Increasing COVID-19 Vaccine Uptake in Pregnant People

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Financial Disclosures

- None
Learning Objectives

• Review the outcomes of COVID-19 infection in pregnant people
• Discuss the safety profile of COVID-19 vaccines for pregnant and lactating people, as well as people wanting to become pregnant
• Describe the problem of lower COVID-19 vaccine uptake among pregnant people
• Offer opportunities to improve COVID-19 vaccine uptake in pregnant people
Inclusive Language

• The U.S. OB/GYN community recognizes that people/persons other than women become pregnant, carry pregnancies, and deliver babies.

• This can include transgender, gender non-binary, and gender non-conforming people, among others.

• In an effort to be more inclusive, you will hear me use pregnant people, persons, and women interchangeably throughout this presentation.
A Patient Story
Risk of Disease From COVID-19 Infection During Pregnancy
COVID-19 Infection During Pregnancy

Pregnancy is an independent risk factor for severe COVID-19 disease
COVID-19 Infection During Pregnancy

• Compared to non-pregnant women of reproductive age:
  • 2-3-fold increased risk for **ICU** admission
  • ~2.5-fold increased risk for needing **ventilator support**
  • 2-fold increased risk for needing **Extracorporeal Membrane Oxygenation (ECMO)**
  • 1.7-fold increased risk for **death**

**Allotey et al. BMJ 2020;370:m3320 and Zambrano et al. MMWR 2020, 69(44);1641–1647**
COVID-19 Infection During Pregnancy

• Compared to pregnant women without COVID-19:
  • 2.85-fold increased odds of maternal death
  • 1.33-fold increased odds of pre-eclampsia
  • 1.47-fold increased odds of preterm birth
  • 2.84-fold increased odds of stillbirth
  • 4.89-fold increased odds of NICU admission

COVID-19 Infection During Pregnancy

• It is **extremely rare** that COVID-19 crosses the placenta and causes congenital infection in the fetus

• **No** COVID-19 related birth defects that have been identified

COVID-19 Infection During Pregnancy

- However, consistent pathologic changes are seen in the placenta.

- These may be the cause of the increased risks of stillbirth, preterm birth, and pre-eclampsia seen with COVID-19 infection during pregnancy.

Wong et al. Diagnostics (Basel) 2021 Jan; 11(1): 94
COVID-19 Vaccines and Pregnancy
COVID-19 Vaccines and Pregnancy

The American College of Obstetricians and Gynecologists recommends that pregnant individuals be vaccinated against COVID-19. Vaccination helps protect you and may help protect your newborn against COVID-19 infection.
COVID-19 Vaccine Trials

• Despite strong lobbying by the American College of Obstetricians and Gynecologists and the Society for Maternal Fetal Medicine (among other women’s health and advocacy organizations) for pregnant people to be included in the original vaccine studies, pregnancy was an exclusion criteria from being able to participate in these critical trials
• “Discuss the risks and benefits with your provider” ->
• “Recommend”
Use your smartphone to tell CDC about any side effects after getting the COVID-19 vaccine. You’ll also get reminders if you need an additional dose.

V-safe and Registry Monitoring People Who Report Pregnancy

<table>
<thead>
<tr>
<th>v-safe After Vaccination Health Checker</th>
<th>v-safe COVID-19 Vaccine Pregnancy Registry Registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant people reported, United States, as of December 20, 2021</td>
<td>Pregnant people enrolled, United States, as of December 20, 2021</td>
</tr>
<tr>
<td>180,289</td>
<td>8,749</td>
</tr>
</tbody>
</table>
COVID-19 Vaccines DO NOT Contain Live Virus

- Pfizer/Moderna Vaccines
  - Contain mRNA genetic material that encode SARS-CoV-2 spike S-protein
  - Elicits neutralizing antibodies to the S-protein
  - mRNA rapidly degraded (10-20 days) by normal cellular processes

- Janssen Biotech (Johnson & Johnson) Vaccine
  - Uses a modified adenovirus (common cold) vector that cannot replicate
  - Delivers the DNA code for the SARS-CoV-2 spike S-protein to host cells
  - Spike protein in host cells triggers antibody and cell-mediated responses
  - DNA code is not integrated into the host cell genetic material
COVID-19 Vaccines - Update

• December 16, 2021
  • Due to the increased risk of the rare complication of Thrombosis and Thrombocytopenia Syndrome (TTS), the CDC released a clinical preference for the mRNA vaccines over the adenovirus vector vaccine
  • Individuals not wanting the mRNA vaccines still should be able to receive the Janssen Biotech (J&J) vaccine

CDC Endorses ACIP’s Updated COVID-19 Vaccine Recommendations

<table>
<thead>
<tr>
<th>Media Statement</th>
<th>Advisory Committee on Immunization Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Immediate Release: Thursday, December 16, 2021</td>
<td></td>
</tr>
<tr>
<td>Contact: Media Relations</td>
<td></td>
</tr>
<tr>
<td>(404) 639-3286</td>
<td></td>
</tr>
<tr>
<td>Vaccine</td>
<td>Age</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Pfizer-BioNTech/Comirnaty</td>
<td>&gt;12 years</td>
</tr>
<tr>
<td>(approved)</td>
<td>&gt;5-11 years</td>
</tr>
<tr>
<td>Moderna</td>
<td>&gt;18 years</td>
</tr>
<tr>
<td>Janssen Biotech (J&amp;J)*</td>
<td>&gt;18 years</td>
</tr>
</tbody>
</table>
COVID-19 VACCINE BOOSTERS DURING PREGNANCY

All pregnant and recently pregnant people (up to 6 weeks postpartum) who received a COVID-19 vaccine before or during pregnancy

Should receive a booster 5-6 months after second shot of Pfizer or Moderna

Should receive a booster 2 months after shot of J&J/Janssen

Can receive any vaccine for a booster:
- Pfizer: Full dose
- Moderna: Half dose
- J&J: Full dose
COVID-19 Vaccine Side Effects in Pregnancy

COVID-19 Vaccine Side Effects in Pregnancy

- **No difference** in common COVID-19 mRNA vaccine side effects between pregnant and non-pregnant people
  - Pain
  - Fatigue
  - Headache
  - Myalgias
  - Chills
  - Fevers

- For the first or second shot – no difference
## COVID-19 Vaccine Side Effects in Pregnancy

<table>
<thead>
<tr>
<th>Participant-Reported Outcome</th>
<th>Published Incidence*</th>
<th>V-safe Pregnancy Registry†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>no./total no. (%)</td>
</tr>
<tr>
<td>Pregnancy loss among participants with a completed pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spontaneous abortion: &lt;20 wk\textsuperscript{15-17,‡}</td>
<td>Not applicable</td>
<td>104</td>
</tr>
<tr>
<td>Stillbirth: ≥ 20 wk\textsuperscript{18-20}</td>
<td>&lt;1</td>
<td>1/725 (0.1)§</td>
</tr>
<tr>
<td>Neonatal outcome among live-born infants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preterm birth: &lt;37 wk\textsuperscript{21,22}</td>
<td>8–15</td>
<td>60/636 (9.4)¶</td>
</tr>
<tr>
<td>Small size for gestational age\textsuperscript{23,24∥}</td>
<td>3.5</td>
<td>23/724 (3.2)</td>
</tr>
<tr>
<td>Congenital anomalies\textsuperscript{25,**}</td>
<td>3</td>
<td>16/724 (2.2)</td>
</tr>
<tr>
<td>Neonatal death\textsuperscript{26,††}</td>
<td>&lt;1</td>
<td>0/724</td>
</tr>
</tbody>
</table>

COVID-19 Vaccine Side Effects in Pregnancy

• **No difference** in poor pregnancy outcomes between COVID-19 vaccinated pregnant people and the general population
  • Miscarriage
  • Stillbirth
  • Preterm birth
  • Small size for gestational age
  • Birth defects
  • Neonatal death
Enrolled 84 pregnant, 31 lactating, and 16 nonpregnant women

Compared antibody response between natural COVID-19 infection to the COVID-19 mRNA vaccines

Evaluated for antibodies in:
- Patient blood
- Breastmilk
- Umbilical cord blood -> passage of antibodies to the baby
Patient Serum Antibodies to COVID-19

• Present after both natural infection and vaccine
• Pregnant and lactating women had similar response to non-pregnant women
• Antibody response MUCH higher in vaccine vs. natural infection

Gray et al AJOG 2021;225(3):303.e1-303.e17
Umbilical Cord Blood / Breastmilk

- Neutralizing antibodies against the SARS-CoV-2 spike S protein were found in both the umbilical cord blood and breastmilk.

- Suggests passive immunity to the fetus/neonate with maternal vaccination.

Gray et al AJOG 2021;225(3):303.e1-303.e17
COVID-19 Vaccines and Pregnancy

• We now have good and reliable data to suggest that COVID-19 vaccination is safe and effective in pregnancy and lactation

• Data also suggests that vaccination in pregnancy provides some degree of immunity to the fetus/neonate through the placenta and breastmilk

COVID-19 VACCINATION IS SAFE and protects you, your family, and your community.
COVID-19 Vaccines During Pregnancy – How Are We Doing?
Big Boost After Strong CDC Recommendation for COVID Vaccine During Pregnancy

[Diagram showing vaccination rates by different age and pregnancy statuses over time]
COVID-19 Vaccination for Pregnant People to Prevent Serious Illness, Deaths, and Adverse Pregnancy Outcomes from COVID-19

The Centers for Disease Control and Prevention (CDC) recommends urgent action to increase Coronavirus Disease 2019 (COVID-19) vaccination among people who are pregnant, recently pregnant (including those who are lactating), who are trying to become pregnant now, or who might become pregnant in the future. CDC **strongly recommends** COVID-19 vaccination either before or during pregnancy because the benefits of vaccination outweigh known or potential risks.
COVID-19 vaccines available to all individuals +16 years

Updated CDC Clinical Considerations

Updated ACOG/SMFM Guidance

HAN

Currently 41.5%

https://covid.cdc.gov/covid-data-tracker/#vaccinations-pregnant-women
Figure 2: Percent of Pregnant People Aged 18–49 Years Fully Vaccinated with COVID-19 Vaccine Prior to or during Pregnancy Overall, by Race/Ethnicity, and Date Reported to CDC – Vaccine Safety Datalink*, United States December 14, 2020 – January 1, 2022

Currently 41.5%

https://covid.cdc.gov/covid-data-tracker/#vaccinations-pregnant-women
COVID-19 Vaccines and Pregnancy

• With the reliable safety and efficacy data regarding COVID-19 vaccines in pregnancy, along with the data supporting increased risk of severe illness and poor pregnancy outcomes with COVID-19 infection during pregnancy, the low fully vaccinated rate of 41.5% of pregnant people is unacceptable.
Next Steps
Tools and Recommendations
Tips for Health Care Providers

- Lead with listening
- Use patient-centered techniques
- Respond with empathy
- Address misinformation about COVID-19 vaccination by sharing key facts
- Help individuals find their motivation for getting vaccinated
- Wrap up the conversation by encouraging your patients to take at least one action
- Re-engage in conversations during follow up visits

www.cdc.gov/vaccines/covid-19/hcp/engaging-patients.html
Tips for Patients and Health Systems

• Patients
  • Disseminate information and updates
  • Assess reasons for vaccine hesitancy
  • Share personal stories
  • Recruit vaccine champions of diverse backgrounds

• Providers and Health Systems
  • Encourage clinicians to become a vaccine providers in different clinic settings*
  • Provide resources to assist with vaccine discussions
  • Work with hospitals to encourage vaccine availability in triage and postpartum
CDC Resources

CDC’s COVID-19 vaccine tools and resources.

- For Healthcare Professionals: https://www.cdc.gov/vaccines/covid-19/hcp/index.html
“When my patients ask me about the COVID-19 vaccines, I proudly tell them I got the shots and that I was breastfeeding at the time. In fact, I am still pumping and breastfeeding my baby. Getting the vaccine was the right choice for me.”

— Veronica Maria Pimentel, MD, FACOG, obstetrician–gynecologist and maternal–fetal medicine specialist (Connecticut)

COVID-19 Vaccines: Tools for Your Practice and Your Patients

More than 80% of people say that they would turn to their doctor or to another health care professional who cares for them to actually make a decision about whether or not they should get a vaccine.”

— Vice Admiral Vivek H. Murthy, MD, MPH, U.S. Surgeon General, 2021 ACOG Annual Clinical and Scientific Meeting

Obstetrician–gynecologists have the unique responsibility of counseling their patients, including people who are pregnant and lactating, through their COVID-19 vaccination decisions. This guide can help you:
Tips for this Committee

• Women and Children’s Health Committee of the State of Connecticut Medical Assistance Program Oversight Council
  • Lobby to collect pregnancy-specific COVID-19 vaccination rates in Connecticut
  • Partner with birthing hospitals and pre-/post-natal care providers to discuss ways to breakdown barriers to pregnant people receiving COVID-19 vaccines (you are all invited to meet with the Connecticut Perinatal Quality Collaborative!)
  • Sponsor focus group discussions with pregnant and lactating people to hear concerns and questions about COVID-19 vaccine safety and efficacy in pregnancy
Thank you for your time

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References

- **BMJ** 2020;370:m3320 doi: [https://doi.org/10.1136/bmj.m3320](https://doi.org/10.1136/bmj.m3320)


References


- CDC COVIDVaxView [https://www.cdc.gov/vaccines/imz-managers/coverage/covidvaxview/index.html](https://www.cdc.gov/vaccines/imz-managers/coverage/covidvaxview/index.html)
- CDC COVID Data Tracker [https://covid.cdc.gov/covid-data-tracker/#vaccinations-pregnant-women](https://covid.cdc.gov/covid-data-tracker/#vaccinations-pregnant-women)
- CDC Talking with Patients about COVID-19 Vaccination [https://www.cdc.gov/vaccines/covid-19/hcp/engaging-patients.html](https://www.cdc.gov/vaccines/covid-19/hcp/engaging-patients.html)
- CDC Vaccine Recipient Education [https://www.cdc.gov/vaccines/covid-19/hcp/index.html](https://www.cdc.gov/vaccines/covid-19/hcp/index.html)