COVID 19- Topics

• Epidemiology
• “Variant” prevalence
• Vaccine administration
• Vaccine hesitancy/ vaccine safety
• After vaccination
Daily Trends in Number of COVID-19 Cases in the United States Reported to CDC

Source: CDC.gov 4/7/21
New cases of Covid-19, reported to CDC, in DE

Seven-day moving average of new cases, by number of days since 10 average daily cases first recorded.

Source: CDC 4/7/21
COVID-19 Data Dashboard Overview

190,159
Persons Fully Vaccinated

562,730
Vaccines Administered

1,578
Total Deaths
12.7 per 10,000 people

314
New Cases
7-day Average

129
Current Hospitalizations

5.5%
Positive Tests
7-day Average
Total Deaths by Age

Source DPH 4/7/21
CASES WHO VISITED VENUES (REPORTED ALL WEEKS)

<table>
<thead>
<tr>
<th>Venue</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restaurant</td>
<td>2218</td>
</tr>
<tr>
<td>Religious service**</td>
<td>765</td>
</tr>
<tr>
<td>Other tourist attraction</td>
<td>744</td>
</tr>
<tr>
<td>Gym</td>
<td>699</td>
</tr>
<tr>
<td>Beach</td>
<td>643</td>
</tr>
<tr>
<td>Other large gathering</td>
<td>500</td>
</tr>
<tr>
<td>House party</td>
<td>499</td>
</tr>
<tr>
<td>Bar</td>
<td>447</td>
</tr>
<tr>
<td>Recreational center</td>
<td>424</td>
</tr>
<tr>
<td>Nail or hair salon/spa</td>
<td>415</td>
</tr>
<tr>
<td>Dinner party</td>
<td>402</td>
</tr>
<tr>
<td>Wedding</td>
<td>156</td>
</tr>
<tr>
<td>Outdoor event</td>
<td>118</td>
</tr>
</tbody>
</table>

Source: DPH 4/7/21
Treatment

- Outpatient
  - Monoclonal antibody
  - Convalescent plasma

- Inpatient
  - Steroids/Remdesivir/il 6 blockers
  - Anticoagulation

- Post discharge
  - Chronic pulmonary dysfunction- steroids
  - Anticoagulation in high risk populations
COVID 19 Variants

• Naturally occurring genetic mutations
• Benefit vs detrimental
• Increase affinity for ACE receptors
• Increase viral load
• More viral particles/airway volume
• Increased inflammatory response
• Higher “infectivity”, poorer outcomes
COVID 19 Variants

• **Variants of interest** – altered genetics and increased prevalence

• **Variants of concern** – increased virulence/morbidity/evades response
  - B 1.1.7(UK) –Dec 2020
  - B 1.351 (SA)- Jan 2021
  - P 1. ( Brazil) –Jan 2021
  - B.1.427, B.1.429 ( CA) Feb 2021

• **Variants of consequence** – evidence that “countermeasures” are ineffective
  - CDC.GOV April 2021
## Delaware Variants – DPH April 9, 2021

<table>
<thead>
<tr>
<th>Variants of Concern</th>
<th>Variants of Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variant</td>
<td>Origin</td>
</tr>
<tr>
<td>B.1.1.7</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>B.1.351</td>
<td>South Africa</td>
</tr>
<tr>
<td>B.1.427</td>
<td>California, US</td>
</tr>
<tr>
<td>B.1.429</td>
<td>California, US</td>
</tr>
</tbody>
</table>
Pennsylvania

Estimated share of cases from B.1.1.7
75%

New cases per 100,000:
100

Feb. 1 | Mar. 28
------|-------
50%   | 50%   

Feb. 1 | Mar. 28
------|-------
25%   | 25%   

Feb. 1 | Mar. 28
------|-------
75%   | 75%   

Figure 13 Cumulative Incidence Curves for the First COVID-19 Occurrence After Dose 1 – Dose 1 All-Available Efficacy Population

172 cases in placebo group, vs. 9 in vaccine group
VACCINATIONS IN DELAWARE

• Delaware is significantly ahead of where state officials thought we would be
  • In February 2021 Health officials projected we would still be in Phase 1 as of today
  • But as of April 6, 2021 Delaware opened up eligibility to all Delawareans age 16 and up

Source DPH 1/29/21
# State of Delaware COVID-19 Vaccinations

## Vaccine Campaign Key Metrics

<table>
<thead>
<tr>
<th>People Vaccinated</th>
<th>At Least One Dose</th>
<th>Fully Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ages</td>
<td>332,375</td>
<td>190,159</td>
</tr>
<tr>
<td>Percentage of people of all ages</td>
<td>34.7%</td>
<td>19.9%</td>
</tr>
<tr>
<td>16+ age group</td>
<td>332,273</td>
<td>190,135</td>
</tr>
<tr>
<td>Percentage of 16+ age group</td>
<td>42.8%</td>
<td>24.5%</td>
</tr>
<tr>
<td>65+ age group</td>
<td>144,375</td>
<td>113,370</td>
</tr>
<tr>
<td>Percentage of 65+ age group</td>
<td>82.9%</td>
<td>65.1%</td>
</tr>
</tbody>
</table>
TOTAL FULLY VACCINATED BY AGE (PERCENTAGE OF DEMOGRAPHIC GROUP)

Source DPH 3/7/21
Variant - Vaccine efficacy

• Janssen single dose – 57% vs S. Africa, 87% vs US
• Novovax – similar data
• Moderna/Pfizer– can exchange mRNA for variant mRNA
• Race--- vaccine vs variant
• 1000 people vaccinated at 66% vs 10 at 95%
• Timing in communities/countries/cost/accessibility
• Shelf life – 2 years Janssen vaccine
the National Institute of Allergy and Infectious Diseases.

## Known genetic variants of SARS-CoV-2

<table>
<thead>
<tr>
<th>Variant</th>
<th>First identified in</th>
<th>More contagious?</th>
<th>Ability to evade vaccine</th>
<th>CDC/WHO classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.1.1.7</td>
<td>United Kingdom</td>
<td>Yes</td>
<td>Minimal</td>
<td>Concern</td>
</tr>
<tr>
<td>B.1.351</td>
<td>South Africa</td>
<td>Yes</td>
<td>Moderate</td>
<td>Concern</td>
</tr>
<tr>
<td>P.1</td>
<td>Brazil</td>
<td>Yes</td>
<td>Moderate</td>
<td>Concern</td>
</tr>
<tr>
<td>B.1.526</td>
<td>New York</td>
<td>Unknown</td>
<td>Potentially</td>
<td>Interest</td>
</tr>
<tr>
<td>B.1.525</td>
<td>New York</td>
<td>Unknown</td>
<td>Potentially</td>
<td>Interest</td>
</tr>
<tr>
<td>P.2</td>
<td>Brazil</td>
<td>Unknown</td>
<td>Potentially</td>
<td>Interest</td>
</tr>
<tr>
<td>B.1.427</td>
<td>California</td>
<td>Yes</td>
<td>Moderate</td>
<td>Concern</td>
</tr>
<tr>
<td>B.1.429</td>
<td>California</td>
<td>Yes</td>
<td>Moderate</td>
<td>Concern</td>
</tr>
<tr>
<td>P.3</td>
<td>Philippines</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Under investigation</td>
</tr>
<tr>
<td>A.23.1 with E484K</td>
<td>England</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Under investigation</td>
</tr>
<tr>
<td>B.1.1.7 with E484K</td>
<td>England</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Under investigation</td>
</tr>
<tr>
<td>B.1.525</td>
<td>England</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Under investigation</td>
</tr>
<tr>
<td>B1.1.318</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Under investigation</td>
</tr>
<tr>
<td>B1.324.1 with E383K</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Under investigation</td>
</tr>
<tr>
<td>B.1.111 with E383K and 429S</td>
<td>Columbia</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

Sources: Rappler.com, CDC.gov, Health.com, WHO Weekly Epidemiological Update, Public Health England
Vaccine Hesitancy

What is getting in the way of vaccine confidence in the US?

There has been a considerable decline in COVID-19 vaccine acceptability in the past 4 months
Factors weighing on acceptance include:

- Concern about side effects
- Efficacy
- Risk perception/need for vaccine
- Associated costs

Perceived safety, cost, and accessibility can all affect COVID-19 vaccine acceptance
...but attributes that made COVID-19 vaccine more acceptable included:

- if your healthcare provider said it was safe
- if there are no costs to the individual
- if it would help get back to school and work
- if they could get it easily, from a walk-in or drive-thru clinic, pharmacy or doctor’s office


Vaccine safety

Millions of people have safely received a COVID-19 vaccine

Over 167 million doses of COVID-19 vaccine were administered in the United States from December 14, 2020, through April 5, 2021.

COVID-19 vaccines are safe and effective. COVID-19 vaccines were evaluated in tens of thousands of participants in clinical trials. The vaccines met FDA’s rigorous scientific standards for safety, effectiveness, and manufacturing quality needed to support emergency use authorization (EUA).

Millions of people in the United States have received COVID-19 vaccines, and these vaccines will undergo the most intensive safety monitoring in U.S. history. This monitoring includes using both established and new safety monitoring systems to make sure that COVID-19 vaccines are safe.

Source: CDC.gov 4/7/21
Results are reassuring

Results from monitoring efforts are reassuring. Some people have no side effects. Others have reported common side effects after COVID-19 vaccination like

- swelling, redness and pain at injection site,
- fever,
- headache,
- tiredness,
- muscle pain,
- chills,
- and nausea.

These reactions are common. A small number of people have had a severe allergic reaction (called “anaphylaxis”) after vaccination, but this is extremely rare. If this occurs, vaccination providers have medicines available to effectively and immediately treat the reaction.

After you get a COVID-19 vaccine, you will be asked to stay for 15-30 minutes so you can be observed in case you have a severe allergic reaction and provided treatment in the rare case it is needed.
Vaccine safety

I got vaccinated because...

"I decided to get vaccinated, because I believe we’ll only get this pandemic under control when people get vaccinated."

-- Rev. Rita Paige, Dover

"Vaksinen se pi bon desizyon mwen te pran pou protege moun mwen renmen yo ak kominote a"

-- Rose, New Castle County

"Tengo cierta edad, y es necesario vacunarme para protegerme a mí y a los demás...La ciencia ha sido probada."

-- Bethsaida, New Castle County

"As the Tribal leadership, we are happy to have good, qualified resources to work with us, through the uncertain times that we have had. Now we have some hope restored."

-- Chief Natosha Norwood Carmine, Millsboro

Source: DPH 4/7/21
Vaccine safety

As of April 2021, a majority of Judicial Branch have been vaccinated, including hundreds judicial officers, court security, court staff and justice system partners
COVID 19 Vaccine Adverse Events

• 167 million people vaccinated
• Anaphylaxis 2-5 injections per million (300-800 events)
• No deaths related to vaccination
• Safe in pregnancy
• Safe for immunosuppressed
• VAERS system

  • CDC.GOV April
AstraZeneca vaccine clotting disorder

• 11 patients- Germany/Austria
• 80 million doses of AZ vaccine- exceedingly rare event
• 11 patients (age 22-49)
  • CNS, intraabdominal, pulm clots
  • 6 deaths
  • 5-16 days post vax
• Auto Immune Thrombotic Thombocytopenia

• NEJM Greinacher et al April 2021
Janssen vaccine clotting disorder

- 6 patients (age 18-48, women)
- 6.8 million doses in US
- Cerebral Venous thrombosis
- 6-13 days post vaccine
- No deaths
- ACIP emergency meeting April 14, 2021
- Vaccine administration on hold

  - Joint CDC/FDA notification April 13, 2021
Vaccine Induced Coagulation

• Both are Adenovirus vector DNA vaccines
• COVID 19 has significant clotting associated phenomenon
• Immune mediated thrombocytopenic thrombosis
• RARE events range of 1-2 per 1-10 million (current data)
• Patient predisposition?
• Should we exclude those with clotting disorders?
• Should we exclude immune disorders?
COVID 19 Vaccine -observations

• Number of patients with covid <7 days post vax
• No “post vaccine GBS”
• Seattle – “breakthrough” cases – 3/700,000- expected
• 4 million doses in one day
• Sites closing (Georgia)- non specific reactions
• Clotting issues- await data- TBD
• Vaccinate now before the SA/Brazil variants take hold
After you are fully vaccinated

What does fully vaccinated mean?
People are considered fully vaccinated:

- 2 weeks after their second dose in a 2-dose series (of Pfizer or Moderna vaccines), or
- 2 weeks after a single-dose vaccine, (Johnson & Johnson's Janssen vaccine)

If it has been less than 2 weeks since your 1-dose shot, or if you still need to get your second dose of a 2-dose vaccine, **you are NOT fully protected.** Keep wearing face masks, and social distancing in all situations.

Source: DPH 4/7/21
After you are fully vaccinated

If you’ve been fully vaccinated...

(These recommendations apply only to situations within the home, not at the workplace, in a public setting, or other indoor gathering site)

- You don’t have to wear a mask inside a home around other fully vaccinated people.
- You don’t have to wear a mask inside a home when visiting with unvaccinated people from one other household (like visiting with relatives who all live together). The exception is if the unvaccinated people are at increased risk for severe illness from COVID-19.
- If you are identified as being a close contact of someone with COVID, you don’t have to quarantine or get tested unless you have symptoms. The exception is if you live in a group setting. CDC says you should stay away from others for 14 days and get tested. Also, if you test positive for COVID-19 after being vaccinated, you still need to isolate at home.

Source: DPH 4/7/21
After you are fully vaccinated

Fully vaccinated people should still...

- Wear face coverings and social distance in public, work spaces, and other indoor settings.
- Wear face coverings and social distance when visiting or being around unvaccinated people from more than one other household.
- Avoid medium or large-sized gatherings.
- Watch out for symptoms of COVID and get tested if you have them. For a list of testing sites in DE visit de.gov/gettested. If you test positive for COVID-19 whether you have symptoms or not, you should isolate for 10 days from the time of your test or your symptom start date.

Source: DPH 4/7/21
After you are fully vaccinated

What we know...
We know that COVID-19 vaccines are effective at preventing COVID-19 disease, especially severe illness and death, and that prevention steps that help stop the spread of the disease are still important as vaccines are being distributed.

What we’re still learning...
- How effective the vaccines are against variants of the virus that causes COVID-19. Early data show the vaccines may work against some variants but could be less effective against others.
- How well COVID-19 vaccines keep people from spreading the disease.
- More. Early data show that the vaccines may help keep people from spreading COVID-19, but we are learning more as more people get vaccinated.

Source: DPH 4/7/21