

COVID-19 VACCINATION

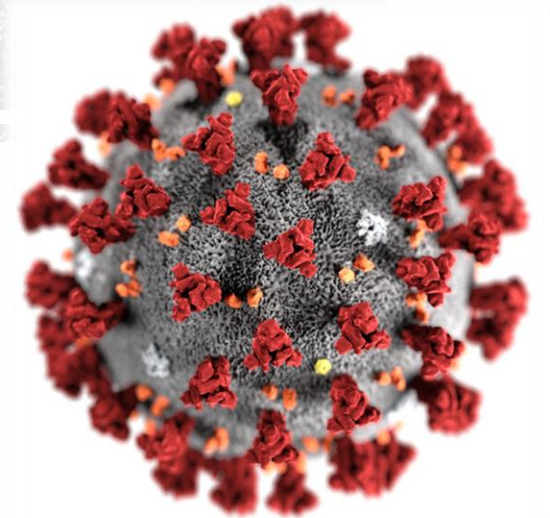
UPDATE FOR EMS PERSONNEL & FIRST RESPONDERS

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Chief, Division of EMS

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TODAY'S PANEL



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St Clair Hospital



Vaccination Rates Vary Among First Responders

By ARIEL WORTHY & AN-LI HERRING • FEB 12, 2021

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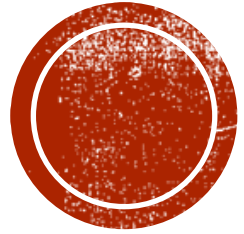
- CDC national survey
 - 39-49% intend to receive COVID-19 vaccination
- Survey of fire fighters and EMS
 - 48.2% high acceptability
 - 24.2% unsure
 - 27.6% low acceptability



GOALS OF THIS SESSION

- Provide the latest information on the COVID-19 vaccine
- Address commonly asked questions and answers related to COVID-19 vaccination
- Promote vaccination among EMS personnel and first responders
- Prepare EMS personnel for their role in mass vaccinations

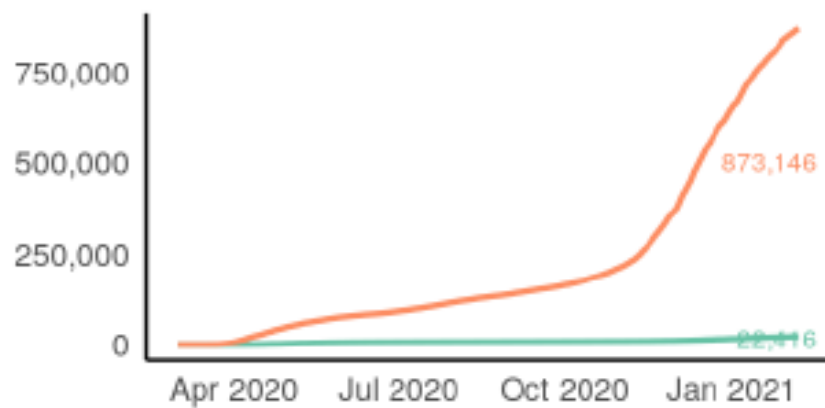




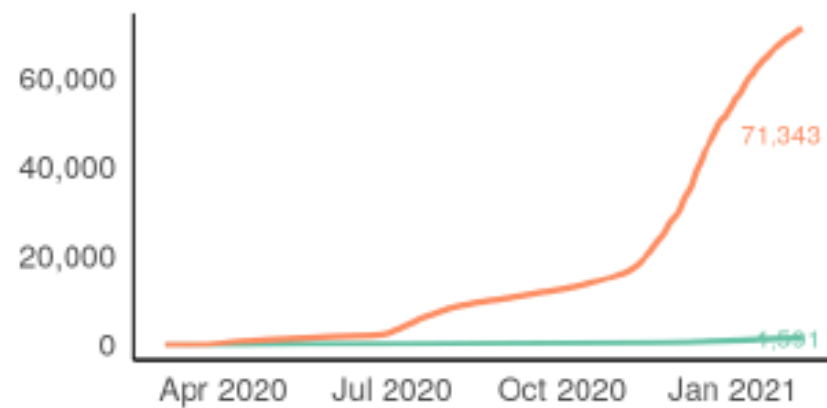
WHERE ARE WE IN THE PANDEMIC?

Is this over yet?

Pennsylvania Cumulative Cases and Deaths

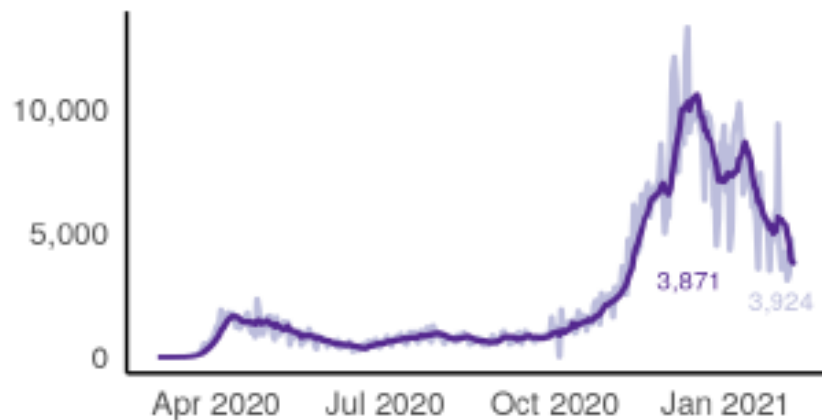


Allegheny County Cumulative Cases and Deaths

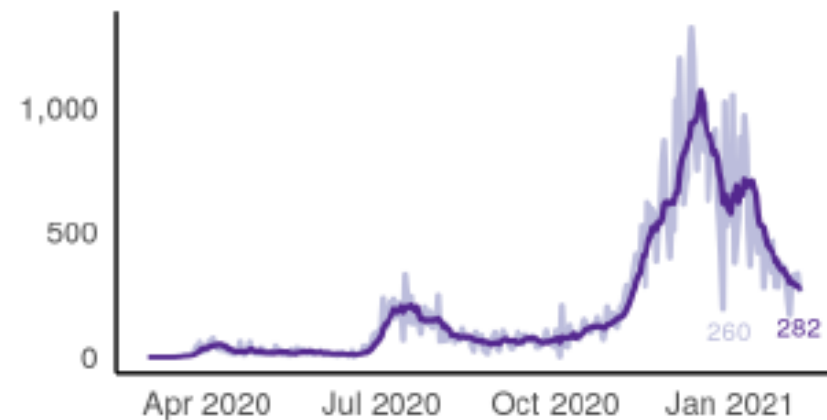


— Cumulative Cases — Cumulative Deaths

New Cases



New Cases



— New Cases — 7-day Avg

Source: Johns Hopkins Univ.



Confirmed Cases

775,305

Probable Cases

121,555

Negative Tests

3,775,387

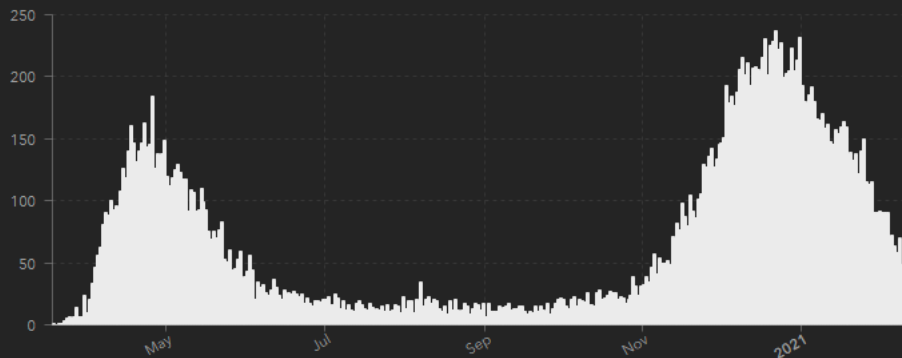
Deaths

23,119

Cases by Day

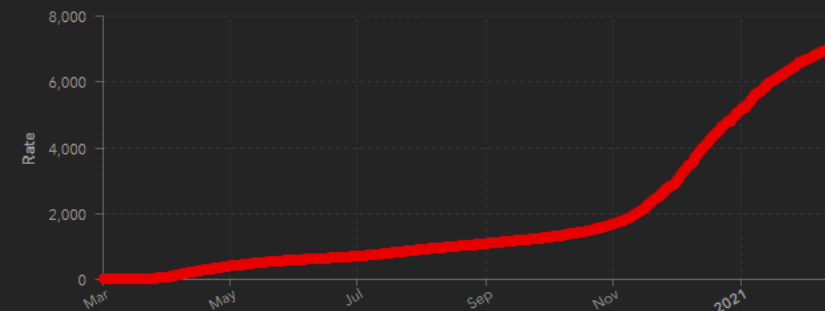


Deaths by Day

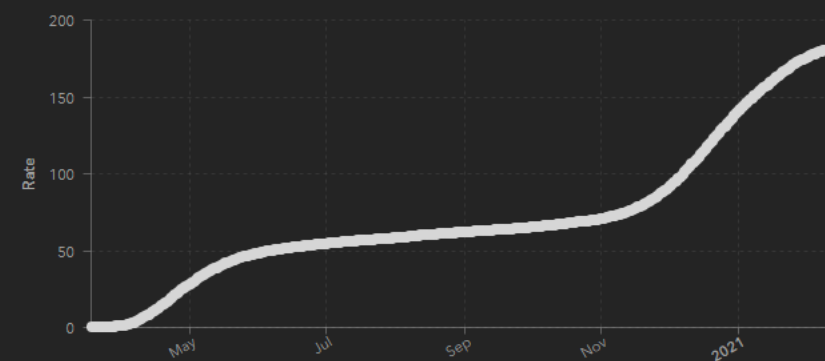


Choose a County from the dropdown Pennsylvania

Cumulative Cases per 100,000



Cumulative Deaths per 100,000



Case data from PA-NEDSS. Death data is based on the date of death as reported to EDRS. Death counts for prior dates will change as additional death records are registered or amended. Case counts include confirmed and probable.

In early January the dashboard switched from 2018 to 2019 population estimates to calculate all rates.

HOW DO WE RETURN TO SOMETHING THAT ACTUALLY FEELS NORMAL?



UNDERSTANDING HERD IMMUNITY

- Need 70-85% of population vaccinated (or have had COVID) to achieve herd immunity

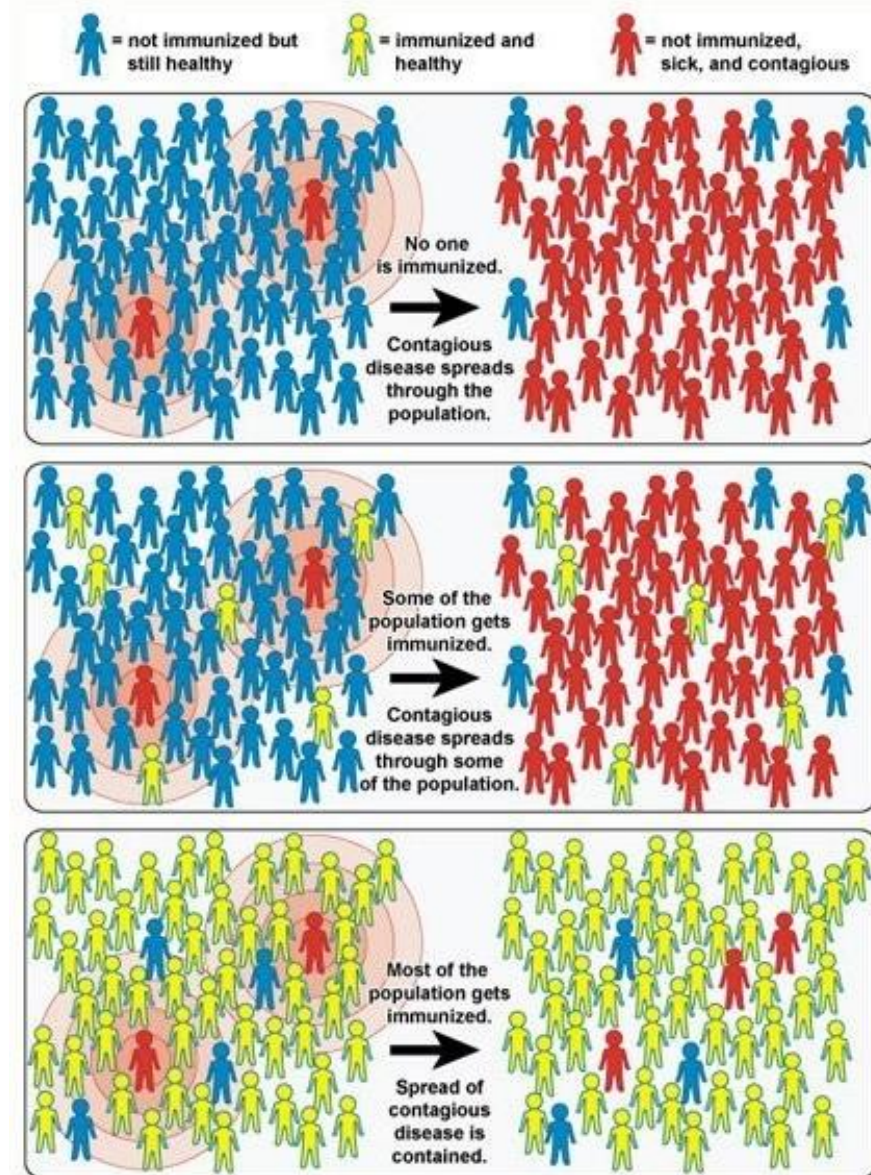


Image: The National Institute of Allergy and Infectious Disease (NIAID)

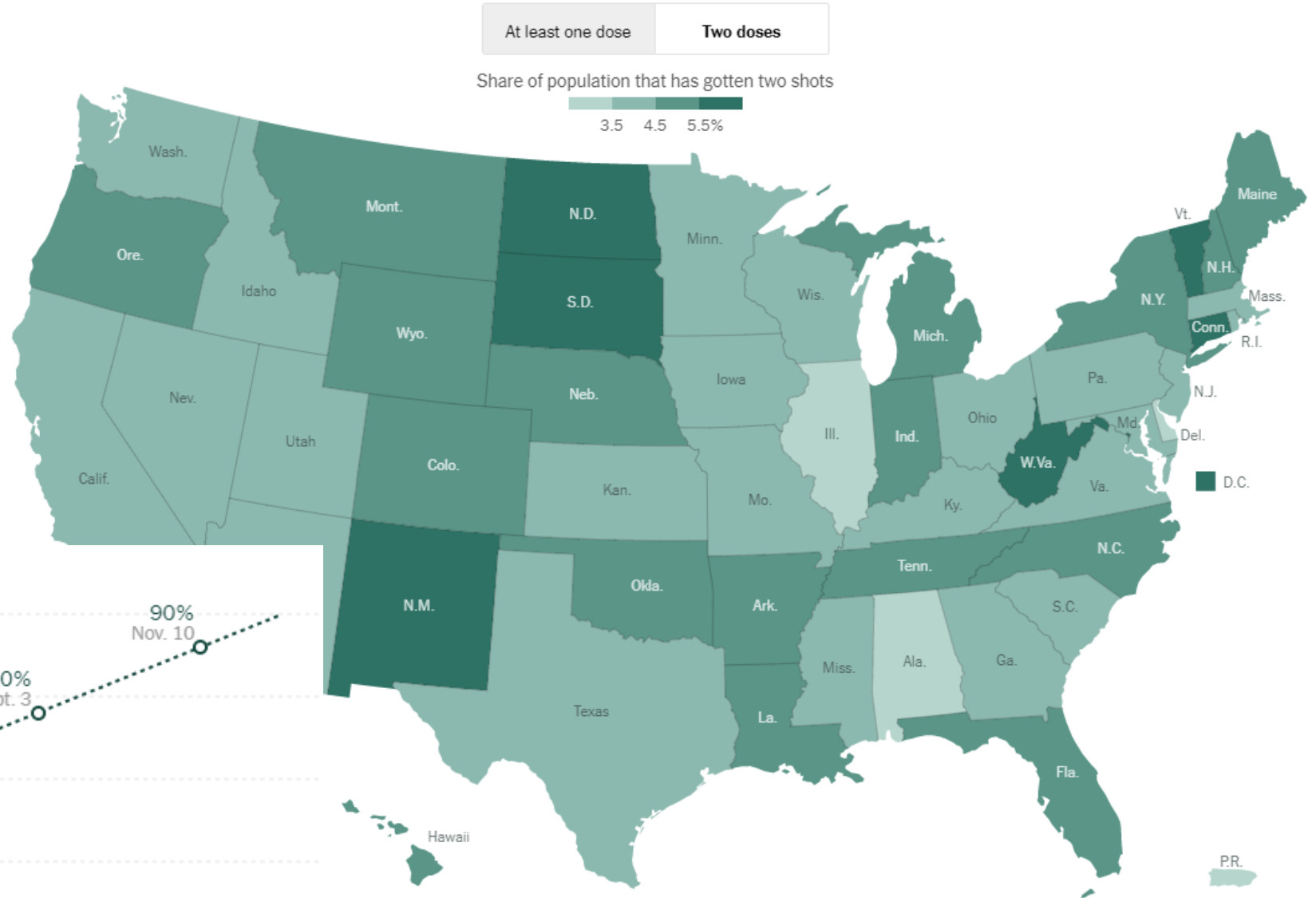


■ **United States:**

- One dose: 39.7 million
- Full vax: 15 million

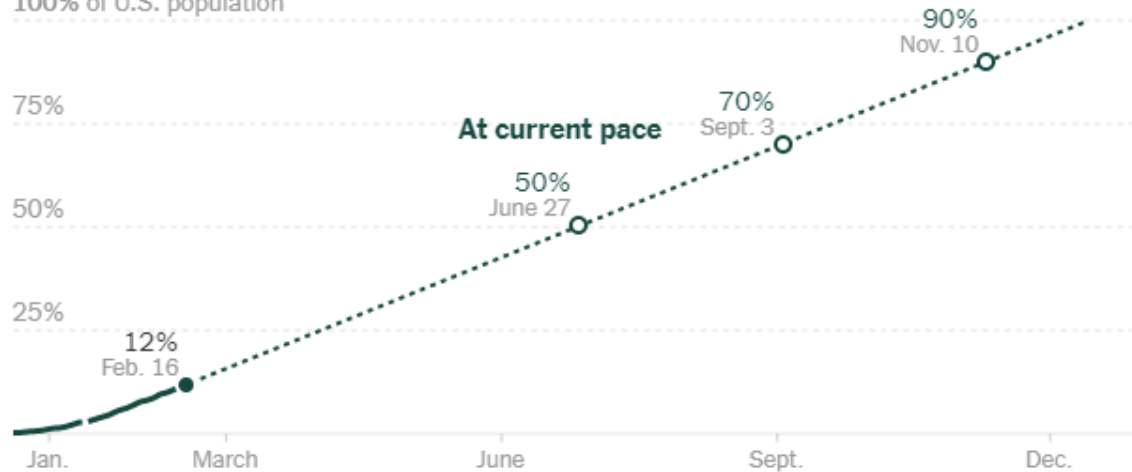
■ **Pennsylvania**

- One dose: 11%
- Full vax: 3.6%



Average daily first doses in last 7 days: 971,905

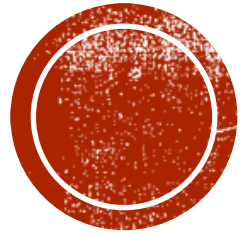
100% of U.S. population



e: Centers for Disease Control and Prevention

Source: Centers for Disease Control and Prevention | Note: Data from Dec. 20 to Jan. 12 are for all doses administered. Data for Jan. 13 is unavailable. Projections could change if additional vaccines are authorized.
















COVID-19 VACCINES

What's available or under production and how do they work?

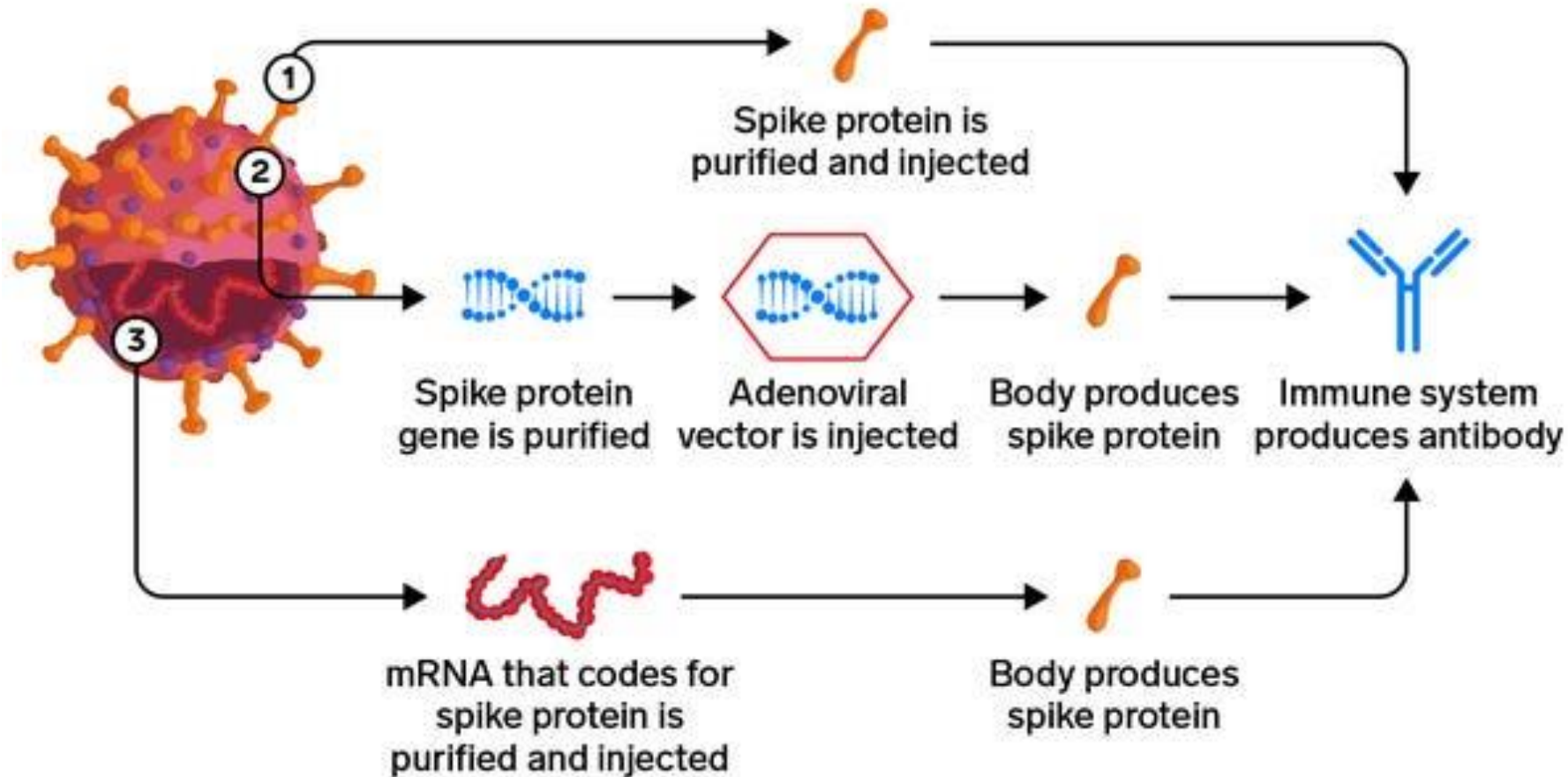
VACCINE CANDIDATES

Platform	Manufacturer	Status
mRNA	 	Approved in U.S.
		Approved in U.S.
Viral Vector	 	Approved in E.U., U.K.
	 	Phase 3 Trials
		Discontinued
Protein Subunit		Phase 3 Trials
	 	Phase 2 Trials



Three types of coronavirus vaccines in development

- ① Protein-based ② Viral vector ③ mRNA



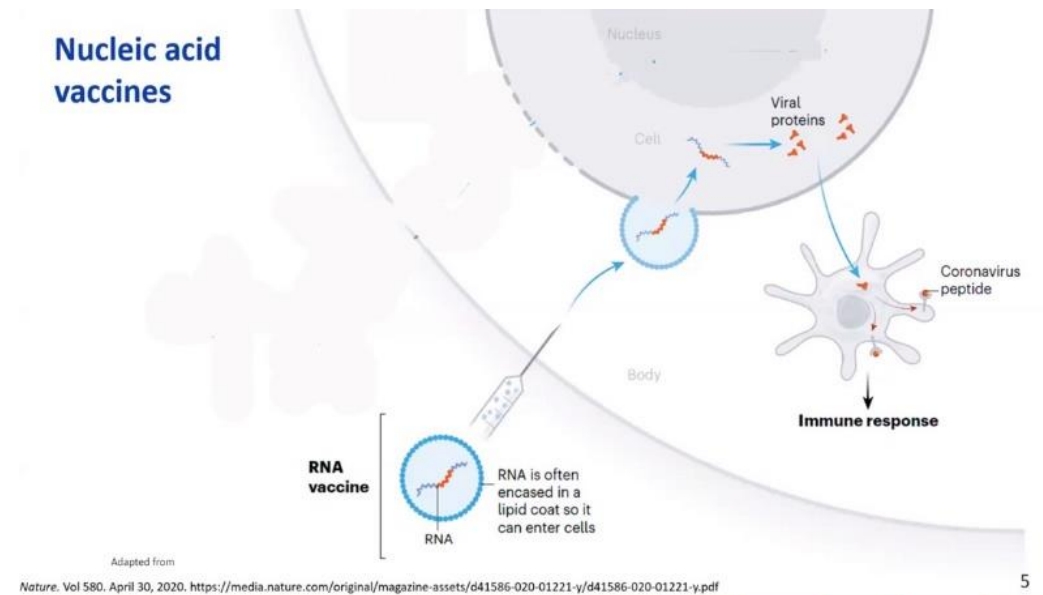
Source: National Institutes of Health presentation at Senate hearing on September 9, 2020

INSIDER



HOW DO mRNA VACCINES WORK?

- Vaccine includes **messenger RNA (mRNA)**
→ **instructions** for creating spike protein on the surface of the SARS-CoV-2 virus.
- Cell uses the mRNA to **make the spike protein**.
- mRNA is fragile and self-destructs.
→ **Does not alter DNA!**
- Spike protein is released out of the cell.
- The body sees the spike protein as “foreign” and mounts an **immune response**.
- If a SARS-CoV-2 virus enters the body, the immune system recognizes its spike protein and launches an attack by cells and antibodies.



mRNA VACCINES

Pfizer Vaccine

- Requires -70°C storage
- 2nd dose 21 days apart
- Strict documentation & reporting requirements

Moderna Vaccine

- Requires -20°C
- 2nd dose 28 days apart
- Strict documentation & reporting requirements



EFFICACY

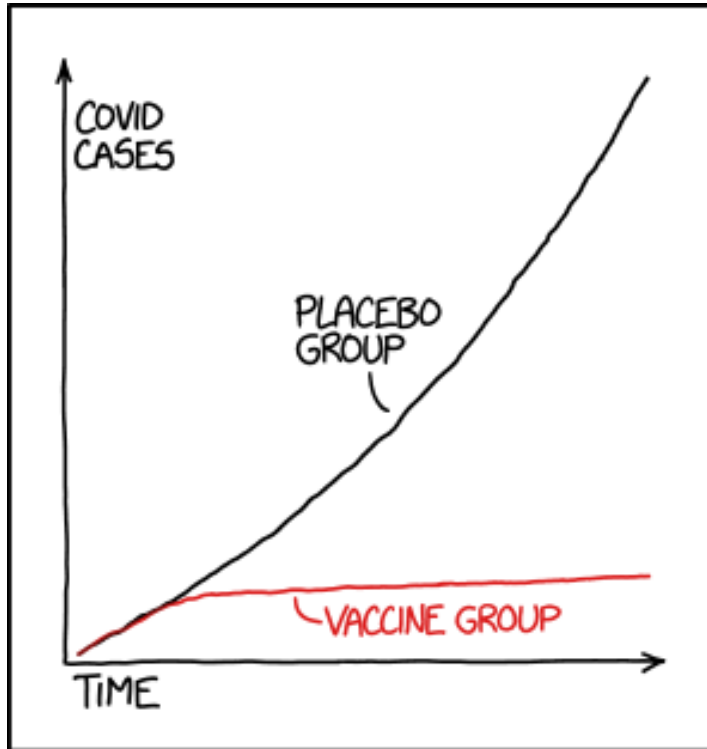
- Pfizer-BioNTech
 - 94% efficacy

- Moderna
 - 95% efficacy in 18-64 years
 - 86% efficacy in >64 years

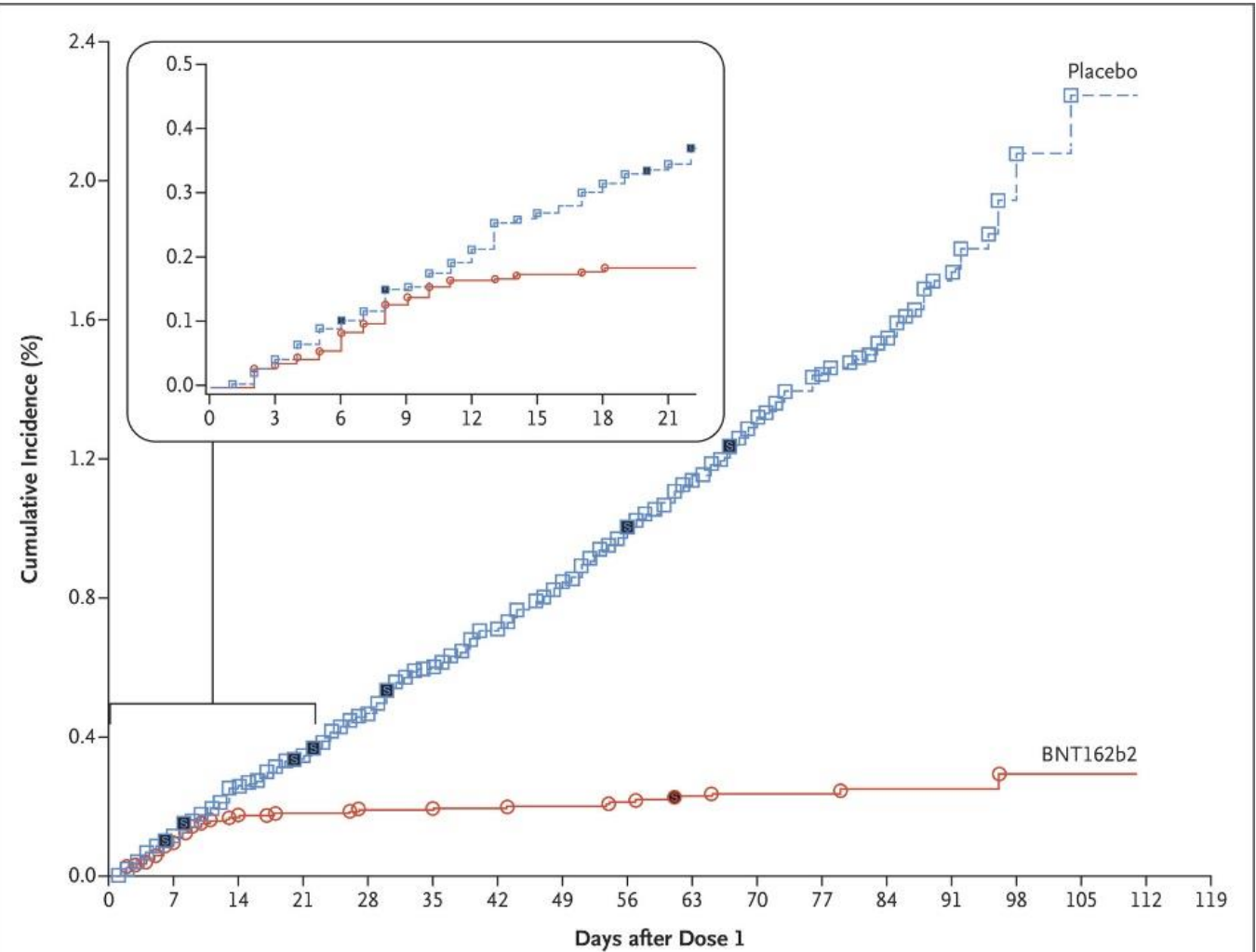
- Zero Deaths



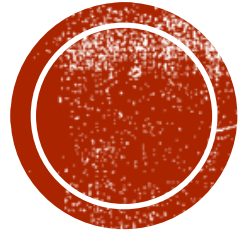
EFFICACY



STATISTICS TIP: ALWAYS TRY TO GET DATA THAT'S GOOD ENOUGH THAT YOU DON'T NEED TO DO STATISTICS ON IT



Efficacy End-Point Subgroup	BNT162b2, 30 µg (N=21,669)		Placebo (N=21,686)		VE (95% CI) percent
	No. of participants	Surveillance time person-yr (no. at risk)	No. of participants	Surveillance time person-yr (no. at risk)	
Covid-19 occurrence					
After dose 1	50	4.015 (21,314)	275	3.982 (21,258)	82.0 (75.6–86.9)
After dose 1 to before dose 2	39		82		52.4 (29.5–68.4)
Dose 2 to 7 days after dose 2	2		21		90.5 (61.0–98.9)
≥7 Days after dose 2	9		172		94.8 (89.8–97.6)



HOW SAFE ARE THE VACCINES?



SAFETY

Over 53 million doses administered!

- Severe adverse events in $\leq 1\%$ of recipients (similar to placebo)
- Adverse reactions:
 - Typically, within 1-2 days
 - Resolved in 1-3 days
 - More common after 2nd dose, in people under 65 years, and if previously ill with COVID-19
- Most common symptoms:
 - Local pain, swelling, or redness
 - Fatigue
 - Headache
 - Nausea/vomiting
 - Fever or chills
 - Muscle or joint aches



SAFETY

- *How often are people getting anaphylaxis from the vaccine?*
 - Study of first 1.8 million people receiving Pfizer-BioNTech vaccine
 - n = 21 people had anaphylaxis (11 cases per million doses)
 - Most (71%) occurred within 15 minutes of vaccination
 - All cases were able to be managed with standard therapy for allergic reaction
- *Demonstrates:*
 - Appropriateness of brief (15 min) observation after vaccination
 - Need for medical personnel on site
 - Safety and rarity of this adverse event



WHEN IS IT CONTRAINDICATED?

- The only absolute contraindication is history of severe allergic reaction to any component of the vaccine, principally:
 - PEG
 - Polysorbate
 - Another mRNA vaccine component
- The vial stoppers are not made with natural rubber latex.



AGE ELIGIBILITY

- Pfizer-BioNTech: age 16 years and older.
- Moderna: age 18 years and older.
- Pediatric Clinical Studies:
 - Pfizer-BioNTech – Trial in 12-15 years fully enrolled (results mid-year)
 - Moderna – Trial in 12-17 years enrolling
 - Oxford-AstraZeneca – Trial in 6-17 years planned



CAN I GET COVID-19 FROM THE VACCINE?

Absolutely not!

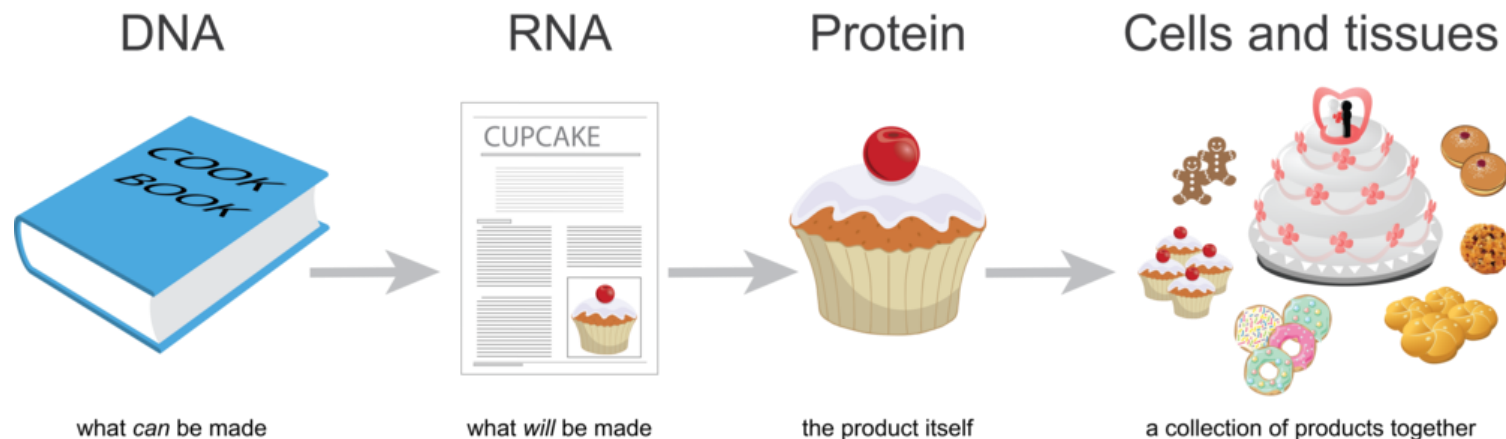
- There is no virus in the vaccine
- Cannot make the virus from the mRNA
 - mRNA instructions are only for a protein on the shell



CAN THE mRNA GET INTO MY DNA?

Absolutely not!

- mRNA does not work that way
- mRNA is the instructions for building proteins and cannot replace DNA, which is the instructions for making RNA



IS THERE A MICROCHIP IN THE VACCINE?

No



HOW MIGHT NOT GETTING THE VACCINE IMPACT ME?

- **Medically**
 - Increased risk of getting ill with COVID-19
 - Increased risk of bringing COVID-19 to your family
 - Not contributing to herd immunity (return to “normal life”)
- **Operationally**
 - Some employers may require it
 - May not be able to work special events / overtime
 - May not have future paid time for periods on quarantine
 - May be needed for travel or entry into certain locations



ONCE I AM VACCINATED, DO I NEED TO STILL WEAR A MASK AND OTHER PPE?

Yes

- Must continue wearing mask and other PPE, physically distance, and decontaminate
- Vaccinated individuals may still be carriers of the virus even though not ill (and get family sick)
- Not everyone will be protected by the vaccine



WHAT DO I NEED TO DO AS A PARAMEDIC OR PHRN TO ASSIST WITH VACCINATING?

1. Complete the PA Train course #1095048 on vaccination
<https://www.train.org/pa/course/1095048/>

AND

2. Complete a vaccine checkoff form and have it signed off by your medical command physician



Q&A WITH OUR PANEL



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