



Update on the COVID-19 Vaccines

Meg Fisher, MD
July 8, 2021



Disclaimer

- Information about COVID-19 and SARS-CoV-2, the virus that causes the illness is evolving daily
- Recommendations change frequently
- What you hear today may be outdated soon
- Trusted sources of up to date information
 - NJ Department of Health - www.nj.gov/health/
 - Centers for Disease Control and Prevention - www.cdc.gov

What is COVID-19 and how does it spread?

COVID-19 is a disease caused by a virus. It can be serious and have lasting effects.

COVID-19 is spread easily, often through close contact between people (within about 6 feet)

When people with COVID-19 breathe, talk, cough, or sneeze, they produce droplets that can **infect others nearby**

Source: <https://www.cdc.gov/coronavirus/2019-ncov/transmission/index.html>



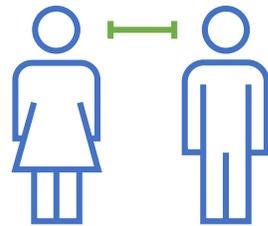
Transmission



How to help prevent the spread



Wear a mask that covers your nose and mouth



Stay at least 6 feet (about 2 arms lengths) from others



Avoid crowds and sick people



Wash your hands often



Get vaccinated

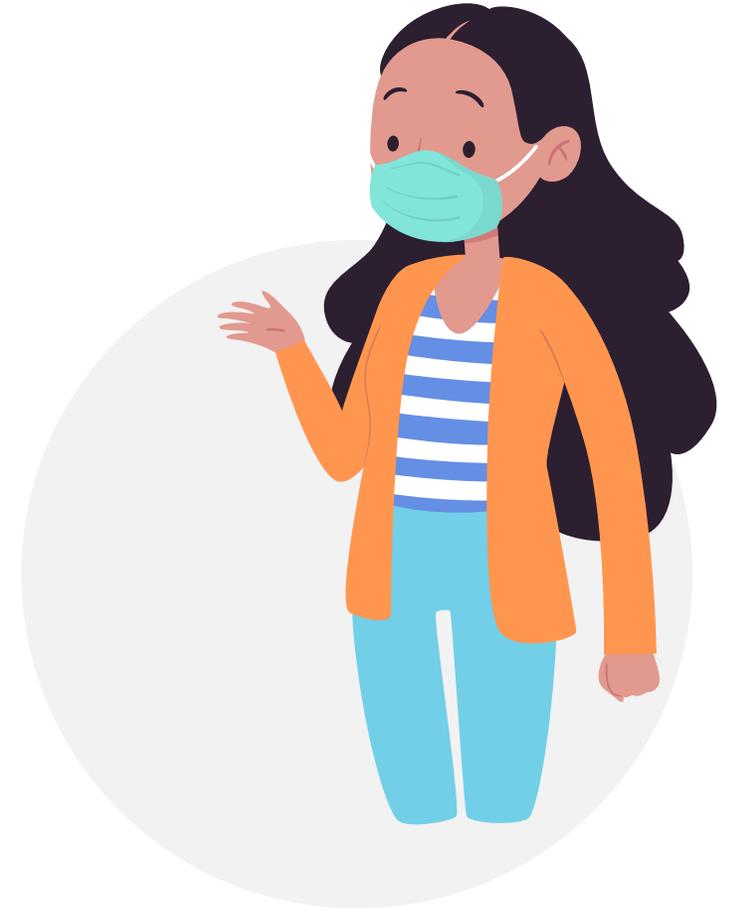


Source: <https://www.cdc.gov/coronavirus/2019-ncov/your-health/need-to-know.html>

COVID-19 Basics

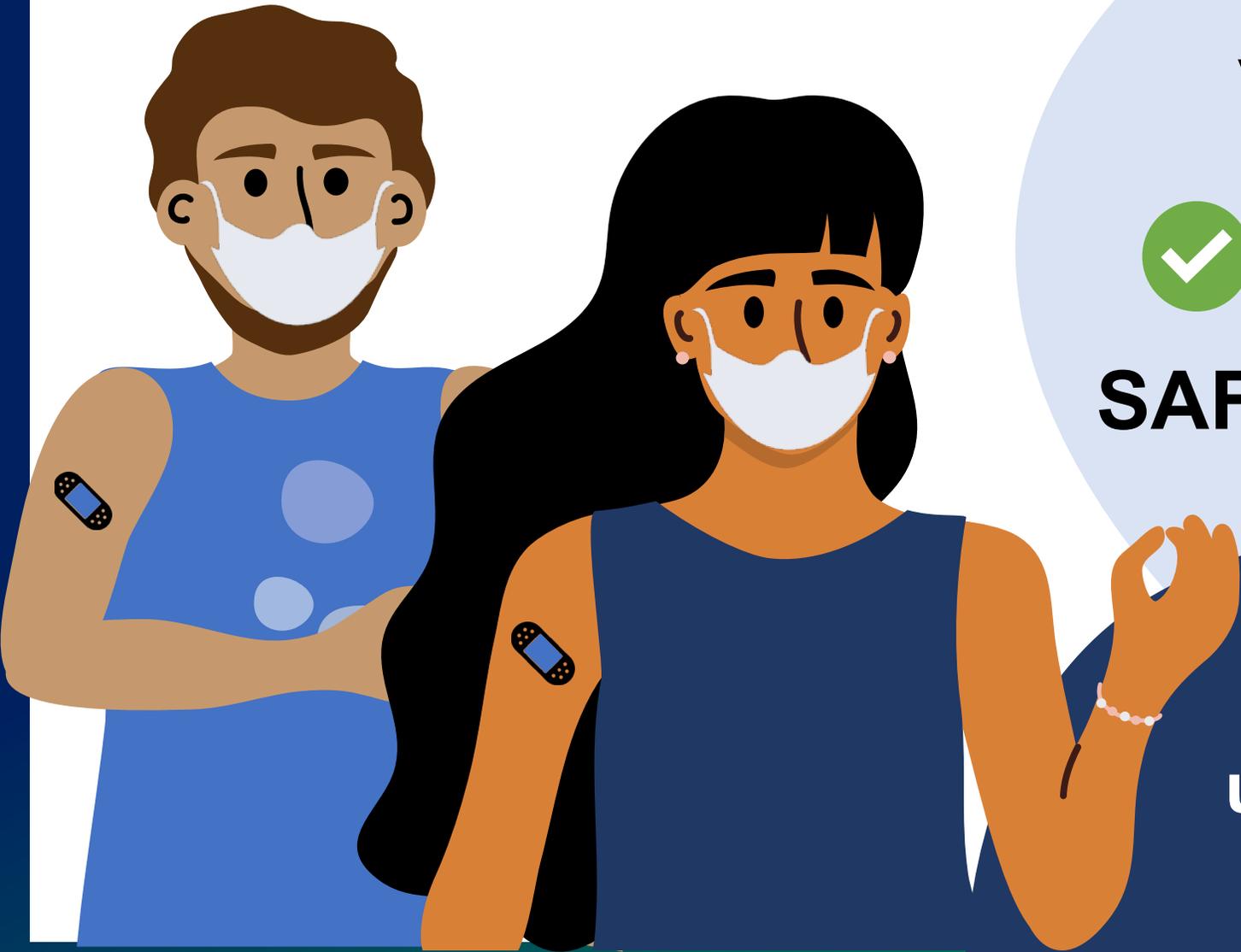
COVID-19 is real and can be serious

- Disease varies from asymptomatic to mild upper respiratory illness to pneumonia to multiorgan involvement and death
- Disease in children is usually either asymptomatic or mild
 - Multisystem inflammatory syndrome – Children (MIS-C) is a rare postinfectious complication





covid19.nj.gov/vaccine



COVID-19 vaccines are



SAFE



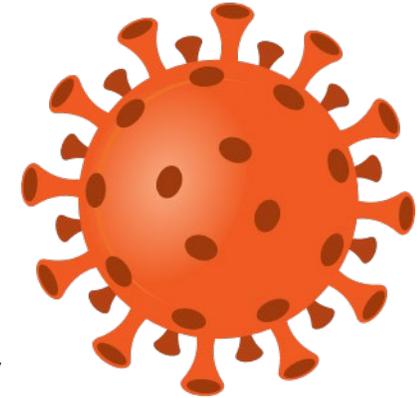
EFFECTIVE



FREE
for all

You can get a vaccine if you are **uninsured, and / or undocumented**

COVID-19 Vaccines



- Messenger RNA (mRNA) vaccines
 - Pfizer – 12/11/20 – for ages 16 years and older
 - Moderna – 12/18/20 – for ages 18 years and older
- Adenovirus vector
 - J&J Janssen – 2/27/21 – for ages 18 years and older
 - AstraZeneca – not available in US

mRNA COVID-19 Vaccines

- Pfizer BioNTech (super cold freezer), dose 2 at 3 weeks
- Moderna (must be refrigerated), dose 2 at 4 weeks
- Both doses should be the same vaccine

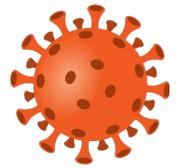
1st Dose



2nd Dose

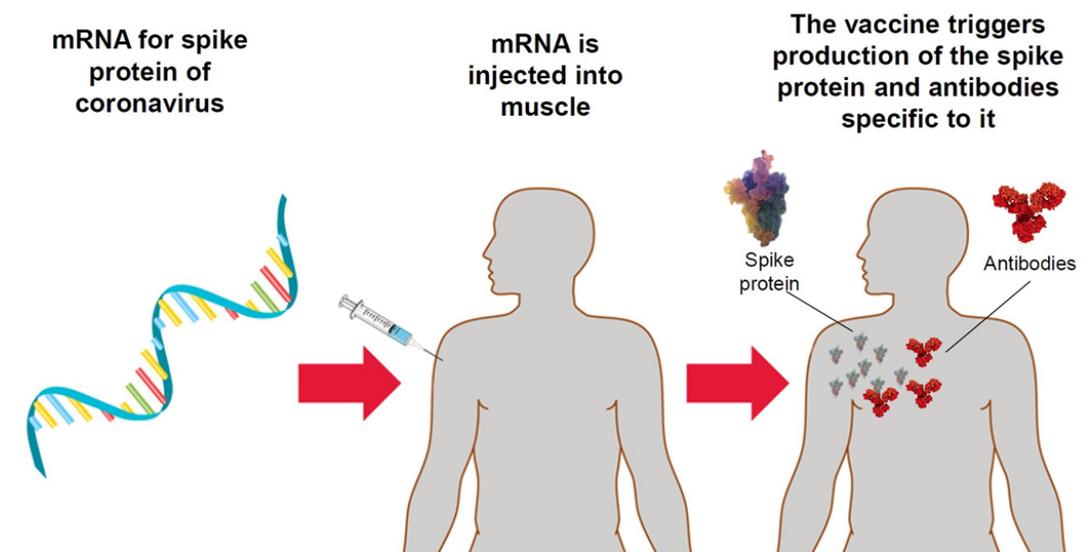


About mRNA COVID-19 Vaccines



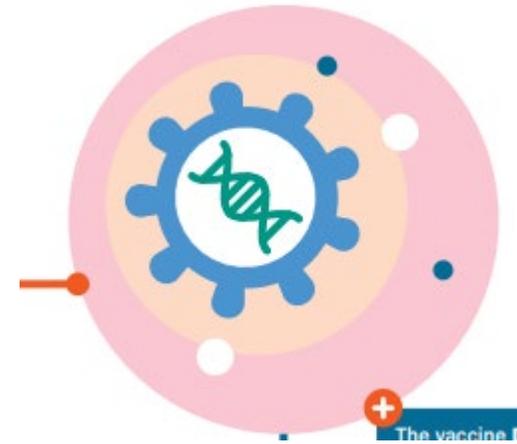
- Messenger RNA codes for the spike protein of the virus
- Carrier is a lipid nanoparticle
- Lipid allows the mRNA to enter cells
- Code is read and spike protein produced
- Immune system responds with antibodies and cell mediated immunity

Vaccine Without The Virus: Messenger RNA (mRNA) Approach
NIH Vaccine Research Center and Moderna went from sequence to Phase I in 63 days



J&J Janssen COVID-19 Vaccine

- Code for the spike protein inserted into an altered human adenovirus (Ad26.COV2.S)
- Replication incompetent virus
- Adenovirus enters cells and releases code for the spike protein
- Immune systems responds to the spike protein

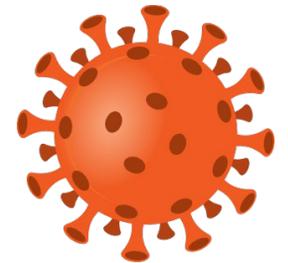


Single dose



How Were Vaccines Developed So Quickly?

- Messenger RNA vaccines and adenovirus vector vaccines are new but not unknown
- The research was basically already done!
 - The virus that causes COVID-19 (SARS-CoV-2) is VERY similar to other viruses (SARS and MERS), which had a lot of vaccine research starting in 2003
- Clinical trials overlapped instead of running one at a time
- Vaccine makers were able to begin production early to have supply ready as soon as vaccine authorized



Krammer, F. SARS-CoV-2 vaccines in development. *Nature* **586**, 516–527 (2020). <https://doi.org/10.1038/s41586-020-2798-3>.

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How were the vaccines developed so quickly?

We've had research on a similar virus and the vaccine technology for many years.

Testing a vaccine usually occurs in phases

For the COVID-19 vaccine, **phases overlapped** and **manufacturing efforts began early** so we could have vaccines available as soon as it was authorized

COVID-19 pandemic times

Phase 1

Phase 2

Phase 3

Manufacturing

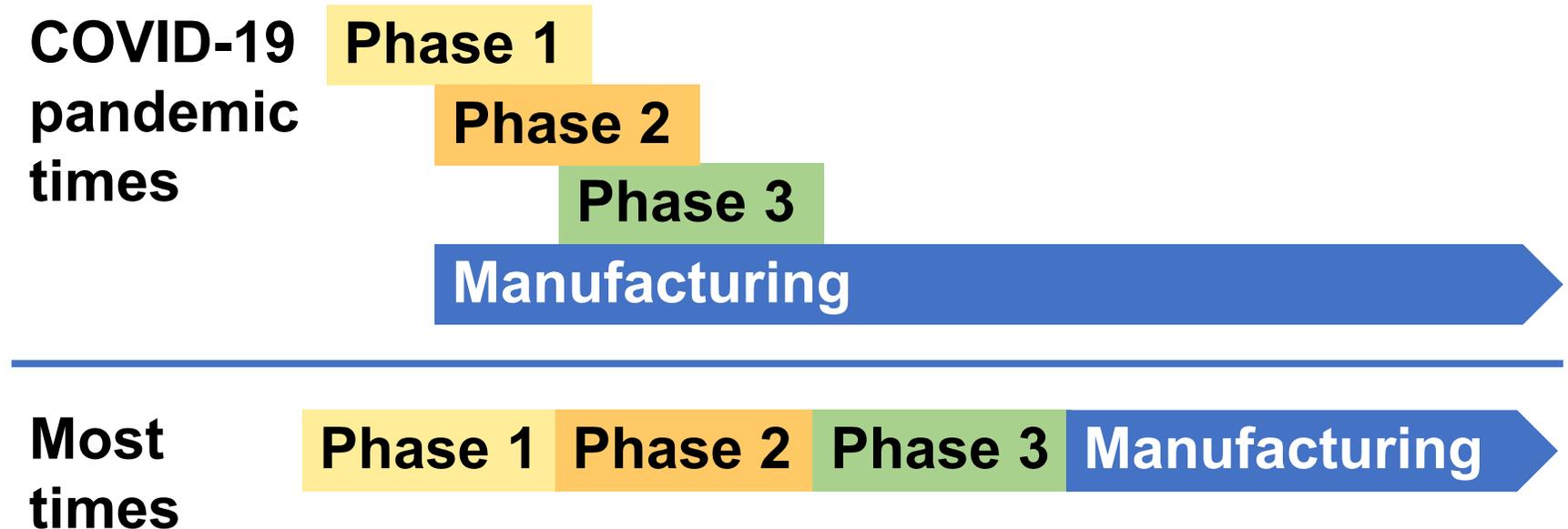
Most times

Phase 1

Phase 2

Phase 3

Manufacturing

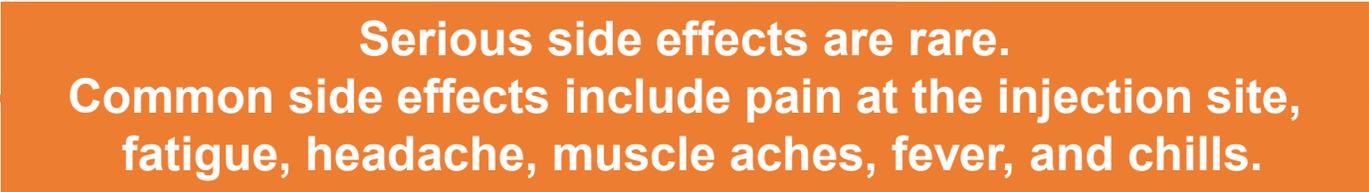


Source: <https://www.cdc.gov/vaccinesafety>; <https://www.cfr.org/background/guide-global-covid-19-vaccine-efforts>

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About the 3 COVID-19 vaccines:

| | Pfizer / BioNTech | Moderna | Johnson & Johnson |
|--|--|--|---|
| Authorized by FDA for Emergency Use | 12/11/20  | 12/18/20  | 2/27/21  |
| Clinical trials | Tested on >43,000 people | Tested on >30,000 people | Tested on >43,000 people |
| Dose information | 2 doses, 3 weeks apart | 2 doses, 4 weeks apart | 1 dose |
| Trial findings |  <p>Similar efficacy findings across genders, racial and ethnic groups, and underlying diseases.</p> | | |
| Side effects |  <p>Serious side effects are rare. Common side effects include pain at the injection site, fatigue, headache, muscle aches, fever, and chills.</p> | | |

Clinical Trials for Authorized Vaccines

- All trials include people of different race and ethnicity
- All trials include people of different ages
- All trials include people with underlying conditions
- There are no head-to-head trials of efficacy
- Trials were done at different times and in different locations
- All trials are ongoing for another 2 years
- Trials are in progress for children
 - On 5/10/21, Pfizer granted EUA for children 12 to 18
 - Moderna applied for age extension on 6/10/21



Side Effects of mRNA COVID-19 Vaccines

- Most common complaint was pain at the injection site
 - Other common symptoms included fatigue, fever, and headache
 - These are common side effects after getting vaccinated
- Risk for severe reaction to the vaccine about 0.5%
- People with a history of severe allergies (anaphylaxis) to food or medicine should talk to their doctor before taking the vaccine
- Side effects less common in people over 50 years of age
- Side effects more common after the second dose



<https://www.fda.gov/media/144246/download>

<https://www.fda.gov/media/144434/download>

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/expect/after.html>

Anaphylaxis and mRNA COVID-19 Vaccines

- Pfizer-BioNTech

- 21 cases after 1,893,360 first doses (11.1 cases per million doses)
- 71% within 15 minutes of vaccination; 86% within 30 minutes
- 90% of cases in women; 81% of cases had a history of allergic reactions

- Moderna

- 10 cases of anaphylaxis after administration of a reported 4,041,396 first doses (2.5 cases per million doses administered)
- 90% within 15 minutes of vaccination
- 100% women; 90% history of allergic reactions

<https://www.cdc.gov/mmwr/volumes/70/wr/mm7002e1.htm>

<https://www.cdc.gov/mmwr/volumes/70/wr/mm7004e1.htm>

Recommendations

- Ensure supplies available to manage anaphylaxis, especially epinephrine in prefilled syringes or autoinjectors
- Screen potential vaccine recipients to identify persons with contraindications and precautions
- Observation periods, 15 or 30 minutes depending on history
- Recognize the signs and symptoms of anaphylaxis early
- Treat suspected anaphylaxis with intramuscular epinephrine immediately
- Instructed people to seek immediate medical care if they develop signs or symptoms of an allergic reaction after they leave
- Report adverse events vaers.hhs.gov/reportevent.htm 

<https://www.cdc.gov/mmwr/volumes/70/wr/mm7002e1.htm>

<https://www.cdc.gov/mmwr/volumes/70/wr/mm7004e1.htm>

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Myocarditis and Pericarditis

- Increased reports since April 2021
- Following mRNA vaccines
- Most in adolescents and young adults
- More common following second dose
- Most patients responded well to medications and recovered quickly
- CDC continues to recommend vaccination for everyone 12 years and older
- Monitoring continues

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/myocarditis.html>

Side Effects of the Adenovirus Vector COVID-19 vaccines

- Most common complaint was pain at the injection site
 - Other common symptoms included fatigue, fever, and headache
 - These are common side effects after getting vaccinated
- Side effects less common in people over 60 years of age
- Single dose



<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/janssen.html>

Serious Side Effects

- Thrombocytopenia and Thrombosis with J&J vaccine
 - Cerebral venous sinus thrombosis and other thromboses
 - Single case during studies: 25-year-old male
 - Six additional cases: women 18 to 48 years old, one fatal
 - Onset within 6 to 13 days of vaccination
 - PF4 HIT (Platelet Factor 4 Heparin Induced Thrombocytopenia) antibody positive
- Thrombotic Thrombocytopenia with AstraZeneca vaccine
 - 62 cases of cerebral venous sinus thrombosis, 24 splenic vein thrombosis, 18 fatal
 - Most women under 60, onset within 2 weeks of vaccination
 - 4/7/21 European Medicine Agency safety committee: overall benefit-risk positive

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/JJUpdate.html>

<https://www.ema.europa.eu/en/news/astrazenecas-covid-19-vaccine-ema-finds-possible-link-very-rare-cases-unusual-blood-clots-low-blood>

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US FDA and CDC Recommendations

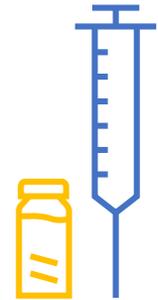
- Pause on use of J & J vaccine 4/13/21; reassessed; use resumed 4/23/21
- Vaccinees - seek medical treatment urgently for any of the following:
 - Severe headache or blurred vision
 - Shortness of breath
 - Chest pain
 - Leg swelling
 - Gut pain that does not go away
 - Easy bruising or tiny blood spots under the skin
- Healthcare providers – maintain awareness
 - Report adverse events vaers.hhs.gov/reportevent.htm 



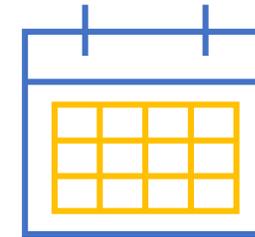
<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/JJUpdate.html>

Why do I need two doses?

You need **both doses** of the **Pfizer** and **Moderna vaccines** for **maximum protection.**



Your second dose should be the same brand your first dose



The vaccine doses are spaced about 3 (Pfizer BioNTech) or 4 (Moderna) weeks apart

Source: DOH Public FAQs, <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq.html#doses>



**ALL New Jerseyans age 12
and older are eligible for a
COVID-19 vaccine.**

Schedule an appointment or get help by phone at **855-568-9545**

Visit **[covid19.nj.gov/vaccine](https://www.nj.gov/covid19/vaccine)** for links to online scheduling

Please check [covid19.nj.gov/vaccine](https://www.nj.gov/covid19/vaccine) for updates. Appointment availability depends on vaccine supply.

Overview of State’s vaccine administration (as of 9:30am 7/7/2021)

| | Total doses administered | People with at least one vaccine dose ³ | People with completed vaccination series ⁴ | Source |
|---|--------------------------|--|---|----------|
| NJ residents vaccinated by NJ, NYS, and NYC ¹ | 9,822,468 | 5,383,254 | 4,804,834 | NJIIS |
| NJ residents vaccinated by other jurisdictions (excl. NYS and NYC) and by Federal programs ² | 352,743 | 211,980 | 151,895 | Tiberius |
| Total NJ residents vaccinated | 10,175,211 | 5,595,234 | 4,956,729 | - |
| Out-of-state persons vaccinated by NJ | 237,005 | 137,832 | 110,200 | NJIIS |
| Total NJ residents vaccinated + Out-of-state persons vaccinated by NJ | 10,412,216 | 5,733,066 | 5,066,929 | - |

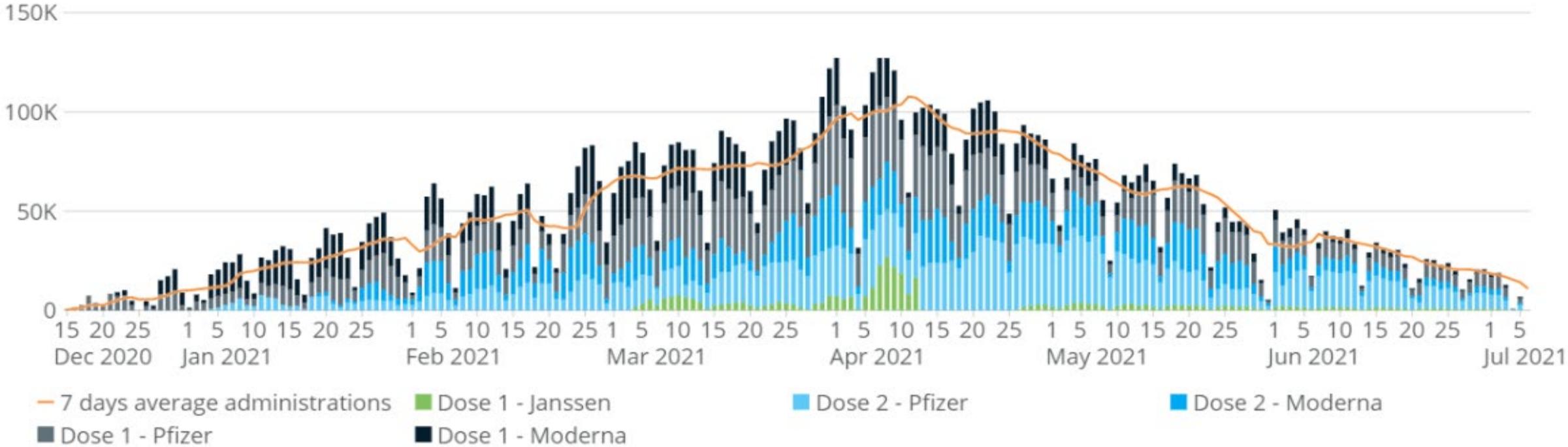
1. Includes all NJ residents who were vaccinated within New Jersey, New York State, or New York City
 2. NJ residents vaccinated by other jurisdictions and Federal Programs as of 7/07; NJ residents vaccinated by DoD as of 6/30
 3. Individuals who have received a single dose from a one dose vaccine course or a first dose from a two dose vaccine course
 4. Individuals who have received a single dose from a one dose vaccine course or a second dose from a two dose vaccine course

Source: NJIIS, VTckS, Tiberius

Daily report on vaccination (as of 10pm 7/6/2021) – 2/8

Vaccination by day

Administrations Daily



NOTE: Includes all individuals who were vaccinated within New Jersey (those who live work or study within New Jersey). Excludes vaccines administered through select federal programs (e.g., Bureau of Prisons, Veterans Health, Indian Health Service, and Department of Defense) as well as NJ residents vaccinated in other states

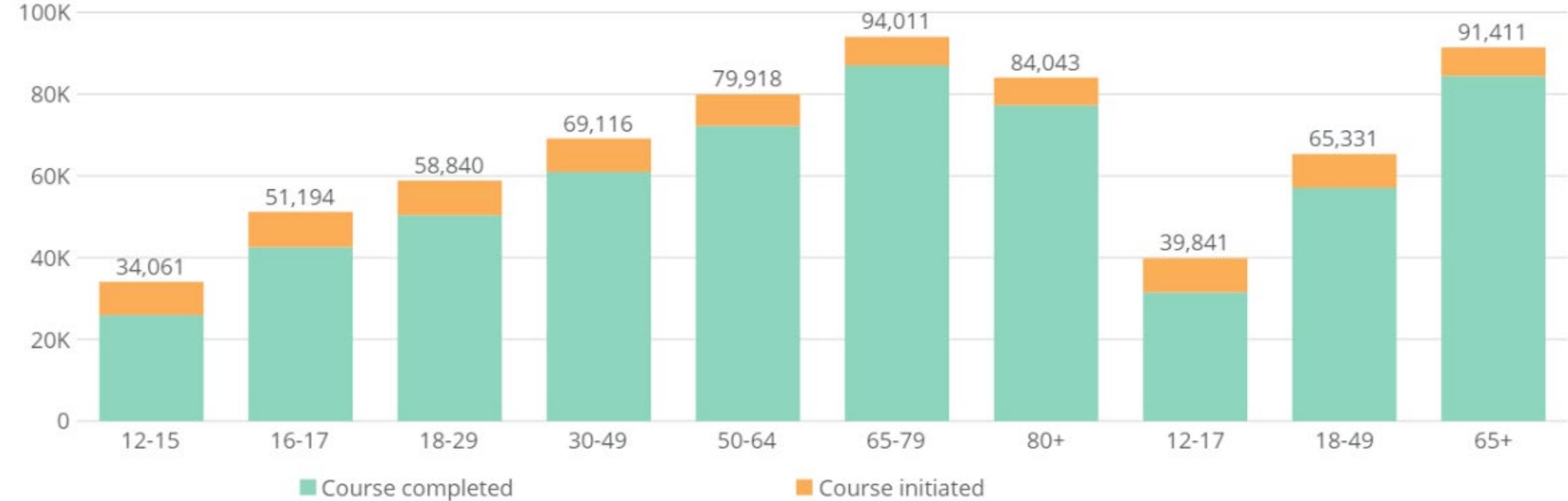
Preliminary, pre-decisional, and deliberative. Based on input provided by State agency leaders and staff, to date, and subject to change. Content is descriptive only and is not meant to constitute legal, clinical, or policy advice.

Source: NJIIS, Vtrcks

Daily report on vaccination (as of 10pm 7/6/2021) – 3/8

Vaccination by age per 100K

Vaccine Courses by Age Category per 100K



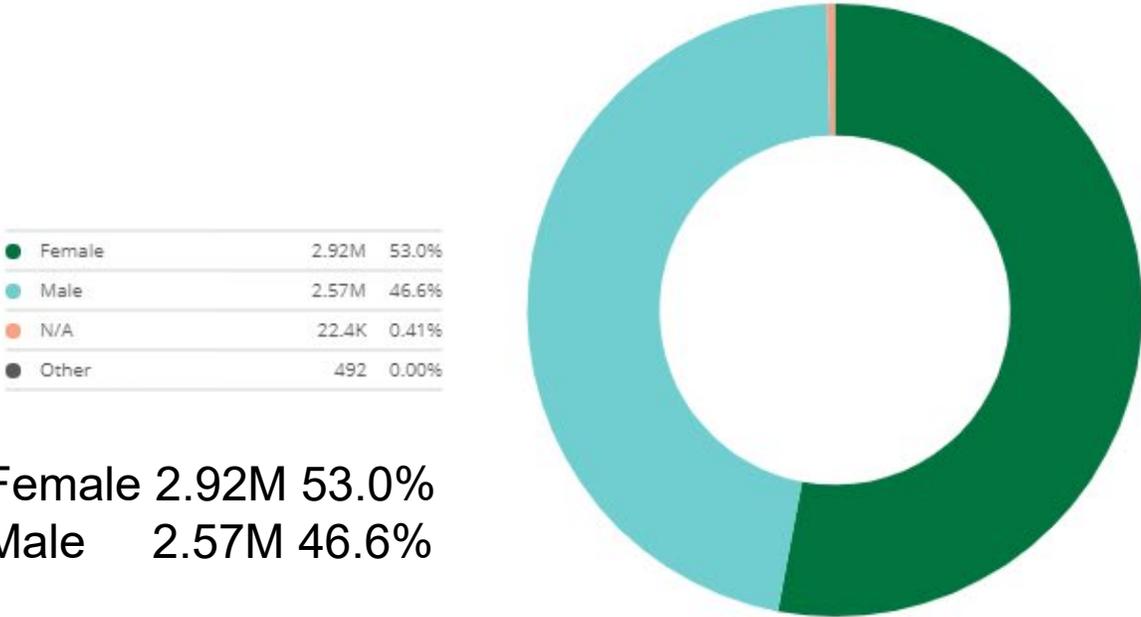
NOTE: Includes all individuals who were vaccinated within New Jersey (those who live work or study within New Jersey). Excludes vaccines administered through select federal programs (e.g., Bureau of Prisons, Veterans Health, Indian Health Service, and Department of Defense) as well as NJ residents vaccinated in other states

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Daily report on vaccination (as of 10pm 7/6/2021) – 5/8

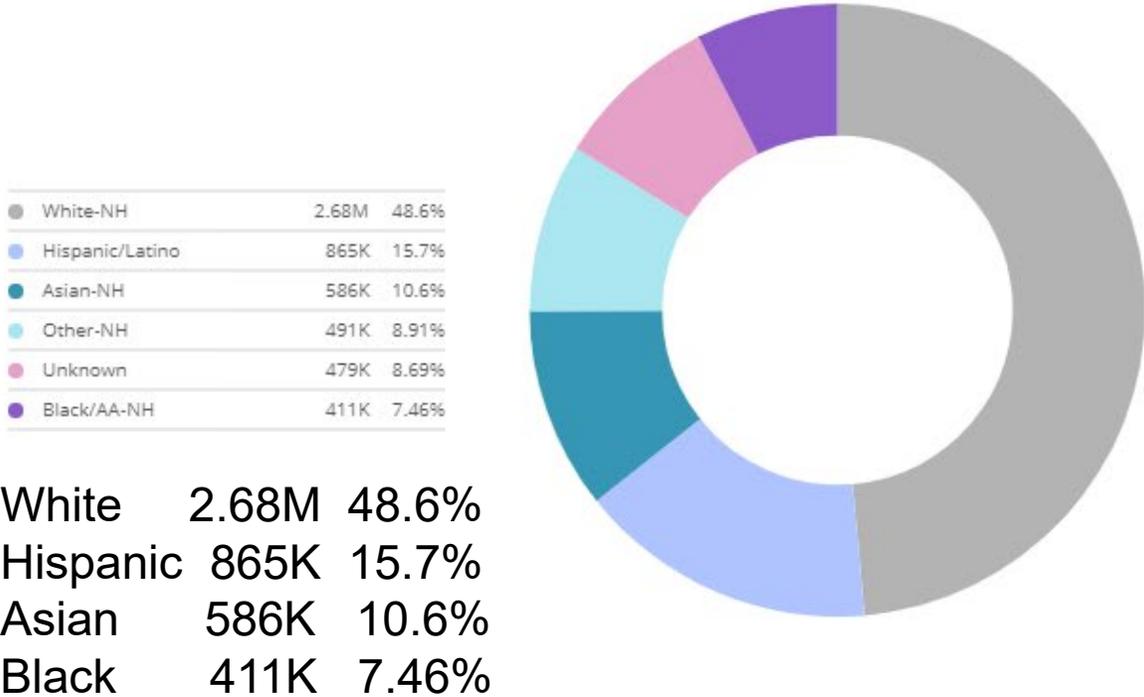
Demographic breakdown¹

Gender Distribution (People vaccinated at NJ sites)



Female 2.92M 53.0%
 Male 2.57M 46.6%

Race distribution (People vaccinated at NJ sites)



White 2.68M 48.6%
 Hispanic 865K 15.7%
 Asian 586K 10.6%
 Black 411K 7.46%

NOTE: Includes all individuals who were vaccinated within New Jersey (those who live work or study within New Jersey). Excludes vaccines administered through select federal programs (e.g., Bureau of Prisons, Veterans Health, Indian Health Service, and Department of Defense) as well as NJ residents vaccinated in other states

1. Individuals who have received at least one dose

Source: NJIIS, Vtrcks

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Employee time off allowances for COVID-19

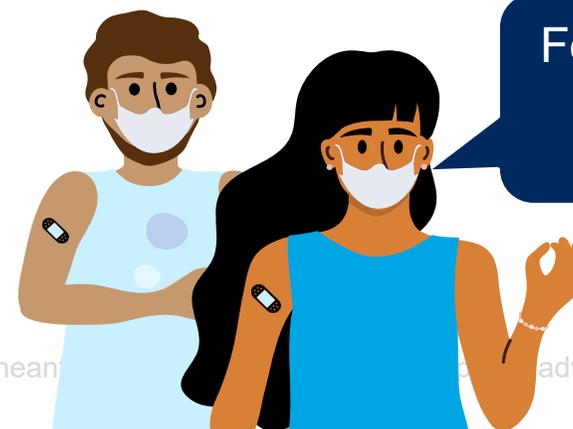
If an individual has tested positive for COVID-19 or has symptoms of COVID-19 and is unable to work, they:

- ✓ **Cannot be fired for taking time off to test, quarantine or isolate with a medical note recommending the employee take that time off**
- ✓ **Can ask their employer about Federal Paid Sick Leave**
- ✓ **Can use accrued New Jersey Earned Sick Leave to care for themselves or a loved one with COVID-19**

In addition, individuals can use **NJ Earned Sick Leave** to get a **COVID-19 vaccine**:

- ✓ **Can use NJ Earned Sick Leave to get their COVID-19 vaccine**

Employers **must pay up to 40 hours of NJ Earned Sick Leave per year** to most full- and part-time employees, including migrant and seasonal employees



For full details or to file a complaint, visit mysickdays.nj.gov

Source: New Jersey Department of Labor and Workforce Development.

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covid19.nj.gov/vaccine

Everyone 12 or older who lives, works, or studies in New Jersey is now eligible for the COVID-19 vaccine.

COVID-19 vaccines are safe and highly effective at preventing you from getting sick. They are one of the most important tools to ending the COVID-19 pandemic and getting back to what you love.

ON THIS PAGE

- [How to get vaccinated](#)
- [Get help getting an appointment](#)
- [Learn more about vaccination](#)
- [Vaccine statistics](#)

How to get vaccinated

Find a vaccine appointment

Use the NJ Vaccine Appointment Finder to find vaccination locations near you with available appointments.

[NJ Vaccine Appointment Finder](#)

Visit a megasite for walk-in appointments

All six vaccine megasites are open for walk-in vaccinations, typically during the following times:

NJ COVID Vaccine Call Center

You can **make an appointment** for the COVID-19 vaccine, **get help** with the scheduling system, **check registration status**, and **ask vaccine questions** by phone



Interpreters are available

Call 855-568-0545

Where can I learn more?



**NJ Vaccine Call
Center 855-568-0545**

Schedule or register for an appointment, ask questions, get contact information for vaccine sites, look up your registration

Available in many languages, including Spanish



**NJ COVID-19 Information
Hub covid19.nj.gov**

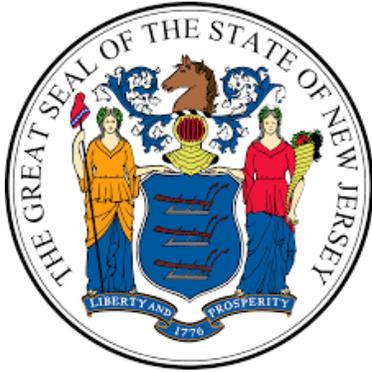
Up-to-date information about COVID-19 and the State's response, including information about services such as food assistance and small business assistance

Available in English and Spanish

Scan here



Text NJCOVID to 898-211 to receive text information and stay informed



NJ Employer COVID-19 Vaccine promotion toolkit: How to promote the COVID-19 vaccine among your NJ-based employees

May 2021

Employer Initiatives

Employer checklist:

- Ensure all employees have information on how to access the vaccine

- If interested, [sign-up](#) to host a no cost vaccine clinic

- Promote the usage of the State call center

- Implement additional vaccine promotion actions appropriate for your organization

Based on input provided by State agency leaders and staff, to date, and subject to change. Content is descriptive only and is not meant to constitute legal, clinical, or policy advice.

The New Jersey Department of Health is pairing vaccine providers with employers to create no-cost, on-site vaccine pop-up clinics to help employees and their families access the vaccine



You will be asked to offer a space where the vaccines could be administered and space for waiting and rest areas

The clinic staff and vaccine doses will be provided by the identified vaccine provider partner

Please complete the [On-site Vaccine Clinic Interest Survey](#) if you would like to be considered to host a pop-up clinic on-site at no cost (Note: the form will request information about how many employees you have and other logistical questions)

Completing this survey is the first step to notify NJ Department of Health and its partners of your interest; the NJ Department of Health will be in touch to discuss how to help fulfill your request

Actions NJ employers could take to encourage employee vaccinations

Employer checklist:

- Ensure all employees have information on how to access the vaccine
- If interested, [sign-up](#) to host a no cost vaccine clinic
- Promote the usage of the State call center
- Implement additional vaccine promotion actions appropriate for your organization**

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Non-exhaustive



Build conviction

- Share vaccine educational information**, provide FAQs, and acknowledge concerns via targeted communication channels e.g., emails, flyers/posters
- Host discussions with State experts** to share scientific information, answer questions, and acknowledge concerns
- Internally highlight employee role models** who received the vaccine and can discuss their experience
- Publicly pledge** to help employees get vaccinated and encourage other NJ employers to do the same



Amplify convenience

- Inform employees about how to access the vaccine** e.g., location of local sites, hours for walk-in appointments
- Subsidize out-of-pocket costs** such as transportation or offer free rides to and from vaccination sites

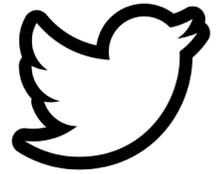
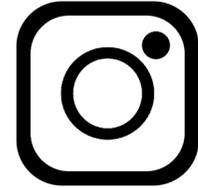


Provide costlessness

- Offer rewards** for vaccination e.g., cash bonuses, recognition, wellness program reward points
- Provide incremental sick days or paid time off (PTO)** for vaccination and any needed recovery time
- Offer **extended lunch hours / breaks** for employers to get vaccinated

Help us spread the word!

The COVID-19 vaccine is
safe, effective, and free
for all



@NJDeptofHealth

#VaccinesWork

#LetsGetNJVaccinated

