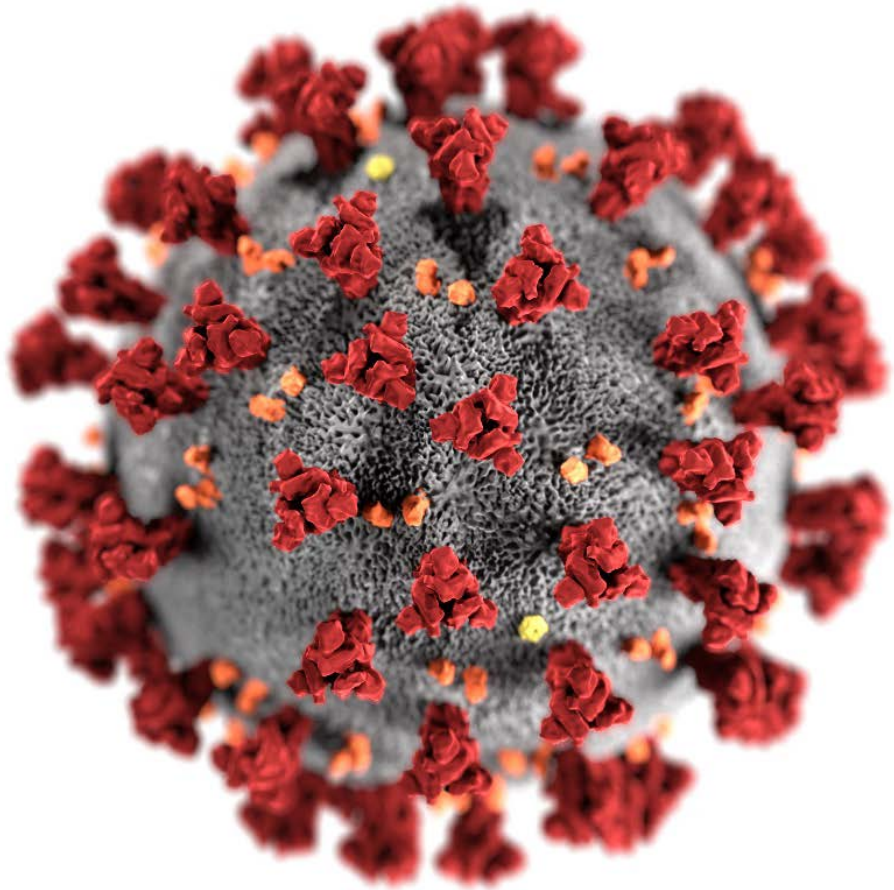
Use of mRNA COVID-19 Vaccines: Interim Clinical Considerations



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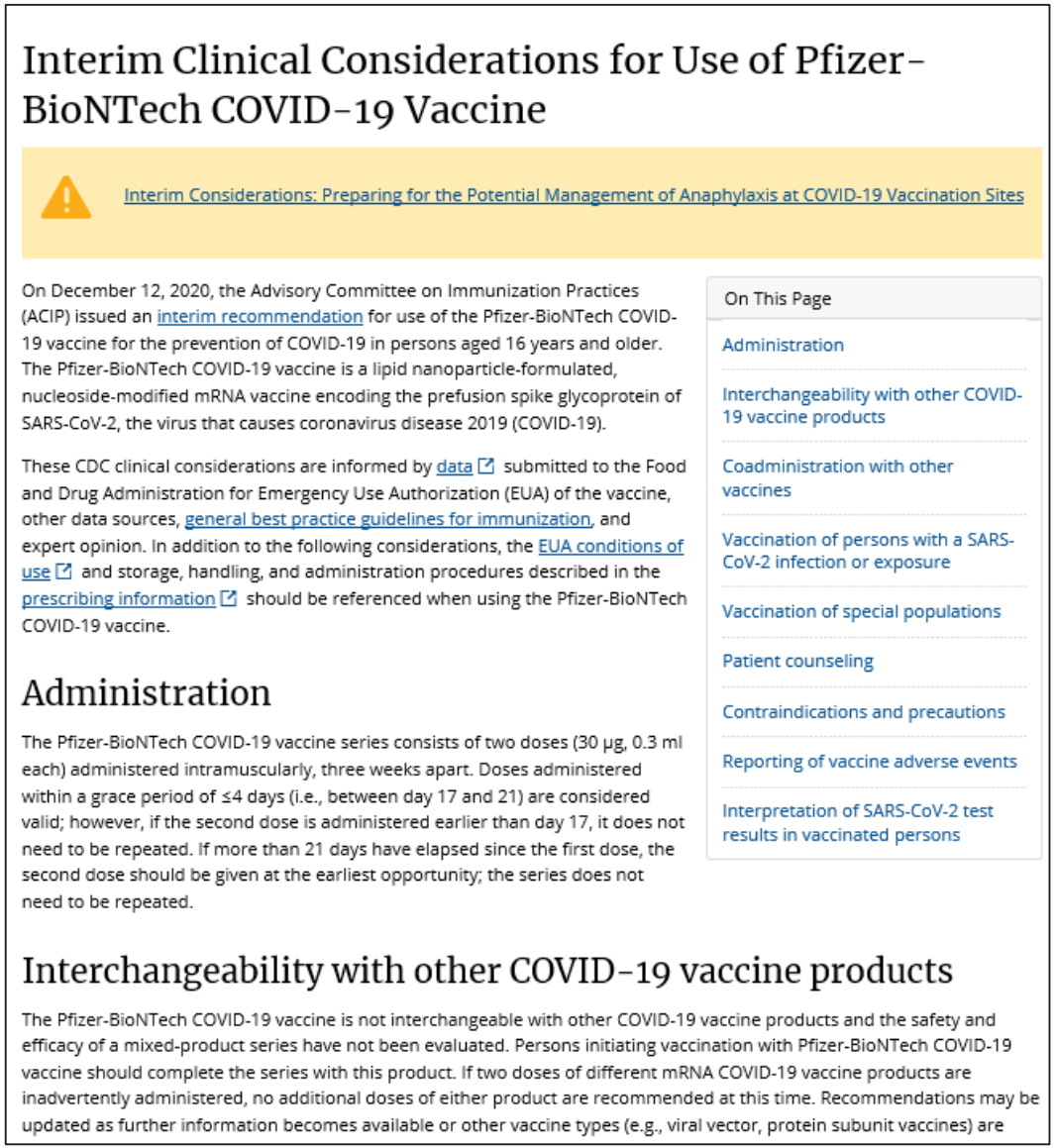
Clinical considerations for use of mRNA COVID-19 vaccines

- CDC clinical considerations for Pfizer-BioNTech COVID-19 published:
  - https://www.cdc.gov/vaccines/covid-19/info-by-product/pfizer/clinical-considerations.html

- Clinical considerations will be updated to include both authorized mRNA vaccine products
  - Guidance harmonized across products with few differences (e.g., age indication, dosing schedule)
  - This presentation focuses on contraindications and precautions to vaccination



Interim Clinical Considerations for Use of Pfizer-BioNTech COVID-19 Vaccine

Interim Considerations: Preparing for the Potential Management of Anaphylaxis at COVID-19 Vaccination Sites

On December 12, 2020, the Advisory Committee on Immunization Practices (ACIP) issued an interim recommendation for use of the Pfizer-BioNTech COVID-19 vaccine for the prevention of COVID-19 in persons aged 16 years and older. The Pfizer-BioNTech COVID-19 vaccine is a lipid nanoparticle-formulated, nucleoside-modified mRNA vaccine encoding the prefusion spike glycoprotein of SARS-CoV-2, the virus that causes coronavirus disease 2019 (COVID-19).

These CDC clinical considerations are informed by data submitted to the Food and Drug Administration for Emergency Use Authorization (EUA) of the vaccine, other data sources, general best practice guidelines for immunization, and expert opinion. In addition to the following considerations, the EUA conditions of use and storage, handling, and administration procedures described in the prescribing information should be referenced when using the Pfizer-BioNTech COVID-19 vaccine.

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Administration

The Pfizer-BioNTech COVID-19 vaccine series consists of two doses (30 µg, 0.3 ml each) administered intramuscularly, three weeks apart. Doses administered within a grace period of ≤4 days (i.e., between day 17 and 21) are considered valid; however, if the second dose is administered earlier than day 17, it does not need to be repeated. If more than 21 days have elapsed since the first dose, the second dose should be given at the earliest opportunity; the series does not need to be repeated.

Interchangeability with other COVID-19 vaccine products

The Pfizer-BioNTech COVID-19 vaccine is not interchangeable with other COVID-19 vaccine products and the safety and efficacy of a mixed-product series have not been evaluated. Persons initiating vaccination with Pfizer-BioNTech COVID-19 vaccine should complete the series with this product. If two doses of different mRNA COVID-19 vaccine products are inadvertently administered, no additional doses of either product are recommended at this time. Recommendations may be updated as further information becomes available or other vaccine types (e.g., viral vector, protein subunit vaccines) are

Contraindications and precautions to mRNA COVID-19 vaccines

Contraindications to vaccination

- Prescribing information for both Pfizer-BioNTech and Moderna COVID-19 vaccines:
  - Severe allergic reaction (e.g., anaphylaxis) to **any component of the vaccine** is a contraindication to vaccination
  - Appropriate medical treatment used to manage immediate allergic reactions must be immediately available in the event an acute anaphylactic reaction occurs following administration of the vaccine

Ingredients* included in mRNA COVID-19 vaccines

Description	Pfizer-BioNTech	Moderna
mRNA	Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2	Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2
Lipids	2[(polyethylene glycol)-2000]-N,N-ditetradecylacetamide	Polyethylene glycol (PEG) 2000 dimyristoyl glycerol (DMG)
	1,2-distearoyl-sn-glycero-3-phosphocholine	1,2-distearoyl-sn-glycero-3-phosphocholine
	Cholesterol	Cholesterol
	(4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate)	SM-102
Salts, sugars, buffers	Potassium chloride	Tromethamine
	Monobasic potassium phosphate	Tromethamine hydrochloride
	Sodium chloride	Acetic acid
	Dibasic sodium phosphate dihydrate	Sodium acetate
	Sucrose	sucrose

*As reported in the prescribing information

Ingredients* included in mRNA COVID-19 vaccines

Description	Pfizer-BioNTech	Moderna
mRNA	Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2	Nucleoside-modified mRNA encoding the viral spike (S) glycoprotein of SARS-CoV-2
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Salts, sugars, buffers	Potassium chloride	Tromethamine
	Monobasic potassium phosphate	Tromethamine hydrochloride
	Sodium chloride	Acetic acid
	Dibasic sodium phosphate dihydrate	Sodium acetate
	Sucrose	sucrose

*As reported in the prescribing information

Precautions to vaccination: Pfizer-BioNTech and Moderna COVID-19 vaccines

- History of severe allergic reaction (e.g., anaphylaxis) **to any other vaccine or injectable therapy** (e.g., intramuscular, intravenous, or subcutaneous)
  - Risk assessment should be conducted in persons who report history of severe allergic reaction (e.g., whether reaction required use of epinephrine [EpiPen®, etc.], resulted in hospitalization)

- These persons may still receive vaccination, but should be counseled about the unknown risks of developing a severe allergic reaction and balance these risks against the benefits of vaccination

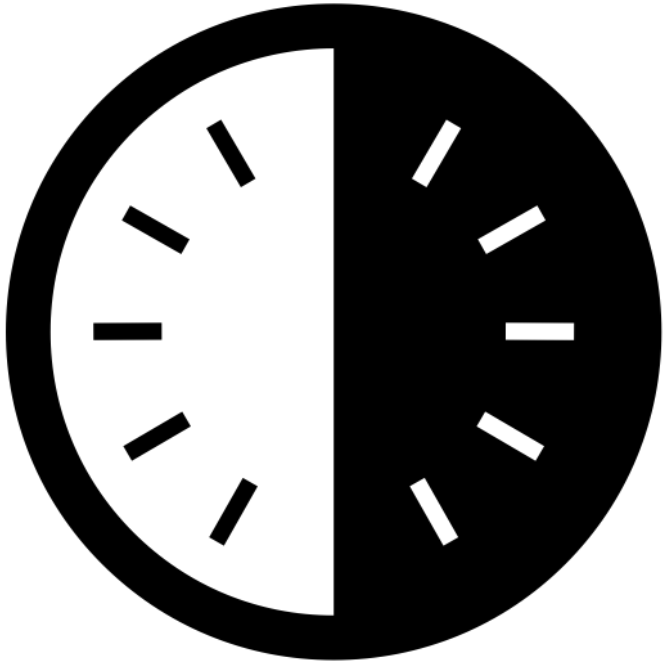
Allergies that do not constitute a contraindication or precaution to vaccination

- Persons with the following allergies do not have a contraindication or precaution to vaccination:
  - History of food, pet, insect, venom, environmental, latex, or other allergies not related to vaccines or injectable therapies
  - History of allergy to oral medications (including the oral equivalent of an injectable medication)
  - Non-serious allergy to vaccines or other injectables (e.g., no anaphylaxis)
  - Family history of anaphylaxis
  - Any other history of anaphylaxis that is not related to a vaccine or injectable therapy

Observation period following vaccination

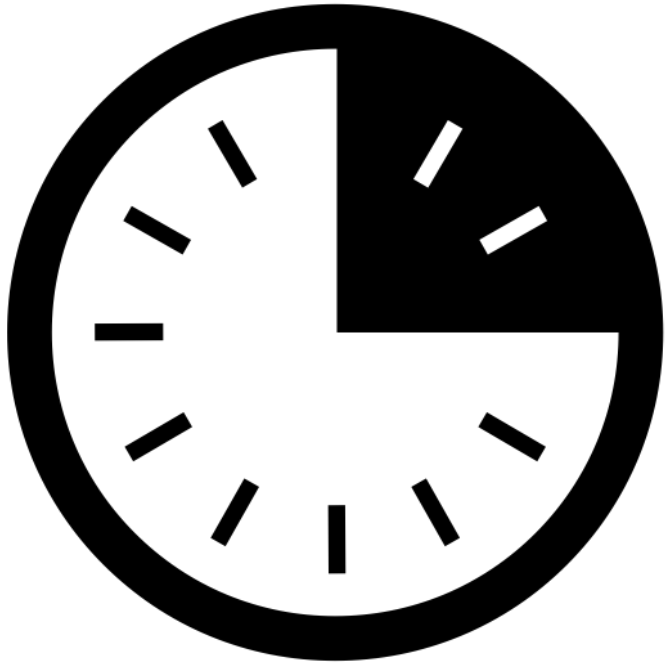
- Vaccine providers should observe patients after vaccination to monitor for the occurrence of immediate adverse reactions:

Persons with a history of anaphylaxis (due to any cause)



30 minutes

All other persons



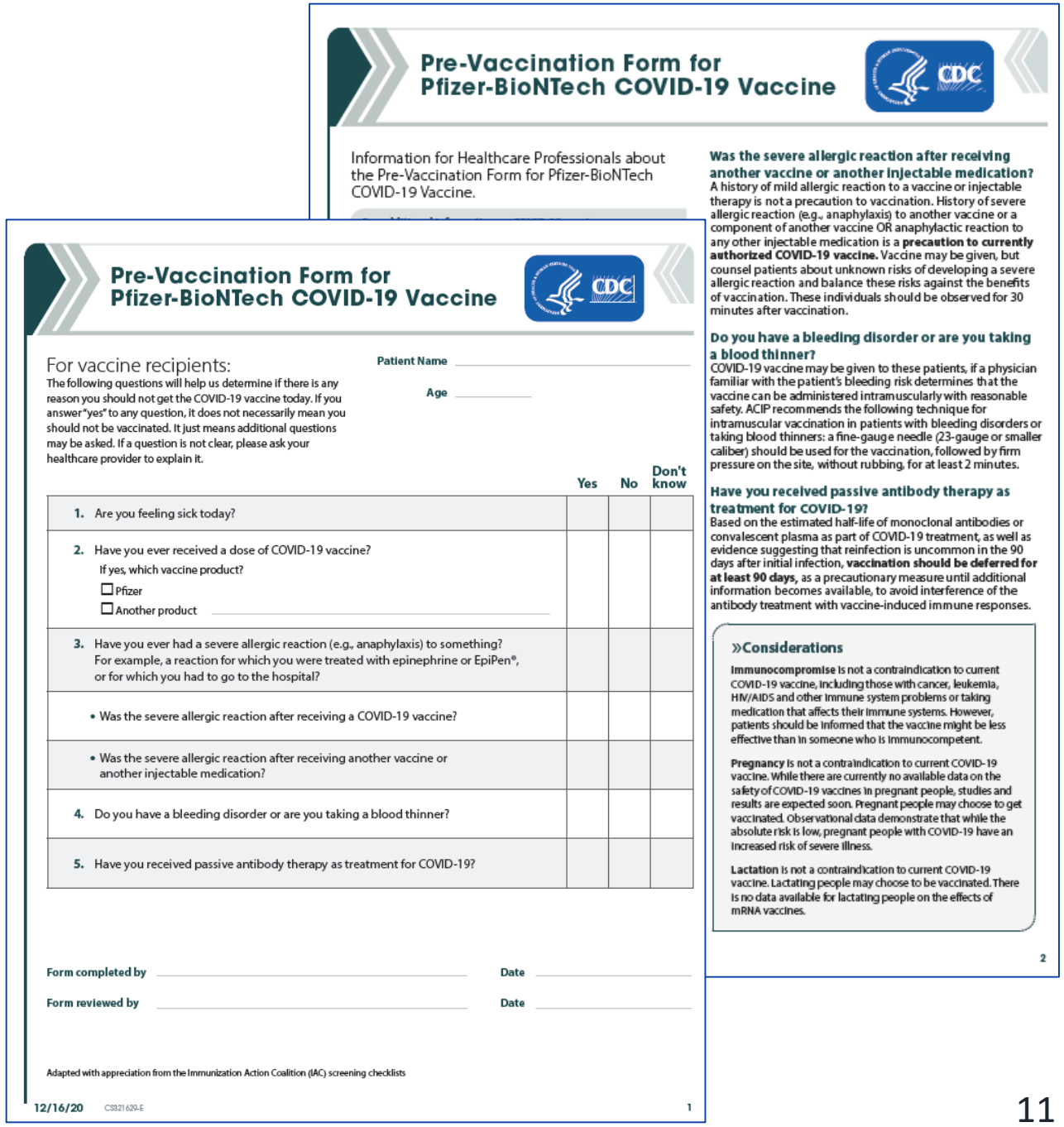
15 minutes

Algorithm for the triage of persons presenting for mRNA COVID-19 vaccine

	MAY PROCEED WITH VACCINATION	PRECAUTION TO VACCINATION	CONTRAINDICATION TO VACCINATION
CONDITIONS	**CONDITIONS** • Immunocompromising conditions • Pregnancy • Lactation **ACTIONS** • Additional information provided* • 15 minute observation period	**CONDITIONS** • Moderate/severe acute illness **ACTIONS** • Risk assessment • Potential deferral of vaccination • 15 minute observation period if vaccinated	**CONDITIONS** • None **ACTIONS** • N/A
ALLERGIES	**ALLERGIES** • History of food, pet, insect, venom, environmental, latex, or other allergies not related to vaccines or injectable therapies • History of allergy to oral medications (including the oral equivalent of an injectable medication) • Non-serious allergy to vaccines or other injectables (e.g., no anaphylaxis) • Family history of anaphylaxis • Any other history of anaphylaxis that is not related to a vaccine or injectable therapy **ACTIONS** • 30 minute observation period: Persons with a history of severe allergic reaction (e.g., anaphylaxis) due to any cause • 15 minute observation period: Persons with allergic reaction, but not anaphylaxis	**ALLERGIES** • History of severe allergic reaction (e.g., anaphylaxis) to another vaccine (not including mRNA COVID-19 vaccines†) • History of severe allergic reaction (e.g., anaphylaxis) to an injectable therapy **ACTIONS:** • Risk assessment • Potential deferral of vaccination • 30 minute observation period if vaccinated	**ALLERGIES** • History of severe allergic reaction (e.g., anaphylaxis) to any component of an mRNA COVID-19 vaccine† **ACTIONS** • Do not vaccinate

https://www.cdc.gov/vaccines/covid-19/info-by-product/pfizer/clinical-considerations.html

Additional tools to identify persons with contraindications and precautions to vaccination



Pre-Vaccination Form for Pfizer-BioNTech COVID-19 Vaccine

Information for Healthcare Professionals about the Pre-Vaccination Form for Pfizer-BioNTech COVID-19 Vaccine.

Was the severe allergic reaction after receiving another vaccine or another injectable medication?
A history of mild allergic reaction to a vaccine or injectable therapy is not a precaution to vaccination. History of severe allergic reaction (e.g., anaphylaxis) to another vaccine or a component of another vaccine OR anaphylactic reaction to any other injectable medication is a **precaution to currently authorized COVID-19 vaccine.** Vaccine may be given, but counsel patients about unknown risks of developing a severe allergic reaction and balance these risks against the benefits of vaccination. These individuals should be observed for 30 minutes after vaccination.

Do you have a bleeding disorder or are you taking a blood thinner?
COVID-19 vaccine may be given to these patients, if a physician familiar with the patient's bleeding risk determines that the vaccine can be administered intramuscularly with reasonable safety. ACIP recommends the following technique for intramuscular vaccination in patients with bleeding disorders or taking blood thinners: a fine-gauge needle (23-gauge or smaller caliber) should be used for the vaccination, followed by firm pressure on the site, without rubbing, for at least 2 minutes.

Have you received passive antibody therapy as treatment for COVID-19?
Based on the estimated half-life of monoclonal antibodies or convalescent plasma as part of COVID-19 treatment, as well as evidence suggesting that reinfection is uncommon in the 90 days after initial infection, **vaccination should be deferred for at least 90 days,** as a precautionary measure until additional information becomes available, to avoid interference of the antibody treatment with vaccine-induced immune responses.

»Considerations

Immunocompromise is not a contraindication to current COVID-19 vaccine, including those with cancer, leukemia, HIV/AIDS and other immune system problems or taking medication that affects their immune systems. However, patients should be informed that the vaccine might be less effective than in someone who is immunocompetent.

Pregnancy is not a contraindication to current COVID-19 vaccine. While there are currently no available data on the safety of COVID-19 vaccines in pregnant people, studies and results are expected soon. Pregnant people may choose to get vaccinated. Observational data demonstrate that while the absolute risk is low, pregnant people with COVID-19 have an increased risk of severe illness.

Lactation is not a contraindication to current COVID-19 vaccine. Lactating people may choose to be vaccinated. There is no data available for lactating people on the effects of mRNA vaccines.

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Pre-Vaccination Form for Pfizer-BioNTech COVID-19 Vaccine

For vaccine recipients:
The following questions will help us determine if there is any reason you should not get the COVID-19 vaccine today. If you answer "yes" to any question, it does not necessarily mean you should not be vaccinated. It just means additional questions may be asked. If a question is not clear, please ask your healthcare provider to explain it.

Patient Name _____

Age _____

	Yes	No	Don't know
1. Are you feeling sick today?			
2. Have you ever received a dose of COVID-19 vaccine? If yes, which vaccine product? ☐ Pfizer ☐ Another product _____			
3. Have you ever had a severe allergic reaction (e.g., anaphylaxis) to something? For example, a reaction for which you were treated with epinephrine or EpiPen®, or for which you had to go to the hospital?			
• Was the severe allergic reaction after receiving a COVID-19 vaccine?			
• Was the severe allergic reaction after receiving another vaccine or another injectable medication?			
4. Do you have a bleeding disorder or are you taking a blood thinner?			
5. Have you received passive antibody therapy as treatment for COVID-19?			

Form completed by _____ **Date** _____

Form reviewed by _____ **Date** _____

Adapted with appreciation from the Immunization Action Coalition (IAC) screening checklists

12/16/20 CS321620-E

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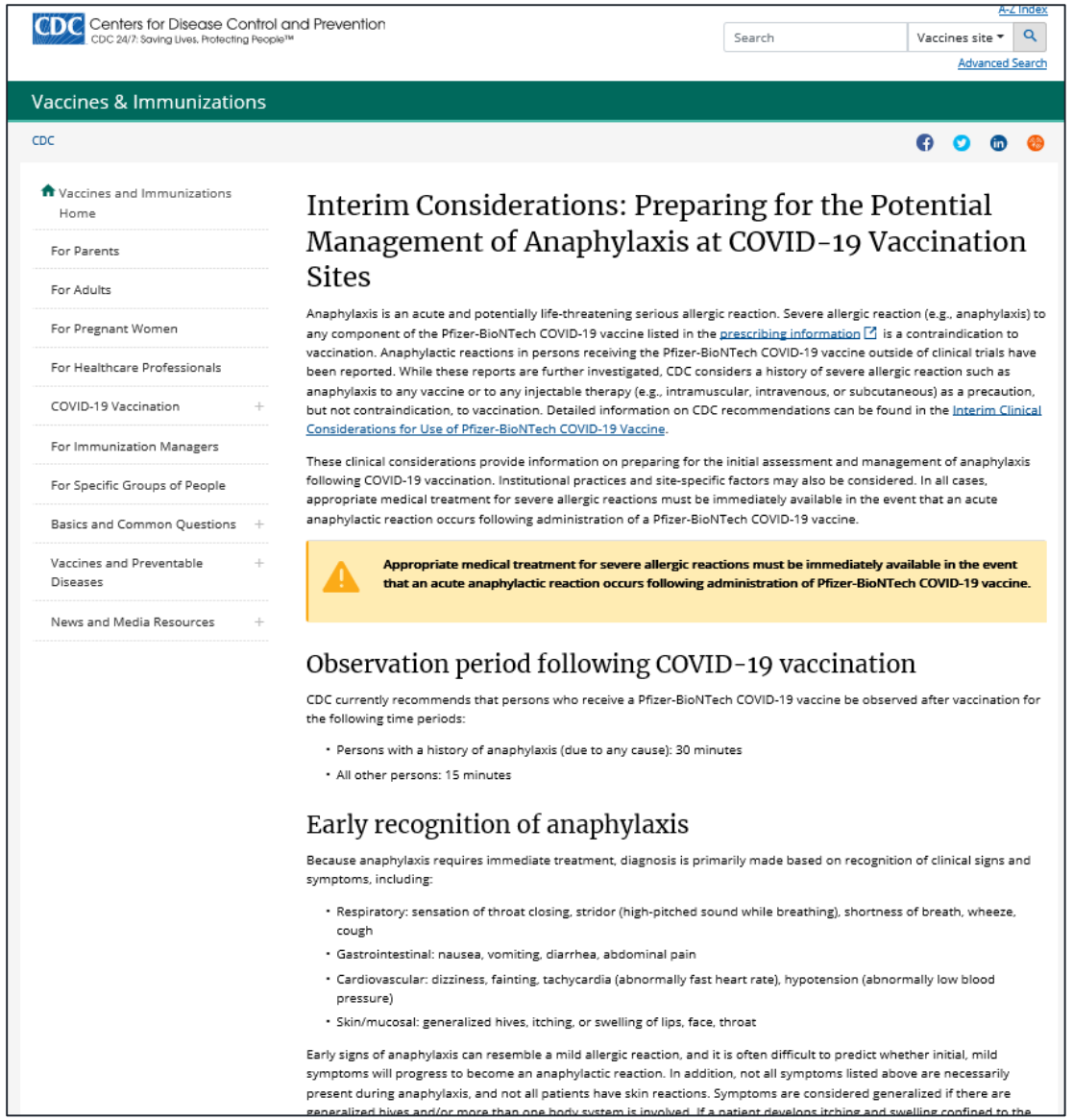
https://www.cdc.gov/vaccines/covid-19/downloads/pre-vaccination-screening-form.pdf

Interim considerations:

Preparing for the potential management of anaphylaxis at COVID-19 vaccination sites

Fact sheets under development, including one tailored to long-term care facilities



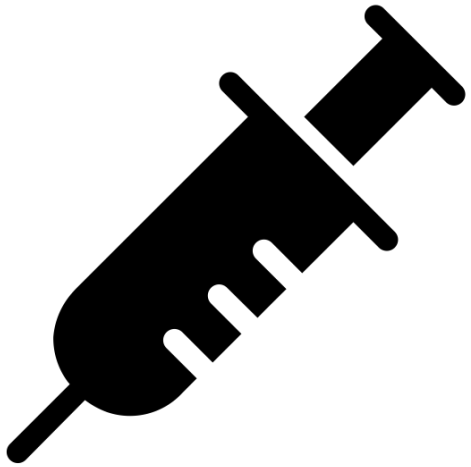
https://www.cdc.gov/vaccines/covid-19/info-by-product/pfizer/anaphylaxis-management.html

Key messages

Preparing for the potential management of anaphylaxis at COVID-19 vaccination sites

Early recognition of anaphylaxis symptoms

Prompt treatment with epinephrine



Activate emergency medical services

https://www.cdc.gov/vaccines/covid-19/info-by-product/pfizer/anaphylaxis-management.html

Recommended medications and supplies for the management of anaphylaxis at COVID-19 vaccination sties

Should be available at all sites	Include at sites where feasible
Epinephrine prefilled syringe or autoinjector*	Pulse oximeter
H1 antihistamine (e.g., diphenhydramine)†	Oxygen
Blood pressure cuff	Bronchodilator (e.g., albuterol)
Stethoscope	H2 antihistamine (e.g., famotidine, cimetidine)
Timing device to assess pulse	Intravenous fluids
	Intubation kit
	Adult-sized pocket mask with one-way valve (also known as cardiopulmonary resuscitation (CPR) mask)

*COVID-19 vaccination sites should have at least 3 doses of epinephrine on hand at any given time.

†Antihistamines may be given as adjunctive treatment and should not be used as initial or sole treatment for anaphylaxis. Additionally, caution should be used if oral medications are administered to persons with impending airway obstruction.

Discussion

Discussion

- Does ACIP agree with the proposed contraindications and precautions to vaccination?

- Are there any other sections of the clinical considerations that ACIP would like to discuss?

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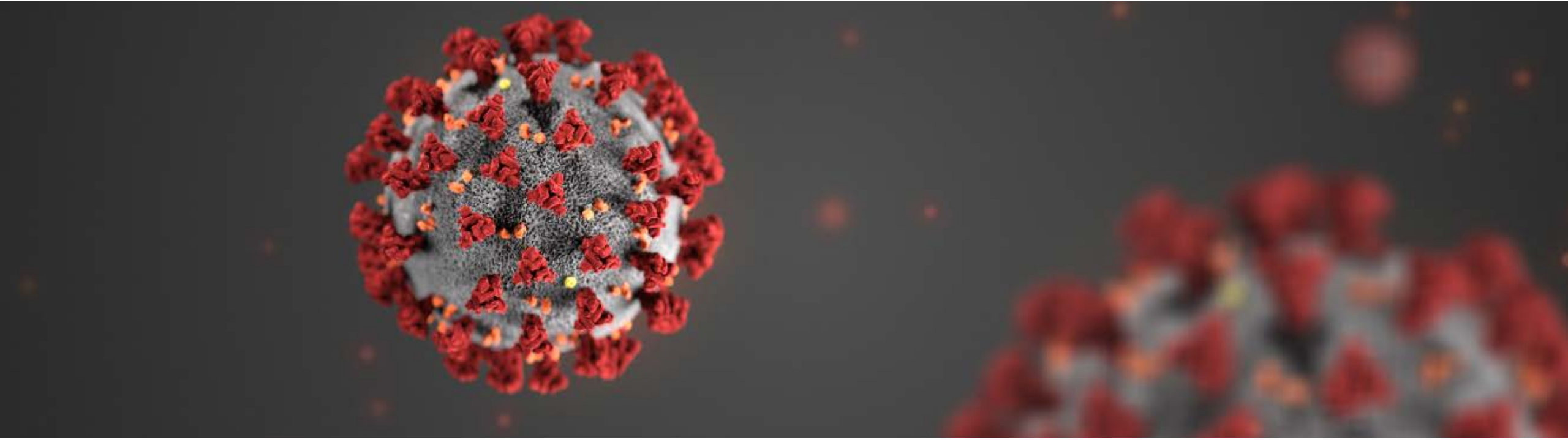

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

Thank you

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.