

$$I(t,\tau) = I(t-\tau). \quad (2)$$

Symptom monitoring was assessed as a method to detect and isolate infected individuals and therefore prevent transmission after symptom onset. As described above, we assumed that a proportion of infected individuals develop symptoms (σ_0) and develop symptoms at rate $\sigma(t)$ as defined by the incubation period (described above). The onset of symptoms was assumed to lead to isolation until recovery, resulting in a residual in transmission risk over the transmission window:

$$r_S(t,\tau) = 1-\sigma_0\sigma(t-\tau). \quad (3)$$

Transmission at a time t can also be mitigated through quarantine. We estimated the impact of quarantine as a reduction in risk of a magnitude equal to the adherence $\propto_Q$ $(1 = 100\%)$ during a quarantine of duration T_Q starting at the time of arrival t_0 with residual transmission risk:

$$r_Q(t) = 1-\propto_Q \text{if } t\in[t_0, t_0 + T_Q], \text{and 1 otherwise.} \quad (4)$$

Transmission can also be mitigated through test-based detection followed by isolation. For the purposes of the model, we assumed that test results were immediately available and a positive test immediately led to isolation until recovery. Test positivity for each test (described above) was characterized $\rho(t)$ and the corresponding residual in transmission associated with each test k at test time t_k is:

$$r_T(t,\tau,t_k) = 1-\rho(t_k-\tau) \text{ if } t\in[t_k,\infty], \text{and 1 otherwise.} \quad (5)$$

For a set of tests, K, the residual risk is the product:

Table 1 Model parameters

Variable	Definition	Values used
t	Time of transmission risk from traveler relative to time of travel	Ranges: 0–1 days while traveling, 0–28 days after travel
τ	Time of infection risk to traveler relative to time of travel	0 or ranges: 1–7 days pre-departure, 1–7 days pre-arrival
$I(t, \tau)$	Infectiousness	Functions shown in Fig. 1a [27, 51, 59]
σ_0	Proportion of infected individuals that develop symptoms	70%, 50%
$\sigma(t, \tau)$	Cumulative probability of developing symptoms among individuals who develop symptoms	Log-Normal cumulative distribution function [61]
t_0	Time of quarantine relative to the time of travel	0
$\propto_Q$	Adherence to quarantine	100%, 50%
T_Q	Duration of quarantine starting at t_0	7, 10, 14 days
t_k	Time of test k	6 days pre-departure to 7 days post-arrival
$\rho(t_k, \tau)$	Probability of a positive test	Functions shown in Fig. 1b
$\epsilon(\tau)$	Risk of infection	Uniform distribution

$$r_T^K(t,\tau) = \prod_{k=1}^{K} r_T(t,\tau,t_k) \quad (6)$$

Here, we assessed two transmission windows: days 0–1 for risk during travel to include potential risk in transit prior to and after airline travel and days 0–28 for risk after travel. The total transmission risk between times t_1 and t_2 for individuals infected at time τ is:

$$I_0(\tau) = \int_{t_1}^{t_2} I(t,\tau)dt. \quad (7)$$

The transmission risk prevented by protocols including symptom monitoring, quarantine, and testing is:

$$I_{SQT}^K(\tau) = \int_{t_1}^{t_2} I(t,\tau)\left(1-r_S(t,\tau)r_Q(t)r_T^K(t,\tau)\right)dt. \quad (8)$$

For exposure windows in which a unique time of exposure is unknown, we assumed that infection may have occurred at any time in that window with equal probability. We therefore define the risk of exposure $\epsilon(\tau)$ as uniformly distributed over a window defined by the beginning and end of the exposure period, τ_1 and τ_2, respectively:

$$\epsilon(\tau) = 1/(\tau_2-\tau_1) \text{ if } \tau\in[\tau_1-\tau_2], \text{and 0 otherwise.} \quad (9)$$

For example, with a 1-day trip, infection between 7 days pre-departure and the time of departure can be modeled relative to the time of arrival with $\tau_1 = -8$ and $\tau_2 = -1$.

Total infectiousness is then:

$$I_0 = \int_{\tau_1}^{\tau_2}\int_{t_1}^{t_2} I(t,\tau)dtd\tau. \quad (10)$$

The prevented transmission risk is:

$$I_{SQT}^K = \int_{\tau_1}^{\tau_2}\int_{t_1}^{t_2} \epsilon(\tau)I(t,\tau) \times \left(1-r_S(t,\tau)r_Q(t)r_T^K(t,\tau)\right)dtd\tau. \quad (11)$$

Finally, we calculate the proportional reduction in transmission risk as: I_{SQT}^K/I_0.

All analyses were conducted in R and the code is available at https://github.com/cdcepi/COVID-19-traveler-model.

Results

Reducing transmission risk after a specific known exposure

Before looking at exposure over a range of times, we first assessed the impact of symptom monitoring, quarantine, and testing when the time of infection was known (for example, a brief high-risk contact). Isolating infected individuals at the time of symptom onset, without testing or quarantine, resulted in a reduction in transmission risk of 36–52% (minimum to maximum) accounting for differences in infectiousness over time between models relative to the onset of symptoms and an assumption that 30% of infected individuals never develop symptoms. If the proportion of individuals who never have symptoms was higher, the effect of symptom monitoring decreased. For example, if 50% of individuals never had symptoms, the reduction from symptom monitoring decreased to 26–37%. Quarantine alone implemented immediately following exposure led to higher reductions in transmission risk, from 39 to 75% with 7 days to 90–100% with 14 days. Isolating individuals based on a single positive test result alone produced a 0–67% reduction in transmission, depending on the day of the test relative to the infectious period and the time-specific test sensitivity (Fig. 2). Testing earlier in infection was less

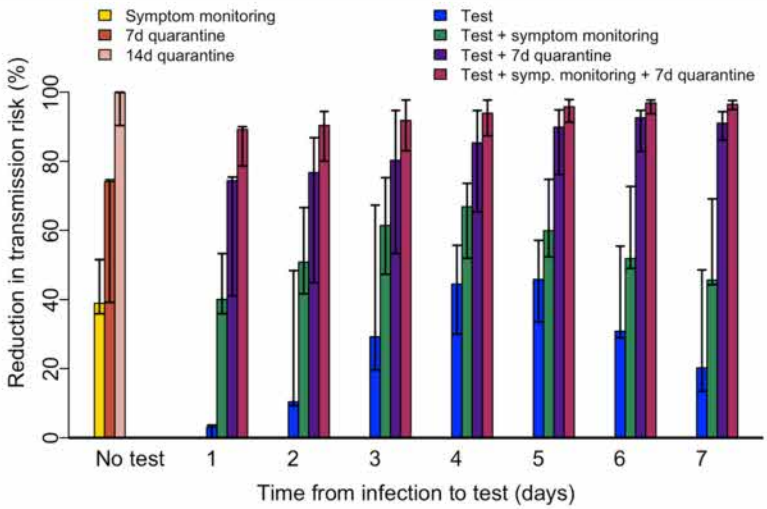

Fig. 2 Reductions in total average SARS-CoV-2 transmission risk after infection at a known high-risk exposure time (day 0) without considering travel. Transmission risk reductions are stratified by method of risk reduction including symptom monitoring, quarantine (7 or 14 days), and testing (test on days 1–7). Symptom monitoring is assumed to be ongoing regardless of the test date when implemented and either symptom onset or a positive test result is assumed to result in immediate isolation until the individual is no longer infectious. The bars represent the median estimates and the error bars show the ranges (minima and maxima) across the different infectiousness curves and test positivity curves (when testing was included)

effective at detecting infections; later testing means that while the test was more likely to be positive, the infectious period may begin prior to the test, leading to a smaller reduction in risk.

Combining symptom monitoring or quarantine with testing provided added benefit, leading to increased risk reduction, especially with a test at day 3–5 post-exposure with symptom monitoring (47–75% reduction with 30% never symptomatic or 39–73% with 50% never symptomatic) or a test at day 5–7 with a 7-day quarantine (76–95% reduction). A 7-day quarantine with symptom monitoring and a test at day 5–7 further increased the lower bound of likely risk reduction to 91–98% (with 30% never symptomatic, 86–97% with 50% never symptomatic). The effect of moderately different assumptions related to the proportion of infections that never result in symptoms had minimal impacts when symptom monitoring was combined with testing or quarantine, we therefore use the 30% value for this parameter in the following analyses.

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

We assessed the impact of test sensitivity relative to timing by comparing the antigen-type test model to the same model with higher sensitivity. With the same time-specific pattern but different sensitivity (80% vs. 95%, Fig. 3b), the higher sensitivity test gives a higher reduction in transmission risk if used at the same time. However, the importance of sensitivity is intertwined with timing. The lower sensitivity test was as effective or more effective than a higher sensitivity test if it was performed closer to the time of travel. For example, the test with 80% sensitivity performed 1 day prior to departure was 47–58% effective at reducing transmission risk during travel, while the test with 95% sensitivity performed 3 days prior to departure was 18–35% effective.

Transmission risk after travel

We then considered measures to reduce the risk of SARS-CoV-2 introduction to the destination location from travelers, i.e., transmission risk after traveling (Fig. 4). Assuming infection occurs at an unknown time within a 7-day exposure period prior to arrival (i.e., including possible infection while traveling), a single test on its own was most effective when performed 1- or 2-days post-arrival (29–53% and 29–51% reduction in transmission risk, respectively). This reduction in introduction risk was higher than reductions generated by

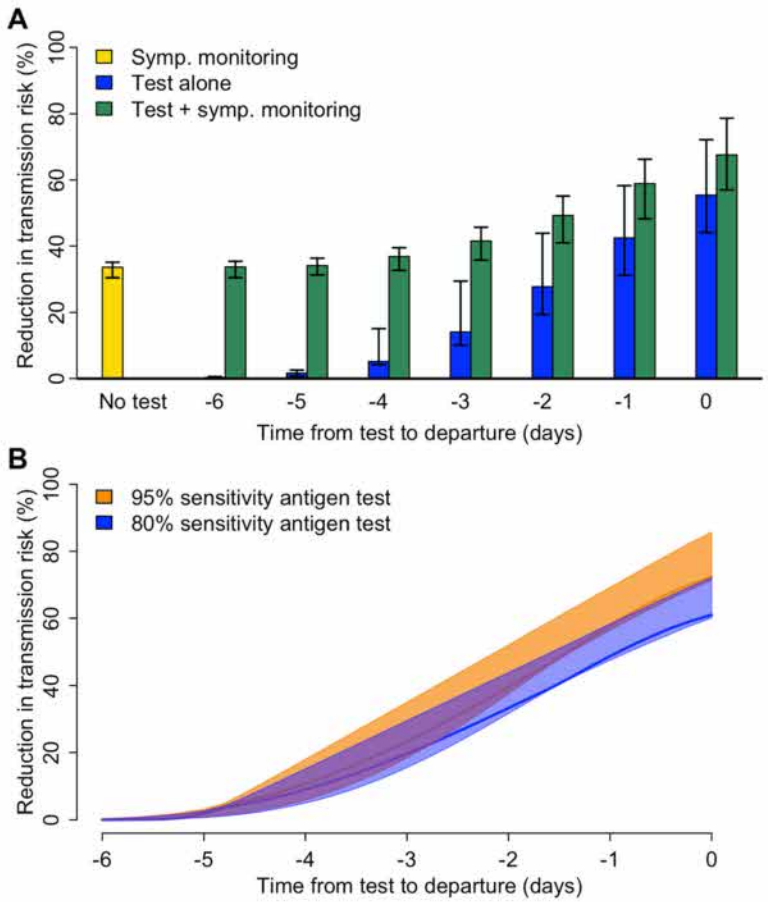

Fig. 3 Reductions in SARS-CoV-2 transmission during travel. **a** Reduction in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel, stratified by method of risk reduction. Individuals developing symptoms are assumed to be isolated and therefore do not travel. **b** Reductions in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel comparing the antigen assays with 80% and 95% sensitivity. Ranges indicate uncertainty from the different infectiousness models

testing prior to travel; a test 1 day prior to arrival provided a 17–35% reduction in risk and a test 3 days prior to arrival provided an 5–13% reduction (not shown). Tests prior to travel do not detect travelers infected while traveling and were less likely to detect travelers infected close to the time of travel. These travelers are those who are most likely to experience their entire infectious period in the destination location, and therefore, pose the greatest introduction risk.

Although a pre-travel test was less effective on its own than a post-travel test, the combination of pre-travel and post-travel tests provided additional risk reduction. A pre-travel test was most effective at reducing transmission risk after travel when performed close to the time of travel (as described above for risk during travel). In the absence of post-arrival quarantine, a second test post-travel was optimal 2–3 after arrival. The pre-travel test was likely to detect individuals who were infectious upon arrival and the later test was likely to detect those who became infectious after arrival. Combined, these tests can reduce introduction risk by 37–75%. A similar effect can be attained by testing immediately upon arrival and again 2–4 days post-arrival, which reduced introduction risk by 47–82%.

Symptom monitoring and isolation before, during, and after travel, with no other measures in place, reduced introduction risk by 42–56% and was more effective when combined with testing (Fig. 4). For example, a test 1-day post-arrival combined with symptom monitoring before, during, and after travel reduced introduction risk by 57–75%. However, quarantine for 7 days or more on its own was more effective than testing combined with symptom monitoring, regardless of when the test occurred. A 14-day quarantine reduced transmission risk by 96–100%, a 10-day quarantine by 84–100%, and a 7-day quarantine by 64–95% (Fig. 5). Testing and symptom monitoring further enhanced the effectiveness of quarantine. A single test conducted 5–6 days after arrival with symptom monitoring and a 7-day quarantine reduced introduction risk by 97--100% (Fig. 4). The day

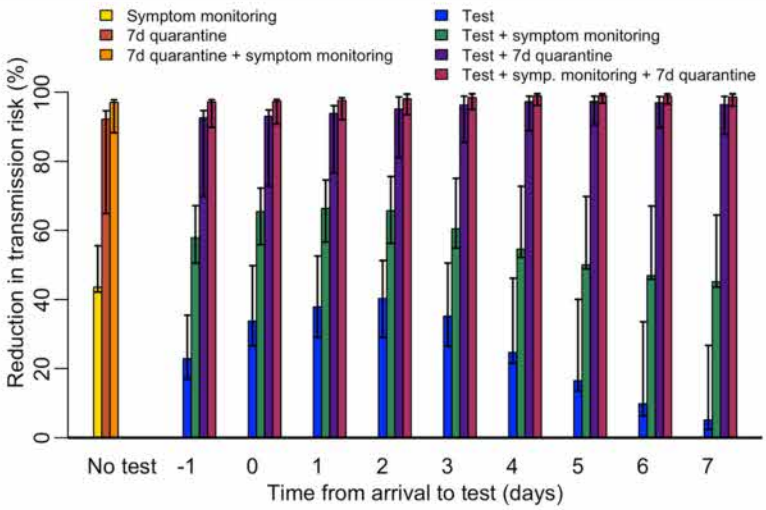

Fig. 4 Reductions in SARS-CoV-2 transmission risk from infected travelers post-arrival. Reduction in transmission risk after arrival assuming a 7-day exposure window prior to arrival, stratified by day of test and symptom monitoring, with and without a 7-day quarantine. Symptom monitoring is assumed to be ongoing before, during, and after travel and either symptom onset or a positive test result is assumed to result in immediate isolation until the individual is no longer infectious

5–6 window is optimal because it balances the reduced risk while in quarantine, with higher sensitivity for detecting individuals who may remain infectious at the end of the quarantine period.

A 7-day quarantine in conjunction with symptom monitoring and testing had similar effectiveness to a 10-day or 14-day quarantine on its own. Comparing quarantine with imperfect adherence (50%), we found that with symptom monitoring and no test, a 7-day quarantine (70–72%) was likely to be almost as effective as a 14-day quarantine (71–77%; Fig. 5). Combined with a test within 0–3 days after arrival and symptom monitoring, a 7-day quarantine with 50% adherence was estimated to be more effective (77–86%) than a 14-day quarantine with 50% adherence and no test (71–77%) and as effective as a 14-day quarantine with a test (77–88%).

Discussion

Control of SARS-CoV-2 is contingent upon multiple layered mitigation measures. Reducing the risk of

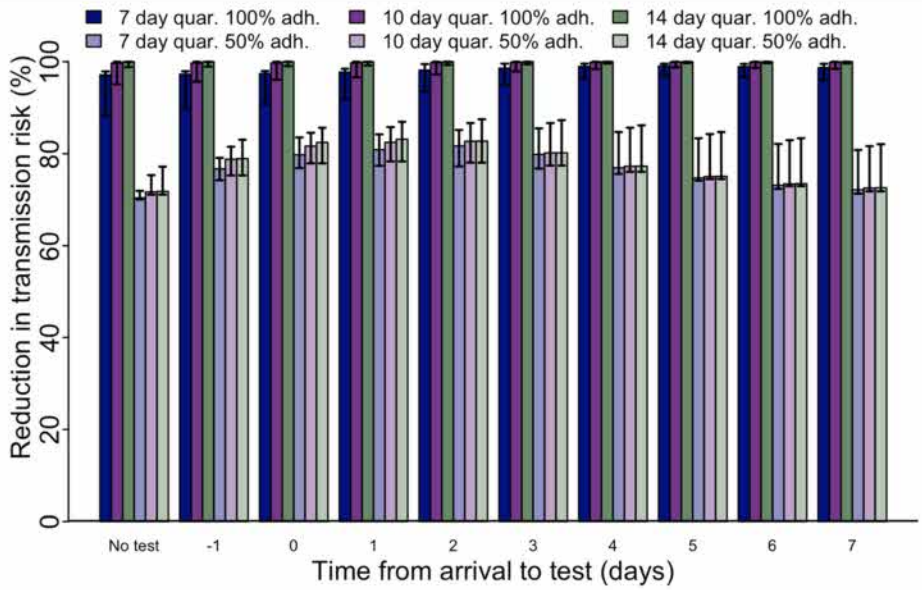

Fig. 5 Reductions in transmission risk post-arrival assuming a 7-day exposure window prior to arrival and symptom monitoring, stratified by quarantine length, quarantine adherence, and day of test

transmission associated with travel is critical to reducing the impact related to importations on local health and healthcare systems. This is important when transmission at the destination is low and an introduction could spur additional outbreaks, but also when transmission is already high and health systems may be strained. Reducing risks associated with air travel could pave the way to air industry recovery, as well as offer relief to national economies and reduce social distress [63]. Efforts to control transmission before and after travel rely on individual mitigation measures such as mask use and social distancing before, during, and after travel, but additional control measures, such as testing and quarantine, have also been used by some countries. The fifth meeting of the International Health Regulations Emergency Committee convened by WHO regarding the COVID-19 pandemic stated that for health measures related to international travel, countries should regularly reappraise measures applied to international travel and ensure those measures (including targeted use of diagnostics and quarantine) are risk- and evidence-based [64].

Here, we used a mathematical model to assess the relative impact of three mitigation measures to reduce transmission risk from infected travelers: symptom monitoring, testing, and quarantine. We assessed combinations of these mitigation measures with different estimates of the infectious period, different estimates of test-positivity relative to time of infection, and different assumptions about infection timing and test sensitivity. We frame these results as proportional reductions in transmission risk from infected travelers during or after travel to consider the importance of optimizing mitigation measures to address peak infectiousness (Fig. 1a). On its own, quarantine was the most effective of the three strategies, with a 14-day quarantine almost eliminating risk and a 7-day quarantine being more effective than any single other measure. However, these measures can be more effective when used together. For example, symptom monitoring is relatively easy and further increases the effect of a 7-day quarantine to 88–98% with a 7-day exposure window prior to arrival (Fig. 4).

Testing also provides added benefit but is contingent on the timing and quality of the test. Testing prior to travel reduces transmission risk both while traveling and after travel if testing is done close to the time of travel. Testing closer to the time of travel is more likely to detect individuals who are infectious while traveling and immediately afterwards but can still miss infected travelers who are in their latent period, as they may not have enough viral shedding to be detected. While testing immediately prior to travel can substantially reduce risk, it poses additional logistical challenges: results must be reliably available prior to travel and protocols would be needed to effectively isolate individuals who test positive and their close contacts. On the other hand, testing more than 3 days before travel provides little benefit beyond what symptom monitoring can provide, because individuals who test positive at that point contribute less to transmission risk during and after travel than individuals who test negative because they are in their latent period or not yet infected at that time. Because of the value of testing close to the time of travel, a lower sensitivity test with faster results can be more effective despite decreased sensitivity. This finding is consistent with modeling work by Larremore et al. showing that limitations of reduced sensitivity can be overcome by more frequent testing that can still identify infections in time to reduce transmission, in this case, closer to the time of travel [65]. This conclusion draws attention to the importance of turnaround times to allow for corresponding decision-making, not just the sensitivity of the test. While test and setting-specific test turnaround times are critical to planning, they are highly varied and were not included here. These results should be considered in that context. For example, short turn-around time is very important for pre-travel testing but less critical for post-travel testing at days 3 or 4 when individuals are expected to remain in quarantine for 7 days or more.

In the absence of quarantine or with low adherence to quarantine, post-arrival testing is likely most effective 1–2 days after arrival, balancing early detection with optimal sensitivity for travelers in their latent period while traveling. With high-adherence quarantine or potential exposure closer to the time of travel (for example, while traveling), optimal post-arrival test timing is later, 5–6 days after travel. This corresponds to improved sensitivity for detecting individuals who may be infected close to the time of arrival and are most likely to be infectious at the end of the quarantine. With exposure up to 7 days prior to travel, we found that optimal test timing was on days 0–2 after arrival with symptom monitoring and no quarantine, days 5–6 with symptom monitoring and quarantine with 100% adherence, and days 0–3 with symptom monitoring and quarantine with 50% adherence. When exposure time is known more precisely or is specifically at the time of travel, for example with a high-risk contact while traveling or otherwise, the optimal test time is on days 4–5 after that exposure to optimize test sensitivity with or without symptom monitoring and on days 6–7 when combined with quarantine (Fig. 2). Beyond days 7–8 post-infection, the sensitivity for detecting infections in the models considered here begins to decrease (Fig. 1b). Even with quarantine measures in place, tests on or after arrival may have additional roles if quarantine adherence is imperfect or to assist in contact tracing when other travelers are potentially infected. Waiting to test several days after arrival improves the chance of detecting an individual who will

be infectious at the end of the quarantine but does not optimize early detection of other infections among travelers.

These results are generally consistent with other analyses of risk associated with travel. Early in the pandemic, it was apparent that symptom screening at airports or other transit hubs could not stop the spread of SARS-CoV-2 [18]. Using an individual-level simulation framework, Clifford et al. found that more than half of infected travelers would not be detected by exit and entry screening based on temperature measurement, observation for illness, and health declaration [51]. Sufficient detection of infected travelers to avoid uncontrolled importations is largely dependent on a set of assumptions that are inconsistent with COVID-19 epidemiology: asymptomatic transmission being negligible, very high airport symptom screening sensitivity, and a short incubation period. Clifford et al. also assessed combined measures and estimated that an 8-day quarantine period with an RT-PCR test on day 7 would be nearly as effective as a 14-day quarantine on its own. Other recent work highlights the effectiveness of shorter quarantine periods combined with testing for individuals with known exposures [53, 66, 67]. Across these studies, the specific days for quarantine or testing and the estimated effectiveness varied due to differences in assumptions about the time of exposure, different modeled test characteristics, and differences in parameters for the infectious period. Nonetheless, all indicate the value of shorter quarantine combined with symptom monitoring and testing, a finding that is helpful both in the travel setting and in other settings with exposure risk.

The model used here has some specific limitations. First, the infectious period of SARS-CoV-2 is not well-defined. We therefore considered multiple models of the infectious period generated by multiple approaches to reflect uncertainty around this period, yet these models also have limitations, are not exhaustive, and more detail is needed for more precise estimates. Moreover, each of the infectious period models captures only the average infectious period, so for individual travelers, this could be substantially different. The most effective measures modeled here are close to 100% effective in the model; however, the existence of individual-level variation suggests that none of these approaches would truly be 100% effective. Even with a 14-day quarantine, it is likely that some individuals will be infectious later, or even develop symptoms only at the end of the time period. Nonetheless, the average parameterization gives the expected average effectiveness for larger numbers of infected travelers; this is the scale at which policies may be most useful. Testing options are also highly varied and not well-characterized. The test options considered here are not exhaustive nor precisely characterized. Moreover, test turnaround time can also vary. We did not model test turnaround time; instead, we focused on when the test was performed, such that the result turnaround time could be considered in the context of whatever testing and laboratory resources are available. For example, a test during quarantine should be done sufficiently early so that results are available before the end of quarantine, but that delay varies in different settings. Our framework, however, can be applied with many other options, or with better characterized distributions as these become available.

We also did not consider behavioral aspects of prevention, with the exception of adherence to quarantine. For simplicity, we assumed that quarantine was equivalent to individual-level isolation and that symptomatic individuals or those testing positive are isolated immediately. However, individuals may quarantine with others. In that case, symptom onset or a positive test for a single individual can indicate exposure for the others during quarantine. Without symptom onset or a positive test, there may be silent secondary transmission that could result in additional post-quarantine risk. Moreover, travelers may have little incentive to consistently adhere to these measures, and notification or enforcement of them also would require substantial effort and resources. Some travelers could attribute symptoms to other etiologies, such as an exacerbation of a pre-existing condition or travel fatigue. Additionally, if negative test results are available prior to the recommended end of quarantine, individuals may be less likely to complete the recommended quarantine perceiving that the test is sufficient evidence of not being infected. While adherence to all measures may be lower in practice than considered here, the relative effectiveness of measures still provides a useful guide. Moreover, the effectiveness of shorter quarantines, especially when combined with symptom monitoring and testing, may be enhanced because a shorter quarantine is less onerous and may drive better adherence [68].

Finally, we focused on comparing the effectiveness of intervention measures for infected travelers, not the reduction in absolute risk as that varies by location and time. This is therefore not an analysis of the conditions in which these measures should be implemented, nor of the specific logistical and policy challenges that arise in different situations. Quarantine of all travelers can be an effective prevention measure but could also result in the restricted movement of many travelers who are not infected and, therefore, pose no risk. When the absolute risk of infection in travelers is low and the number of travelers is high, quarantine of travelers without symptoms would predominantly result in the quarantine of uninfected people. Testing is helpful in part because it

can reduce the length of quarantine needed for optimal prevention. However, testing can also result in false negatives (missed cases that are released from quarantine when still infectious) or false positives (individuals who test positive but are not actually infected). The impact of false positives can be partly mitigated by confirmatory testing. It is also possible that some recently recovered individuals will test positive but no longer be infectious (e.g., by RT-PCR which can detect SARS-CoV-2 RNA after the infectious period has ended). Additional testing or assessment of cycle threshold values may help reduce the impact on these individuals [69]. It is important that authorities also carefully consider prioritization of testing resources in the context of other public health needs in resource-limited situations.

A multi-layered approach is needed to control SARS-CoV-2 transmission associated with travel. Infection prevention measures (e.g., social distancing, mask use, hand hygiene, enhanced cleaning, and disinfection) are expected to reduce risk before, during, and after travel. Symptom monitoring, quarantine, and testing can all complement those measures to further reduce risk. Predeparture SARS-CoV-2 testing can supplement symptom monitoring to identify potentially infectious travelers who do not have symptoms, and therefore, offers an opportunity to further reduce transmission risk during and after travel. Post-arrival SARS-CoV-2 testing can identify asymptomatic or pre-symptomatic infected travelers, including some who may have tested negative prior to departure, if prior testing took place. Post-arrival testing is likely effective at days 1–2 without quarantine, but more effective later, at days 5–6, if combined with an effective quarantine of 7 days or longer. A 14-day quarantine is effective on its own but combined with testing and symptom monitoring (with isolation of those who develop symptoms or test positive), quarantine can be shortened and still be effective. These findings can inform policies for travel until safe and effective vaccines become widely available.

Acknowledgements
Not applicable

Authors' contributions
MAJ, PSD, THC, CMB, MSC, and FAR conceived the study. MAJ, HW, and PP designed and carried out the analyses. MAJ, HW, PP, PSD, and FAR drafted the manuscript. All authors revised the manuscript. The authors read and approved the final manuscript.

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Availability of data and materials
All code required to run the analysis is available at https://github.com/cdcepi/COVID-19-traveler-model.

Declarations

Ethics approval and consent to participate
Not applicable

Consent for publication
Not applicable

Competing interests
The authors declare that they have no competing interests.

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References
1. Devi S. Travel restrictions hampering COVID-19 response. Lancet. 2020; 395(10233):1331–2. https://doi.org/10.1016/S0140-6736(20)30967-3.
2. Studdert DM, Hall MA, Mello MM. Partitioning the curve — interstate travel restrictions during the Covid-19 pandemic. N Engl J Med. 2020;383(13):e83. https://doi.org/10.1056/NEJMp2024274.
3. TSA checkpoint travel numbers for 2020 and 2019 | Transportation Security Administration. https://www.tsa.gov/coronavirus/passenger-throughput. Accessed 5 Nov 2020.
4. Air travel in the time of COVID-19. Lancet Infect Dis. 2020;20:993.
5. Maneenop S, Kotcharin S. The impacts of COVID-19 on the global airline industry: an event study approach. J Air Transp Manag. 2020;89:101920. https://doi.org/10.1016/j.jairtraman.2020.101920.
6. Sun X, Wandelt S, Zhang A. How did COVID-19 impact air transportation? A first peek through the lens of complex networks. J Air Transp Manag. 2020; 89:101928.
7. Forsyth P, Guiomard C, Niemeier H-M. Covid −19, the collapse in passenger demand and airport charges11The authors wish to thank Brian Pearce of IATA and Michael Stanton-Geddes of ACI for helpful discussions and data, and also two anonymous referees for their comments. J Air Transp Manag. 2020;89:101932. https://doi.org/10.1016/j.jairtraman.2020.101932.
8. Airlines Seek Gate Checks for Virus to Revive Foreign Travel. Bloomberg.com. 2020. https://www.bloomberg.com/news/articles/2020-09-09/airlines-seek-u-s-airport-virus-tests-to-revive-foreign-travel. Accessed 5 Nov 2020.
9. Wilson ME, Chen LH. Re-starting travel in the era of COVID-19: preparing anew. J Travel Med. 2020;27(5). https://doi.org/10.1093/jtm/taaa108.
10. US Department of Transportation. Runway to Recovery: The United States Framework for Airlines and Airports to Mitigate the Public Health Risks of Coronavirus, Guidance Jointly Issued by the U.S. Departments of Transportation, Homeland Security, and Health and Human Services. https://www.transportation.gov/sites/dot.gov/files/2020-07/Runway_to_Recovery_07022020.pdf. Accessed 5 Nov 2020.
11. Anderson SC, Mulberry N, Edwards AM, Stockdale JE, Iyaniwura SA, Falcao RC, et al. How much leeway is there to relax COVID-19 control measures? medRxiv. 2020. doi:https://doi.org/10.1101/2020.06.12.20129833.
12. Proclamation on Suspension of Entry as Immigrants and Nonimmigrants of Persons who Pose a Risk of Transmitting 2019 Novel Coronavirus. The White House. https://www.whitehouse.gov/presidential-actions/proclamation-suspension-entry-immigrants-nonimmigrants-persons-pose-risk-transmitting-2019-novel-coronavirus/. Accessed 5 Nov 2020.
13. Linka K, Peirlinck M, Costabal FS, Kuhl E. Outbreak dynamics of COVID-19 in Europe and the effect of travel restrictions. Comput Methods Biomech Biomed Engin. 2020;23(11):710–7. https://doi.org/10.1080/10255842.2020.1759560.
14. Chinazzi M, Davis JT, Ajelli M, Gioannini C, Litvinova M, Merler S, et al. The effect of travel restrictions on the spread of the 2019 novel coronavirus (COVID-19) outbreak. Science. 2020;368(6489):395–400. https://doi.org/10.1126/science.aba9757.
15. Pombal R, Hosegood I, Powell D. Risk of COVID-19 during air travel. JAMA. 2020;324(17):1798. https://doi.org/10.1001/jama.2020.19108.
16. International Civil Aviation Organization Council Aviation Recovery Task Force. Take-off: guidance for air travel through the COVID-19 public health crisis. 2020. https://www.icao.int/covid/cart/Documents/CART_Report_Take-Off_Document.pdf. Accessed 5 Nov 2020.
17. Mouchtouri VA, Bogogiannidou Z, Dirksen-Fischer M, Tsiodras S, Hadjichristodoulou C. Detection of imported COVID-19 cases worldwide: early assessment of airport entry screening, 24 January until 17 February

2020. Trop Med Health. 2020;48(1):79. https://doi.org/10.1186/s41182-020-00260-5.
18. Gostic K, Gomez AC, Mummah RO, Kucharski AJ, Lloyd-Smith JO. Estimated effectiveness of symptom and risk screening to prevent the spread of COVID-19. eLife. 2020;9:e55570. https://doi.org/10.7554/eLife.55570.
19. Considerations relating to passenger locator data, entry and exit screening and health declarations in the context of COVID-19 in the EU/EEA and the UK. European Centre for Disease Prevention and Control. 2020. https://www.ecdc.europa.eu/en/publications-data/passenger-locator-data-entry-exit-screening-health-declaration. Accessed 5 Nov 2020.
20. Vilke GM, Brennan JJ, Cronin AO, Castillo EM. Clinical features of patients with COVID-19: is temperature screening useful? J Emerg Med. 2020;59(6):952–6. https://doi.org/10.1016/j.jemermed.2020.09.048.
21. Dollard P. Risk Assessment and Management of COVID-19 Among Travelers Arriving at Designated U.S. Airports, January 17–September 13, 2020. MMWR Morb Mortal Wkly Rep. 2020;69. https://doi.org/10.15585/mmwr.mm6945a4.
22. Oran DP, Topol EJ. Prevalence of asymptomatic SARS-CoV-2 infection. Ann Intern Med. 2020;173(5):362–7. https://doi.org/10.7326/M20-3012.
23. Furukawa NW, Brooks JT, Sobel J. Evidence supporting transmission of severe acute respiratory syndrome coronavirus 2 while Presymptomatic or asymptomatic. Emerg Infect Dis. https://doi.org/10.3201/eid2607.201595.
24. Lavezzo E, Franchin E, Ciavarella C, Cuomo-Dannenburg G, Barzon L, Del Vecchio C, et al. Suppression of a SARS-CoV-2 outbreak in the Italian municipality of Vo. Nature. 2020;584(7821):425–9. https://doi.org/10.1038/s41586-020-2488-1.
25. Buitrago-Garcia D, Egli-Gany D, Counotte MJ, Hossmann S, Imeri H, Ipekci AM, et al. Occurrence and transmission potential of asymptomatic and presymptomatic SARS-CoV-2 infections: a living systematic review and meta-analysis. Plos Med. 2020;17(9):e1003346. https://doi.org/10.1371/journal.pmed.1003346.
26. Joshi RK, Ray RK, Adhya S, Chauhan VPS, Pani S. Spread of COVID-19 by asymptomatic cases: evidence from military quarantine facilities. BMJ Mil Health. 2020:bmjmilitary-2020-001669. https://doi.org/10.1136/bmjmilitary-2020-001669.
27. Johansson MA, Quandelacy TM, Kada S, Prasad PV, Steele M, Brooks JT, et al. SARS-CoV-2 transmission from people without COVID-19 symptoms. JAMA Netw Open. 2021;4(1):e2035057. https://doi.org/10.1001/jamanetworkopen.2020.35057.
28. Tindale LC, Stockdale JE, Coombe M, Garlock ES, Lau WYV, Saraswat M, et al. Evidence for transmission of COVID-19 prior to symptom onset. eLife. 2020;9:e57149. https://doi.org/10.7554/eLife.57149.
29. Nishiura H, Linton NM, Akhmetzhanov AR. Serial interval of novel coronavirus (COVID-19) infections. Int J Infect Dis. 2020;93:284–6. https://doi.org/10.1016/j.ijid.2020.02.060.
30. Zhao S, Gao D, Zhuang Z, Chong MKC, Cai Y, Ran J, et al. Estimating the serial interval of the novel coronavirus disease (COVID-19): a statistical analysis using the public data in Hong Kong from January 16 to February 15, 2020. Front Phys. 2020;8. https://doi.org/10.3389/fphy.2020.00347.
31. Wei WE. Presymptomatic Transmission of SARS-CoV-2 — Singapore, January 23–March 16, 2020. MMWR Morb Mortal Wkly Rep. 2020;69. https://doi.org/10.15585/mmwr.mm6914e1.
32. Tong Z-D, Tang A, Li K-F, Li P, Wang H-L, Yi J-P, et al. Potential Presymptomatic transmission of SARS-CoV-2, Zhejiang Province, China, 2020. Emerg Infect Dis. 2020;26(5):1052–4. https://doi.org/10.3201/eid2605.200198.
33. Considerations for quarantine of contacts of COVID-19 cases. https://www.who.int/publications-detail-redirect/considerations-for-quarantine-of-individuals-in-the-context-of-containment-for-coronavirus-disease-(covid-19). Accessed 5 Nov 2020.
34. Peak CM, Kahn R, Grad YH, Childs LM, Li R, Lipsitch M, et al. Individual quarantine versus active monitoring of contacts for the mitigation of COVID-19: a modelling study. Lancet Infect Dis. 2020;20(9):1025–33. https://doi.org/10.1016/S1473-3099(20)30361-3.
35. Saldaña F, Flores-Arguedas H, Camacho-Gutiérrez JA, Barradas I. Modeling the transmission dynamics and the impact of the control interventions for the COVID-19 epidemic outbreak. Math Biosci Eng. 2020;17(4):4165–83. https://doi.org/10.3934/mbe.2020231.
36. Lin C, Mullen J, Braund WE, Tu P, Auerbach J. Reopening safely – Lessons from Taiwan's COVID-19 response. J Glob Health. 10. https://doi.org/10.7189/jogh.10.020318.
37. Lam HY, Lam TS, Wong CH, Lam WH, Leung CME, Au KWA, et al. The epidemiology of COVID-19 cases and the successful containment strategy in Hong Kong–January to may 2020. Int J Infect Dis. 2020;98:51–8. https://doi.org/10.1016/j.ijid.2020.06.057.
38. Paltiel AD, Zheng A, Walensky RP. Assessment of SARS-CoV-2 screening strategies to permit the safe reopening of college campuses in the United States. JAMA Netw Open. 2020;3(7):e2016818. https://doi.org/10.1001/jamanetworkopen.2020.16818.
39. Taylor T, Das R, Mueller K, Pransky G, Christian J, Orford R, et al. Safely returning America to work: part I: general guidance for employers. J Occup Environ Med. 2020;62(9):771–9. https://doi.org/10.1097/JOM.0000000000001984.
40. Murray MT. Mitigating a COVID-19 Outbreak Among Major League Baseball Players — United States, 2020. MMWR Morb Mortal Wkly Rep. 2020;69. https://doi.org/10.15585/mmwr.mm6942a4.
41. Coronavirus (COVID-19) Travel Restrictions By Country. KAYAK. https://www.kayak.com/travel-restrictions. Accessed 5 Nov 2020.
42. Visiting Iceland. https://www.covid.is/categories/tourists-travelling-to-iceland. Accessed 5 Nov 2020.
43. No. 205.2: Quarantine Restrictions on Travelers Arriving in New York. Governor Andrew M. Cuomo. 2020. https://www.governor.ny.gov/news/no-2052-quarantine-restrictions-travelers-arriving-new-york. Accessed 5 Nov 2020.
44. Centers for Medicare and Medicaid Services. What is CMS's policy regarding laboratories performing antigen tests authorized by the Food and Drug Administration (FDA) under an Emergency Use Authorization (EUA) for use at the point of care (POC) or in patient care settings operating under a Clinical Laboratory Improvement Amendments of 1988 (CLIA) Certificate of Waiver on asymptomatic individuals? https://www.cms.gov/files/document/clia-poc-ag-test-enforcement-discretion.pdf. Accessed 5 Nov 2020.
45. Food and Drug Administration. Individual EUAs for Antigen Diagnostic Tests for SARS-CoV-2. FDA. 2020. https://www.fda.gov/medical-devices/coronavirus-disease-2019-covid-19-emergency-use-authorizations-medical-devices/vitro-diagnostics-euas. Accessed 5 Nov 2020.
46. Alemany A, Baró B, Ouchi D, Rodó P, Ubals M, Corbacho-Monné M, Vergara-Alert J, Rodon J, Segalés J, Esteban C, Fernández G, Ruiz L, Bassat Q, Clotet B, Ara J, Vall-Mayans M, G-Beiras C, Blanco I, Mitjà O. Analytical and clinical performance of the panbio COVID-19 antigen-detecting rapid diagnostic test. J Inf Secur. 2021;0. https://doi.org/10.1016/j.jinf.2020.12.033.
47. Pilarowski G, Lebel P, Sunshine S, Liu J, Crawford E, Marquez C, et al. The CLIAHUB Consortium, DeRisi J. Performance characteristics of a rapid severe acute respiratory syndrome coronavirus 2 antigen detection assay at a public plaza testing site in San Francisco. J Infect Dis. 2021. https://doi.org/10.1093/infdis/jiaa802.
48. Prince-Guerra JL. Evaluation of Abbott BinaxNOW Rapid Antigen Test for SARS-CoV-2 Infection at Two Community-Based Testing Sites — Pima County, Arizona, November 3–17, 2020. MMWR Morb Mortal Wkly Rep. 2021;70. https://doi.org/10.15585/mmwr.mm7003e3.
49. Pray IW. Performance of an Antigen-Based Test for Asymptomatic and Symptomatic SARS-CoV-2 Testing at Two University Campuses — Wisconsin, September–October 2020. MMWR Morb Mortal Wkly Rep. 2021;69. https://doi.org/10.15585/mmwr.mm695152a3.
50. Burns J, Movsisyan A, Stratil JM, Coenen M, Emmert-Fees KM, Geffert K, et al. Travel-related control measures to contain the COVID-19 pandemic: a rapid review. Cochrane Database Syst Rev. 2020. https://doi.org/10.1002/14651858.CD013717.
51. Clifford S, Quilty BJ, Russell TW, Liu Y, Chan Y-WD, Pearson CAB, et al. Strategies to reduce the risk of SARS-CoV-2 re-introduction from international travellers. medRxiv. 2020. https://doi.org/10.1101/2020.07.24.20161281.
52. Dickens BL, Koo JR, Lim JT, Sun H, Clapham HE, Wilder-Smith A, et al. Strategies at points of entry to reduce importation risk of COVID-19 cases and re-open travel. J Travel Med. 2020;27(8). https://doi.org/10.1093/jtm/taaa141.
53. Ashcroft P, Lehtinen S, Angst DC, Low N, Bonhoeffer S. Quantifying the impact of quarantine duration on COVID-19 transmission. medRxiv. 2020. https://doi.org/10.1101/2020.09.24.20201061.
54. He X, Lau EHY, Wu P, Deng X, Wang J, Hao X, et al. Temporal dynamics in viral shedding and transmissibility of COVID-19. Nat Med. 2020;26(5):672–5. https://doi.org/10.1038/s41591-020-0869-5.

55. Casey M, Griffin J, McAloon CG, Byrne AW, Madden JM, McEvoy D, et al. Pre-symptomatic transmission of SARS-CoV-2 infection: a secondary analysis using published data. medRxiv. 2020. https://doi.org/10.1101/2020.05.08.20094870.
56. Benefield AE, Skrip LA, Clement A, Althouse RA, Chang S, Althouse BM. SARS-CoV-2 viral load peaks prior to symptom onset: a systematic review and individual-pooled analysis of coronavirus viral load from 66 studies. medRxiv. 2020. https://doi.org/10.1101/2020.09.28.20202028.
57. Walsh KA, Jordan K, Clyne B, Rohde D, Drummond L, Byrne P, et al. SARS-CoV-2 detection, viral load and infectivity over the course of an infection. J Inf Secur. 2020;81:357–71.
58. Byrne AW, McEvoy D, Collins AB, Hunt K, Casey M, Barber A, et al. Inferred duration of infectious period of SARS-CoV-2: rapid scoping review and analysis of available evidence for asymptomatic and symptomatic COVID-19 cases. BMJ Open. 2020;10(8):e039856. https://doi.org/10.1136/bmjopen-2020-039856.
59. Goyal A, Reeves DB, Cardozo-Ojeda EF, Schiffer JT, Mayer BT. Wrong person, place and time: viral load and contact network structure predict SARS-CoV-2 transmission and super-spreading events. medRxiv. 2020. https://doi.org/10.1101/2020.08.07.20169920.
60. Wölfel R, Corman VM, Guggemos W, Seilmaier M, Zange S, Müller MA, et al. Virological assessment of hospitalized patients with COVID-2019. Nature. 2020;581(7809):465–9. https://doi.org/10.1038/s41586-020-2196-x.
61. McAloon C, Collins Á, Hunt K, Barber A, Byrne AW, Butler F, et al. Incubation period of COVID-19: a rapid systematic review and meta-analysis of observational research. BMJ Open. 2020;10(8):e039652. https://doi.org/10.1136/bmjopen-2020-039652.
62. Kucirka LM, Lauer SA, Laeyendecker O, Boon D, Lessler J. Variation in false-negative rate of reverse transcriptase polymerase chain reaction–based SARS-CoV-2 tests by time since exposure. Ann Intern Med. 2020;173(4):262–7. https://doi.org/10.7326/M20-1495.
63. Lamb TL, Winter SR, Rice S, Ruskin KJ, Vaughn A. Factors that predict passengers willingness to fly during and after the COVID-19 pandemic. J Air Transp Manag. 2020;89:101897. https://doi.org/10.1016/j.jairtraman.2020.101897.
64. Statement on the fifth meeting of the International Health Regulations (2005) Emergency Committee regarding the coronavirus disease (COVID-19) pandemic. https://www.who.int/news/item/30-10-2020-statement-on-the-fifth-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-coronavirus-disease-(covid-19)-pandemic. Accessed 5 Nov 2020.
65. Larremore DB, Wilder B, Lester E, Shehata S, Burke JM, Hay JA, et al. Test sensitivity is secondary to frequency and turnaround time for COVID-19 surveillance. medRxiv. 2020. https://doi.org/10.1101/2020.06.22.20136309.
66. Quilty BJ, Clifford S, Group2 C nCoV working, Flasche S, Eggo RM. Effectiveness of airport screening at detecting travellers infected with novel coronavirus (2019-nCoV). Euro Surveill. 2020;25:2000080.
67. Wells CR, Townsend JP, Pandey A, Krieger G, Singer B, McDonald RH, et al. Optimal COVID-19 quarantine and testing strategies. medRxiv. 2020. https://doi.org/10.1101/2020.10.27.20211631.
68. Webster RK, Brooks SK, Smith LE, Woodland L, Wessely S, Rubin GJ. How to improve adherence with quarantine: rapid review of the evidence. Public Health. 2020;182:163–9. https://doi.org/10.1016/j.puhe.2020.03.007.
69. Bullard J, Dust K, Funk D, Strong JE, Alexander D, Garnett L, et al. Predicting infectious severe acute respiratory syndrome coronavirus 2 from diagnostic samples. Clin Infect Dis. 2020. https://doi.org/10.1093/cid/ciaa638.

Publisher's Note

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 12:51:15 +0000
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: put in your copy from last night

Hi,
I made the first change for (b)(5)

(b)(5)

Lisa D. Rotz, MD, FIDSA
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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Thu, 29 Dec 2022 14:31:14 +0000
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ); Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: RE: 4pm and 7pm calls

Or is this mostly Ryan's call and we're tagging along with the TGS stuff?

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Thursday, December 29, 2022 9:30 AM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: 4pm and 7pm calls

Ok. Then if I join, will just be to listen in since you'll be on for the TGS stuff.

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Thursday, December 29, 2022 9:29 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: 4pm and 7pm calls

I think the goal when we set them up (b)(5)

(b)(5)

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T: 404-639-1430\ C: 470-487-4373

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Thursday, December 29, 2022 9:26 AM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: 4pm and 7pm calls

So then are you planning (b)(5)

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Thursday, December 29, 2022 9:23 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: 4pm and 7pm calls

The way it went with Japan Michelle opened ((b)(6) and Kim will host) then Ryan says something – (b)(5)

(b)(5)

If you want we can have a pre call
I am sure there will be ques about the order on this call– (b)(5)

(b)(5)

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Thursday, December 29, 2022 9:17 AM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: 4pm and 7pm calls

How do we want to do the 4pm and 7pm calls that OGA set up with AU (4pm) and Singapore (7pm) – I'm happy to join (b)(6)

(b)(6)

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From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Sun, 1 Jan 2023 16:23:42 +0000
To: George, Dylan (CDC/OD/CFA)
Subject: Re: assessment of COVID in China

Wonderful, thank you. Happy New Year!

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
Get Outlook for Android
From: George, Dylan (CDC/OD/CFA) <ejv8@cdc.gov>
Sent: Sunday, January 1, 2023 10:27:29 AM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: assessment of COVID in China

Thanks for the note.

I will check to see if there are (b)(5)
(b)(5)
(b)(5) Will know more early this week.

From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Thursday, December 29, 2022 8:00 AM
To: George, Dylan (CDC/OD/CFA) <ejv8@cdc.gov>
Subject: assessment of COVID in China

Not sure how much new information we have, I (b)(5)
(b)(5)

Thx, Henry

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 14:31:31 +0000
To: Misrahi, James J. (CDC/OCOO/OGC); Tress, Deborah W. (CDC/OCOO/OGC); Walters, Justine (CDC/OCOO/OGC)
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: RE: attestation question

Thanks.

From: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>
Sent: Wednesday, December 28, 2022 9:31 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: attestation question

Yes, from Barb McGarey

Get Outlook for iOS

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Wednesday, December 28, 2022 9:29:08 AM
To: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: attestation question

Thanks. (b)(5)

From: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>
Sent: Wednesday, December 28, 2022 9:16 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: attestation question

I think the attestation (b)(5)

(b)(5)

(b)(5)

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Wednesday, December 28, 2022 9:13:39 AM
To: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: attestation question

(b)(5)

From: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>
Sent: Wednesday, December 28, 2022 9:01 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Stolp, Amber (CDC/DDID/NCEZID/DGMQ) <wmg9@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: attestation question

(b)(5)

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Wednesday, December 28, 2022 8:57:16 AM
To: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>; Stolp, Amber (CDC/DDID/NCEZID/DGMQ)

<wmg9@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: attestation question

What are your thoughts then (b)(5)

(b)(5)

From: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>
Sent: Wednesday, December 28, 2022 8:50 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Stolp, Amber (CDC/DDID/NCEZID/DGMQ) <wmg9@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: attestation question

I think i (b)(5)

Jim

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Wednesday, December 28, 2022 8:44:03 AM
To: Stolp, Amber (CDC/DDID/NCEZID/DGMQ) <wmg9@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Cc: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: attestation question

All,

(b)(5)

L

Lisa D. Rotz, MD, FIDSA
Acting Director
Division of Global Migration and Quarantine
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention

Email: LRotz@cdc.gov
Office: 404-639-4376
Mobile: 404-683-3832

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Sun, 25 Dec 2022 14:43:32 +0000
To: Berger, Sherri (CDC/OD/OCS); Walensky, Rochelle (CDC/OD)
Cc: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ); Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: RE: Background for Monday 4:00pm

Got it, thx

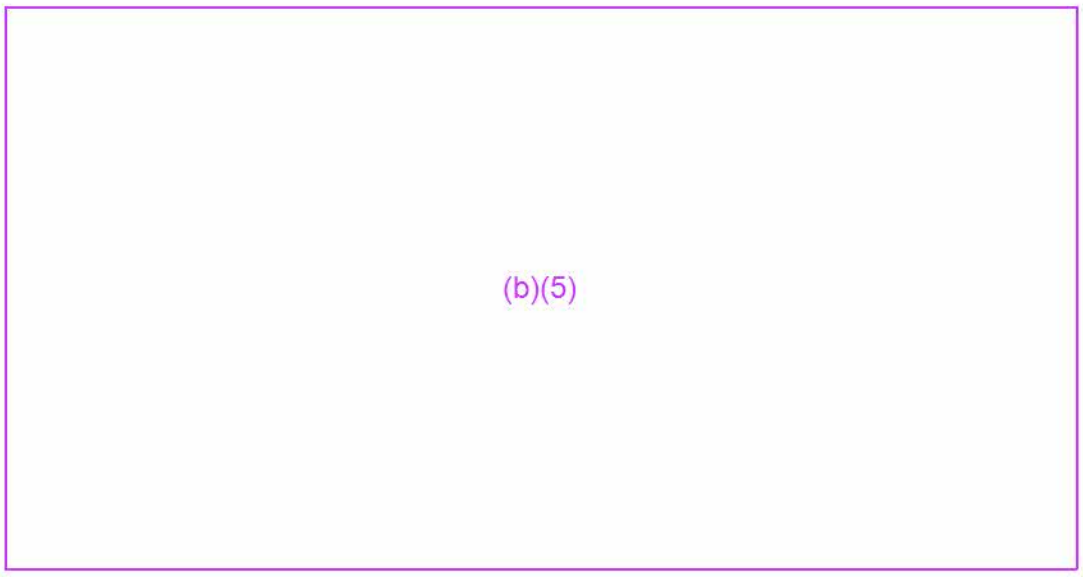
From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Sunday, December 25, 2022 9:19 AM
To: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: Background for Monday 4:00pm

Please note: those numbers were also when testing was being required in China so lots of available tests. Could be different situation now.

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Sunday, December 25, 2022 9:19 AM
To: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Background for Monday 4:00pm

Hi Rochelle & Henry,

In case you are asked during the meeting, here are the data for the Testing Exemption data and Vaccine Exception data for China (versus overall) to date:



(b)(5)

Thanks,
Sherri

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Thu, 29 Dec 2022 15:24:09 +0000
To: Nordlund, Kristen (CDC/OD/OADC)
Cc: Haynes, Benjamin (CDC/OD/OADC)
Subject: Re: Bloomberg News Request re: China testing recs

Ok with these

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
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From: Nordlund, Kristen (CDC/OD/OADC) <hok4@cdc.gov>
Sent: Thursday, December 29, 2022 10:23:16 AM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Haynes, Benjamin (CDC/OD/OADC) <fxq2@cdc.gov>
Subject: Bloomberg News Request re: China testing recs

Hi Henry,

Below are follow up questions from Bloomberg about yesterday's announcement. I added some suggested comments in red if you're okay with these, (b)(5)

Thanks,
Kristen

From: Fiona Rutherford (BLOOMBERG/ NEWSROOM:) <frutherford@bloomberg.net>
Sent: Thursday, December 29, 2022 10:02 AM
To: Nordlund, Kristen (CDC/OD/OADC) <hok4@cdc.gov>
Subject: RE: Bloomberg News Request: TGS Program

Great, thank you Kristen.

If useful, here are the questions we're keen to answer in the story:

- Are there any recent trends that might suggest that what's going on in China is having an impact in the US yet? (b)(5)
(b)(5)
- Can you offer any insight into tracking of variants in China that suggests its insufficient? (And what exactly is insufficient about China's approach) (b)(5)
(b)(5)
- Is CDC considering any further Covid recommendations or travel restrictions? (b)(5)
(b)(5)

Thanks again!

FIONA RUTHERFORD
frutherford@bloomberg.net

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 16:41:42 +0000
To: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ); Sood, Neha Jaggi (CDC/DDID/NCEZID/DGMQ); Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: RE: Blurb for website

ok

From: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>
Sent: Wednesday, December 28, 2022 11:41 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Sood, Neha Jaggi (CDC/DDID/NCEZID/DGMQ) <mtq6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: Blurb for website

(b)(5)

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Wednesday, December 28, 2022 11:40 AM
To: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Sood, Neha Jaggi (CDC/DDID/NCEZID/DGMQ) <mtq6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: Blurb for website

(b)(5)

From: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>
Sent: Wednesday, December 28, 2022 11:33 AM
To: Sood, Neha Jaggi (CDC/DDID/NCEZID/DGMQ) <mtq6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: Blurb for website

Is everyone ok with this?

(b)(5)

Caitlin Shockey, JD
Associate Director for Communication
Division of Global Migration and Quarantine

Centers for Disease Control and Prevention
404.831.0025
cshockey@cdc.gov

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Wed, 28 Dec 2022 00:31:03 +0000
To: Carter, Hillary H. EOP/NSC; Berger, Sherri (CDC/OD/OCS)
Subject: RE: Call we discussed

Not sure what time zone RW is in, but I think a reasonable hour for China CDC on day of announcement. Our CDC team in China will help set it up.

From: Carter, Hillary H. EOP/NSC (b)(6)
Sent: Tuesday, December 27, 2022 7:19 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Cc: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: Call we discussed

Yes, will do. When would the call take place (noting the time difference)?

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Tuesday, December 27, 2022 7:13 PM
To: Carter, Hillary H. EOP/NSC (b)(6)
Cc: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: Call we discussed

Can you incl Henry when you send me the reply? Thanks

Sherri A. Berger, MSPH
Chief of Staff
Centers for Disease Control and Prevention
404-213-8392 cell
sberger@cdc.gov

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Fri, 30 Dec 2022 17:20:54 +0000
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: RE: Canada's question

(b)(5)

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Friday, December 30, 2022 12:17 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: RE: Canada's question

Yeah— (b)(5)

(b)(5)

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Friday, December 30, 2022 12:08 PM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: Canada's question

(b)(5)

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Friday, December 30, 2022 12:05 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: Re: Canada's question

(b)(5)

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Friday, December 30, 2022 10:37:38 AM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: Canada's question

(b)(5)

ve

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Friday, December 30, 2022 10:26 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: RE: Canada's question

I agree, (b)(5)

(b)(5)

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Friday, December 30, 2022 10:25 AM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Canada's question

(b)(5)

Lisa D. Rotz, MD, FIDSA
Acting Director
Division of Global Migration and Quarantine
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention

Email: LRotz@cdc.gov
Office: 404-639-4376
Mobile: 404-683-3832

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Mon, 26 Dec 2022 18:25:15 +0000
To: Novak, Ryan (CDC/DDID/NCIRD/DBD)
Cc: Berger, Sherri (CDC/OD/OCS)
Subject: RE: China CDC meeting summary 23-Dec

thx

From: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>
Sent: Monday, December 26, 2022 12:12 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Subject: China CDC meeting summary 23-Dec

Henry—
For awareness sharing an internal draft summary of the meeting with China CDC on Friday 23-Dec. Still pending review/input from Sue Lin, Barbara Mahon and Clint Paden before finalizing.
Ryan

Ryan Novak, PhD | CAPT, U.S. Public Health Service
CGH COVID-19 Responsible Official
bnk4@cdc.gov | 404-992-2512

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Mon, 26 Dec 2022 16:18:55 +0000
To: Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO)
Cc: Novak, Ryan (CDC/DDID/NCIRD/DBD); Butryn, Deena (CDC/DDPHSIS/CGH/OD)
Subject: RE: China CDC uploading of sequences

How many sequences did they upload recently?

From: Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Sent: Monday, December 26, 2022 10:08 AM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>
Subject: FW: China CDC uploading of sequences

From: Yee, Sue Lin (CDC/DDPHSIS/CGH/DGHP) <sby9@cdc.gov>
Sent: Monday, December 26, 2022 5:25 AM
To: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Paden, Clinton R. (CDC/DDID/NCIRD/DVD) <fep2@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>
Cc: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>; Chao, Viviane (CDC/DDPHSIS/CGH/OD) <yuj2@cdc.gov>; Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED) <iyn0@cdc.gov>; Dahl, Benjamin A. (CDC/DDPHSIS/CGH/GID) <bid5@cdc.gov>; Moolenaar, Ronald L. (CDC/DDPHSIS/CGH/DGHP) <rlm8@cdc.gov>
Subject: Fwd: China CDC uploading of sequences

Dear All:

Below is what our team was able to find on GISAID. Please share with others that should receive. Sorry, directory on phone is not up some names at the moment.

Thanks,
Sue Lin

The data about China variants is in the headline of GISAID as attached. Attached is also the detaild submission information.

https://gisaid.org

GISAID

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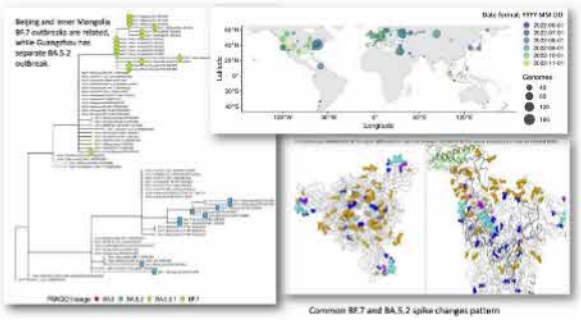
In Focus

Latest data from China resembles known circulating variants

The Chinese Center for Disease Control and Prevention shared via GISAID new hCoV-19 genome sequences from Beijing, Guangzhou, and Inner Mongolia. Preliminary phylogenetic analysis found that, when compared against the 14.4M genomes in GISAID's EpiCoV database, all closely resemble known globally circulating variants.

The closest related genomes were from the BF.7 and BA.5.2 lineages, which were collected in Russia and USA between 2022-Jul-09 and 2022-Aug-24. The analysis also revealed that the BF.7 outbreaks in Beijing and Inner Mongolia are related; Guangzhou has a separate BA.5.2 outbreak plus 2 additional independent imports.



China

Sequences collected in time window: 3,628 (0.036% of cases)

Reported COVID-19 cases: 10,167,676
Reported deaths from COVID-19: 31,585
Most recent sequence submission 1 day ago;
most recent collection was 15 days ago
Median days to deposition: 114

Collection date time window: (●) Since 10 January 2020 ( ) Last 180 days ( ) Last 90 days ( ) Last 30 days

Color countries and territories by: (●) Percentage of cases shared ( ) Percentage of cases not shared ( ) Most recent submission to GISAID (days ago) ( ) Most recent collection (days ago) ( ) Median days to deposition

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Mon, 26 Dec 2022 13:24:49 +0000
To: Butryn, Deena (CDC/DDPHSIS/CGH/OD); Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED)
Cc: Novak, Ryan (CDC/DDID/NCIRD/DBD)
Subject: Re: China CDC uploading of sequences

Plus Branden and Sara

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
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From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 8:15:31 AM
To: Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>
Cc: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>
Subject: Fwd: China CDC uploading of sequences

(b)(5)

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
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From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 8:07:39 AM
To: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>
Subject: Fwd: China CDC uploading of sequences

Ryan will this start happening this week, (b)(5)
(b)(5)

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
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From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Monday, December 26, 2022 7:11:04 AM
To: Cardo, Denise M. MD (CDC/DDID/NCEZID/DHQP) <dbc0@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: China CDC uploading of sequences

Thank you, adding @Walke, Henry (CDC/DDPHSIS/CPR/OD) since he will attend the Deputies today

---

From: Cardo, Denise M. MD (CDC/DDID/NCEZID/DHQP) <dbc0@cdc.gov>
Sent: Sunday, December 25, 2022 9:10 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Subject: Fwd: China CDC uploading of sequences

FYI

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From: Yee, Sue Lin (CDC/DDPHSIS/CGH/DGHP) <sby9@cdc.gov>
Sent: Sunday, December 25, 2022 8:58:00 PM
To: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Paden, Clinton R. (CDC/DDID/NCIRD/DVD) <fep2@cdc.gov>; Mahon, Barbara (CDC/DDID/NCIRD/OD) <bdm3@cdc.gov>; Cardo, Denise M. MD (CDC/DDID/NCEZID/DHQP) <dbc0@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>
Cc: Dahl, Benjamin A. (CDC/DDPHSIS/CGH/GID) <bid5@cdc.gov>; Chao, Viviane (CDC/DDPHSIS/CGH/OD) <yuj2@cdc.gov>; Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Subject: China CDC uploading of sequences

Dear All:

(b)(5)

(b)(5) I'll ask our monitoring team to check regularly. Please share this heads up with others as appropriate.

Sue Lin

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Mon, 26 Dec 2022 18:23:56 +0000
To: Novak, Ryan (CDC/DDID/NCIRD/DBD); Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO)
Cc: Butryn, Deena (CDC/DDPHSIS/CGH/OD)
Subject: RE: China COVID Situation Update 21Dec

Got it thanks

From: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>
Sent: Monday, December 26, 2022 12:26 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Cc: Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>
Subject: China COVID Situation Update 21Dec

China COVID Situation Update 21 Dec

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Mon, 26 Dec 2022 18:36:52 +0000
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: Re: CLOSE HOLD: China—new CDC pre-departure travel testing order

I'll still be in the air so can't join the call. Sorry

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Monday, December 26, 2022 12:35:43 PM
To: Cardo, Denise M. MD (CDC/DDID/NCEZID/DHQP) <dbc0@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>; Yee, Sue Lin (CDC/DDPHSIS/CGH/DGHP) <sby9@cdc.gov>; Chao, Viviane (CDC/DDPHSIS/CGH/OD) <yuj2@cdc.gov>; McCulloch, Audrey (CDC/DDPHSIS/CGH/OD) <xzk0@cdc.gov>; Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>
Cc: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: RE: CLOSE HOLD: China—new CDC pre-departure travel testing order

Hello again,

I'd like to set up a call at 1830 Eastern time to discuss next steps. With apologies for the (technical) holiday call, I'm hopeful it will not take more than 20 minutes or so.

Will send an invite shortly!

Thank you,
Julia

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Sent: Sunday, December 25, 2022 3:04 PM
To: Cardo, Denise M. MD (CDC/DDID/NCEZID/DHQP) <dbc0@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>; Yee, Sue Lin (CDC/DDPHSIS/CGH/DGHP) <sby9@cdc.gov>; Chao, Viviane (CDC/DDPHSIS/CGH/OD) <yuj2@cdc.gov>; McCulloch, Audrey (CDC/DDPHSIS/CGH/OD) <xzk0@cdc.gov>; Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>
Cc: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Subject: CLOSE HOLD: China—new CDC pre-departure travel testing order

Hi everyone,

Jumping in, here! I wanted to follow up and note that this is still pre-decisional; no final decisions have been made. As I'm sure you can imagine, there are lots of moving parts.

Please keep this extremely close hold for now; hope to have more information for you soon.

Warmly,
Julia

From: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>
Sent: Sunday, December 25, 2022 2:40 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Fwd: China—new CDC pre-departure travel testing order

FYSA.

Julia: I'm not up on the latest, would appreciate assistance with following up with the details.

Ryan Novak | CDC Global COVID-19 Responsible Official | bnk4@cdc.gov | 404-992-2512

From: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>
Sent: Sunday, December 25, 2022 11:31
To: Cardo, Denise M. MD (CDC/DDID/NCEZID/DHQP) <dbc0@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>; Yee, Sue Lin (CDC/DDPHSIS/CGH/DGHP) <sby9@cdc.gov>
Cc: Chao, Viviane (CDC/DDPHSIS/CGH/OD) <yuj2@cdc.gov>; McCulloch, Audrey (CDC/DDPHSIS/CGH/OD) <xzk0@cdc.gov>; Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>
Subject: China—new CDC pre-departure travel testing order

All—
I'm sorry to be sending this message on Christmas.

(b)(5); (b)(6)

There is a followup Deputies meeting on China Monday morning, Dr Walensky and Henry Walke are attending for CDC.

Ryan Novak | CDC Global COVID-19 Responsible Official | bnk4@cdc.gov | 404-992-2512

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Tue, 27 Dec 2022 17:27:55 +0000
To: Novak, Ryan (CDC/DDID/NCIRD/DBD); Berger, Sherri (CDC/OD/OCS); Charles, Julia (CDC/DDID/NCEZID/DGMQ); Jernigan, Daniel B. (CDC/DDPHSS/OD); Lubar, Debra (CDC/DDID/NCEZID/OD); Rotz, Lisa (CDC/DDID/NCEZID/DGMQ); Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ); Misrahi, James J. (CDC/OCOO/OGC); Tress, Deborah W. (CDC/OCOO/OGC); Oliver, Angela (CDC/OD/OCS); Thaker, Kaytna (CDC/DDID/NCEZID/DGMQ); Stolp, Amber (CDC/DDID/NCEZID/DGMQ)
Cc: Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED); Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ); Griffis, Kevin (CDC/OD/OADC)
Subject: Re: CLOSE HOLD: Internal CDC Update - China-U.S. travel

Nothing to share, (b)(5)

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
Get Outlook for Android
From: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>
Sent: Tuesday, December 27, 2022 12:25:12 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Oliver, Angela (CDC/OD/OCS) <irr7@cdc.gov>; Thaker, Kaytna (CDC/DDID/NCEZID/DGMQ) <xxb4@cdc.gov>; Stolp, Amber (CDC/DDID/NCEZID/DGMQ) <wmg9@cdc.gov>
Cc: Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED) <iyn0@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Griffis, Kevin (CDC/OD/OADC) <tvw8@cdc.gov>
Subject: Re: CLOSE HOLD: Internal CDC Update - China-U.S. travel

OGA has scheduled call with Japan 6pm ET today re TGS. (b)(5)
(b)(5)

Ryan Novak | CDC Global COVID-19 Responsible Official | bnk4@cdc.gov | 404-992-2512
From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Tuesday, December 27, 2022 09:19
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Oliver, Angela (CDC/OD/OCS) <irr7@cdc.gov>; Thaker, Kaytna (CDC/DDID/NCEZID/DGMQ) <xxb4@cdc.gov>; Stolp, Amber (CDC/DDID/NCEZID/DGMQ) <wmg9@cdc.gov>

Cc: Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED) <iyn0@cdc.gov>; Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Griffis, Kevin (CDC/OD/OADC) <tvw8@cdc.gov>
Subject: RE: CLOSE HOLD: Internal CDC Update - China-U.S. travel

All, there is another Deputies for RW & Henry today at 3:30PM. Checking on agenda items now. Thanks

Sherri A. Berger, MSPH
Chief of Staff
Centers for Disease Control and Prevention
404-213-8392 cell
sberger@cdc.gov

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Tuesday, December 27, 2022 9:52 AM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>; Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Oliver, Angela (CDC/OD/OCS) <irr7@cdc.gov>; Thaker, Kaytna (CDC/DDID/NCEZID/DGMQ) <xxb4@cdc.gov>; Stolp, Amber (CDC/DDID/NCEZID/DGMQ) <wmg9@cdc.gov>
Cc: Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED) <iyn0@cdc.gov>; Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Griffis, Kevin (CDC/OD/OADC) <tvw8@cdc.gov>
Subject: CLOSE HOLD: Internal CDC Update - China-U.S. travel
Importance: High

Not intended for broad distribution

All –

My apologies for holiday work!

I want to provide a quick update to everyone on where we are and next steps (and a few Qs):

(b)(5)

Anything else I am missing here for the group to be aware of/tracking?

Thank you,
Sherri

Sherri A. Berger, MSPH
Chief of Staff
Centers for Disease Control and Prevention
404-213-8392 cell
sberger@cdc.gov

-----Original Appointment-----
From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Friday, December 23, 2022 1:08 PM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ); Charles, Julia (CDC/DDID/NCEZID/DGMQ); Jernigan, Daniel B. (CDC/DDPHSS/OD); Lubar, Debra (CDC/DDID/NCEZID/OD); Lisa Rotz (CDC/OID/NCEZID) (ler8@cdc.gov); Walke, Henry (CDC/DDPHSIS/CPR/OD); Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ); Misrahi, James J. (CDC/OCOO/OGC); Tress, Deborah W. (CDC/OCOO/OGC)
Cc: Berger, Sherri (CDC/OD/OCS); Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED); Novak, Ryan (CDC/DDID/NCIRD/DBD); Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO)
Subject: Update - China-U.S. travel
When: Friday, December 23, 2022 1:30 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Microsoft Teams meeting

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(b)(6)

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Thu, 29 Dec 2022 15:35:14 +0000
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ); Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ); Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: RE: COVID in China, the U.S., and everything in-between

Should be nod to benefit of WW testing 😊.

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Thursday, December 29, 2022 10:34 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: COVID in China, the U.S., and everything in-between

Yes I saw – she tweeted last night and it wasn't great but this is better for TGS

Cindy R. Friedman, MD
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
National Center for Emerging Zoonotic and Infectious Diseases
Centers for Disease Control and Prevention
Atlanta, GA 30329

T: 404-639-1430\ C: 470-487-4373

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Thursday, December 29, 2022 10:27 AM
To: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: FW: COVID in China, the U.S., and everything in-between

Fyi . TGS got kudos (and a not to benefit of WW testing) but the rest of our 'plan' not so much

---

From: Katelyn Jetelina from Your Local Epidemiologist <yourlocalepidemiologist@substack.com>
Sent: Thursday, December 29, 2022 9:52 AM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: COVID in China, the U.S., and everything in-between

YOUR LOCAL EPIDEMIOLOGIST
KATELYN JETELINA
TRANSLATING PUBLIC HEALTH SCIENCE FOR EVERYDAY USE

Si quiere leer la versión en español, pulse aquí.

COVID in China, the U.S., and everything in-between

KATELYN
JETELINA
DEC
29

Well, I was very much enjoying my holiday but COVID continues to do its COVID thing. It's time for an update.

China: A humanitarian disaster

As expected, the COVID-19 situation in China is out of hand. In an interesting turn of events, China went from a "zero COVID" policy to a "let it rip" policy by dropping all mitigation measures without fully vaccinating the highest of risk or strengthening their healthcare system.

Egregiously, they stopped reporting cases, hospitalizations, and deaths, too. This looks good for them on paper, but when we rely on epidemiology 101 and anecdotal reports, which are plentiful, the situation in China is beyond grim.

Officials estimate between 5,000-10,000 people are dying per *day*. (At the U.S. peak, we lost 3,800 people per day). Epidemiologists expect death toll to rise in China in the coming months leading to 0.5-1 million cumulative deaths. A humanitarian disaster.

This outbreak could have implications worldwide, like the emergence of a variant of concern. The best we can tell, BF.7 is spreading in China, which is an Omicron subvariant about 3 evolutionary steps behind what is spreading in most of the world. But, a new variant of concern could appear. (This is more *possible* than *probable* because transmission is high everywhere).

Just like cases and deaths, though, China is not reporting genomic data. In other words, we don't know if and how the virus is changing and what it may (or may not) mean to the international community.

U.S. responds domestically

So, how should the United States respond? Well, it depends on our goal: delay or decrease transmission from China? Identify variants of concern? Pressure the Chinese government to uphold international responsibilities?

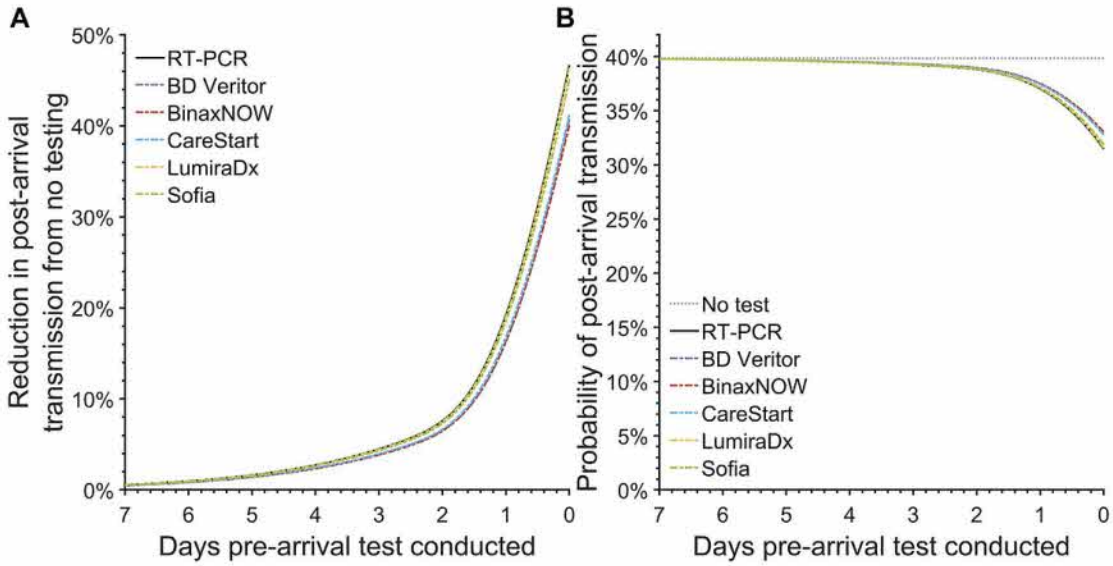
Yesterday, the U.S. publicly signaled two goals:

Delay transmission. On a scale from "do nothing" to "ban all travel", the U.S. chose something in the middle. Travelers coming to the U.S. from China will be required to have a negative PCR test within 48 hours of departure. This starts on January 5, 2023. I assume the goal is to buy time—delay a wave in the U.S. seeded by travelers. And this may be a legitimate concern, as Milan reported that 50% of passengers on flights from China tested positive. However, the extent to which this delays transmission, and by how much, is up for debate:

1. As Adam Kucharski pointed out, "uncontrolled domestic transmission will grow exponentially while importations grow linearly. In other words, we're much more likely to get an infection from a fellow resident than a traveler."

2. The policy doesn't start until next week in order for airlines to prepare, which likely won't help if transmission is already out of control in China.

3. To test pre-departure within 48 hours of travel is problematic. Studies have shown that this will reduce transmission by only 10%.



4. Figure: The post-arrival transmission for pre-arrival testing. Wells et al., 2022. Int J Public Health. Source here.

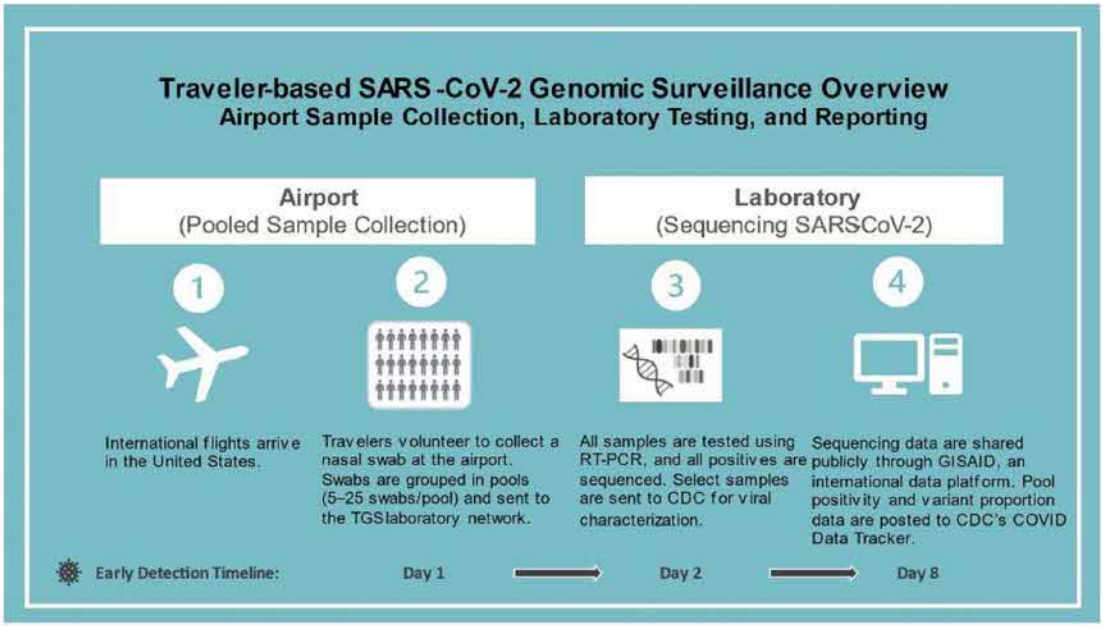
5. Finally, buying time is only useful if we actually *did* something to prepare.

Usingback of the napkin math, this policy would prevent ~10,000 infections in the U.S. If a variant of concern did pop up and was 100% immune invasive and every passenger had it (unlikely scenario), we would delay a wave by one week.

In any health crisis, policy decisions are challenging. Risks (ethics, lack of effectiveness, potential other harms, like xenophobia) must be weighed with benefits (low cost, possibility of delay). Then politics get involved. Epidemiologically this policy isn't adding up for me.

Find variants of concern. The second goal is to find potential variants of concern. Given zero data is being released by China, enhanced surveillance of PCR cases with a travel history to China is worthwhile. The U.S. will not have access to pre-departure testing results in China, but we can do it once people arrive.

The CDC already has a great program in place (see figure below), but because of the China situation, it expanded to 2 more airports. While this program is proactive, it's not that big: 10% of passengers at 7 airports. We should expand our capacity even more. It would be more advantageous to sequence airplane wastewater.

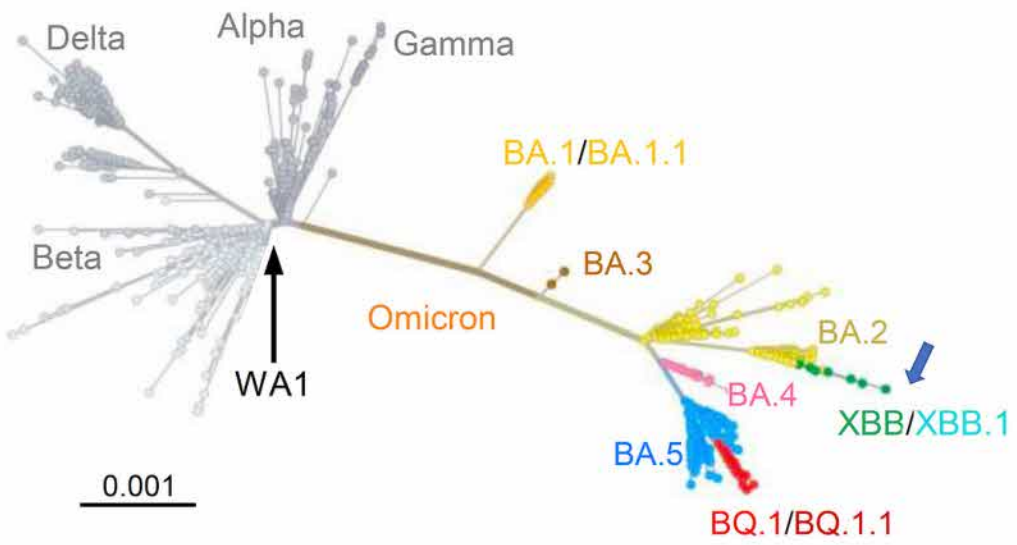


(CDC)

A homegrown problem

Regardless of the China situation, current variants in the U.S. are likely more problematic. At least in the short-term.

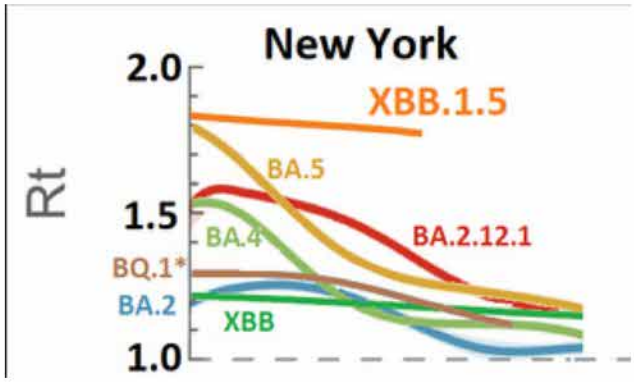
Specifically, we have a new subvariant on the horizon: XBB.1.5. This is an offshoot of BA.2, which is different from the subvariant currently circulating (BQ.1.1— an offshoot of BA.5).



Phylogenetic tree with scale bar indicating genetic distance, from Wang et al, Cell

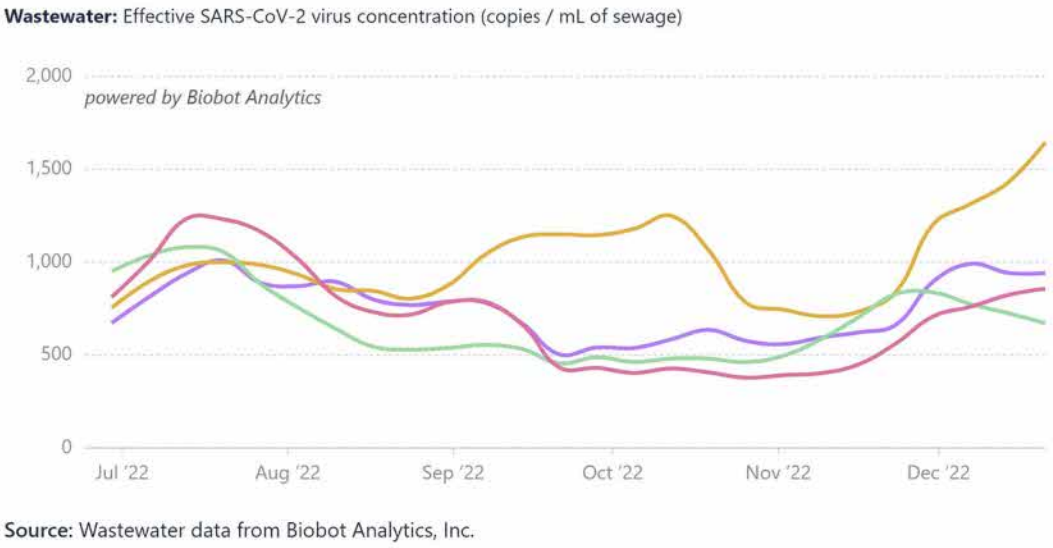
Both lab and epidemiological data show XBB.5.1 may be cause for concern:

- In the "real world," and particularly in New York, cases are exponentially increasing. Currently XBB.1.5 has a 120% weekly growth advantage, which equates to, on average, 1 infected person infecting 2 others. This rate is higher than we've seen with any other subvariant this year given our immunity wall.



- Source: Graph from JWeiland, Analysis from Trevor Bedford

- So, as expected, we see a clear uptick in Northeast wastewater. This is unwelcome given that admissions for people over age 70, for example, are the third highest since the pandemic began. This doesn't reflect the new variant or impact of holidays, yet, either.



U.S. Covid-19 Wastewater Monitoring by Region. Yellow=Northeast; Pink= South; Green= West, Purple=Midwest (Source: Biobot Analytics)

- In the lab, XBB.1.5 is presenting a more confusing picture. It has a similar ability to escape our immunity as other subvariants. Because of this, we wouldn't think it would cause a massive wave compared to what is circulating right now. XBB.1.5 *does* have higher ACE2 binding affinity—it allows it to latch onto our cells better; it's more sticky—but that wouldn't necessarily cause it to be more transmissible. So something else may be going on—another part of the virus may have changed that influences transmission. We need to look into this more.

Bottom line

We should be very concerned for the people of China. And it is possible that a variant of concern will arise from their disaster. But the U.S. already has a problem of its own.

I was hoping for a quieter 2023. There may still be a chance, but these are not welcome developments going into the New Year.

Love, YLE

"Your Local Epidemiologist (YLE)" is written by Dr. Katelyn Jetelina, MPH PhD—an epidemiologist, data scientist, wife, and mom of two little girls. During the day she works at a nonpartisan health policy think tank and is a senior scientific consultant to a number of organizations, including the CDC. At night she writes this newsletter. Her main goal is to "translate" the ever-evolving public health science so that people will be well equipped to make evidence-based decisions. This newsletter is free thanks to the generous support of fellow YLE community members. To support this effort, subscribe below:

Read Your Local Epidemiologist in the app

Listen to posts, join subscriber chats, and never miss an update from Katelyn Jetelina.

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Thu, 29 Dec 2022 23:05:08 +0000
To: Gaudreau, Marc-Andre (PHAC/ASPC)
Subject: Re: COVID-19 and China

Yes. Thanks

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>
Sent: Thursday, December 29, 2022 6:02:48 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: RE: COVID-19 and China

Hello Lisa
Would 900 or 930 tomorrow morning work from your end? 1030 would also work, as well as 12 noon, all eastern time
I will be happy to set this up
Regards
MA

Marc-Andre Gaudreau
(he/il)
Chief of Staff to the Deputy Chief Public Health Officer and Vice-President/Chef de cabinet du Sous-administrateur en chef de la santé publique et vice-président
Infectious Diseases Programs Branch/Direction générale des programmes des maladies infectieuses
Public Health Agency of Canada/Agence de la santé publique du Canada
613-894-1796

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: 2022-12-29 5:45 PM
To: Njoo, Howard (PHAC/ASPC) <howard.njoo@phac-aspc.gc.ca>; Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Heisz, Marianne (PHAC/ASPC) <marianne.heisz@phac-aspc.gc.ca>; Levesque, Marie-helene (PHAC/ASPC) <marie-helene.levesque@phac-aspc.gc.ca>; Reznikova, Ekaterina (PHAC/ASPC) <Ekaterina.Reznikova@phac-aspc.gc.ca>
Subject: Re: COVID-19 and China

Sounds good. Will look forward to talking with you Howard! Happy Holidays….. :)

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Njoo, Howard (PHAC/ASPC) <howard.njoo@phac-aspc.gc.ca>
Sent: Thursday, December 29, 2022 5:37:04 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Heisz, Marianne (PHAC/ASPC) <marianne.heisz@phac-aspc.gc.ca>; Levesque, Marie-helene (PHAC/ASPC) <marie-helene.levesque@phac-aspc.gc.ca>; Reznikova, Ekaterina (PHAC/ASPC) <Ekaterina.Reznikova@phac-aspc.gc.ca>
Subject: RE: COVID-19 and China

Hi Lisa

Glad to "see you"! I hope you got some time off during the holiday season to spend time with family and friends 😊

I spoke to our program staff and it would be important to have another meeting tomorrow to discuss

(b)(5)

My office will contact you to set up meeting…..looking forward to the discussion.

Kind regards,
Howard

Howard Njoo MD, MHSc, FRCPC
(he | il)

Deputy Chief Public Health Officer and
Interim Vice-President
Infectious Disease Programs Branch
Public Health Agency of Canada

Sous-administrateur en chef de la santé publique et vice-président par intérim
Direction générale des programmes des maladies infectieuses
Agence de la santé publique du Canada

howard.njoo@phac-aspc.gc.ca
tel: 613-960-1940

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: 2022-12-29 5:06 PM
To: Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>; Njoo, Howard (PHAC/ASPC) <howard.njoo@phac-aspc.gc.ca>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: COVID-19 and China

I just spoke with Neil Wheatherdon and a couple of his colleagues but can talk with others tomorrow if still needed,

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Sent: Thursday, December 29, 2022 4:56:47 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>; Njoo, Howard (PHAC/ASPC) <howard.njoo@phac-aspc.gc.ca>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: COVID-19 and China

Hi, Lisa—would you and/or some of the DGMQ folk who can discuss t (b)(5) (b)(5) for travelers from China be available to connect with colleagues from PHAC sometime tomorrow?

From: Njoo, Howard (PHAC/ASPC) <howard.njoo@phac-aspc.gc.ca>
Sent: Thursday, December 29, 2022 4:51 PM
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Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>
Subject: COVID-19 and China

Hi Jay

I hope you are having a good holiday season with your family and friends. I would like to discuss with you and your team regarding the recent announcement by the US for pre departure testing for individuals coming to the US from China. (b)(5)
(b)(5)
(b)(5) Ideally, we can organize to meet tomorrow.

Kind regards,
Howard

Howard Njoo MD, MHSc, FRCPC
(he | il)

Deputy Chief Public Health Officer and
Interim Vice-President
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Sous-administrateur en chef de la santé publique et vice-président par intérim
Direction générale des programmes des maladies infectieuses
Agence de la santé publique du Canada

howard.njoo@phac-aspc.gc.ca
tel: 613-960-1940

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Fri, 30 Dec 2022 00:03:01 +0000
To: Butler, Jay C. (CDC/DDID/OD)
Subject: RE: COVID-19 and China

No problem. Howard is one of my favorite people 😊

From: Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Sent: Thursday, December 29, 2022 7:01 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: RE: COVID-19 and China

Thank you, Lisa!

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Thursday, December 29, 2022 5:45 PM
To: Njoo, Howard (PHAC/ASPC) <howard.njoo@phac-aspc.gc.ca>; Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Heisz, Marianne (PHAC/ASPC) <marianne.heisz@phac-aspc.gc.ca>; Levesque, Marie-helene (PHAC/ASPC) <marie-helene.levesque@phac-aspc.gc.ca>; Reznikova, Ekaterina (PHAC/ASPC) <Ekaterina.Reznikova@phac-aspc.gc.ca>
Subject: Re: COVID-19 and China

Sounds good. Will look forward to talking with you Howard! Happy Holidays….. :)

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Njoo, Howard (PHAC/ASPC) <howard.njoo@phac-aspc.gc.ca>
Sent: Thursday, December 29, 2022 5:37:04 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Heisz, Marianne (PHAC/ASPC) <marianne.heisz@phac-aspc.gc.ca>; Levesque, Marie-helene (PHAC/ASPC) <marie-helene.levesque@phac-aspc.gc.ca>; Reznikova, Ekaterina (PHAC/ASPC) <Ekaterina.Reznikova@phac-aspc.gc.ca>
Subject: RE: COVID-19 and China

Hi Lisa

Glad to "see you"! I hope you got some time off during the holiday season to spend time with family and friends ☺

I spoke to our program staff and it would be important to have another meeting tomorrow to discuss

(b)(5)

My office will contact you to set up meeting.....looking forward to the discussion.

Kind regards,
Howard

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howard.njoo@phac-aspc.gc.ca
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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: 2022-12-29 5:06 PM
To: Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>; Njoo, Howard (PHAC/ASPC) <howard.njoo@phac-aspc.gc.ca>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
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Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>; Njoo, Howard (PHAC/ASPC) <howard.njoo@phac-aspc.gc.ca>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
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howard.njoo@phac-aspc.gc.ca
tel: 613-960-1940

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Fri, 30 Dec 2022 16:27:00 +0000
To: Njoo, Howard (PHAC/ASPC); Butler, Jay C. (CDC/DDID/OD)
Cc: Gaudreau, Marc-Andre (PHAC/ASPC); Watkins, Kerri (PHAC/ASPC); Charles, Julia (CDC/DDID/NCEZID/DGMQ); Heisz, Marianne (PHAC/ASPC); Levesque, Marie-helene (PHAC/ASPC); Reznikova, Ekaterina (PHAC/ASPC); Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ)
Subject: RE: COVID-19 and China

Hi Howard. Thanks for the call this am. Great talking with you as always. Wanted to send the link where we upload data from the traveler genomic testing program.
CDC COVID Data Tracker: Traveler-Based Genomic Surveillance for SARS-CoV-2

Dr. Cindy Friedman, our Travelers' Health Branch Chief, would be your main POC for this program as well (b)(5) She's cc'd on this email.

Lisa

From: Njoo, Howard (PHAC/ASPC) <howard.njoo@phac-aspc.gc.ca>
Sent: Thursday, December 29, 2022 5:37 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Heisz, Marianne (PHAC/ASPC) <marianne.heisz@phac-aspc.gc.ca>; Levesque, Marie-helene (PHAC/ASPC) <marie-helene.levesque@phac-aspc.gc.ca>; Reznikova, Ekaterina (PHAC/ASPC) <Ekaterina.Reznikova@phac-aspc.gc.ca>
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Division of Global Migration and Quarantine, CDC

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Cc: Gaudreau, Marc-Andre (PHAC/ASPC) <marc-andre.gaudreau@phac-aspc.gc.ca>; Watkins, Kerri (PHAC/ASPC) <kerri.watkins@phac-aspc.gc.ca>
Subject: COVID-19 and China

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(b)(5)

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Kind regards,
Howard

Howard Njoo MD, MHSc, FRCPC
(he | il)

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Sous-administrateur en chef de la santé publique et vice-président par intérim
Direction générale des programmes des maladies infectieuses
Agence de la santé publique du Canada

howard.njoo@phac-aspc.gc.ca
tel: 613-960-1940

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Wed, 28 Dec 2022 20:07:21 +0000
To: Berger, Sherri (CDC/OD/OCS); Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Cc: Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT)
Subject: RE: DG of China CDC

I have no update on this

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Wednesday, December 28, 2022 2:51 PM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Cc: Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: Re: DG of China CDC

Nothing on my end
I asked them to incl Henry when replying maybe he heard and I didn't

---

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Wednesday, December 28, 2022 2:49:48 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Cc: Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: DG of China CDC

Hi Sherri—so sorry to bother you. Just wanted to see if you had any update from WH on the (b)(5)

(b)(5)

Thanks!

Julia Charles
(470) 217-9367
jcharles@cdc.gov

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Wed, 28 Dec 2022 13:45:10 +0000
To: Berger, Sherri (CDC/OD/OCS)
Subject: RE: Draft order

thx

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Wednesday, December 28, 2022 8:44 AM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: Draft order

Hi! I will handle now… needs to go to a few places at CDC to officially transmit. Thanks

Sherri A. Berger, MSPH
Chief of Staff
Centers for Disease Control and Prevention
404-213-8392 cell
sberger@cdc.gov

From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Wednesday, December 28, 2022 8:34 AM
To: Botticella, Angela (HHS/IOS) <Angela.Botticella@hhs.gov>
Cc: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Subject: Draft order

Angela, see attached the draft order.

See comments on page 1 and 5. (b)(5)

(b)(5)

Henry

Henry Walke, MD, MPH (he/him)
Director, Center for Preparedness and Response (CPR)
CDC, HHS
+1-404-639-3582 (office)
+1-404-452-9624 (mobile)
hwalke@cdc.gov

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Thu, 29 Dec 2022 13:31:06 +0000
To: Berger, Sherri (CDC/OD/OCS); Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Cc: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Subject: RE: Draft order

(b)(5)

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Thursday, December 29, 2022 8:26 AM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Cc: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: Draft order

Morning,

A huge thanks for all of the hard work yesterday.

One clarifying question from RW and I want to make sure I have this right since I wasn't tracking all that happened yesterday

(b)(5)

Thank you!!

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Fri, 30 Dec 2022 23:48:50 +0000
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ); Misrahi, James J. (CDC/OCOO/OGC); Charles, Julia (CDC/DDID/NCEZID/DGMQ); Berger, Sherri (CDC/OD/OCS); Lubar, Debra (CDC/DDID/NCEZID/OD); Brown, Tiffany J. (CDC/OD/OCS); Jernigan, Daniel B. (CDC/DDPHSS/OD); CDC Regulations; Oliver, Angela (CDC/OD/OCS); Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED); Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO); Novak, Ryan (CDC/DDID/NCIRD/DBD); Butryn, Deena (CDC/DDPHSIS/CGH/OD); Kennedy, Veronica (CDC/OD/OCS); Griffis, Kevin (CDC/OD/OADC); Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT); Cardo, Denise M. MD (CDC/DDID/NCEZID/DHQP)
Cc: Tress, Deborah W. (CDC/OCOO/OGC)
Subject: Re: Final (!!) CDC Order

Wonderful team! Hope everyone can take some well deserved rest. 👏

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
Get Outlook for Android
From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Friday, December 30, 2022 5:54:49 PM
To: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Brown, Tiffany J. (CDC/OD/OCS) <iji3@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>; CDC Regulations <cdcregulations@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Oliver, Angela (CDC/OD/OCS) <irr7@cdc.gov>; Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED) <iyn0@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>; Kennedy, Veronica (CDC/OD/OCS) <bvo3@cdc.gov>; Griffis, Kevin (CDC/OD/OADC) <tvw8@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Cardo, Denise M. MD (CDC/DDID/NCEZID/DHQP) <dbc0@cdc.gov>
Cc: Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>
Subject: Re: Final (!!) CDC Order

Here here!

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>
Sent: Friday, December 30, 2022 5:54:11 PM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Brown, Tiffany J. (CDC/OD/OCS) <iji3@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>; CDC Regulations <cdcregulations@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Oliver, Angela (CDC/OD/OCS) <irr7@cdc.gov>; Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED) <iyn0@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>; Kennedy, Veronica

(CDC/OD/OCS) <bvo3@cdc.gov>; Griffis, Kevin (CDC/OD/OADC) <tvw8@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Cardo, Denise M. MD (CDC/DDID/NCEZID/DHQP) <dbc0@cdc.gov>
Cc: Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: Re: Final (!!) CDC Order

Amazing work due to Julia's indefatigable efforts!

Get Outlook for iOS
From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Friday, December 30, 2022 5:50:27 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Brown, Tiffany J. (CDC/OD/OCS) <iji3@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>; CDC Regulations <cdcregulations@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Oliver, Angela (CDC/OD/OCS) <irr7@cdc.gov>; Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED) <iyn0@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>; Kennedy, Veronica (CDC/OD/OCS) <bvo3@cdc.gov>; Griffis, Kevin (CDC/OD/OADC) <tvw8@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Cardo, Denise M. MD (CDC/DDID/NCEZID/DHQP) <dbc0@cdc.gov>
Cc: Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>
Subject: Final (!!) CDC Order

Hi all,

After hundreds (maybe, thousands) of emails, dozens of phone calls, and countless GIFs, we're closing the loop on this. Please find below links to the new Order, attestation, and two sets of FAQs. We just completed two sets of industry calls and had minimal questions. Please let us know if you have any questions.

A special thanks to Sherri, Henry, Deb, OGC (x 1,000,000), OES, comms, COVID team, and CGH… well, all of you. You all helped our incredible team get over the finish line.

As we say in DGMQ, it wouldn't be the holidays without a new Order. With that, Happy New Year!

Julia

Order: https://www.cdc.gov/quarantine/china-proof-negative-test.html

Attestation: https://www.cdc.gov/quarantine/pdf/attestation-proof-negative-covid-19-test-result-documentation-recovery-p.pdf

Operators FAQ: https://www.cdc.gov/quarantine/china-airline-faqs.html

Passengers FAQ: https://www.cdc.gov/coronavirus/2019-ncov/travelers/testing-international-air-travelers.html

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Sent: Thursday, December 29, 2022 6:03 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Brown, Tiffany J. (CDC/OD/OCS) <iji3@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>; CDC Regulations <cdcregulations@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Oliver, Angela (CDC/OD/OCS) <irr7@cdc.gov>; Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED) <iyn0@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>; Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Butryn, Deena (CDC/DDPHSIS/CGH/OD) <odx9@cdc.gov>; Kennedy, Veronica (CDC/OD/OCS) <bvo3@cdc.gov>
Cc: Tress, Deborah W. (CDC/OCOO/OGC) <dew3@cdc.gov>; Lisa Rotz (CDC/OID/NCEZID) (ler8@cdc.gov) <ler8@cdc.gov>; Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>
Subject: FYI: Draft CDC Order

Hi all,

Just want to make sure everyone is kept in the loop on the Order. We just sent back the attached drafts to HHS and will receive another round of comments in the morning. We will post the Order, as well as the attestation and supporting communications materials, before noon tomorrow. There is a call with airlines tomorrow at 2:00 pm.

If you have comments on the Order, please make them in the clean version and revert back by 8:00 tomorrow morning.

Thank you,
Julia

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Mon, 26 Dec 2022 16:33:26 +0000
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ)
Subject: RE: First sequencing results back this AM (b)(5)

thx

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 11:33 AM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: Re: First sequencing results back this AM (b)(5)

(b)(5)

From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 11:31:01 AM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: RE: First sequencing results back this AM f (b)(5)

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 10:22 AM
To: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED) <iyn0@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Cc: Ruskey, Ian (CDC/DDID/NCEZID/DGMQ) <klv5@cdc.gov>
Subject: First sequencing results back this AM (b)(5)

(b)(5)

Cindy

Cindy R. Friedman, MD
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
National Center for Emerging Zoonotic and Infectious Diseases

Centers for Disease Control and Prevention
Atlanta, GA 30329

T: 404-639-1430\ C: 470-487-4373

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Mon, 26 Dec 2022 16:16:47 +0000
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ); Novak, Ryan (CDC/DDID/NCIRD/DBD); Rotz, Lisa (CDC/DDID/NCEZID/DGMQ); Charles, Julia (CDC/DDID/NCEZID/DGMQ); Lubar, Debra (CDC/DDID/NCEZID/OD); Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED); Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO)
Cc: Ruskey, Ian (CDC/DDID/NCEZID/DGMQ)
Subject: RE: First sequencing results back this AM f (b)(5)

Wonderful, thanks!

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 10:22 AM
To: Novak, Ryan (CDC/DDID/NCIRD/DBD) <bnk4@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Jackson, Brendan R. (CDC/DDID/NCEZID/DFWED) <iyn0@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Cc: Ruskey, Ian (CDC/DDID/NCEZID/DGMQ) <klv5@cdc.gov>
Subject: First sequencing results back this AM (b)(5)

(b)(5)

Cindy

Cindy R. Friedman, MD
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
National Center for Emerging Zoonotic and Infectious Diseases
Centers for Disease Control and Prevention
Atlanta, GA 30329

T: 404-639-1430\ C: 470-487-4373

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Thu, 29 Dec 2022 00:04:18 +0000
To: Berger, Sherri (CDC/OD/OCS)
Subject: Re: Follow up, re: CDC China Outreach

Ok

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
Get Outlook for Android
From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Wednesday, December 28, 2022 6:37:59 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Cc: Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Shell, Ursula (CDC/OD/OCS) <nka7@cdc.gov>; Bartee, Brad Allen (CDC/OD/OCS) <yxa0@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

(b)(5)
Will, great for you to join if we are able to schedule.
Thanks
From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Wednesday, December 28, 2022 6:04:46 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Shell, Ursula (CDC/OD/OCS) <nka7@cdc.gov>; Bartee, Brad Allen (CDC/OD/OCS) <yxa0@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

Please offer. Scheduling may be hard but we will do what we can for sure! Thanks
From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Wednesday, December 28, 2022 6:03 PM
To: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

Sounds good to me, thx

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
Get Outlook for Android
From: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Sent: Wednesday, December 28, 2022 6:01:56 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>;

Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

Dear Henry:
(b)(5) does that sound ok?
Will

Get Outlook for iOS
From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Wednesday, December 28, 2022 5:57:41 PM
To: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

+ Hank

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
Get Outlook for Android
From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Wednesday, December 28, 2022 4:49:56 PM
To: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Subject: RE: Follow up, re: CDC China Outreach

(b)(5)
(b)(5) The announcement is here. CDC Announces Negative COVID-19 Test Requirement from Air Passengers Entering the United States from the People's Republic of China | CDC Online Newsroom | CDC

From: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Sent: Tuesday, December 27, 2022 7:29 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

Dear Sherri:
Happy to help.
Kind regards,
Will

Get Outlook for iOS

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Tuesday, December 27, 2022 7:05:30 PM
To: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>; Walke, Henry

(CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>
Subject: Follow up, re: CDC China Outreach

(b)(5)

(b)(5) Thank you

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Thu, 29 Dec 2022 18:24:35 +0000
To: Schluter, W. William (CDC/DDPHSIS/CGH/OD); Berger, Sherri (CDC/OD/OCS)
Cc: Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT); Shell, Ursula (CDC/OD/OCS); Bartee, Brad Allen (CDC/OD/OCS); Yee, Sue Lin (CDC/DDPHSIS/CGH/DGHP)
Subject: Re: Follow up, re: CDC China Outreach

Thanks Will

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
Get Outlook for Android
From: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Sent: Thursday, December 29, 2022 1:21:16 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Shell, Ursula (CDC/OD/OCS) <nka7@cdc.gov>; Bartee, Brad Allen (CDC/OD/OCS) <yxa0@cdc.gov>; Yee, Sue Lin (CDC/DDPHSIS/CGH/DGHP) <sby9@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

Dear Sherri/Henry:

(b)(5)

Kind regards,
Will
From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Wednesday, December 28, 2022 6:37 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Cc: Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Shell, Ursula (CDC/OD/OCS) <nka7@cdc.gov>; Bartee, Brad Allen (CDC/OD/OCS) <yxa0@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

(b)(5)
Will, great for you to join if we are able to schedule.
Thanks
From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Wednesday, December 28, 2022 6:04:46 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>; Shell, Ursula (CDC/OD/OCS) <nka7@cdc.gov>; Bartee, Brad Allen (CDC/OD/OCS) <yxa0@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

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Sent: Wednesday, December 28, 2022 6:03 PM
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Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

Sounds good to me, thx

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
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From: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Sent: Wednesday, December 28, 2022 6:01:56 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

Dear Henry:
(b)(5) oes that sound ok?
Will

Get Outlook for iOS
From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Wednesday, December 28, 2022 5:57:41 PM
To: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Tomlinson, Hank (CDC/DDPHSIS/CGH/DGHT) <hjg7@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

+ Hank

Sent via the Samsung Galaxy S22 5G, an AT&T 5G smartphone
Get Outlook for Android
From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Wednesday, December 28, 2022 4:49:56 PM
To: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Cc: Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Subject: RE: Follow up, re: CDC China Outreach

(b)(5)
(b)(5) The announcement is here. CDC Announces Negative COVID-19 Test Requirement from Air Passengers Entering the United States from the People's Republic of China | CDC Online Newsroom | CDC

From: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>
Sent: Tuesday, December 27, 2022 7:29 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>
Subject: Re: Follow up, re: CDC China Outreach

Dear Sherri:
Happy to help.
Kind regards,
Will

Get Outlook for iOS

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Tuesday, December 27, 2022 7:05:30 PM
To: Schluter, W. William (CDC/DDPHSIS/CGH/OD) <wbs8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Walensky, Rochelle (CDC/OD) <aux7@cdc.gov>
Subject: Follow up, re: CDC China Outreach

(b)(5)

(b)(5) Thank you

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 23:22:41 +0000
To: Stolp, Amber (CDC/DDID/NCEZID/DGMQ); Thaker, Kaytna (CDC/DDID/NCEZID/DGMQ); Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ); Walters, Justine (CDC/OCOO/OGC); Misrahi, James J. (CDC/OCOO/OGC); Charles, Julia (CDC/DDID/NCEZID/DGMQ); Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ); Sood, Neha Jaggi (CDC/DDID/NCEZID/DGMQ)
Subject: Re: FOR REVIEW: China Order Attestation

Looks ok. No changes from me. Thanks Amber

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Stolp, Amber (CDC/DDID/NCEZID/DGMQ) <wmg9@cdc.gov>
Sent: Wednesday, December 28, 2022 5:28:30 PM
To: Thaker, Kaytna (CDC/DDID/NCEZID/DGMQ) <xxb4@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Walters, Justine (CDC/OCOO/OGC) <uee0@cdc.gov>; Misrahi, James J. (CDC/OCOO/OGC) <zmr0@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Sood, Neha Jaggi (CDC/DDID/NCEZID/DGMQ) <mtq6@cdc.gov>
Subject: FOR REVIEW: China Order Attestation

Hi all –

Please see the draft attestation for your review. (b)(5)

(b)(5)

ATTACHMENT A-Proof of Negative Covid-19 Test Result or Documentation of Recovery for Air Passengers from the People's Republic Of China.docx

Thanks,
Amber

From: Walke, Henry (CDC/DDPHSIS/CPR/OD)
Sent: Wed, 28 Dec 2022 20:08:14 +0000
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ); Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ); Lubar, Debra (CDC/DDID/NCEZID/OD); Berger, Sherri (CDC/OD/OCS); Brown, Tiffany J. (CDC/OD/OCS)
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ); Rotz, Lisa (CDC/DDID/NCEZID/DGMQ); Charles, Julia (CDC/DDID/NCEZID/DGMQ); Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO)
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

Looks good. Ready to share with HHS?

From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Wednesday, December 28, 2022 2:43 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Brown, Tiffany J. (CDC/OD/OCS) <iji3@cdc.gov>
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

Henry, here is a revision, approved by OGC.

(b)(5)

Nicky.

From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ)
Sent: Wednesday, December 28, 2022 1:56 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) ccf6@cdc.gov; Walke, Henry (CDC/DDPHSIS/CPR/OD) hfw3@cdc.gov; Lubar, Debra (CDC/DDID/NCEZID/OD) dpl9@cdc.gov; Berger, Sherri (CDC/OD/OCS) sob8@cdc.gov; Brown, Tiffany J. (CDC/OD/OCS) iji3@cdc.gov
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) gqw6@cdc.gov; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) ler8@cdc.gov; Charles, Julia (CDC/DDID/NCEZID/DGMQ) yyb1@cdc.gov; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) hgq2@cdc.gov
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

(b)(5)

Nicky.

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Wednesday, December 28, 2022 1:50 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Brown, Tiffany J. (CDC/OD/OCS) <iji3@cdc.gov>
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

Agree with Henry regarding the blurb

Cindy R. Friedman, MD
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
National Center for Emerging Zoonotic and Infectious Diseases
Centers for Disease Control and Prevention
Atlanta, GA 30329

T: 404-639-1430\ C: 470-487-4373

From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Wednesday, December 28, 2022 1:49 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Brown, Tiffany J. (CDC/OD/OCS) <iji3@cdc.gov>
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

Informational. I thought (b)(5)

(b)(5)

(b)(5)

From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Wednesday, December 28, 2022 1:41 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Brown, Tiffany J. (CDC/OD/OCS) <iji3@cdc.gov>
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

Updated THN is attached. We revised the blurb with OGC so it now reads as follows:

(b)(5)

Thanks,
Nicky.

From: Walke, Henry (CDC/DDPHSIS/CPR/OD) hfw3@cdc.gov
Sent: Wednesday, December 28, 2022 1:17 PM
To: Lubar, Debra (CDC/DDID/NCEZID/OD) dpl9@cdc.gov; Berger, Sherri (CDC/OD/OCS) sob8@cdc.gov; Brown, Tiffany J. (CDC/OD/OCS) iji3@cdc.gov
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) gqw6@cdc.gov; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) ccf6@cdc.gov; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) ler8@cdc.gov; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) hei1@cdc.gov; Charles, Julia (CDC/DDID/NCEZID/DGMQ) yyb1@cdc.gov; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) hgq2@cdc.gov
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

THN looks good. Will send to Angela after OGC clearance

From: Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>
Sent: Wednesday, December 28, 2022 1:06 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>; Brown, Tiffany J. (CDC/OD/OCS) <iji3@cdc.gov>
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ)

<yyb1@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

OK…Julia/Nicky, can you let Henry know when OGC has cleared, as well?

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Wednesday, December 28, 2022 12:55 PM
To: Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Brown, Tiffany J. (CDC/OD/OCS) <iji3@cdc.gov>
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Subject: Re: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

Thanks. I don't need to clear
Henry should confirm (b)(5)
Adding @Brown, Tiffany J. (CDC/OD/OCS) for awareness as well
Thanks

From: Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>
Sent: Wednesday, December 28, 2022 12:50:29 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

Sherri, here' the THN level 2 (attached and linked) for your approval and then transmittal. OGC is reviewing as well.

From: Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Sent: Wednesday, December 28, 2022 12:44 PM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

Nothing additional from me. Thanks for the opportunity to review.
Deb do you want to send to Sherri after your review?

Sara
Office Phone: 404-639-0879 | Mobile Phone: 404-772-9348

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Wednesday, December 28, 2022 12:40 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon

Just a note to say that—as I'm sure you've guessed—is on a very tight timeline. Can you let us know ASAP?

Adding Henry and Lisa so they know it's moving.

From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Wednesday, December 28, 2022 12:37 PM
To: Lubar, Debra (CDC/DDID/NCEZID/OD) <dpl9@cdc.gov>; Vagi, Sara J. (CDC/DDPHSIS/CPR/DEO) <hgq2@cdc.gov>
Cc: Shockey, Caitlin E. (CDC/DDID/NCEZID/DGMQ) <gqw6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: For urgent review: China L2 THN (Close Hold) -- for likely posting this afternoon
Importance: High

Sara, Deb,

The THN h (b)(5) and will likely post this afternoon. Could you please clear this version and share with Sherri?

(b)(5)

OGC is reviewing the topline blurb simultaneously.

Level 2_THN_China_12.28.2022_clean.docx

Thanks,
Nicky.

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 00:01:32 +0000
To: Berger, Sherri (CDC/OD/OCS)
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ); Jernigan, Daniel B. (CDC/DDPHSS/OD)
Subject: RE: Getting China Questions

Will do. thanks.

From: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Sent: Tuesday, December 27, 2022 7:00 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>
Subject: RE: Getting China Questions

(b)(5)

Sherri A. Berger, MSPH
Chief of Staff
Centers for Disease Control and Prevention
404-213-8392 cell
sberger@cdc.gov

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Tuesday, December 27, 2022 6:54 PM
To: Berger, Sherri (CDC/OD/OCS) <sob8@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>
Subject: FW: Getting China Questions

Hi Sherri,

(b)(5)

L

From: Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Sent: Tuesday, December 27, 2022 6:51 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>
Cc: Houry, Debra E. (CDC/DDNID/NCIPC/OD) <vjz7@cdc.gov>
Subject: Getting China Questions

State has upped the Travel Advisory for China to Level 3 due to “arbitrary enforcement of local laws and COVID-19 restrictions”. (b)(5)

Get Outlook for iOS

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Wed, 28 Dec 2022 00:01:16 +0000
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: RE: Getting China Questions

done

From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Tuesday, December 27, 2022 6:53 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Subject: RE: Getting China Questions

(b)(5)

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Tuesday, December 27, 2022 6:52 PM
To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: FW: Getting China Questions

(b)(5)

From: Butler, Jay C. (CDC/DDID/OD) <jcb3@cdc.gov>
Sent: Tuesday, December 27, 2022 6:51 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Jernigan, Daniel B. (CDC/DDPHSS/OD) <dbj0@cdc.gov>
Cc: Houry, Debra E. (CDC/DDNID/NCIPC/OD) <vjz7@cdc.gov>
Subject: Getting China Questions

State has upped the Travel Advisory for China to Level 3 due to “arbitrary enforcement of local laws and COVID-19 restrictions”. (b)(5)

Get Outlook for iOS

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Mon, 26 Dec 2022 18:39:03 +0000
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ); Walke, Henry (CDC/DDPHSIS/CPR/OD); Charles, Julia (CDC/DDID/NCEZID/DGMQ)
Subject: Re: IM slides_predeparture testing_final.pptx

Prob not in time for 4pm call (b)(5)

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 12:37:28 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

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Centers for Disease Control and Prevention
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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 1:36 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: IM slides_predeparture testing_final.pptx

(b)(5)

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 12:28:41 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

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From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 1:22 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Right, (b)(5)

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 1:20 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: IM slides_predeparture testing_final.pptx

(b)(5)

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 1:17:09 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: Re: IM slides_predeparture testing_final.pptx

(b)(5)

(b)(5)

Lisa Rotz MD
Acting Director,
Division of Global Migration and Quarantine, CDC

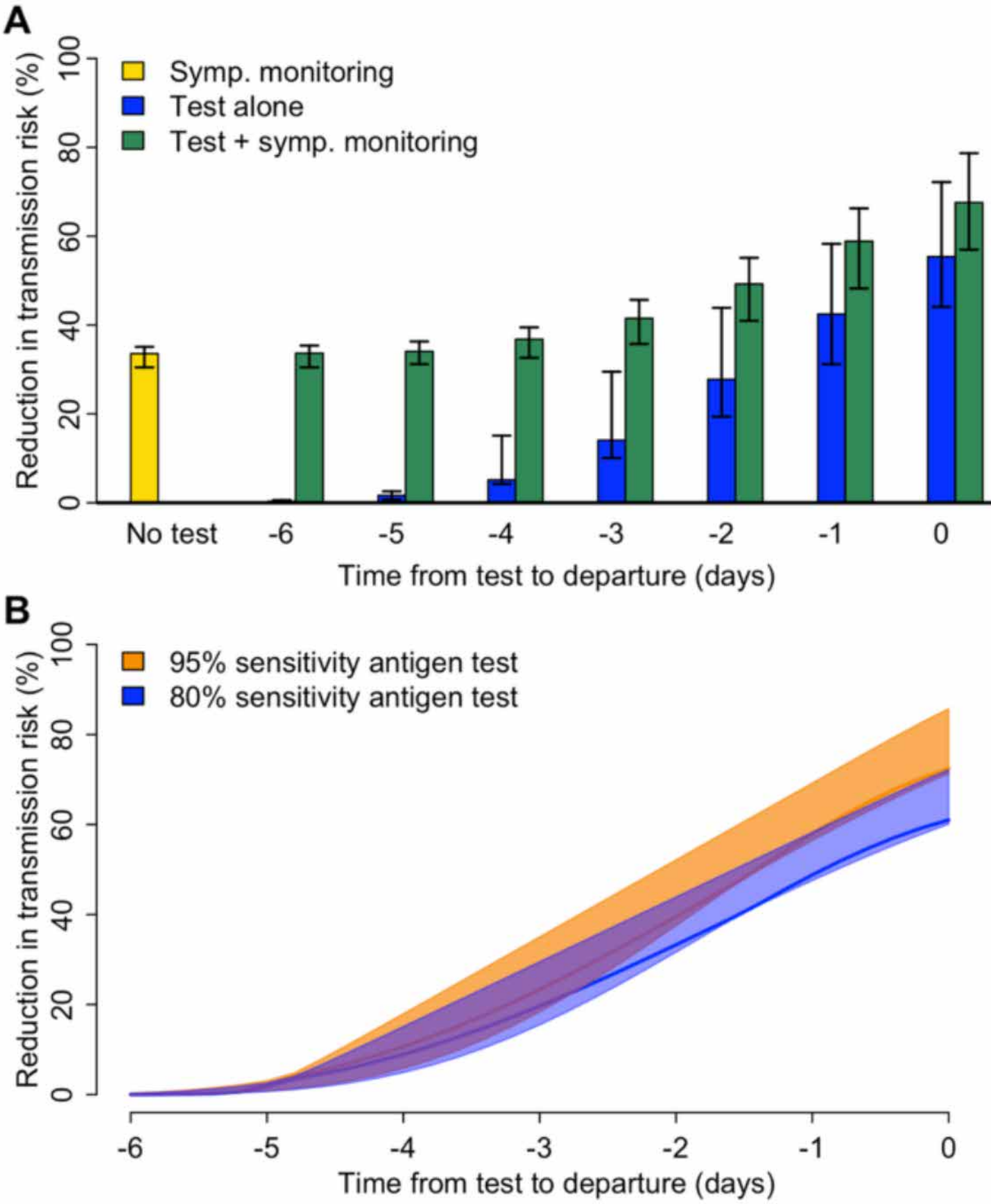
From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 12:07:08 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

Fig. 3


A
Reduction in transmission risk (%)
0
20
40
60
80
100
Symp. monitoring
Test alone
Test + symp. monitoring
No test
-6
-5
-4
-3
-2
-1
0
Time from test to departure (days)
B
Reduction in transmission risk (%)
0
20
40
60
80
100
95% sensitivity antigen test
80% sensitivity antigen test
-6
-5
-4
-3
-2
-1
0
Time from test to departure (days)

Reductions in SARS-CoV-2 transmission during travel. **a** Reduction in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel, stratified by method of risk reduction. Individuals developing symptoms are assumed to be isolated and therefore do not travel. **b** Reductions in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel comparing the antigen assays with 80% and 95% sensitivity. Ranges indicate uncertainty from the different infectiousness models

---

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 1:01 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

This page has what you want

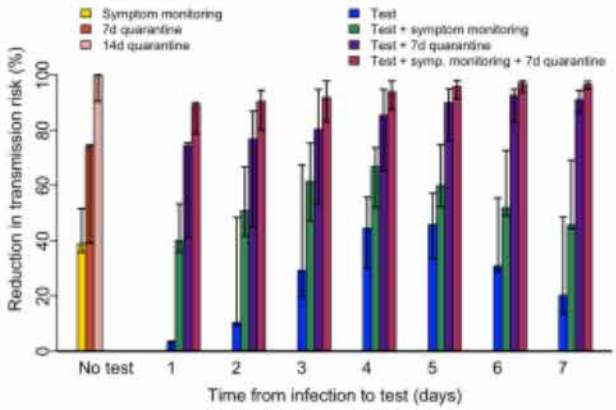


Fig. 2 Reductions in total average SARS-CoV-2 transmission risk after infection at a known high-risk exposure time (day 0) without considering travel. Transmission risk reductions are stratified by method of risk reduction including symptom monitoring, quarantine (7 or 14 days), and testing (test on days 1–7). Symptom monitoring is assumed to be ongoing regardless of the test date when implemented and either symptom onset or a positive test result is assumed to result in immediate isolation until the individual is no longer infectious. The bars represent the median estimates and the error bars show the ranges (minima and maxima) across the different infectiousness curves and test positivity curves (when testing was included)

effective at detecting infections; later testing means that while the test was more likely to be positive, the infectious period may begin prior to the test, leading to a smaller reduction in risk.

Combining symptom monitoring or quarantine with testing provided added benefit, leading to increased risk reduction, especially with a test at day 3–5 post-exposure with symptom monitoring (47–75% reduction with 30% never symptomatic or 39–73% with 50% never symptomatic) or a test at day 5–7 with a 7-day quarantine (76–95% reduction). A 7-day quarantine with symptom monitoring and a test at day 5–7 further increased the lower bound of likely risk reduction to 91–98% (with 30% never symptomatic, 86–97% with 50% never symptomatic). The effect of moderately different assumptions related to the proportion of infections that never result in symptoms had minimal impacts when symptom monitoring was combined with testing or quarantine, we therefore use the 30% value for this parameter in the following analyses.

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

We assessed the impact of test sensitivity relative to timing by comparing the antigen-type test model to the same model with higher sensitivity. With the same time-specific pattern but different sensitivity (80% vs. 95%, Fig. 3b), the higher sensitivity test gives a higher reduction in transmission risk if used at the same time. However, the importance of sensitivity is intertwined with timing. The lower sensitivity test was as effective or more effective than a higher sensitivity test if it was performed closer to the time of travel. For example, the test with 80% sensitivity performed 1 day prior to departure was 47–58% effective at reducing transmission risk during travel, while the test with 95% sensitivity performed 3 days prior to departure was 18–35% effective.

Transmission risk after travel

We then considered measures to reduce the risk of SARS-CoV-2 introduction to the destination location from travelers, i.e., transmission risk after traveling (Fig. 4). Assuming infection occurs at an unknown time within a 7-day exposure period prior to arrival (i.e., including possible infection while traveling), a single test on its own was most effective when performed 1- or 2-days post-arrival (29–53% and 29–51% reduction in transmission risk, respectively). This reduction in introduction risk was higher than reductions generated by

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From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 12:49 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Thank you, is it your impression i (b)(5)

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 12:46 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 12:42 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Cc: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Julia,

(b)(6) Can you work with Cindy to get the BLUF answer for Nancy K. question to add to the Sherri doc? (b)(5)

(b)(5)

(b)(5)

L

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Monday, December 26, 2022 12:30 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Cc: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: FW: IM slides_predeparture testing_final.pptx

Resending this to the top of your email box Henry. (b)(5)

(b)(5)

(b)(5) Cindy can confirm.

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Thursday, December 22, 2022 10:48 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: IM slides_predeparture testing_final.pptx

Henry,

Here are the slides from IM and an abstract for an upcoming mtg that is 90% cleared.

I would just highlight that (b)(5)

(b)(5)

Cindy

Cindy R. Friedman, MD
Chief, Travelers' Health Branch
Division of Global Migration and Quarantine
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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Mon, 26 Dec 2022 20:17:59 +0000
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ); Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ); Charles, Julia (CDC/DDID/NCEZID/DGMQ); Walke, Henry (CDC/DDPHSIS/CPR/OD)
Subject: Re: IM slides_predeparture testing_final.pptx

It just references the changes and shift to self testing. Copied and pasted txt for that part below.

Demand for rapid antigen test kits has surged in China as authorities have eased zero-Covid rules, shifting away from mass testing, lockdowns and centralised quarantine. In the past week, the country has largely abandoned PCR test requirements for public places and offices but some people still needed to be tested, such as people working in crowded environments, medical facilities and homes for the elderly. According to the National Health Commission, these people can now do a rapid test at home and report any positive results to health authorities.

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From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Monday, December 26, 2022 1:39:53 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
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Can you read the whole article?

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 2:38 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
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https://amp.scmp.com/news/china/politics/article/3202828/chinas-zero-covid-rules-ease-demand-surges-rapid-tests-and-medication

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From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Monday, December 26, 2022 1:24:38 PM

To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
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Agree. We need to find out (b)(5)

(b)(5)

Nicky.

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 2:20 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
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(b)(5)

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From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Monday, December 26, 2022 1:13:25 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
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(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 2:11 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
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(b)(5)

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From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ)
Sent: Monday, December 26, 2022 2:06 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

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From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Monday, December 26, 2022 2:03 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
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(b)(5)

Nicky.

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 1:56 PM

To: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
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(b)(5)

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From: Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Sent: Monday, December 26, 2022 1:43 PM
To: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Thanks, Nicky!

Henry, are you tracking what needs to go to into the paper?

From: Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
Sent: Monday, December 26, 2022 1:41 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

(b)(5)

Nicky.

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 1:23 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ)

<yyb1@cdc.gov>; Cohen, Nicole (Nicky) (CDC/DDID/NCEZID/DGMQ) <hei1@cdc.gov>
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Adding Nicky

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From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>
Sent: Monday, December 26, 2022 12:17:09 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
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(b)(5)

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From: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
Sent: Monday, December 26, 2022 12:07:08 PM
To: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
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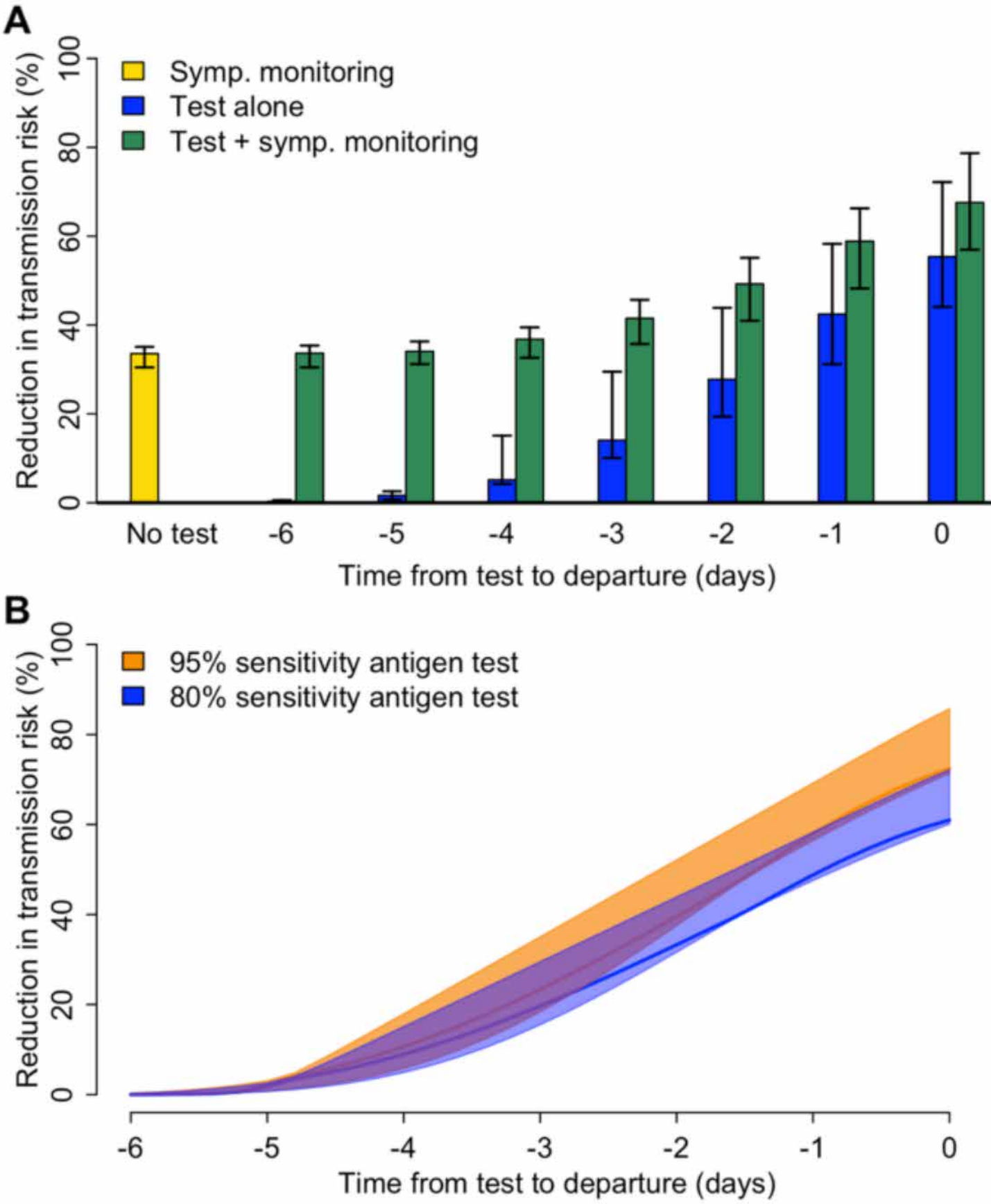
(b)(5)

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected

closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

Fig. 3


A
Reduction in transmission risk (%)
0
20
40
60
80
100
Symp. monitoring
Test alone
Test + symp. monitoring
No test
-6
-5
-4
-3
-2
-1
0
Time from test to departure (days)
B
Reduction in transmission risk (%)
0
20
40
60
80
100
95% sensitivity antigen test
80% sensitivity antigen test
-6
-5
-4
-3
-2
-1
0
Time from test to departure (days)

Reductions in SARS-CoV-2 transmission during travel. **a** Reduction in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel, stratified by method of risk reduction. Individuals developing symptoms are assumed to be isolated and therefore do not travel. **b** Reductions in transmission risk during a 1-day trip assuming a 7-day exposure window prior to travel comparing the antigen assays with 80% and 95% sensitivity. Ranges indicate uncertainty from the different infectiousness models

---

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
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To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
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This page has what you want

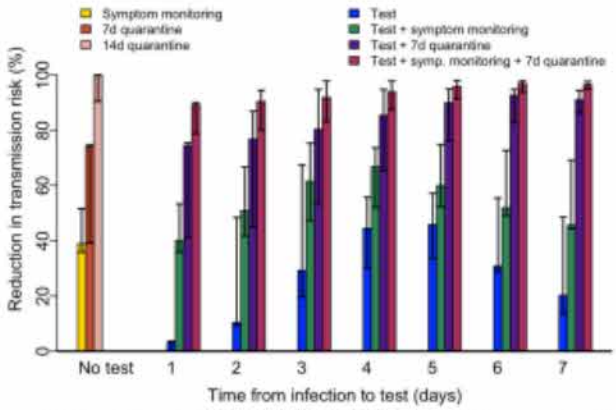

Fig. 2 Reductions in total average SARS-CoV-2 transmission risk after infection at a known high-risk exposure time (day 0) without considering travel. Transmission risk reductions are stratified by method of risk reduction including symptom monitoring, quarantine (7 or 14 days), and testing (test on days 1–7). Symptom monitoring is assumed to be ongoing regardless of the test date when implemented and either symptom onset or a positive test result is assumed to result in immediate isolation until the individual is no longer infectious. The bars represent the median estimates and the error bars show the ranges (minima and maxima) across the different infectiousness curves and test positivity curves (when testing was included)

effective at detecting infections; later testing means that while the test was more likely to be positive, the infectious period may begin prior to the test, leading to a smaller reduction in risk.

Combining symptom monitoring or quarantine with testing provided added benefit, leading to increased risk reduction, especially with a test at day 3–5 post-exposure with symptom monitoring (47–75% reduction with 30% never symptomatic or 39–73% with 50% never symptomatic) or a test at day 5–7 with a 7-day quarantine (76–95% reduction). A 7-day quarantine with symptom monitoring and a test at day 5–7 further increased the lower bound of likely risk reduction to 91–98% (with 30% never symptomatic, 86–97% with 50% never symptomatic). The effect of moderately different assumptions related to the proportion of infections that never result in symptoms had minimal impacts when symptom monitoring was combined with testing or quarantine, we therefore use the 30% value for this parameter in the following analyses.

Transmission risk during travel

To assess approaches for reducing risk of transmission while traveling, we assumed that exposure may have occurred at any time in the 7 days prior to departure and assessed reductions in transmission risk over a 1-day period following departure. Isolating individuals at the time of symptom onset prior to or during travel resulted in a 30–35% reduction in risk (Fig. 3a). Testing resulted in the greatest reduction of risk when the specimen was collected closest to the time of travel. Testing 3 days prior to travel resulted in a 10–29% reduction in transmission risk compared to a 44–72% reduction with testing on the day of travel. This was also true for testing combined with symptom monitoring, which had higher overall reductions.

We assessed the impact of test sensitivity relative to timing by comparing the antigen-type test model to the same model with higher sensitivity. With the same time-specific pattern but different sensitivity (80% vs. 95%, Fig. 3b), the higher sensitivity test gives a higher reduction in transmission risk if used at the same time. However, the importance of sensitivity is intertwined with timing. The lower sensitivity test was as effective or more effective than a higher sensitivity test if it was performed closer to the time of travel. For example, the test with 80% sensitivity performed 1 day prior to departure was 47–58% effective at reducing transmission risk during travel, while the test with 95% sensitivity performed 3 days prior to departure was 18–35% effective.

Transmission risk after travel

We then considered measures to reduce the risk of SARS-CoV-2 introduction to the destination location from travelers, i.e., transmission risk after traveling (Fig. 4). Assuming infection occurs at an unknown time within a 7-day exposure period prior to arrival (i.e., including possible infection while traveling), a single test on its own was most effective when performed 1- or 2-days post-arrival (29–53% and 29–51% reduction in transmission risk, respectively). This reduction in introduction risk was higher than reductions generated by

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Sent: Monday, December 26, 2022 12:49 PM
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Thank you, (b)(5)

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Monday, December 26, 2022 12:46 PM
To: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
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Cc: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Subject: RE: IM slides_predeparture testing_final.pptx

Julia,

(b)(6) Can you work with Cindy to get the BLUF answer for Nancy K. question to add to the Sherri doc? (b)(5)

(b)(5)

(b)(5)

L

From: Rotz, Lisa (CDC/DDID/NCEZID/DGMQ)
Sent: Monday, December 26, 2022 12:30 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>
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Resending this to the top of your email box Henry. (b)(5)
(b)(5)
(b)(5) Cindy can confirm.

(b)(5)

From: Friedman, Cindy R. (CDC/DDID/NCEZID/DGMQ) <ccf6@cdc.gov>
Sent: Thursday, December 22, 2022 10:48 PM
To: Walke, Henry (CDC/DDPHSIS/CPR/OD) <hfw3@cdc.gov>; Rotz, Lisa (CDC/DDID/NCEZID/DGMQ) <ler8@cdc.gov>; Charles, Julia (CDC/DDID/NCEZID/DGMQ) <yyb1@cdc.gov>
Subject: IM slides_predeparture testing_final.pptx

Henry,

Here are the slides from IM and an abstract for an upcoming mtg that is 90% cleared.

I would just highlight that we should (b)(5)

(b)(5)

Cindy

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