Now You're Talking Herd Immunity: Vaccinating Children

Meg Fisher, MD

October 20, 2021

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.

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What you hear today may be outdated soon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
- American Academy of Pediatrics – www.aap.org and www.healthychildren.org

Objectives

Following this session, learners will be able to

1. Discuss COVID-19 vaccines
2. Encourage children and their parents to be vaccinated
3. Put into place strategies to limit transmission of SARS-CoV-2

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Herd Immunity

- Enough people in a community are protected from getting a disease because they have had the disease or been vaccinated
- Population or community immunity protects those who remain susceptible
- The percent needed to achieve population immunity varies by disease

COVID-19

Disease caused by SARS-CoV-2

Spread primarily by droplets

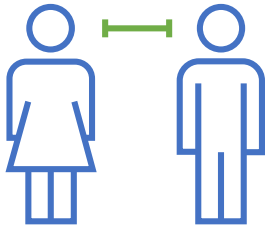
Most droplets fall to the ground within 3 to 6 feet

https://www.cdc.gov/coronavirus/2019cov/transmission/index.html

Transmission

How to help prevent the spread

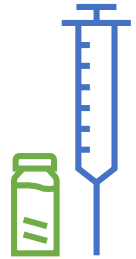
Wear a mask that covers your nose and mouth



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

Avoid crowds and sick people

Wash your hands often



Get vaccinated

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

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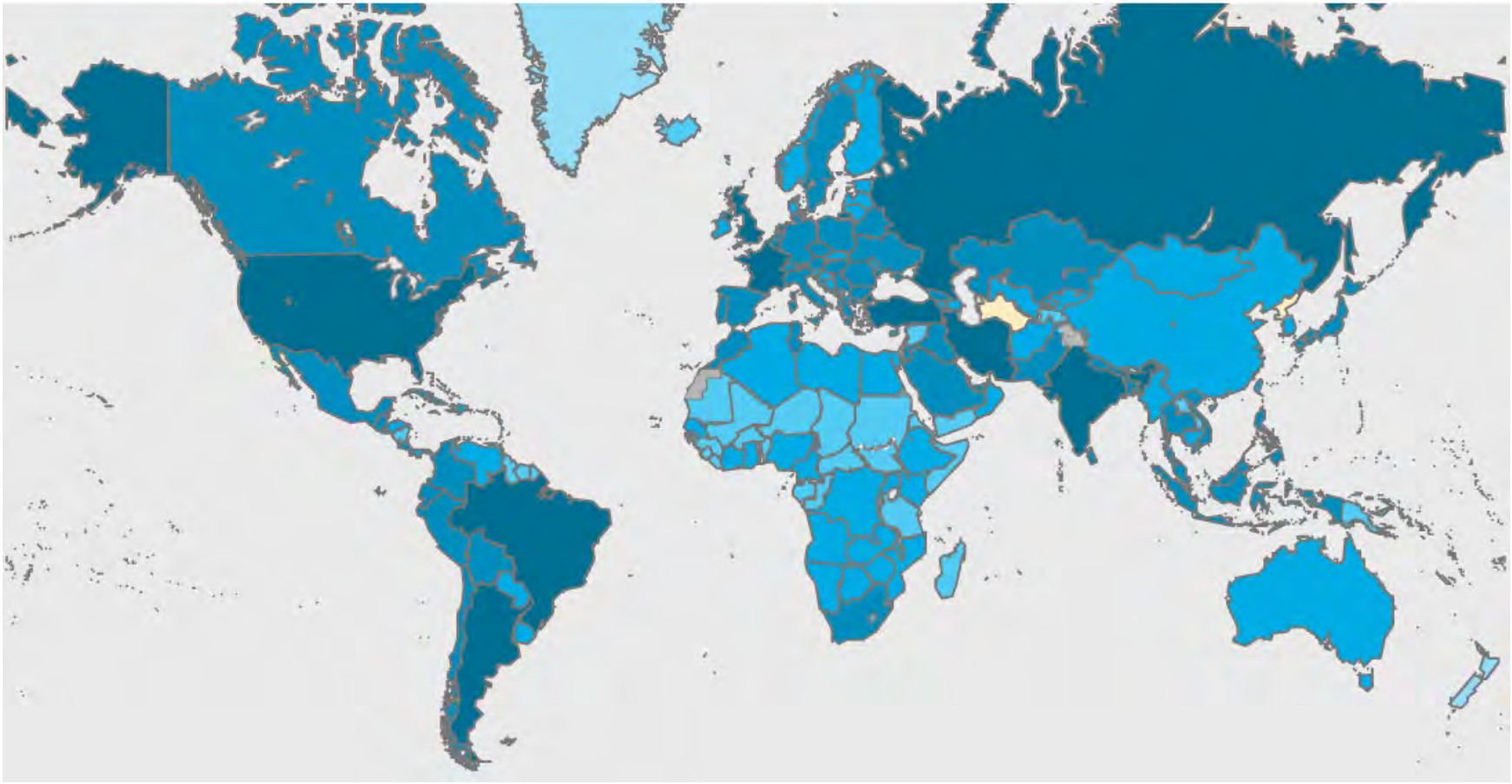
Global Incidence

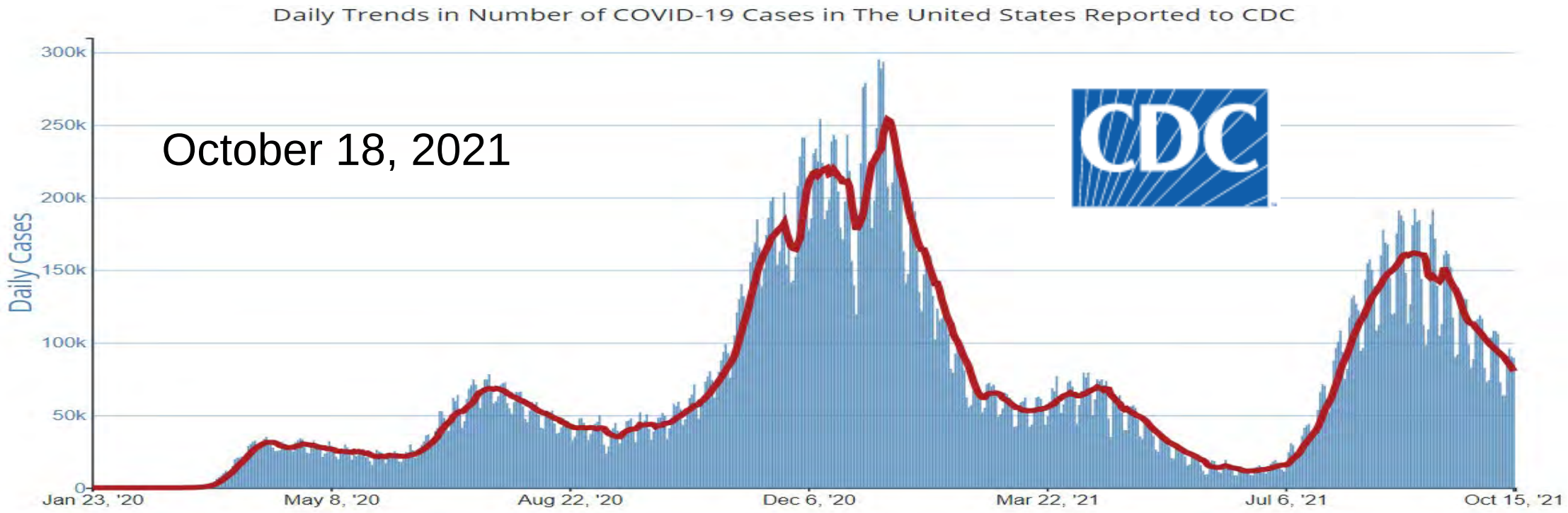
64,056
new cases in last 24hrs

240,061,454
cumulative cases

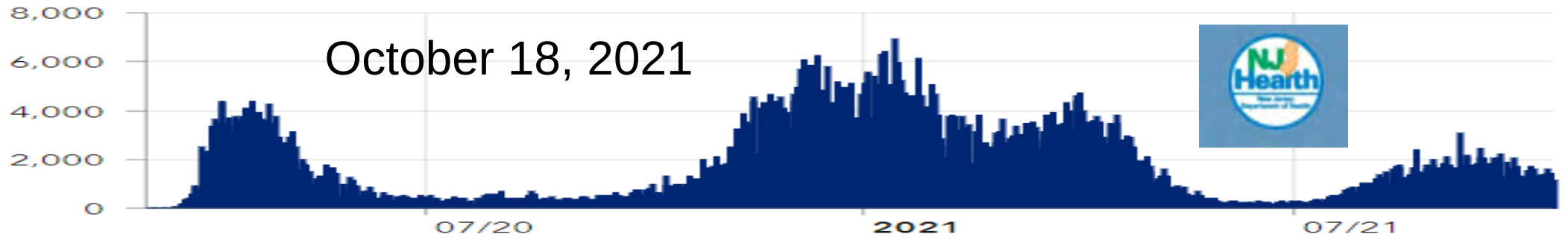
4,887,600
cumulative deaths



COVID-19 Cases in the US and in NJ



https://covid.cdc.gov/covid-data-tracker/#trends_dailycases



https://www.nj.gov/health/cd/topics/covid2019_dashboard.shtml

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COVID-19 Basics

- Disease varies from asymptomatic to mild upper respiratory illness to pneumonia to multiorgan involvement and death – to date 722,212 deaths in US; 24,806 in NJ
- Disease in children usually either asymptomatic or mild but not always, 605 deaths in US, 8 in NJ
  - Multisystem inflammatory syndrome – Children (MIS-C) is a rare post-infectious complication – as of October 4 - 5,217 cases, 46 deaths reported to CDC; as of October 18, - 133 cases, 0 deaths reported in New Jersey

https://covid.cdc.gov/covid-data-tracker/#mis-national-surveillance

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COVID-19 and Children

- Over 140,000 children lost a parent, grandparent or caregiver to COVID-19
  - 1 of every 753 White children
  - 1 of every 612 Asian children
  - 1 of every 412 Hispanic children
  - 1 of every 310 Black children
  - 1 of every 168 American Indian/Alaska Native children
- Most children missed a year of in person school
- All children missed a multitude of celebrations

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Post-COVID Conditions

- Long COVID, long-haul COVID, post-acute COVID

Breathing difficulty	Tired or fatigued	Worse after activity
“Brain fog”	Cough	Pain: chest or stomach
Headache	Palpitations	Joint or muscle pain
Pins-and-needles feeling	Diarrhea	Sleep problems
Fever	Dizzy on standing	Rash
Mood changes	Smell/taste changes	Menstrual changes

- Multiorgan system effects, autoimmunity
- Post-ICU syndrome: weak, brain fog, PTSD

https://www.cdc.gov/coronavirus/2019-ncov/long-term-effects.html

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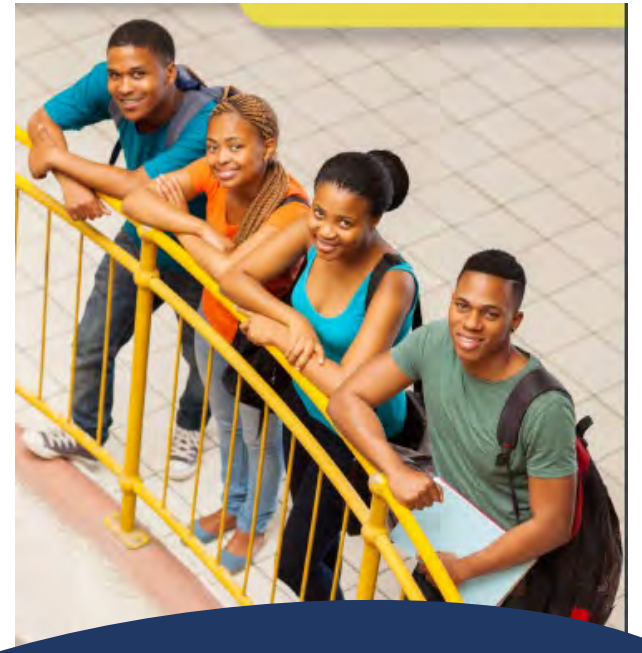
covid19.nj.gov/vaccine

COVID-19 vaccines are



SAFE **EFFECTIVE** **FREE** for all

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

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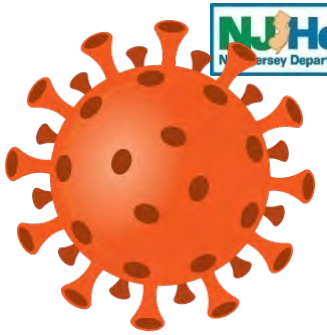
COVID-19 Vaccines



- Messenger RNA (mRNA) vaccines
  - Pfizer – EUA 12/11/20 – for ages 16 years and older; EUA 5/10/21for ages 12 to 17; Licensed 8/23/21 for ages 16 and older (Comirnaty); third dose EUA 8/12; booster EUA 9/22; ages 5 to 11 expected by November
  - Moderna – EUA 12/18/20 – for ages 18 years and older; third dose 8/12; booster expected this week
- Adenovirus vector
  - J&J Janssen – EUA 2/27/21 – for ages 18 years and older; booster expected this week

https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/how-they-work.html

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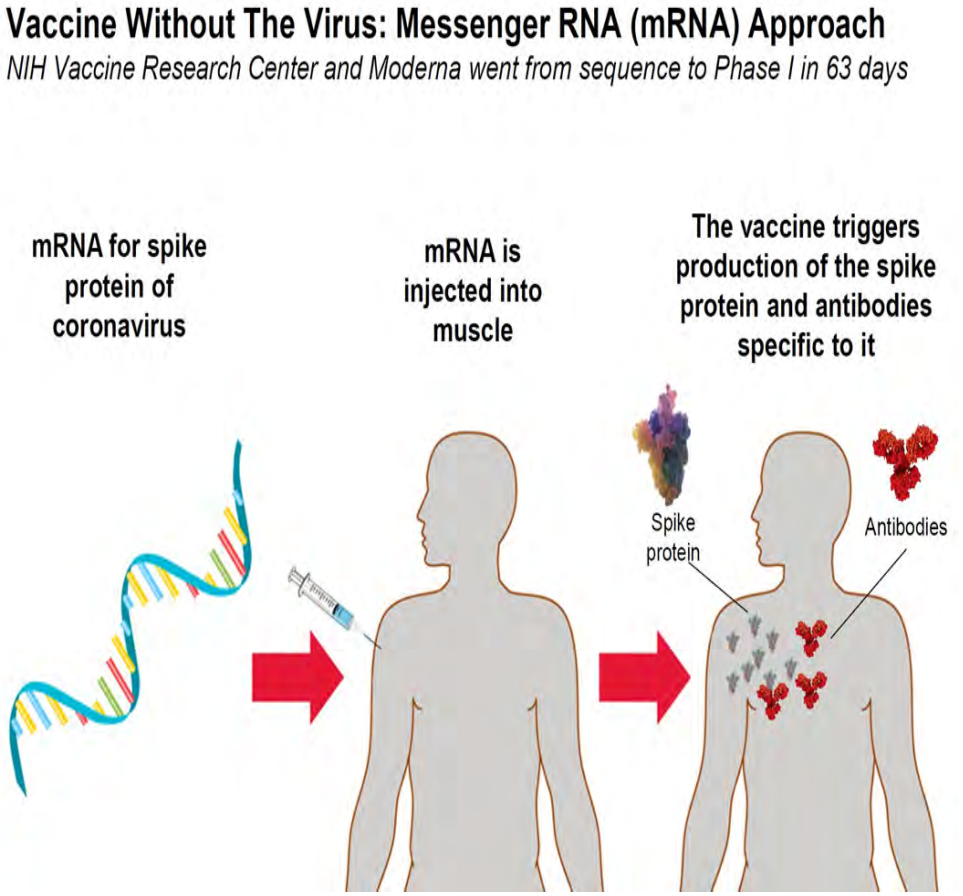
About mRNA COVID-19 Vaccines

- 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
- Two dose series, 3 doses if immune compromised, booster after 6 months for older adults and those with risks



https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/mRNA.html

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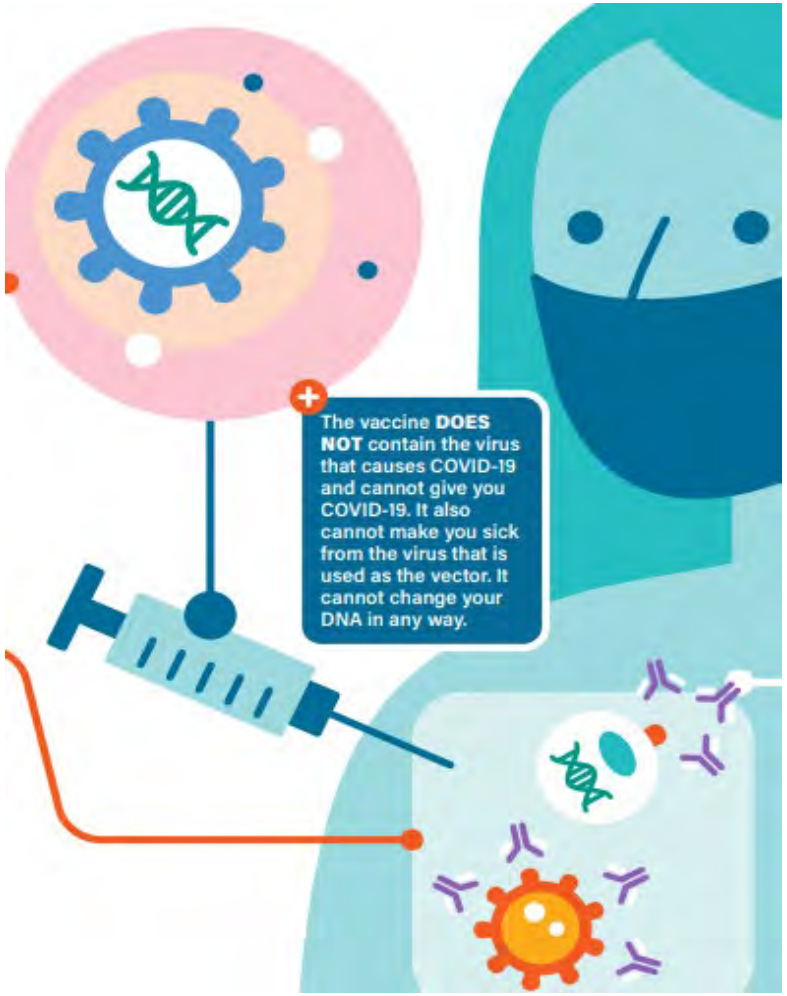
J&J Janssen COVID-19 Vaccine

- 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
- Given as a single dose, booster after 2 months for all



https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/viralvector.html

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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

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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

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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.htmlexternal icon.

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

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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

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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

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

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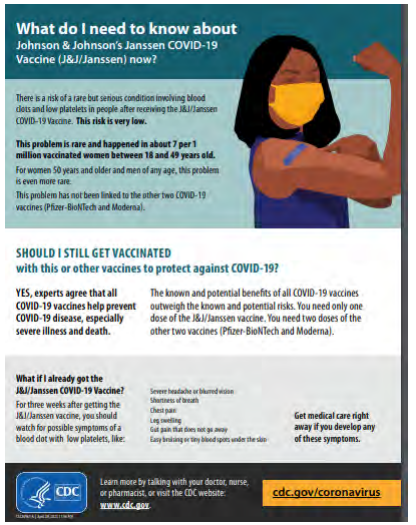
US FDA and CDC Recommendations

- 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.htmlexternal icon.



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

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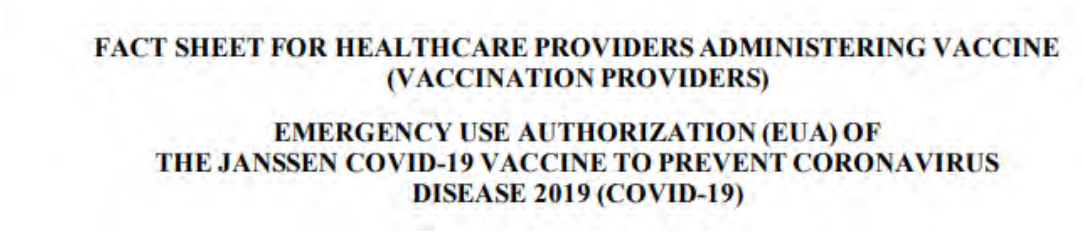
Guillain-Barré Syndrome

- Ascending paralysis
- Usually self-limited with full recovery
- Incidence slightly more common after J&J vaccine than baseline
  - 100 cases reported after 13 million doses
  - Baseline is 3000 to 6000 cases per year
- Onset about 2 weeks after immunization
- FDA added warning to J&J EUA fact sheet on 7/12/21


FACT SHEET FOR HEALTHCARE PROVIDERS ADMINISTERING VACCINE
(VACCINATION PROVIDERS)

EMERGENCY USE AUTHORIZATION (EUA) OF
THE JANSSEN COVID-19 VACCINE TO PREVENT CORONAVIRUS
DISEASE 2019 (COVID-19)

https://www.fda.gov/media/146304/download

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Fertility

- No evidence of any effect of these COVID-19 vaccines on either male or female fertility
- No biologic reason to expect it
- No clinical evidence
- ACOG recommends vaccine for all eligible people who may consider future pregnancy, as well as all pregnant and breastfeeding women

https://www.cdc.gov/coronavirus/2019-ncov/vaccines/facts.html
https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2020/12/covid-19-vaccination-considerations-for-obstetric-gynecologic-care

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COVID-19 Variants

- Arise as viruses multiply
- Variants of interest – changes in binding protein, therapy, possible increased illness and transmission
  - Many: arising in US and globally
- Variants of concern – increased transmission and illness, decreased susceptibility to antibodies and therapy
  - B1.1.7 alpha UK; B1.351 beta So Africa; B1.617.2 delta India; P1 gamma Japan/Brazil
- Variants of high consequence – reduced susceptibility to preventive measures and countermeasures
  - None yet

https://www.cdc.gov/coronavirus/2019-ncov/variants/variant.html

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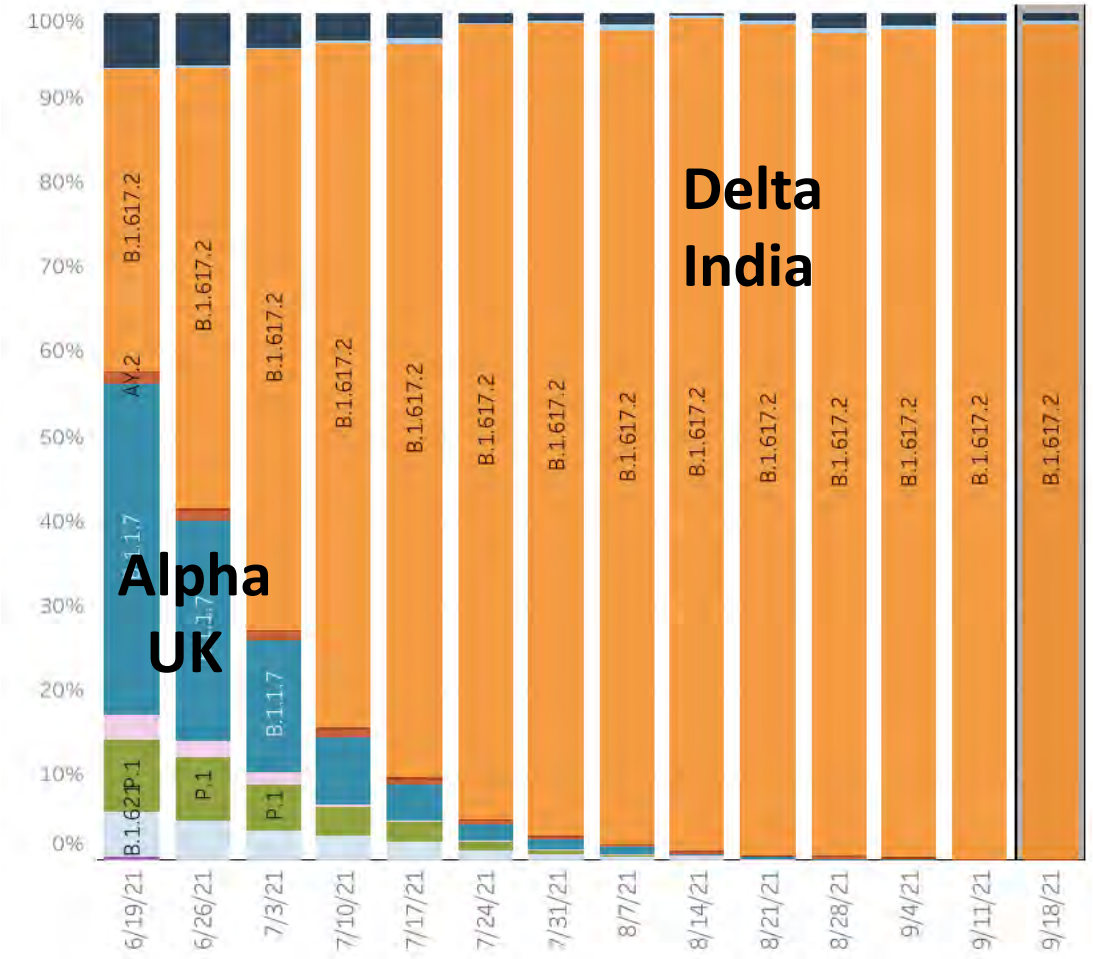
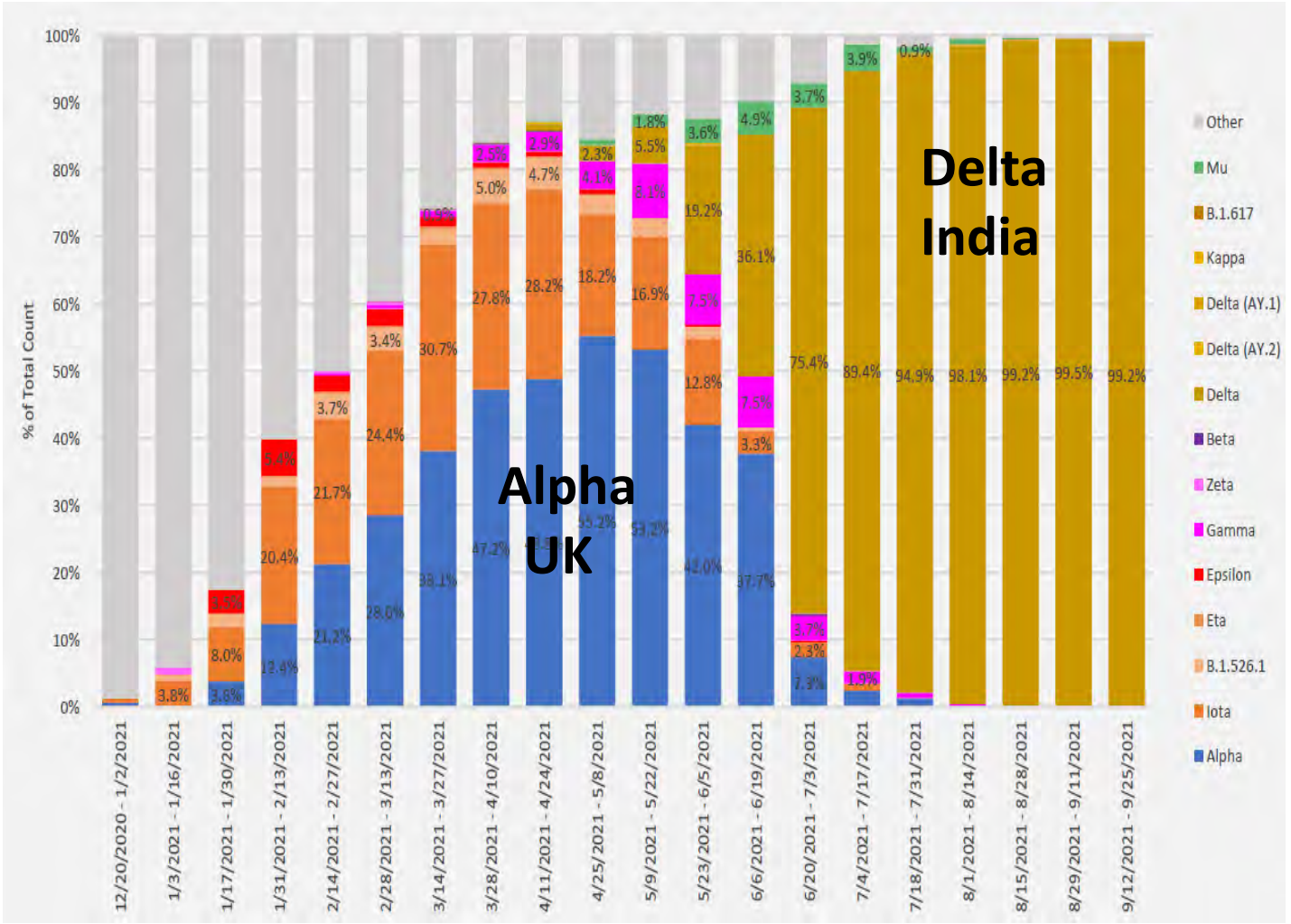
COVID-19 Variants

US – June to September



New Jersey – December to September



SOURCE: https://covid.cdc.gov/covid-data-tracker/#variant-proportions; https://www.nj.gov/health/cd/documents/topics/NCOV/COVID_19_Variant_Report_Week_2021_35.pdf

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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

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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:

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Vaccination Rates in New Jersey

Vaccine Doses Administered in NJ

12,062,852

+

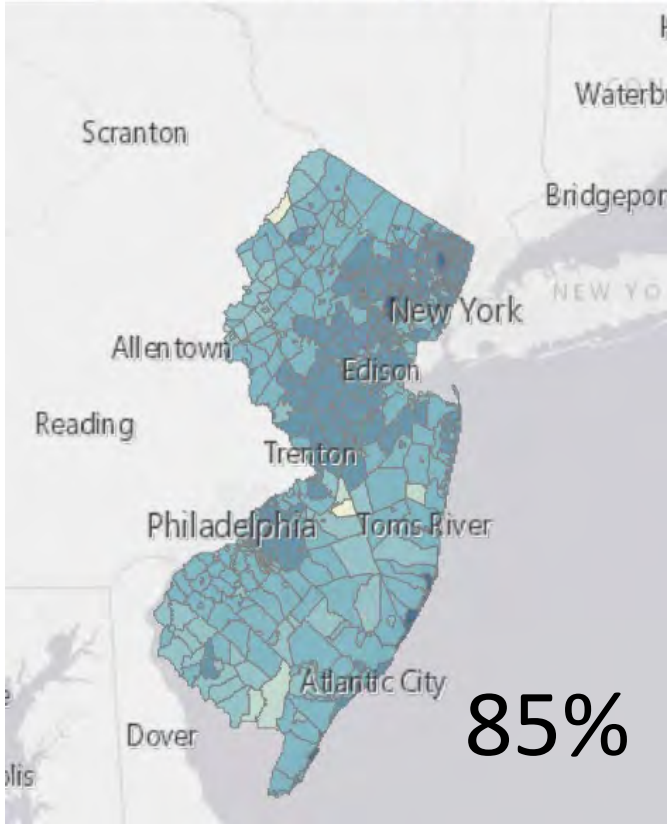
455,188

Doses administered out of state and by federal programs

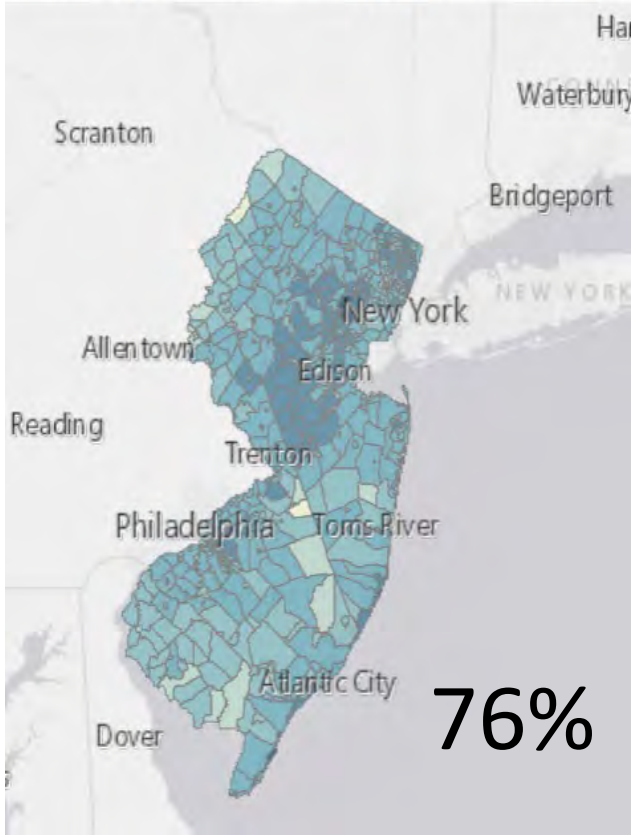
12,518,040

Total doses administered

Persons with at Least One Dose, % of population



Persons with Vaccine Courses Complete, % of population



People fully vaccinated at NJ sites

5,775,994

+

195,566

NJ residents vaccinated out of state and by federal programs

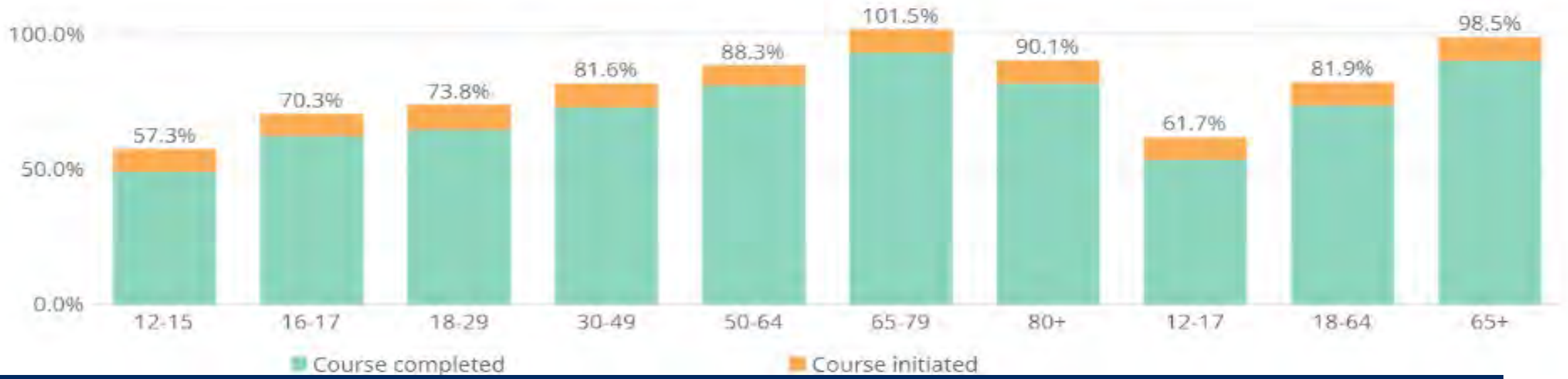
5,971,560

Fully Vaccinated People[2]

https://www.nj.gov/health/cd/topics/covid2019_dashboard.shtml

Daily report on vaccination (as of 10/17/2021)

Initial vaccine courses by age category, % of total population



Additional vaccine doses(3rd doses and boosters) dose by age category, % of completed initial course[1,2]

12-15	16-17	18-29	30-49	50-64	65-79	80+	12-17	18-64	65+
0.2%	0.2%	0.9%	2.3%	4.4%	13.7%	13.8%	0.2%	2.8%	13.7%

1. Additional (3rd doses and boosters) administered – starting Aug-13
2. The data may increase as more sites report. Note, the data was collected at 8AM on October 18th and it is likely to be undercounting as electronic transmissions may occur during the late evening/early morning the next day

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

Source: NJIIS, Vtrcks

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Pfizer For Age 5-11 Years

- EUA expansion requested
- Vaccines and Related Biological Products Advisory Committee (VRBPAC) to meet October 26, 2021
- Advisory Committee on Immunization Practices (ACIP) to meet November 2 – 3, 2021
- New product – orange top
  - 10 doses per vial, add diluent
  - 100 doses minimal order but NJ can deliver less

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Natural Versus Vaccine Immunity

- More unknowns than known
- Natural immunity seems solid for several months
- Vaccine immunity seems solid as well
  - Trials with all 3 vaccines show protection at least 6 months, longer for many
  - Immunity against the known variants is solid
- Both natural and vaccine immunity vary by age and other factors
- Vaccine will boost natural immunity

https://www.cdc.gov/vaccines/covid-19/hcp/answering-questions.html

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Safety at School

- Masks for everyone while inside
- Maintain 3 foot distance
- Vaccines for all eligible people
- Cohort younger children
- Contact tracing
- Isolation for infected people
- Quarantine for unvaccinated close contacts

https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-guidance.html
https://www.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/covid-19-planning-considerations-return-to-in-person-education-in-schools/

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Help us **spread the word!**

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

@NJDeptofHealth

#VaccinesWork

#LetsGetNJVaccinated

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Thank you

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