

Covid-19 and Vaccine Hesitancy

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June 29, 2021

Covid-19 in PA

Covid-19

March 2020 – 6/28/21

Total Cases: 1,211,707

Deaths: 27,657

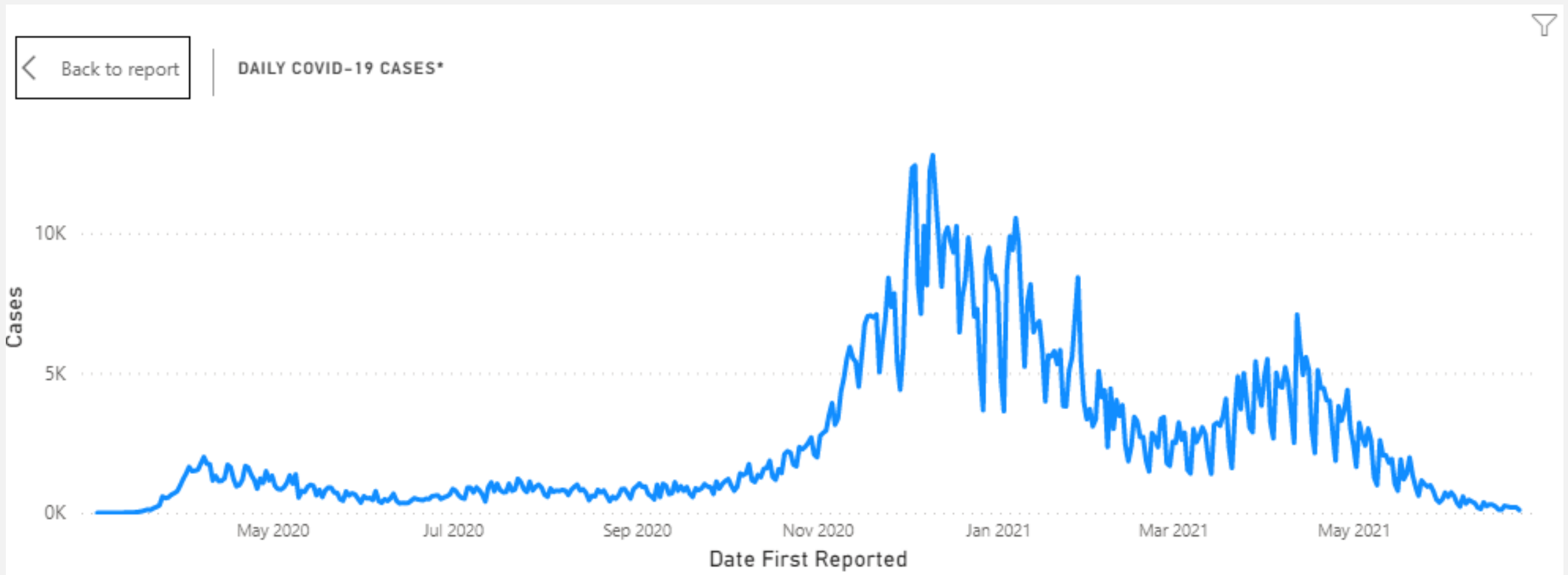
Yesterday's Numbers (6/28/21)

**New Cases: 408 (over the past
3 days, Friday to Sunday)**

Hospitalized: 350

For more data, visit the Covid-19 Dashboard at
<https://www.health.pa.gov/topics/disease/coronavirus/Pages/Cases.aspx>

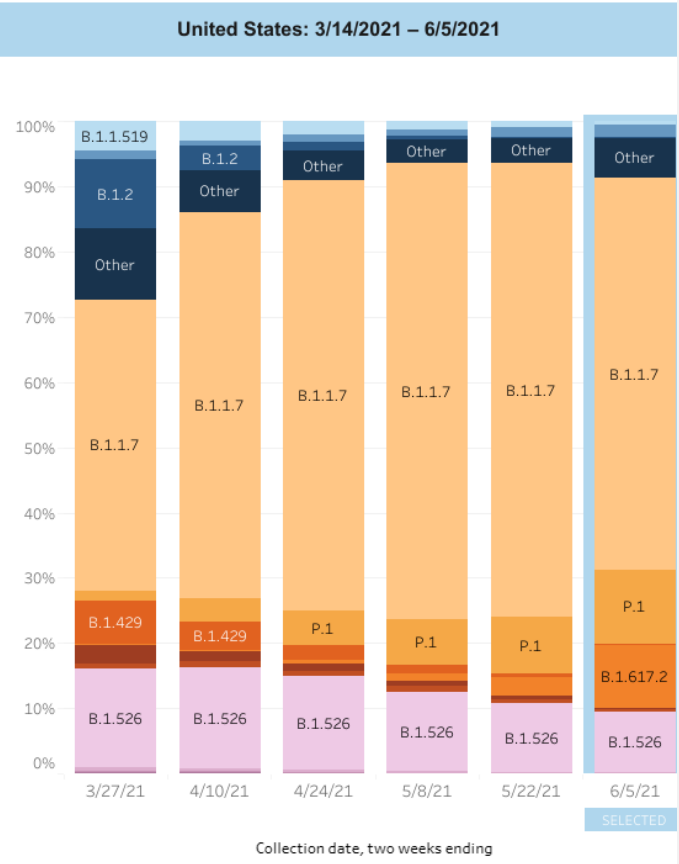
Covid-19 Daily Cases



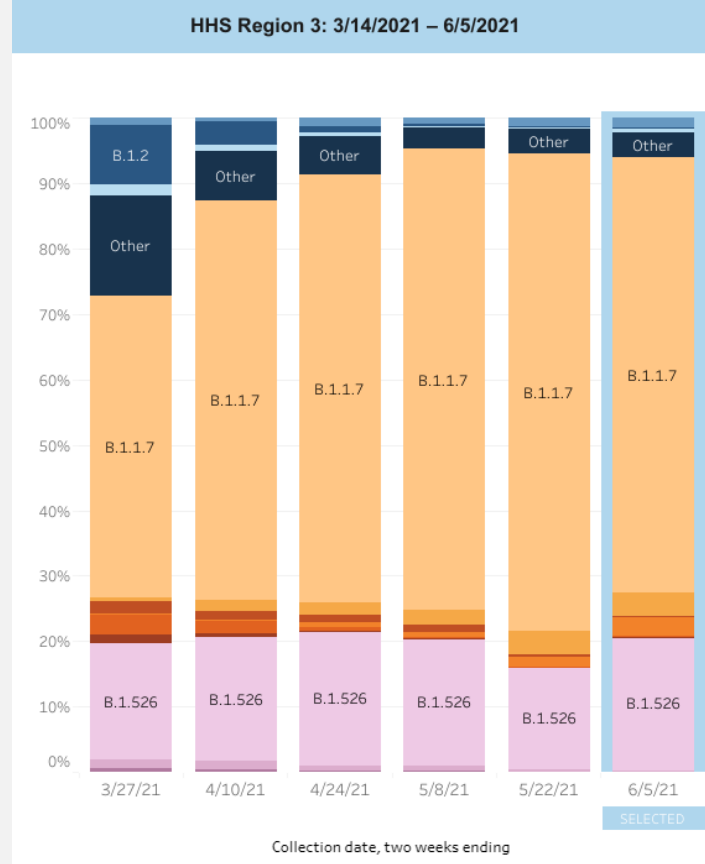
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Covid-19 Variants

SARS-CoV-2 Variants Circulating in the US



SARS-CoV-2 Variants Circulating in Region 3 (DE, MD, PA, DC, VA, WV)



Some of the potential consequences of emerging variants:

- Ability to spread more quickly in people.
- Ability to cause either milder or more severe disease in people.
- Ability to evade detection by specific viral diagnostic tests.
- Decreased susceptibility to therapeutic agents such as monoclonal antibodies.
- Ability to evade natural or vaccine-induced immunity.

June 15th CDC reclassified B.1.617 (Delta variant) as a variant of concern. Accounts for 9.5% in US, and 2.8% in HHS Region 3.

CDC's COVID DATA TRACKER: <https://covid.cdc.gov/covid-data-tracker/#variant-proportions>

4 *Other represents >200 additional lineages, which are each circulating at <1% of viruses.
**Most recent data (shared) are subject to change as samples from the period are still being processed.

Covid-19 Vaccine Progress

Covid-19 Vaccines

- Pfizer-BioNTech COVID-19 Vaccine
- Moderna COVID-19 Vaccine
- Janssen COVID-19 Vaccine (Johnson & Johnson)

Vaccine Progress in Pennsylvania

As of 6/28/2021

Total Vaccinations Administered

- 11.6 Million

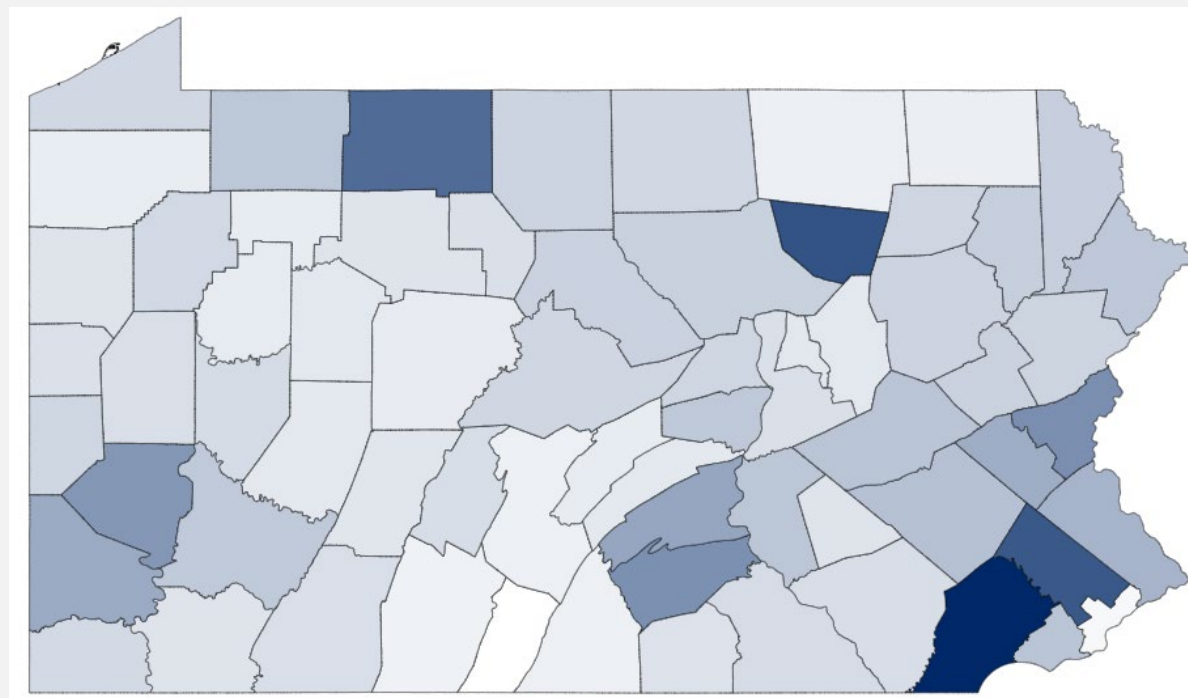
18 and older Pennsylvanians who are fully vaccinated

- 59.8% (6,078,737)

18 and older Pennsylvanians who are partially vaccinated

- 75.2% (7,643,337)

Rate per 100,000 Residents Who Have Received Partially Covered Vaccinations



For more data visit the Covid-19 Dashboard at
<https://www.health.pa.gov/topics/disease/coronavirus/Pages/Cases.aspx>

Vaccine Hesitancy

Context is very
different from even
2 months ago

As the population
approached 50%
vaccinated, we began to
see demand decreasing.

Vaccine hesitancy is a key
challenge with demand
decreasing.

Diversity within hesitancy groups suggests some individuals are more willing to be vaccinated under the right conditions

"Soft" hesitancy

Definition People interested in vaccine but not actively pursuing it

**Concern/
barrier**

- Want more people to receive it first
- Hard to schedule, find or keep appointments
- Have not tried yet
- Do not know their eligibility
- Think it will cost money

"Hard" hesitancy

Hesitant about receiving vaccine in general

- Worried about long term effects
- Opposed for religious or political reasons
- Not enough proof the vaccines work

Two areas must be addressed to continue increasing vaccination

Information

Lack of supportive information about vaccination

- Those who are unsure of the safety and efficacy of vaccine
- Those who want specific questions answered (e.g., fertility safety)



Targeted hesitancy campaign to address concerns

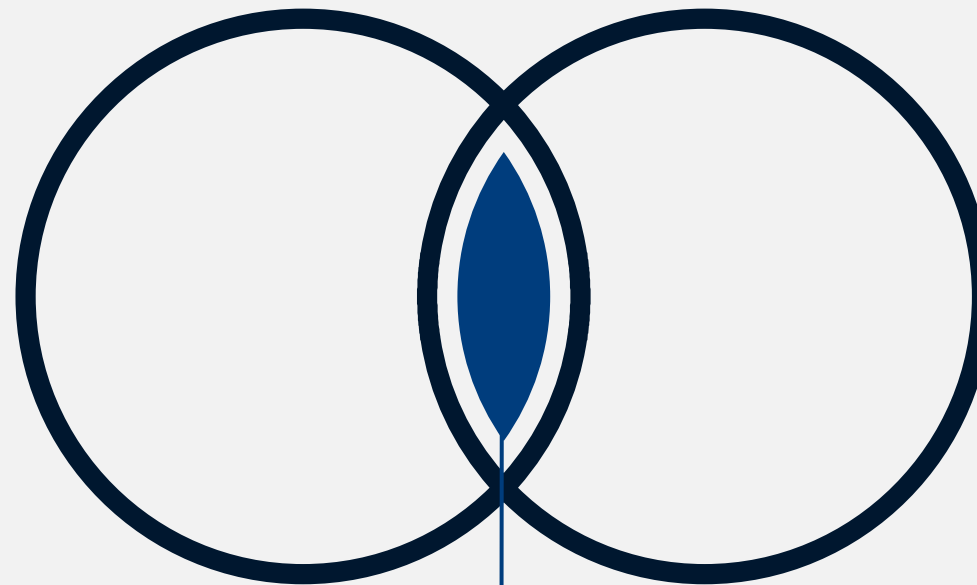
Access

Lack of easy access to vaccine

- Those with hard barriers to access (e.g., lacking a car and no walkable clinic)
- Those unwilling to seek out an appointment or travel, despite having capability

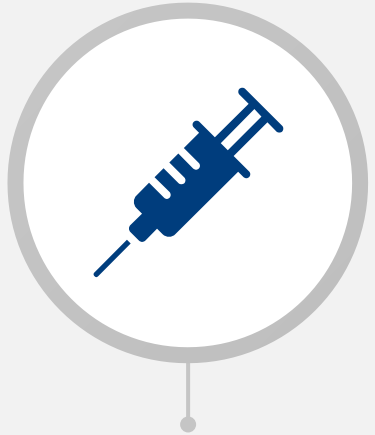
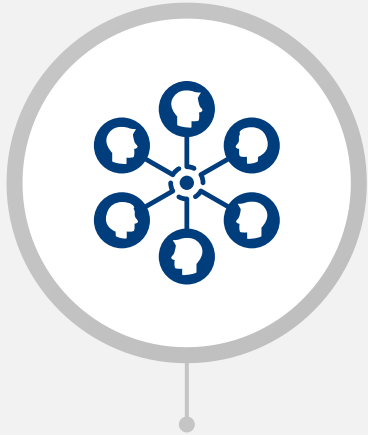


New access points through FRPP, local pharmacies, PCPs, and mobile clinics



Soft hesitancy: Those Pennsylvanians who will get the vaccine only if highly convenient and they have community support

Access: State is evolving network as well



Identify geographic region to augment

Key demand metrics:

- Administration rate
- Appointment availability
- Inventory on-hand
- Vaccine requests

In context of planned Federal Retail Pharmacy Partnership (FRPP) network and allocations

Assess local context driving demand

Local population

Relevant types and key drivers of hesitancy

Determine preferred provider types

Preferred vaccination channel for target population based on provider landscape in area & type of hesitancy

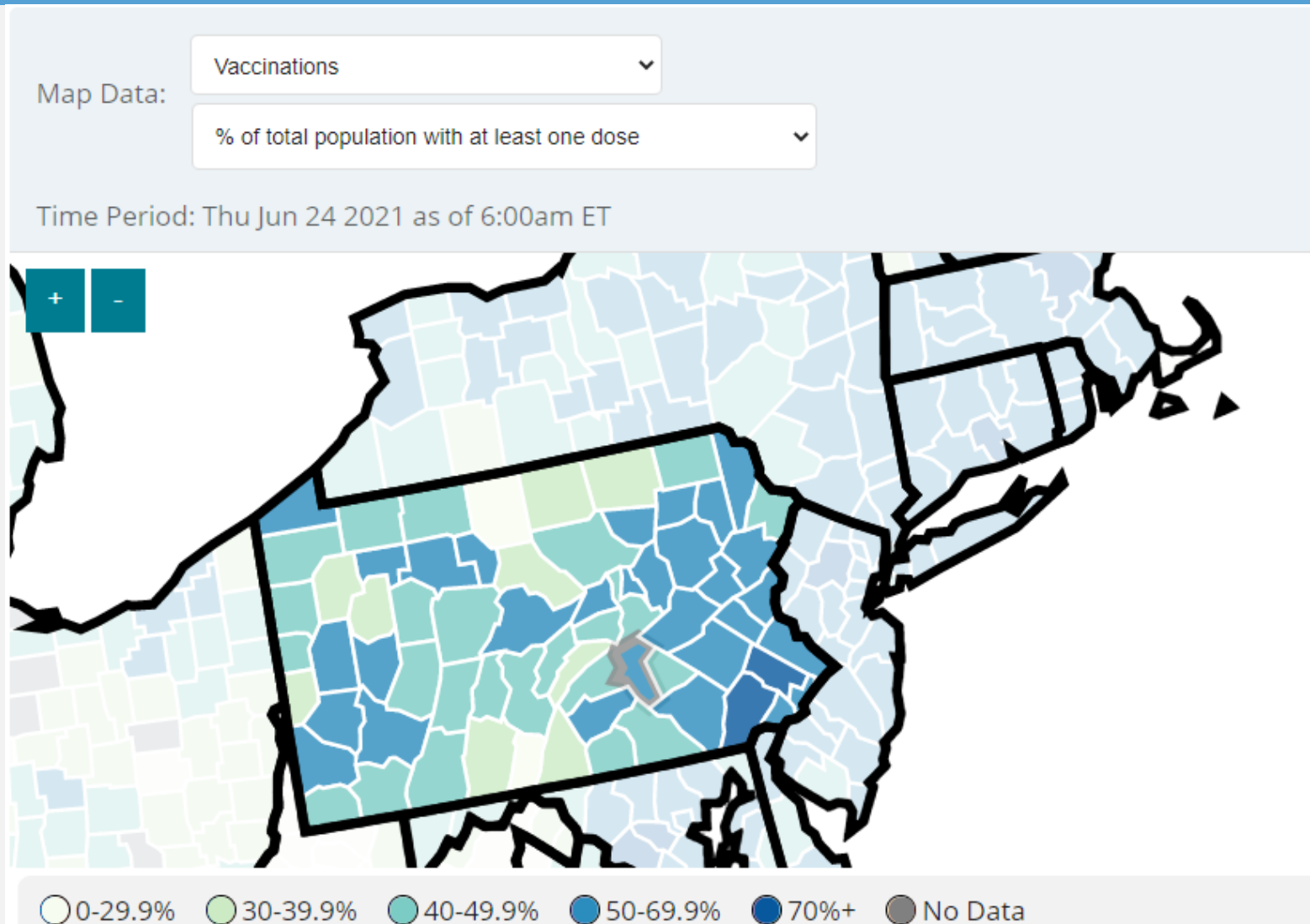
Select provider(s) to activate

Prioritize, in order:

- Providers who have administered Covid vx
- Covid enrolled providers
- Routine vx providers
- All other providers

Allocation strategy is a crucial enabler: must identify where to reduce allocation to free up supply

Moving to a hyper-localized approach to combat hesitancy: moving to zip-code level analysis to focus efforts



Majority of areas with less than 30% vaccination rates are in rural part of the Commonwealth, especially Central PA

Ongoing targeted efforts to combat rural hesitancy



County fair partnership

Establish vaccine clinics at large county fairs in areas with low vaccination rates

Distribute educational materials onsite

Develop fair sponsored incentives for vaccinated individuals



Tailor education materials

Produce posters and flyers with phone number and address of local providers

Target digital & traditional media buys for rural communities

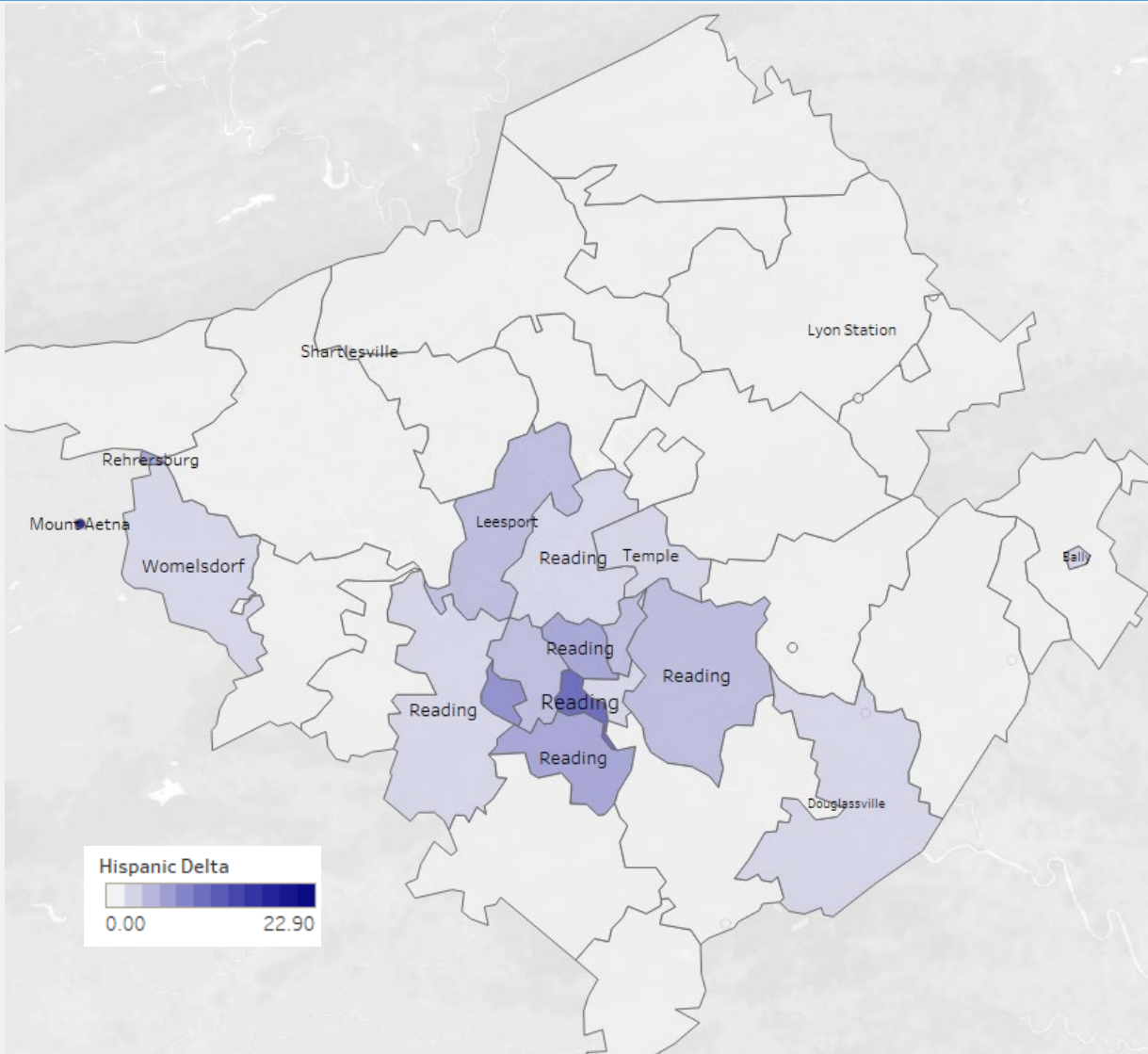


Outreach to physicians

Distribute educational materials to rural health clinics

Letter from Dr. Johnson to medical associations asking physicians to promote vaccinations

Urban example: Partnering with grass roots organizations to fight hesitancy especially among communities of color



Proposed engagement

Find local trusted messengers in community organizations

Understand barriers to their community receiving the vaccine

Organize vaccine education events tailored to specific needs of communities

Currently applying to additional urban areas with low vaccination rates in communities of color

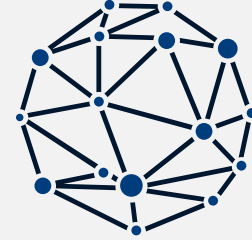
Six key hesitancy-related activities



Analyzing available data to target outreach and network expansion



Engaging with existing providers



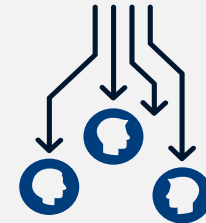
Strategically expanding the provider network to reduce barriers to access



Crafting audience-specific messaging



Working with community partners to combat hesitancy



Conducting direct-to-consumer and targeted marketing to combat hesitancy

Overarching and audience specific activities

▶ Targeted outreach to specific populations



Communities
of color



Low-income
residents



Women of
childbearing age



Rural
Communities

Address hesitancy by:

- Assessing concerns and barriers;
- Developing key messages;
- Identifying trusted messengers and stakeholder groups; and
- Deploying outreach strategies.

COVID-19 Vaccination Coverage Among Pregnant Women During Pregnancy

- **Pregnant women are at increased risk for severe illness and death from COVID-19.**
- As of May 8, 2021, **16.3% of pregnant women** identified in CDC's Vaccine Safety Datalink had received ≥ 1 dose of a COVID-19 vaccine during pregnancy in the United States.
- Vaccination was lowest among **Hispanic** (11.9%) and **non-Hispanic Black** women (6.0%) and **women aged 18–24 years** (5.5%)
- Vaccination was highest among **non-Hispanic Asian** women (24.7%) and **women aged 35–49 years** (22.7%)
- There is a need to improve outreach to and engagement of providers and pregnant women, especially younger and racial and ethnic minority groups.

Preliminary Findings of mRNA Covid-19 Vaccine Safety in Pregnant Persons

- **Data:**
 - “V-safe after vaccination health checker” surveillance system, the v-safe pregnancy registry, and the Vaccine Adverse Event Reporting System (VAERS) from 12/14/20 to 2/28/21
 - Study population: 3958 participants enrolled in the v-safe pregnancy registry, of which 827 had a completed pregnancy
- **Results:**
 - 13.9% resulted in a pregnancy loss and 86.1% resulted in a live birth
 - Adverse neonatal outcomes included preterm birth (in 9.4%) and small size for gestational age (in 3.2%); no neonatal deaths were reported
 - **Calculated proportions of adverse pregnancy and neonatal outcomes in persons vaccinated against Covid-19 who had a completed pregnancy were similar to incidences reported in studies involving pregnant women prior to the Covid-19 pandemic**
- **Conclusions:**
 - Preliminary findings did not show obvious safety signals among pregnant persons who received mRNA Covid-19 vaccines.
 - Longitudinal follow-up, and larger numbers of women vaccinated earlier in pregnancy is needed in order to inform maternal, pregnancy and infant outcomes.

Male Fertility: Sperm Parameters Before and After COVID-19 mRNA Vaccination

- **Background:** SARS-CoV-2 has been associated with decreases in sperm parameters. One reason for vaccine hesitancy is negative effects on fertility. Assessment of sperm parameters before and after mRNA vaccine administration was conducted.
- **Data:**
 - Healthy male volunteers aged 18-50 were recruited from 12/17/20 to 1/12/21 and followed until April 24, 2021.
 - **Study population: 45 male volunteers** (median age, 28 years)
 - 21 (46.7%) received BNT162b2 (Pfizer–BioNTech COVID-19 vaccine)
 - 24 (53.3%) received mRNA-1273 (Moderna COVID-19 vaccine)
- **Results:**
 - **Baseline:** Sperm concentration were 26 million/mL and total motile sperm count (TMSC) were 36 million
 - **After 2 Doses of Vaccine:** Median sperm concentration significantly increased to 30 million/mL and the median TMSC to 44 million.
 - Semen volume and sperm motility also significantly increased.
 - 8 of the 45 men were oligospermic before the vaccine (median concentration, 8.5 million/mL).
 - 7 men had increased sperm concentration to normozoospermic range at follow-up (median concentration, 22 million/mL)
 - 1 man remained oligospermic.
 - No man became azoospermic after the vaccine.
- **Discussion:**
 - **After 2 doses of vaccine, there were no significant decreases in any sperm parameter.**
 - Limitations:
 - Small number of men enrolled;
 - Limited generalizability beyond young, healthy men;
 - Short follow-up;
 - Lack of a control group; and
 - Semen analysis is an imperfect predictor of fertility potential.

Concerns, Barriers and Key Messages

Key concerns and barriers

- Safety of the vaccine (effect on fertility or fetal health)
- “Wait and see”



Key messages

- Thousands of pregnant women have already received the vaccine and there have been no reported issues
 - Pregnant women are at higher risk for severe COVID illness, and the benefits of the vaccine are better than the real danger of getting the virus
 - There is no evidence that the vaccines cause infertility
 - The vaccines do not affect your genes or DNA
 - When you get vaccinated, the antibodies made by your body can be passed through breastmilk and help protect your child from the virus
-
- Seek trusted sources for information about the vaccine (e.g., your PCP, OBGYN)

- Credibility (misinformation/ disinformation/ lack of confidence in what is available)



American Society for Reproductive Medicine

INFERTILITY PATIENTS AND COVID-19

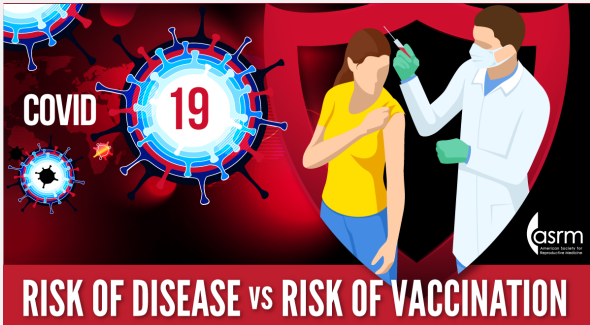
COVID-19 AND PREGNANCY
We don't know much yet about COVID-19 and how the virus may affect fertility, pregnancy, or the children that result. Until the global pandemic of COVID-19 subsides or we have more information, ASRM recommends that you avoid starting new fertility treatment unless it is an emergency (such as if you need chemotherapy in the next few weeks).

IF YOU HAVEN'T STARTED YOUR TREATMENT CYCLE YET
For now, ASRM recommends not starting new fertility treatment, if possible. More specifically, this is not the time to have procedures such as hysteroscopy or HSG or to start treatments like intrauterine insemination or IVF. However, women with an urgent need to preserve their fertility, (such as those with a surgery or medical treatment planned that may cause infertility) may still start treatment.

IF YOU HAVE STARTED YOUR TREATMENT CYCLE
If you or your donor are already taking fertility medications as part of an IVF cycle, you may finish your current cycle and freeze your eggs and/or embryos for a later transfer. You should wait to begin a new cycle until the Coronavirus (COVID-19) pandemic has improved or we know more. If you are diagnosed with COVID-19 during a cycle, telephone your physician right away.

SAFETY OF STORED EGGS AND EMBRYOS IS A PRIORITY
It's not known whether cross-contamination can happen between frozen samples, so ASRM recommends freezing samples from patients with COVID-19 like samples from any patient who tests positive for an infectious disease.

Recommendations from the American Society for Reproductive Medicine for patients considering or undergoing fertility treatment, 3/31/2020



- ### COVID-19 DISEASE Pregnancy Risks (Real)

 - Increased rates of:
 - Hospitalization
 - ICU admission
 - Medical ventilation
 - Possible increased risk of:
 - Preterm delivery
 - Preeclampsia
 - Thrombotic events
 - Spontaneous abortion
 - Risk to fetus from maternal fever
- ### COVID-19 VACCINE Pregnancy Risks (Theoretical)

 - Risk to fetus from maternal fever

TAKE CARE OF YOUR I AND EMOTIONAL AND WELL-BEING
Infertility care, the uncertainty of a pandemic, the need for social distancing, and a delay or interruption in your treatment can each be stressful, and, added together, may feel overwhelming. Take steps to ensure you are taking care of your emotional and physical well-being by eating well, doing exercise, and connecting with your friends and colleagues, even if it is remotely. You may need more emotional support during the time and your physician can assist you in finding a mental health professional to help. You can also find one using the "FIND A PROVIDER" link on www.reproductivefacts.org. You're not alone.

TRAVEL CONCERNS
Non-essential travel is not recommended and, in many cases not possible, especially to highly impacted areas. If you are working with a donor or surrogate/gestational carrier who is not where you are, make a plan now on how to address this.

TELEHEALTH AND FERTILITY CARE
When possible, ASRM recommends having your office visits by telephone or secure videoconference (called telehealth or telemedicine). For example, you can start your evaluation or set a treatment plan with your doctor using telehealth.

The American College of Obstetricians and Gynecologists

Frequently Asked Questions Vaccine Safety During Pregnancy

How do vaccines work?
Vaccines train the immune system to attack specific viruses and bacteria. This makes vaccination an important part of preventing infections during pregnancy. Pregnant women and women who are thinking about getting pregnant need certain vaccines. At different points during their lives, babies, children, teens, adults, and seniors all need certain vaccines, too.

How are vaccines made?
Most vaccines are made with inactivated (killed) versions of a pathogen (a virus or bacteria that causes disease). Some vaccines are made with parts of the pathogen or with a killed toxin made by the pathogen. None of these things can cause the disease itself when given as a vaccine. Most vaccines also contain some other ingredients, including:

- water or other fluids
- preservatives and stabilizers
- chemicals added to increase the virus or bacteria
- substances that help create a stronger immune response to the vaccine
- small amounts of the material that was used to grow the virus or bacteria

The amounts of these ingredients are very small. All of them are tested extensively to make sure they are safe. You can learn more about these ingredients at the website of the Centers for Disease Control (CDC), www.cdc.gov/vaccinesafety. Also, for information on the vaccine for coronavirus (COVID-19), see the question "How do the coronavirus (COVID-19) vaccines work?"

How are vaccines approved?
Vaccines are subject to strict safety standards. In the United States, vaccines are approved by the U.S. Food and Drug Administration (FDA) only after rigorous research. Testing starts with animals and small groups of human volunteers. Later, vaccines are tested in large clinical trials with thousands of volunteers. If a clinical trial shows that a vaccine is safe and effective, there are a few other safety reviews. Then vaccine experts meet to review the testing results.

What happens after a vaccine is licensed?
Once a vaccine is licensed by the FDA, a committee called the Advisory Committee on Immunization Practices (ACIP) recommends how best to use it to control disease. This recommendation goes to the CDC.

How does getting vaccinated during pregnancy protect my baby?
Vaccines cause the body to create antibodies. Antibodies are proteins that can "shoot" bacteria and viruses and stop them from entering cells and making a person sick. After a pregnant woman gets a vaccine and her body creates antibodies, some of those antibodies pass to the fetus. This means the fetus will have the antibodies to protect against disease after birth. Antibodies are a safe, normal reaction to a vaccine. They protect your baby until he or she can be vaccinated during the first few months of life.

How do I know which vaccines I need?

The ACIP recommends that all pregnant women receive vaccines for the flu and pertussis (whooping cough) during each pregnancy, other vaccines are recommended for adults based on their risk of getting a particular disease. Talk with your obstetrician-gynecologist (ob-gyn) about the vaccines that you have had in the past. Your ob-gyn may recommend vaccines based on your medical history and occupation.

Which vaccines can be given during pregnancy?
It is safe to get shots for the flu, whooping cough, hepatitis, pneumonia, and meningitis during pregnancy. All pregnant women should get the flu and whooping cough shots. Talk with your ob-gyn about whether you need other vaccines. For information on the vaccine for coronavirus (COVID-19), see the question "How do the coronavirus (COVID-19) vaccines work?"

Are there vaccines that should not be given during pregnancy?
Certain vaccines should not be given to pregnant women because they contain live, attenuated viruses. "Attenuated" means that the virus has been weakened so that it cannot cause disease in a healthy person. The vaccines that women should not get during pregnancy include:

- live, attenuated flu vaccine given as a nasal spray (but the flu shot is safe)
- measles-mumps-rubella (MMR) vaccine
- chickenpox vaccine

Also, the vaccine for human papillomavirus (HPV) is not a live, attenuated vaccine but it still should not be given during pregnancy.

Are vaccines safe for me and my baby?
Yes, vaccines are safe for both of you. In fact, vaccination is one of the most important things that you can do to protect your health and your baby's health. Keep in mind that vaccines have been safely given to millions of pregnant women for more than 50 years.

Is there mercury in vaccines?
Yes, there is a tiny amount of mercury (also called thimerosal) in some vaccines. It's important to understand what thimerosal is and why it may be added. Some vaccines come in single-dose vials. This means just one person gets a vaccine from a vial. Other vaccines come in multidosed vials. This means the vial has enough vaccine for more than one person. Vials with more than one dose need to be kept pure. This is where thimerosal comes in. It helps prevent germs from growing in a vial that has multiple doses.

Is it safe to get a vaccine with thimerosal?
Yes, it is safe to get a vaccine that has thimerosal. It is not harmful for pregnant women or fetuses. Thimerosal naturally leaves the body after a vaccine. Thimerosal is safe and has been used in vaccines since the 1930s. For information about thimerosal and vaccine safety, visit the page from the CDC, www.cdc.gov/vaccinesafety/concerns/thimerosal/faq.html.

COVID-19 and Pregnancy 3 Steps to Stay Safe

- 1. Know the facts**
 - COVID-19 can spread between people who are in close contact with one another (within about 6 feet).
 - Some people with COVID-19 may have no symptoms.
 - Current reports suggest that pregnant women have a higher risk for more severe illness from COVID-19 than nonpregnant women.
- 2. Slow the spread**
 - Wear a mask or cloth face covering over your nose and mouth while in public.
 - Clean hands often for at least 20 seconds with soap and water or hand sanitizer that contains at least 60 percent alcohol.
 - Limit contact with other people as much as possible.
 - Stay at least 6 feet away from other people if you need to go out.
- 3. Talk with your ob-gyn**
 - **Prenatal and postpartum care:** Your visit schedule may change, or you may have some visits over the phone or with a two-way video call on your computer. Before an in-person visit, tell your ob-gyn if you think you may have COVID-19 or contact with someone who has it.
 - **Your birth plan:** In most cases, the way you plan to give birth does not need to change. And the safest place for you to give birth is still a hospital or accredited birth center.
 - **Visitor policies:** You may not be able to have as many visitors at your checkups or during and after birth while COVID-19 is spreading.

Learn more: www.aacog.org/COVID-Pregnancy

FIGURE 1 This information is designed as an educational aid for patients and does not constitute a recommendation or opinion related to women's health. It is not intended as a substitute for clinical judgment. For COVID-19 complex decisions, visit www.aacog.org/COVID-19. For more information on creating personal care plans, visit www.aacog.org/COVID-19. All rights reserved. Reproduction of this publication may require permission. It is not to be used in any form for any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher.

The Mayo Clinic

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SHOULD PREGNANT WOMEN BE VACCINATED FOR COVID-19?

00:03:20

COVID-19 vaccine
Get the latest information from the CDC.

LEARN MORE

Combat Misinformation

National campaigns to discourage pregnant women from getting the COVID-19 vaccine

CONTEXT

- After American's Frontline Doctors released an article regarding the vaccine and infertility, numerous women began to speak out about their personal experiences with receiving the vaccine and bodily changes they observed during their menstrual cycles or pregnancies.
- Many women activists took to social media to dissuade other women of child-bearing age from getting immunized; some referenced the claim that pregnant women were never part of the vaccine trials.

MESSAGES TO COMBAT MISINFORMATION

- Vaccines don't affect fertility or pregnancy.
- If you are trying to become pregnant now or want to get pregnant in the future, you can get a COVID-19 vaccine.
- Pregnant people are more likely to get severely ill with COVID-19 compared with non-pregnant people.
- If you are pregnant and get COVID-19, you are at increased risk for preterm birth (delivering your baby earlier than 37 weeks) and other potential poor pregnancy outcomes.
- We don't have any data that suggests that the COVID-19 vaccines affect fertility.
- They're not live vaccines.
- The sort of proteins that are used in the vaccines do not alter anyone's DNA or genetic material.
- There is no evidence that fertility problems are a side effect of any vaccine, including COVID-19 vaccines.
- In general, vaccines are safe prior to pregnancy. And in some cases, we encourage people to get vaccinated before pregnancy for certain viruses.

Thank you

Questions?

Dr. Denise Johnson

Acting Physician General

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