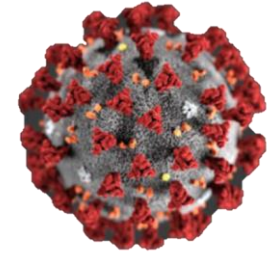


New Hampshire Coronavirus Disease 2019 Weekly Call for Healthcare Providers and Public Health Partners



April 8, 2021

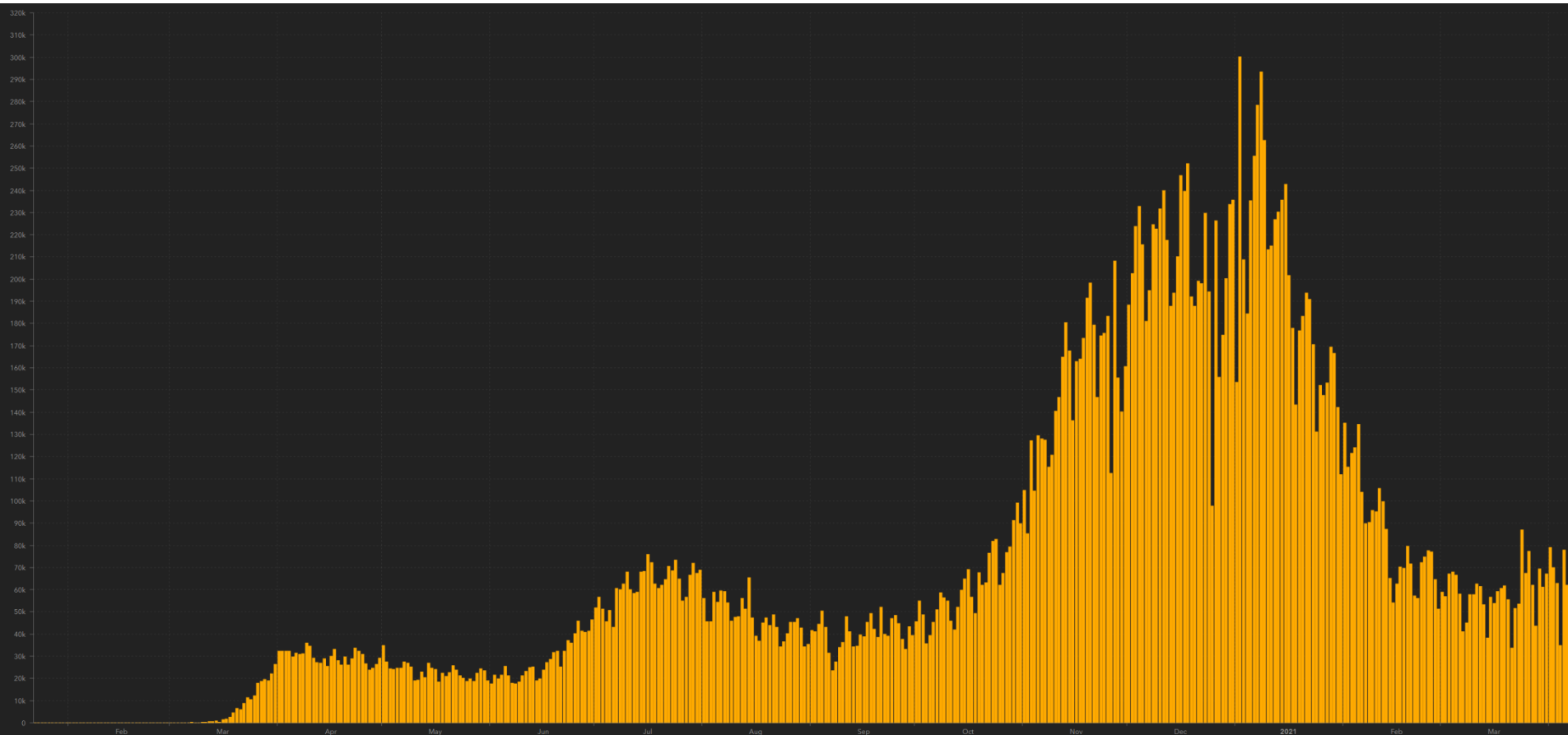
*Ben Chan
Elizabeth Talbot
Beth Daly
Lindsay Pierce*

Thursday noon-time partner calls will focus on science, medical, and vaccine updates geared towards our healthcare partners

Agenda

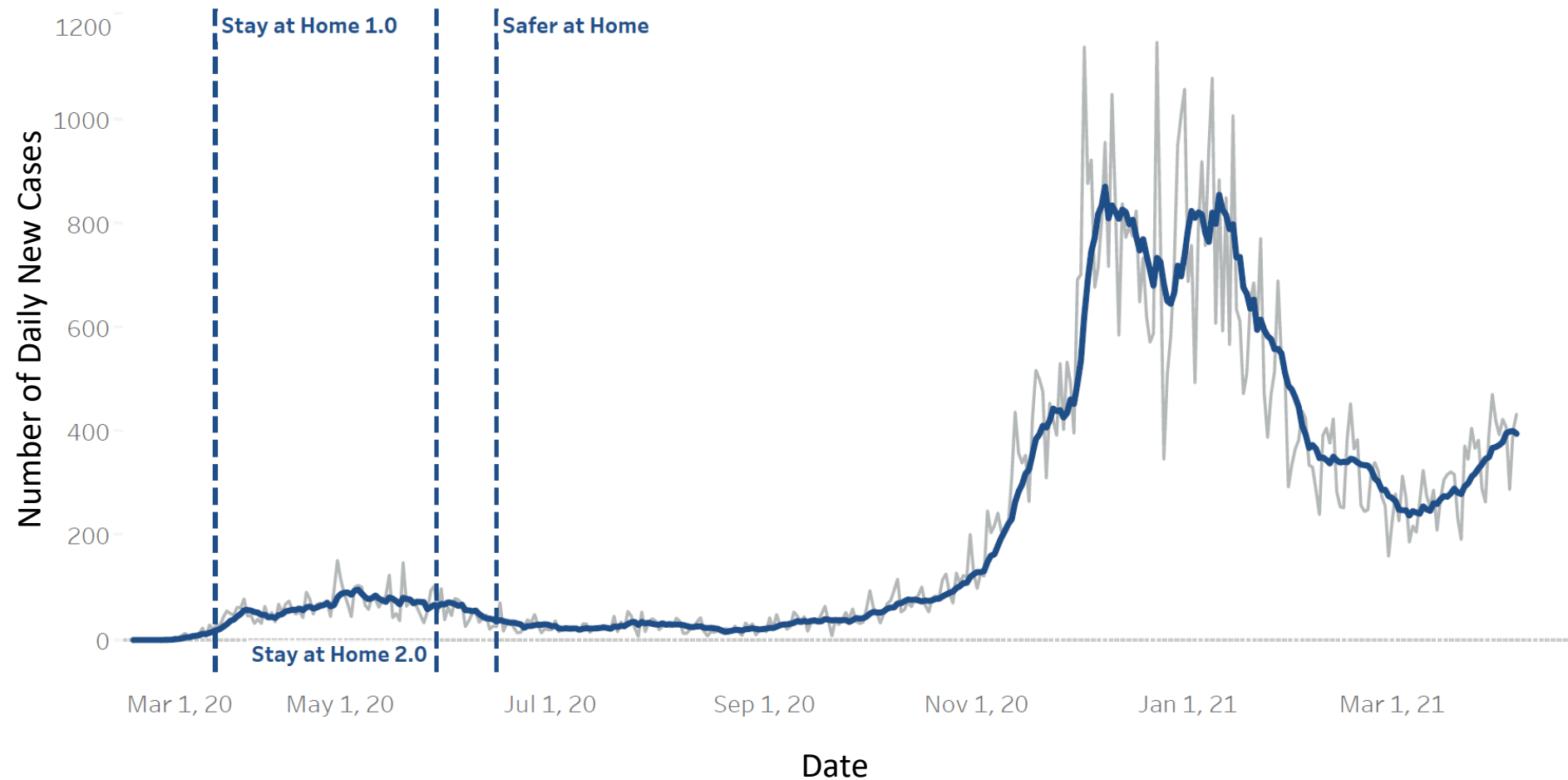
- Epidemiology Update
- HAN #39: A variety of COVID-19 topics
- Pregnancy, COVID-19, and Vaccination
- Questions & Answers (Q&A)

National Daily Incidence of COVID-19



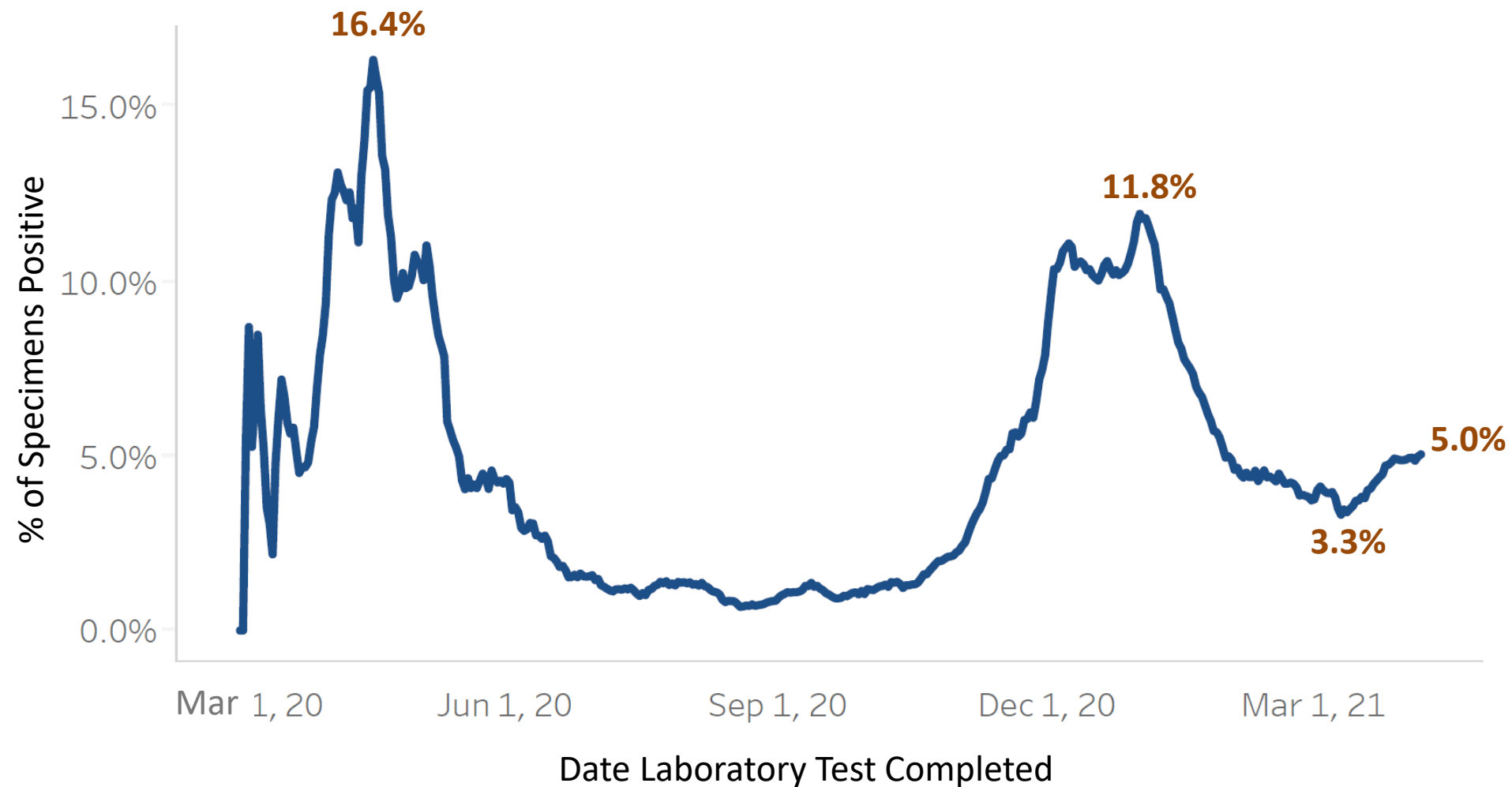
- More than 30.9 million cumulative cases in the U.S. (23% of all global infections)
- More than 559,000 deaths in the U.S. from COVID-19 (19% of all global deaths)

Number of New COVID-19 Cases per Day in NH

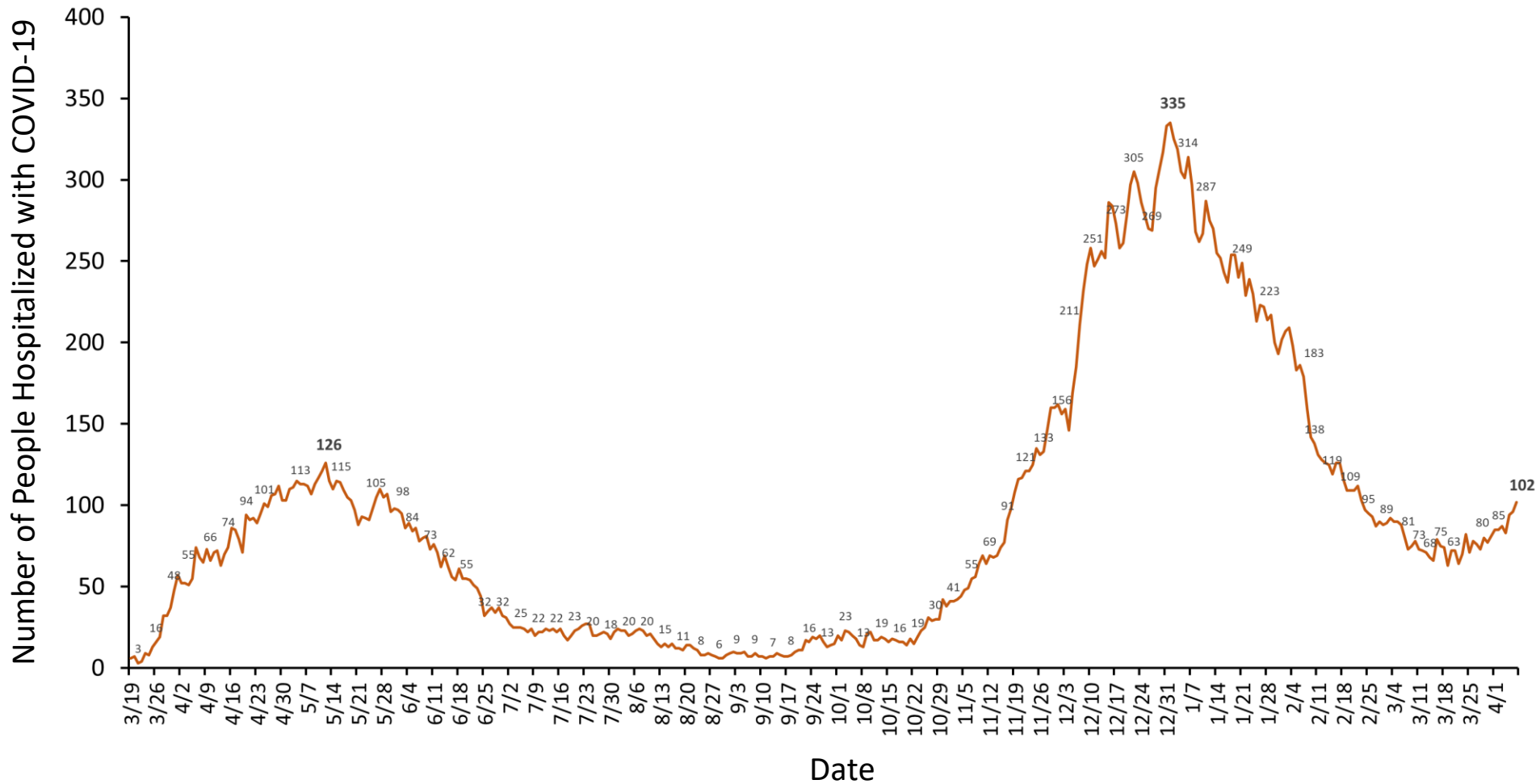


<https://www.nh.gov/covid19/dashboard/overview.htm#dash>

% of Tests (Antigen and PCR) Positive for COVID-19 (7-Day Average)



Number of People Hospitalized with COVID-19 Each Day in NH (Hospital Census)

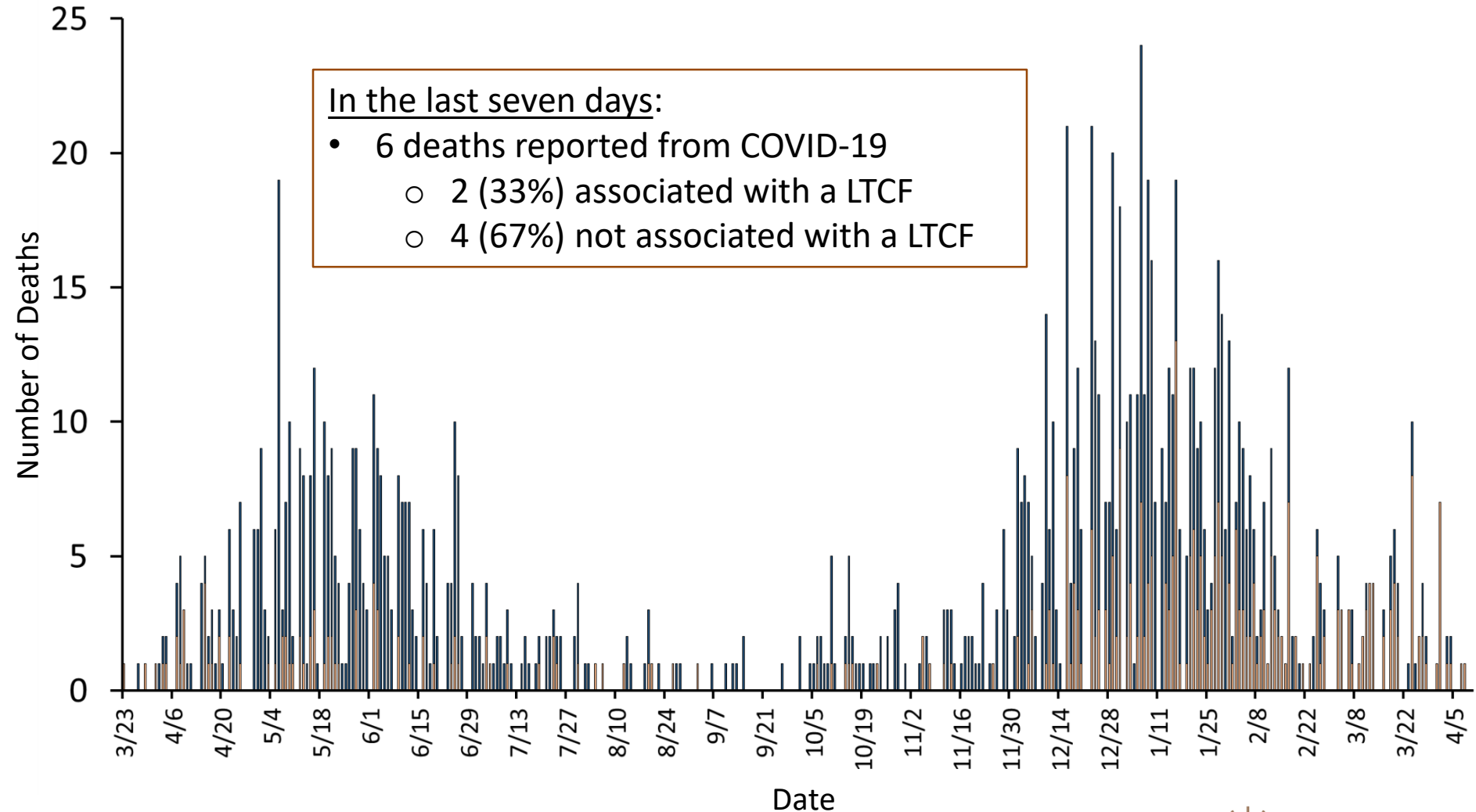


Number of COVID-19 Deaths in NH by Report Date

■ Non-LTCF Associated ■ LTCF Associated

In the last seven days:

- 6 deaths reported from COVID-19
 - 2 (33%) associated with a LTCF
 - 4 (67%) not associated with a LTCF



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Distributed by the NH Health Alert Network
Health.Alert@nh.gov
April 8, 2021 Time 1130 (11:30 AM EDT)
NH-HAN 20210408



Coronavirus Disease 2019 (COVID-19) Outbreak, Update # 39 *Various Topics and Updated Partner Call Schedule*

- Phase 3 COVID-19 vaccination allows anybody 16 years of age and older to be vaccinated. A provider medical verification form is NOT required for anybody
- The US FDA updated their Moderna vaccine EUA: allows 15 dose vials, and relaxes some of the storage and handling requirements (Fact Sheets have also been updated)
- COVID-19 monoclonal antibody therapy update (See NIH and IDSA guidelines; DHHS no longer involved in allocation)
- New COVID-19 Case Report Form providers should use to report new infections
- Partner call schedule changes



Agenda

Current epidemiology

HAN 39

COVID pregnancy impact

Vaccine response in pregnancy

Vaccine safety in pregnancy

AstraZeneca update

ACOG Recommendation Language

- When they meet criteria for receipt of vaccine, ACOG recommends COVID-19 vaccine
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COVID-19 Increased in Pregnancy

- 240 pregnant COVID-19 patients at 35 healthcare systems Mar 1-Jun 30, 2020
- Rate of COVID was 13.9/1000 deliveries, compared with 7.3 of 1,000 state residents aged 20 to 39 years (rate ratio [RR], 1.7)
 - After excluding 45 cases detected through asymptomatic screening, infection rate in pregnant women fell to 11.3 per 1,000 cases (RR, 1.3)
- Pregnant women in WA were infected with COVID-19 at 70% higher rate than others of similar ages, with nonwhite women disproportionately burdened

Higher severe acute respiratory syndrome coronavirus 2 infection rate in pregnant patients


[Erica M. Lokken, PhD, MS](#) • [G. Gray Taylor, BA](#) • [Emily M. Huebner, MS](#) • ... [Sylvia M. LaCourse, MD, MPH](#) • [Kristina M. Adams Waldorf, MD](#)   • On behalf of the Washington COVID-19 in Pregnancy Collaborative •

[Show all authors](#)

Published: February 16, 2021 • DOI: <https://doi.org/10.1016/j.ajog.2021.02.011>

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A pregnant woman is shown from the waist up, wearing a black long-sleeved top and grey pants. She is standing outdoors, with her right hand resting on her pregnant belly. The background consists of a stone wall and green grass. A dark grey text box is overlaid on the left side of the image.

Although the overall risk of severe illness is low, pregnant people are at an increased risk for severe illness from COVID-19 when compared to non-pregnant people.

How Much More Dangerous is COVID in Pregnancy?

Systematic review and meta-analysis of observational studies with comparison data on SARS-CoV-2 infection and severity of COVID-19 during pregnancy

- Eligible studies in MEDLINE, Embase, ClinicalTrials.gov, medRxiv and Cochrane databases up to Jan. 29, 2021
- MESH terms and keywords for "severe acute respiratory syndrome coronavirus 2 OR SARS-CoV-2 OR coronavirus disease 2019 OR COVID-19" AND "pregnancy."
- Evaluated methodologic quality of studies using Newcastle-Ottawa Scale
- Primary outcomes preeclampsia, preterm birth
- Secondary outcomes stillbirth, gestational diabetes and other pregnancy outcomes

42 studies involving 438,548 people who were pregnant. Compared with no SARS-CoV-2 infection in pregnancy, COVID-19 was associated with

- Preeclampsia (OR 1.33, 95% CI 1.03 to 1.73)
- Preterm birth (OR 1.82, 95% CI 1.38 to 2.39)
- Stillbirth (OR 2.11, 95% CI 1.14 to 3.90)
- Compared with mild COVID-19, severe COVID-19 was strongly associated with:
 - Preeclampsia (OR 4.16, 95% CI 1.55 to 11.15)
 - Preterm birth (OR 4.29, 95% CI 2.41 to 7.63)
 - Gestational diabetes (OR 1.99, 95% CI 1.09 to 3.64)
 - Low birth weight (OR 1.89, 95% CI 1.14 to 3.12)

Who is at Higher Risk for COVID-19 During Pregnancy?

medRxiv
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Risk factors for illness severity among pregnant women with confirmed SARS-CoV-2 infection – Surveillance for Emerging Threats to Mothers and Babies Network, 20 state, local, and territorial health departments, March 29, 2020 -January 8, 2021

Romeo R. Galang, Suzanne M. Newton, Kate R. Woodworth, Isabel Griffin, Titilope Oduyebo, Christina L. Sancken, Emily O'Malley Olsen, Kathy Aveni, Heather Wingate, Hanna Shephard, Chris Fussman, Zahra S. Alaali, Samantha Siebman, Umme-Aiman Halai, Camille Delgado Lopez, Jerusha Barton, Mamie Lush, Paul H. Patrick, Levi Schlosser, Ayomide Sokale, Ifrah Chaudhary, Bethany Reynolds, Similoluwa Sowunmi, Nicole Gaarenstroom, Jennifer S. Read, Sarah Chicchelly, Leah de Wilde, Eduardo Azziz-Baumgartner, Aron J. Hall, Van T. Tong, Sascha Ellington, Suzanne M. Gilboa,
CDC COVID-19 Response Pregnancy and Infant Linked Outcomes Team

doi: <https://doi.org/10.1101/2021.02.27.21252169>

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

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COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv

Subject Area

Methods

Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET) used to identify PCR+ pregnant women reported Mar 29, 2020 – Jan 8, 2021

Severity of Illness	Description of the surveillance categorization of severity of COVID-19 illness among pregnant women ^a
Critical	Defined as reported with complication of COVID-19: mechanical ventilation/intubation, ECMO, ICU admission, ARDS, respiratory failure, septic shock, or multiple organ dysfunction; COVID-19 listed as a cause of death
Moderate-to-Severe^b	Defined as reported with any of the following, and not meeting criteria for critical illness: <ul style="list-style-type: none">• Symptoms of dyspnea/shortness of breath AND at least one of the following: fever or cough.• Receipt of oxygen therapy by nasal cannula or a high-flow oxygen device, pneumonia• Treatment for COVID-19 with remdesivir, convalescent plasma, hydroxychloroquine + azithromycin, hydroxychloroquine alone. Additional treatments may be included as evidence of disease severity, referring to NIH treatment guidelines.
Mild^c	Defined as symptomatic illness with at least one of the individual symptoms reported, and not meeting criteria for moderate-to-severe or critical illness □
Asymptomatic infection^d	Defined as reported as asymptomatic ^c (not just absence of reported symptoms) and not meeting criteria for mild, moderate-to-severe, or critical illness
Insufficient information	Defined as missing information needed to categorize into asymptomatic infection, mild, moderate-to-severe, or critical illness

^aAdapted from National Institutes of Health

<https://www.covid19treatmentguidelines.nih.gov/overview/clinical-spectrum/> and World Health

Organization <https://www.who.int/publications/i/item/clinical-management-of-covid-19>.

SET-NET COVID-19 Results

10,996 pregnant women

- 5,963 (54.2%) had sufficient data to categorize illness severity and were focus of report

Risk for mod-severe or critical disease

- Age. Compared to <20 years
 - 30-34 years (RR=1.35, 95% CI: 1.03, 1.77)
 - 35-39 years of age (RR=1.44, 95% CI: 1.08, 1.90)
- Obesity (RR=1.32, 95% CI: 1.17, 1.48)
- Chronic lung disease (RR=1.39, 95% CI: 1.16, 1.66)
- Chronic hypertension (RR=1.37, 95% CI: 1.09, 1.74)
- Pregestational DM (RR=1.54, 95% CI: 1.20, 1.98)
- Health worker (RR=1.34, 95% CI: 1.18, 1.53)
- Black/Non-Hispanic race/ethnicity (aRR=1.22, 95% CI: 1.04, 1.43)

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Is Vaccination Effective in Pregnancy?

- Prospective analysis of blood and breast milk of 131 who received 2 mRNA doses Dec 17, 2020 to Mar 2, 2021
 - 84 pregnant: mean gestational age at first dose was 23.2 weeks
 - 13% received 1st dose in 1st, 46% in 2nd, and 40% in 3rd trimester
 - Blood and breast milk samples were collected
 - 31 lactating women
 - 16 nonpregnant participants
- Timing for sampling
 - At first and second vaccine doses
 - 2 to 6 weeks after the second dose
 - At delivery for 13 who gave birth during study
 - Also collected umbilical cord blood at delivery

Vaccination Appears Effective in Pregnancy

Side effects were rare and occurred with similar frequency in all participants, including fever and chills. After first dose

- 32% of pregnant women
- 50% of nonpregnant women

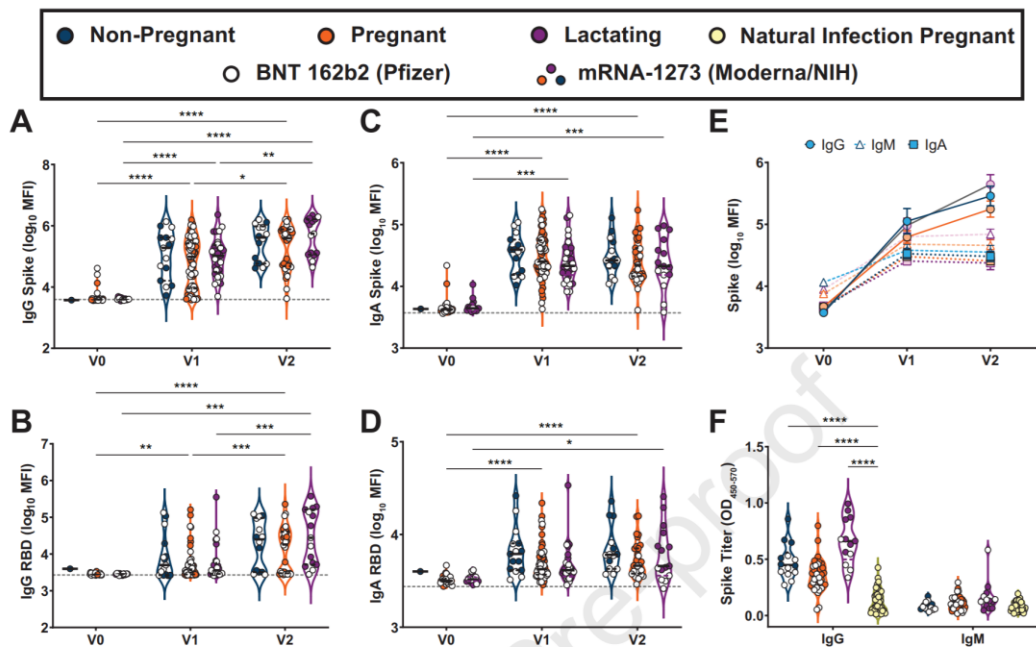
Vaccine-induced antibodies were found in all umbilical cord blood and breast milk samples, indicating transfer of antibodies from mothers to infants

- Antibody levels NS higher in mothers' blood than in umbilical
- Higher levels than natural COVID-19 infection in pregnancy

Second dose increased concentrations of IgG but not IgA

- Mucosal IgA by second dose of Moderna higher than Pfizer

Maternal Vaccination Induces Robust Antibody Response



A-D. Violin plots show the \log_{10} transformed mean fluorescence intensity (MFI) for (A) IgG Spike-, (B) IgG RBD-, (C) IgA Spike-, and (D) IgA RBD-specific titers across V0, V1, and V2 time points collected from non-pregnant reproductive-age (blue), pregnant (orange), or lactating (purple) participants. Participants who received BNT 162b2 from Pfizer/BioNTech are depicted as open circles, and participants who received mRNA-1273 from Moderna/NIH are depicted as closed circles. Differences across timepoints and groups were assessed by repeated measures mixed-effects model followed by posthoc Tukey's multiple comparisons test.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$.

E. Line graph showing the \log_{10} transformed relative Spike-specific titers across V0, V1, and V2 time points collected from non-pregnant (blue), pregnant (orange), or lactating (purple) participants for IgG (circles; solid lines), IgM (open triangles; dashed lines), and IgA (squares; dotted lines).

F. Violin plots show the IgG and IgM Spike-specific titer in non-pregnant (blue), pregnant (orange), lactating (purple), and naturally-infected pregnant (yellow) participants. Participants who received BNT 162b2 from Pfizer/BioNTech are depicted as open circles, and participants who received mRNA-1273 from Moderna/NIH are depicted as closed circles. Differences across groups were assessed by Kruskal-Wallis test followed by posthoc Dunn's multiple comparisons test. **** $p < 0.0001$ compared to natural infection in pregnant women.

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Is Vaccine Safe in Pregnancy?



V-safe as of Mar 29: >69k women who signed up said pregnant at time of vaccination

- ~4,000 of these enrolled in further CDC registry
- [Preliminary CDC report](#) of mRNA V-safe data through mid-Feb "did not indicate any safety problem"

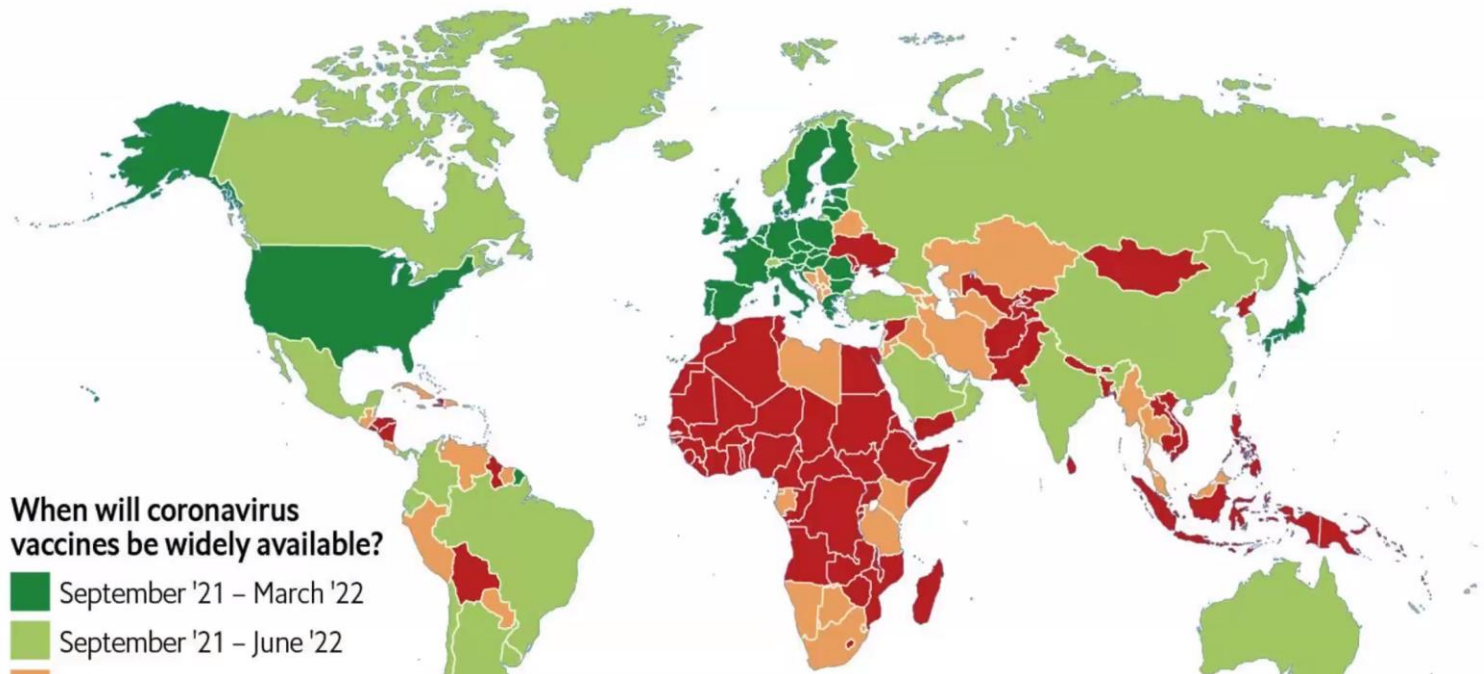
[VAERs](#) pregnancy-specific issues following vaccination aligned with rates of non-pregnant

- "No unexpected pregnancy or infant outcomes have been observed related to COVID-19 vaccination during pregnancy,"

Global Hopes on the AZ Vaccine

- Advantages: can quickly produce, cheap at few dollars/dose and easy to store longterm at refrigerator temps
- Expected dominant worldwide for LMICs
- Manufacturing capacity 3B doses in 2021

Rich countries will get access to coronavirus vaccines earlier than others



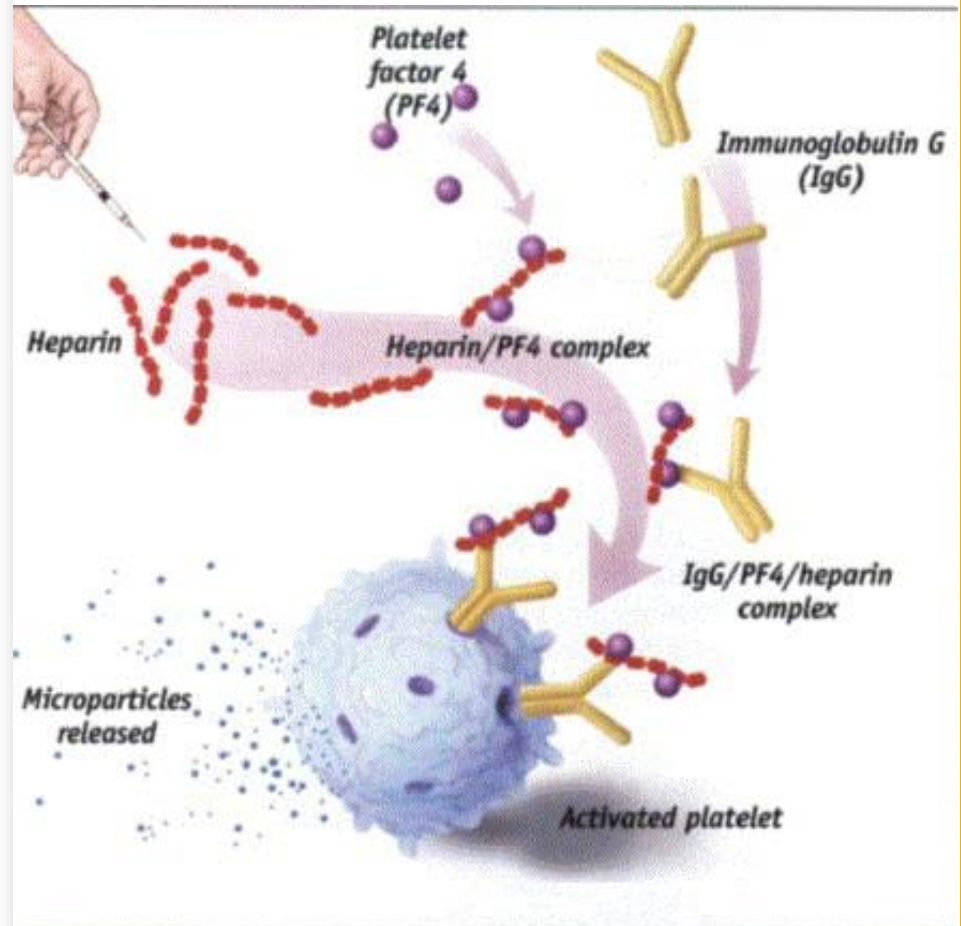
Early March Blood Clot Reports Emerge in AZ Global Rollout As Previously Shown

- Initial report of 7 cases of multiple blood clots and 18 cases of cerebral venous sinus thrombosis (CVST), which have been reported in ~20M recipients
- >20 countries suspended rollout
- EMA preliminary analysis found no association between vaccine and thrombotic events, and no evidence indicates that clotting events were associated with a specific batch
 - Potential association between the vaccine and "very rare cases of blood clots associated with thrombocytopenia," but further analysis is needed

As Previously Shown

Update and Independent Investigation into Pathophysiology

- Two German teams simultaneously announced in PR this week they identified cause
- University of Greifswald: analyzed 13 cases of cerebral venous sinus thrombosis
 - 12 women, all under 55yo
 - Occurred 4-16d after first dose
 - In 4/13 isolated autoantibodies against platelets
 - Completely analogous to [heparin-induced thrombocytopenia \(HIT\)](#)
- Oslo University: analyzed 3 cases; no clotting history
 - Identified autoantibodies



A circular inset on the left side of the slide shows a microscopic view of red blood cells. The cells are numerous, biconcave, and reddish in color, with some showing a central indentation. They are arranged in a dense cluster, with some overlapping. The background is a soft, out-of-focus blue and purple.

April 7 EMA Report

- As of Apr 4, EU surveillance received 169 reports of CVST and 53 reports of splanchnic vein thrombosis among 34M vaccinees
- EMA analyzed 62 cases of CVST and 24 cases of splanchnic vein thrombosis - 18 deaths
 - Most occurred in women within 2w of first dose
- Recommended unusual blood clots with low platelets should be listed as very rare side effects within 2w of vaccination
 - Seek care immediately if they experience symptoms such as shortness of breath, chest, pain, leg swelling, persistent abdominal pain

April 7 MHRA Report

79 cases reported through Mar 31

- 44 CVST with thrombocytopenia and 35 thrombosis of major veins with thrombocytopenia
- Majority were in younger recipients and 58 in women
 - MHRA notes that more women have been vaccinated
- All occurred after first dose, and 19 people died
- 20.2M vaccinated in UK so overall risk of 4 in 1M

Give to people at higher risk of blood clots if benefits outweigh potential risk

Pregnant women should discuss the vaccine decision with their health provider, given known thrombotic risk

WHO statement on AstraZeneca COVID-19 vaccine safety signals

17 March 2021 | Statement | Reading time: Less than a minute (220 words)

Some countries in the European Union have temporarily suspended use of the AstraZeneca COVID-19 vaccine as a precautionary measure based on reports of rare blood coagulation disorders in persons who had received the vaccine. Other countries in the EU – having considered the same information - have decided to continue using the vaccine in their immunization programmes.

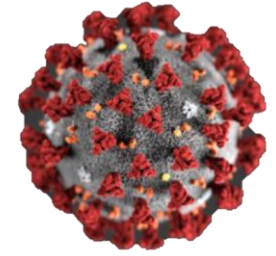
Vaccination against COVID-19 will not reduce illness or deaths from other causes. Thromboembolic events are known to occur frequently. Venous thromboembolism is the third most common cardiovascular disease globally.

In extensive vaccination campaigns, it is routine for countries to signal potential adverse events following immunization. This does not necessarily mean that the events are linked to vaccination itself, but it is good practice to investigate them. It also shows that the surveillance system works and that effective controls are in place.

WHO is in regular contact with the European Medicines Agency and regulators around the world for the latest information on COVID-19 vaccine safety. The WHO COVID-19 Subcommittee of the Global Advisory Committee on Vaccine Safety is carefully assessing the latest available safety data for the AstraZeneca vaccine. Once that review is completed, WHO will immediately communicate the findings to the public.

At this time, WHO considers that the benefits of the AstraZeneca vaccine outweigh its risks and recommends that vaccinations continue.

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