COVID 19 vaccine for moderately or severely immunocompromised

- MRNA vaccines and Novavax
- Immunocompromised would not mount enough immune response with usual 2 dose series.
- Primary series usually consist of 3 vaccine doses (Moderna and Pfizer)
- Space between the doses should be the shortest approved.

COVID 19 vaccine for moderately or severely immunocompromised

- Tumors or cancers of the blood with or without active cancer treatment
- Received an organ or islet transplant and are taking medicine to suppress the immune system
- Received chimeric antigen receptor (CAR)-T-cell therapy (a treatment to help your immune system attach to and kill cancer cells) or received a stem cell transplant (within the last 2 years)
- Moderate or severe primary immunodeficiency (such as common variable immunodeficiency disease, severe combined immunodeficiency, DiGeorge syndrome, Wiskott-Aldrich syndrome)
- Advanced or untreated HIV infection
- Active treatment with high-dose corticosteroids or other drugs that may suppress the immune response

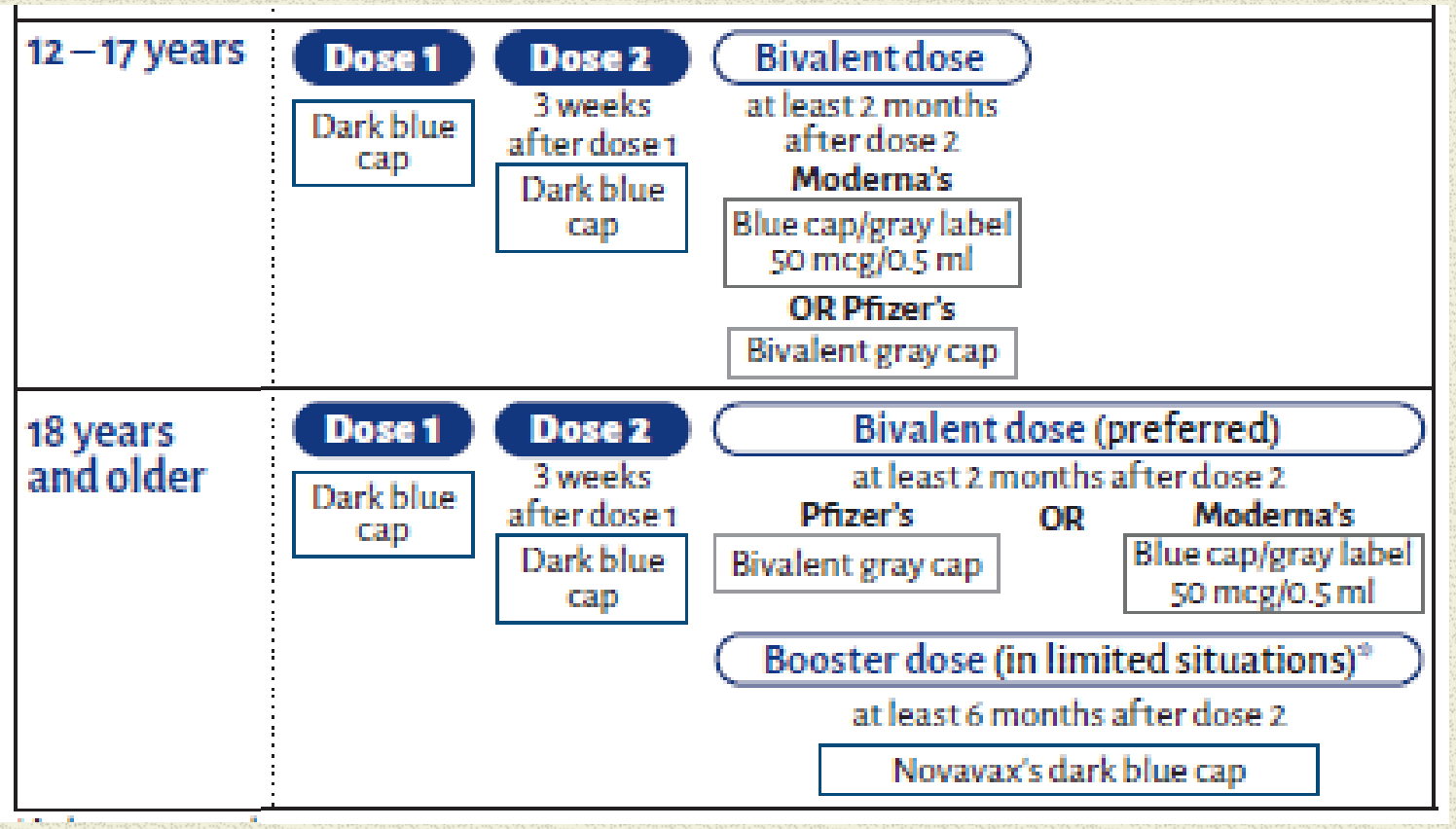
Pfizer-BioNTech: IMMUNOCOMPROMISED

Age at First Dose	Pfizer-BioNTech COVID-19 Vaccine			
6 months–4 years	**Dose 1** Maroon cap	**Dose 2** 3 weeks after dose 1 Maroon cap	**Dose 3** at least 8 weeks after dose 2 Maroon cap	
5 years	**Dose 1** Orange cap	**Dose 2** 3 weeks after dose 1 Orange cap	**Dose 3** at least 4 weeks after dose 2 Orange cap	**Bivalent dose** at least 2 months after last dose† Bivalent orange cap
6–11 years	**Dose 1** Orange cap	**Dose 2** 3 weeks after dose 1 Orange cap	**Dose 3** at least 4 weeks after dose 2 Orange cap	**Bivalent dose** at least 2 months after last dose† Bivalent orange cap **OR Moderna's** Blue cap/gray label 25 mcg/0.25 ml
12–17 years	**Dose 1** Gray cap	**Dose 2** 3 weeks after dose 1 Gray cap	**Dose 3** at least 4 weeks after dose 2 Gray cap	**Bivalent dose** at least 2 months after last dose† Bivalent gray cap **OR Moderna's** Blue cap/gray label 50 mcg/0.5 ml
18 years and older	Same dosing schedule as 12–17 years			

Moderna: IMMUNOCOMPROMISED

Age at First Dose	Moderna COVID-19 Vaccine			
6 months–4 years	**Dose 1** Blue cap/ magenta label	**Dose 2** 4 weeks after dose 1 Blue cap/ magenta label	**Dose 3** at least 4 weeks after dose 2 Blue cap/ magenta label	
5 years	**Dose 1** Blue cap/ magenta label	**Dose 2** 4 weeks after dose 1 Blue cap/ magenta label	**Dose 3** at least 4 weeks after dose 2 Blue cap/ magenta label	**Bivalent dose** at least 2 months after last dose **Pfizer's** Bivalent orange cap
6–11 years	**Dose 1** Blue cap/ purple label	**Dose 2** 4 weeks after dose 1 Blue cap/ purple label	**Dose 3** at least 4 weeks after dose 2 Blue cap/ purple label	**Bivalent dose** at least 2 months after last dose Blue cap/gray label 25 mcg/0.25 ml **OR Pfizer's** Bivalent orange cap
12–17 years	**Dose 1** Red cap/ blue label	**Dose 2** 4 weeks after dose 1 Red cap/ blue label	**Dose 3** at least 4 weeks after dose 2 Red cap/ blue label	**Bivalent dose** at least 2 months after last dose* Blue cap/gray label 50 mcg/0.5 ml **OR Pfizer's** Bivalent gray cap
18 years and older	Same dosing schedule as 12–17 years			

NOVAVAX: IMMUNOCOMPROMISED



Pre-exposure prophylaxis for high risk group

EVUSHELD (Tixagevimab plus Cilgavimab)

- Long acting anti SARS CoV 2 abs, effective against Omicron
- Patients NOT INFECTED AND NOT EXPOSED.
- Moderate to severe immunosuppression, expected not to respond to COVID immunization
- Or for whom COVID 19 vaccination is contraindicated or not recommended.

COVID 19 vaccine for recently infected (per AAP)

- **Usual recommendation to resume immunization per schedule, once the patient** recover from their acute illness and complete isolation.
- This also applies to people who become infected with COVID-19 between their first and second dose of vaccine, or those who are due for a booster.

- Individuals who recently had SARS-CoV-2 infection and have concluded their isolation period **may consider delaying a primary series dose or their first or second COVID-19 vaccine booster dose by 3 months** from symptom onset or positive test
- Study by Zhong et al have shown that increased time between infection and vaccination may result in an improved immune response to vaccination.

Zhong at al; JAMA, 2021 Dec 28;326(24):2524-2526.

COVID-19 vaccine side effects

- 6 months to 3 years:
- Most common side effects are mild
  - Pain on the leg or arm where the shot was given
  - Swollen lymph nodes
  - Irritability or crying
  - Sleepiness
  - Loss of appetite

- 4 years to 17 years
- Side effects are more common **after the second dose** and can include:
  - Pain, swelling, and redness on the arm where the shot was given
  - Tiredness
  - Headache
  - Muscle or joint pain
  - Chills
  - Swollen lymph nodes

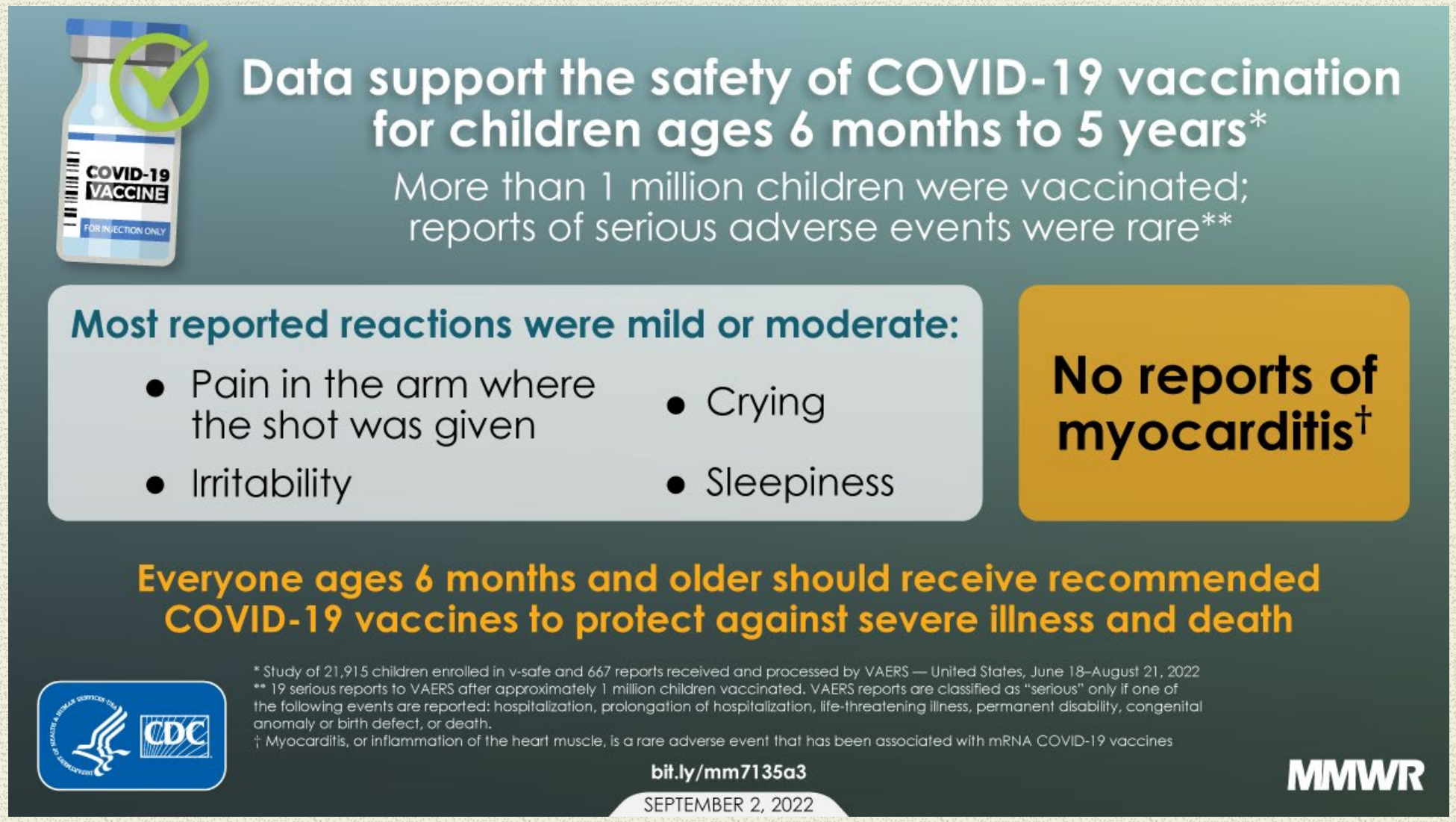
COVID 19 vaccine side effects most common adults

- Pain
- Redness
- Swelling
- Tiredness
- Headache
- Muscle pain
- Chills
- Fever
- Nausea

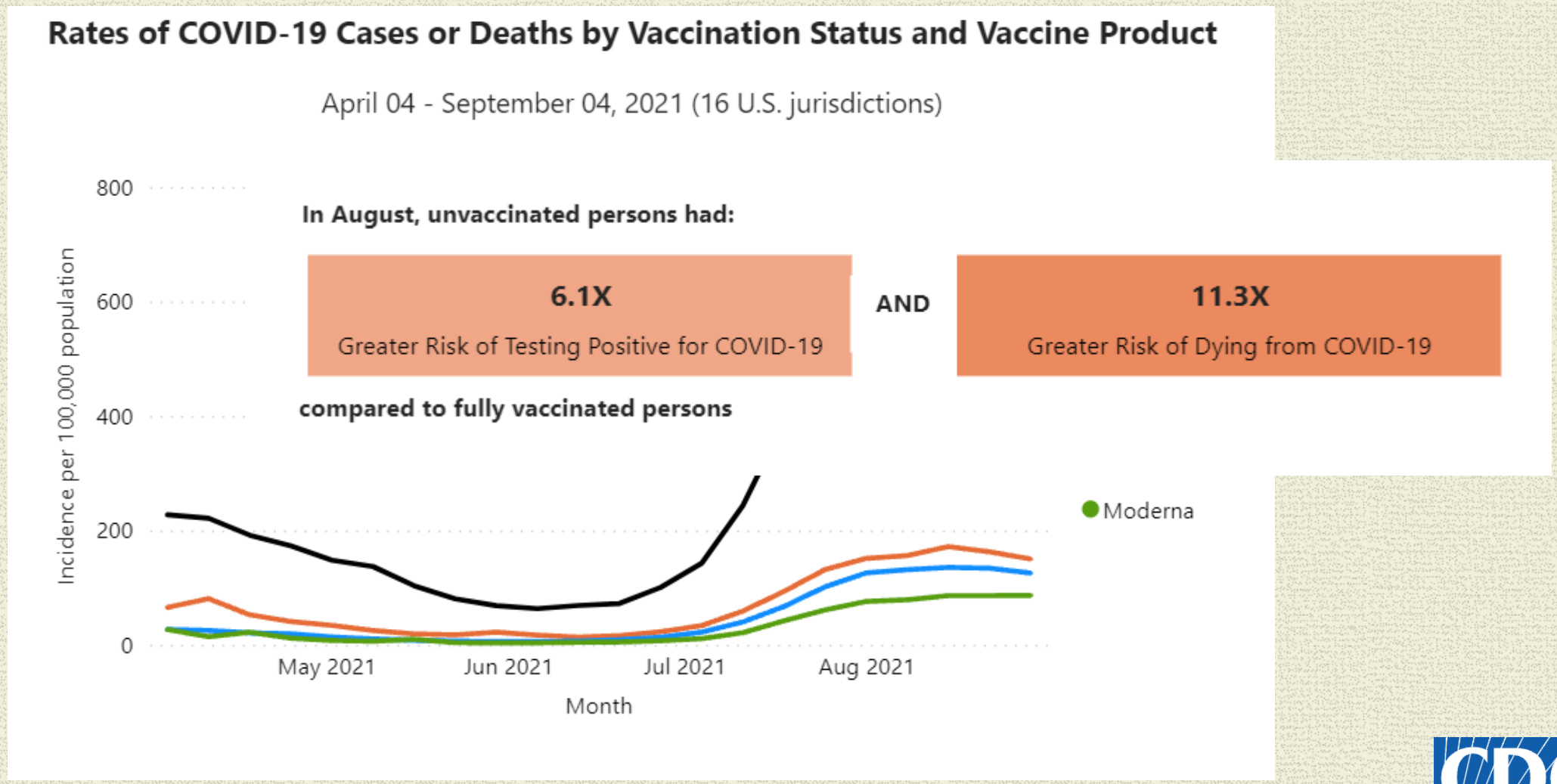
COVID-19 vaccine rare severe side effects

- Anaphylactic reaction
  - 5 cases/1 million doses
- Myocarditis/ Pericarditis after MRNA vaccines- mild, most patients with myocarditis or pericarditis after COVID-19 vaccination responded well to medicine and rest, usually young males
  - 12–15 years (70.7 cases per one million doses of Pfizer-BioNTech)
  - 16–17 years (105.9 cases per one million doses of Pfizer-BioNTech)
  - 18–24 years (52.4 cases and 56.3 cases per million doses of Pfizer-BioNTech and Moderna, respectively)
- Thrombosis with thrombocytopenia syndrome (TTS) after J/J Janssen-rare events that causes blood clots in large blood vessels and low platelets.
  - 4 cases/1 million doses
- Guillen Barre syndrome after J/J Janssen- vaccines-a rare disorder where the body's immune system damages nerve cells, causing muscle weakness and sometimes paralysis. GBS has largely been reported in men ages 50 years and older.
  - 21 times more often in first 21 days than mRNA vaccines
  - 11 times more often after 42 days than mRNA vaccines

Side effect reported to VAERS

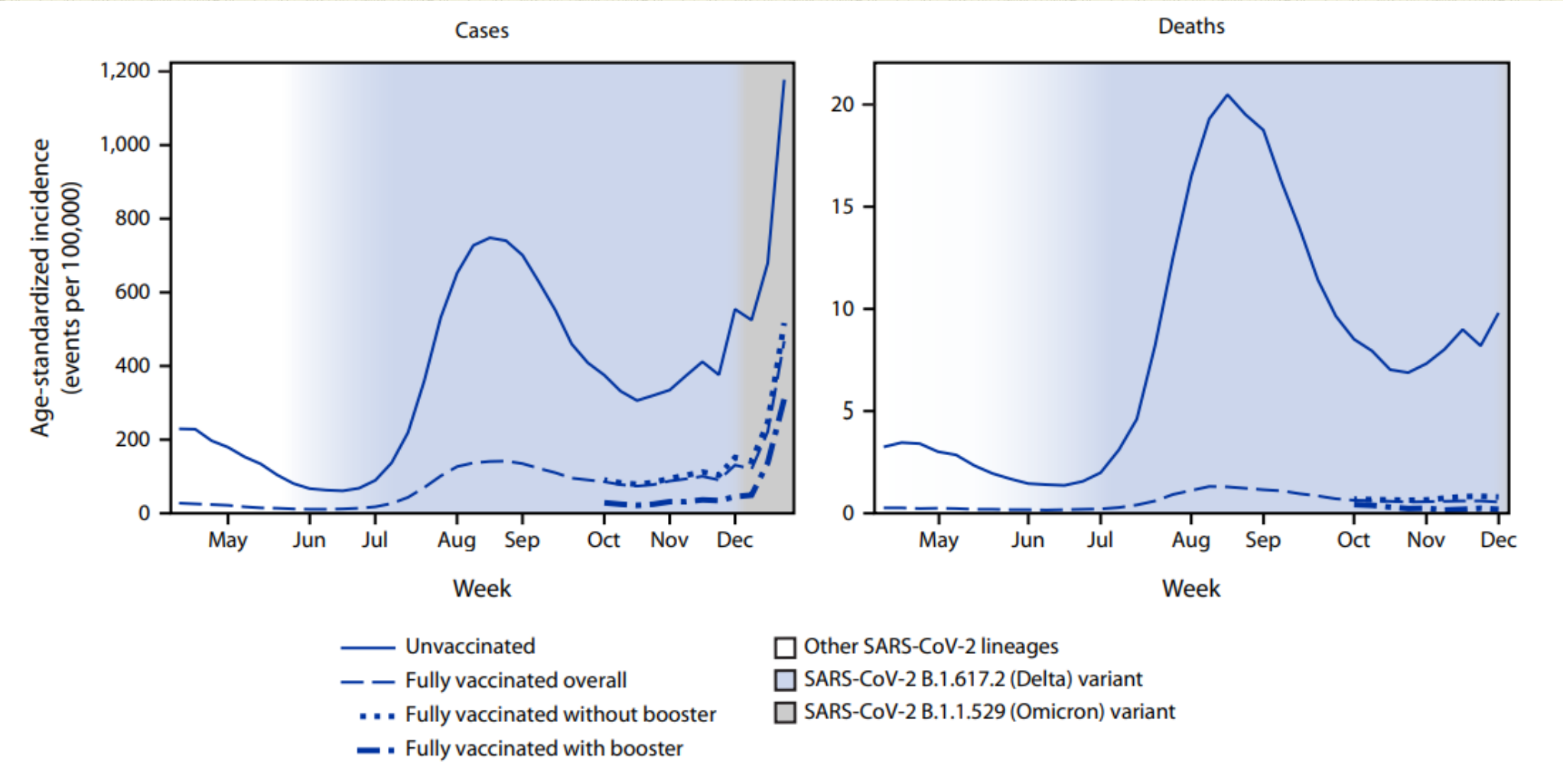


CDC-rate of death related to COVID 19 by vaccination



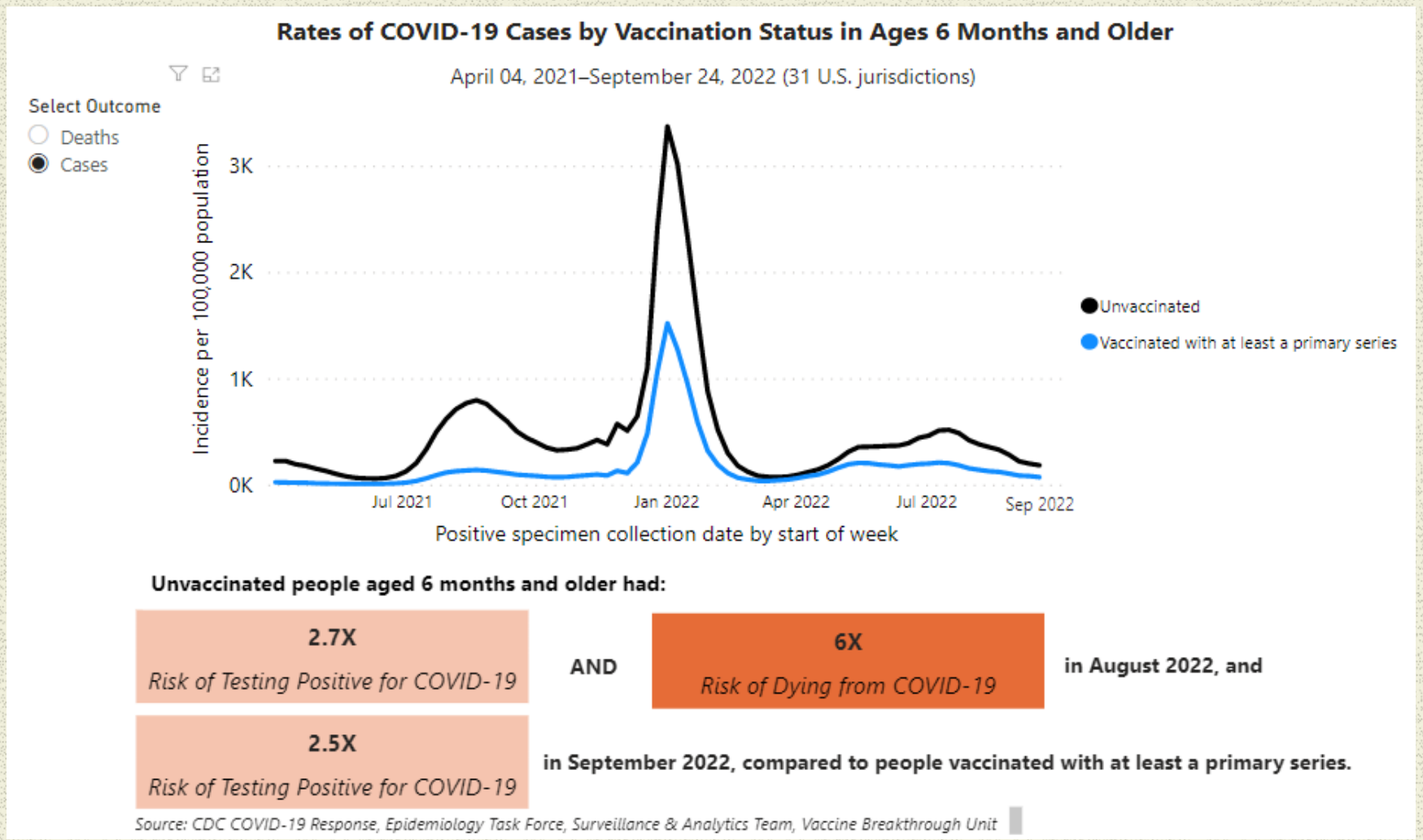
CDC COVID 19 DATA: https://covid.cdc.gov/covid-data-tracker, date accessed 10/29/2022

Incidence of COVID 19 cases and deaths



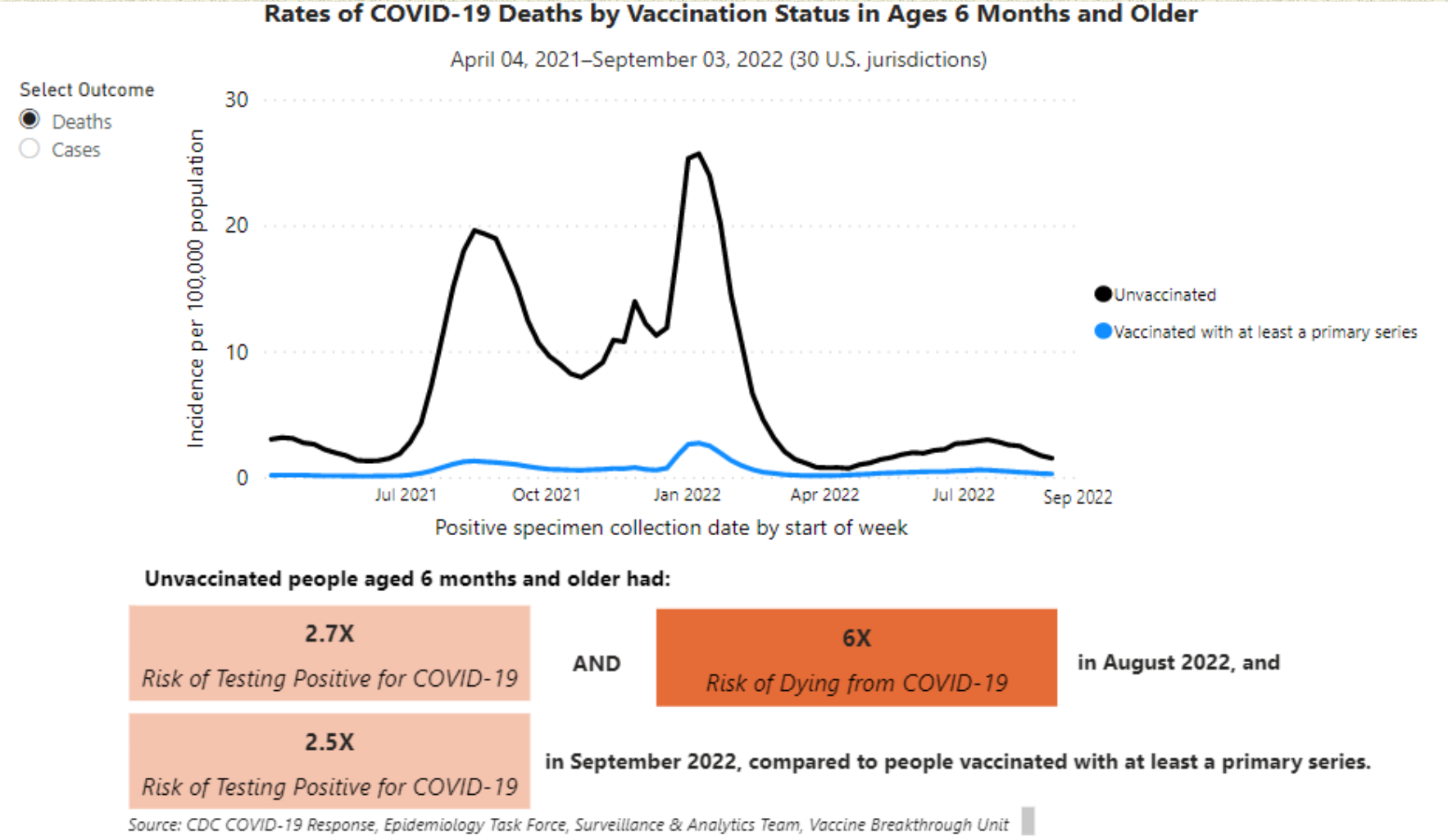
Johnson AG, et al.MMWR Morb Mortal Wkly Rep. 2022 Jan 28;71(4):132-138.

Rates of COVID-19 cases by vaccinated primary series



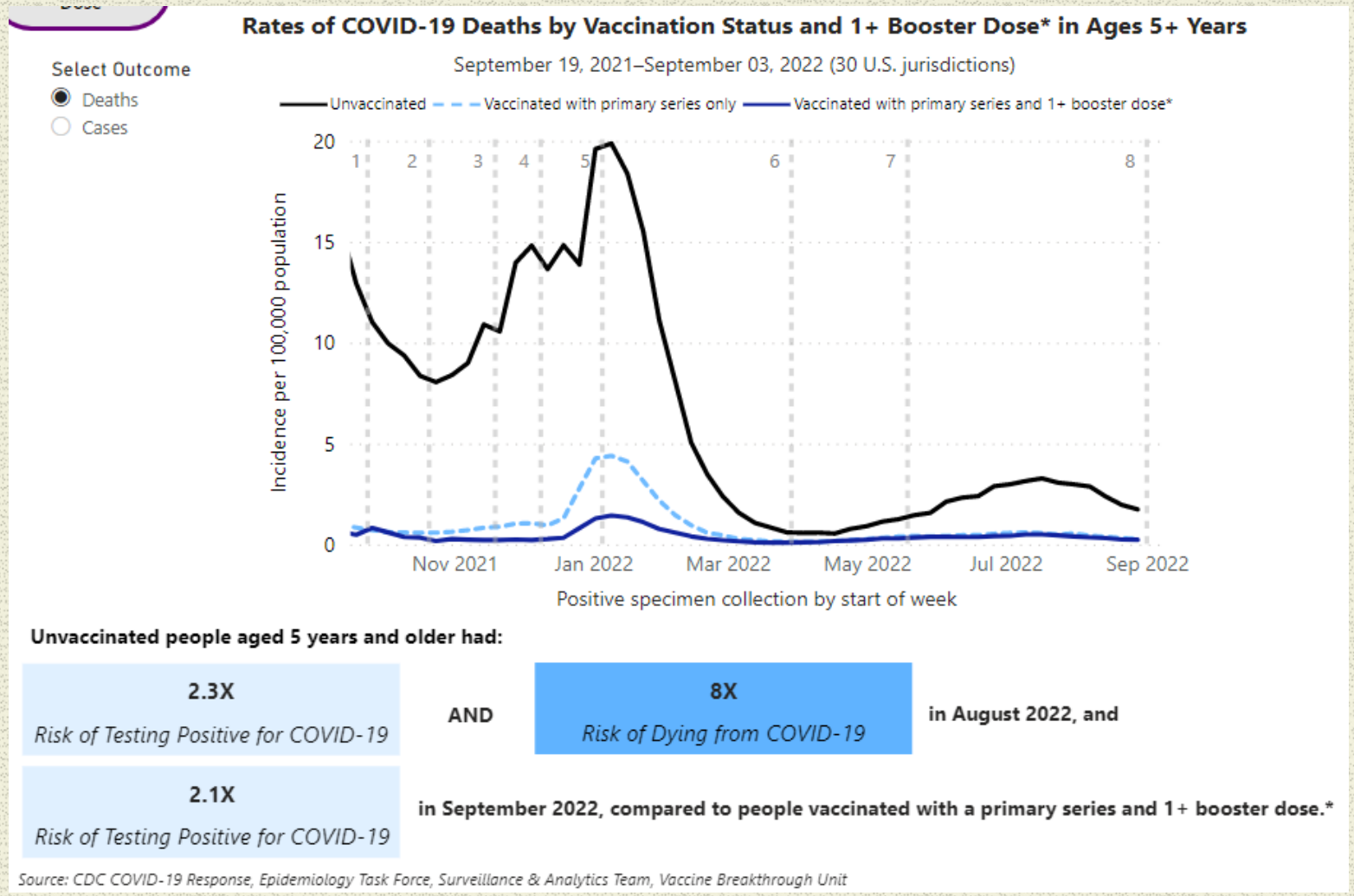
CDC COVID 19 DATA: https://covid.cdc.gov/covid-data-tracker, date accessed 10/29/2022

Rates of COVID-19 deaths vaccinated primary series



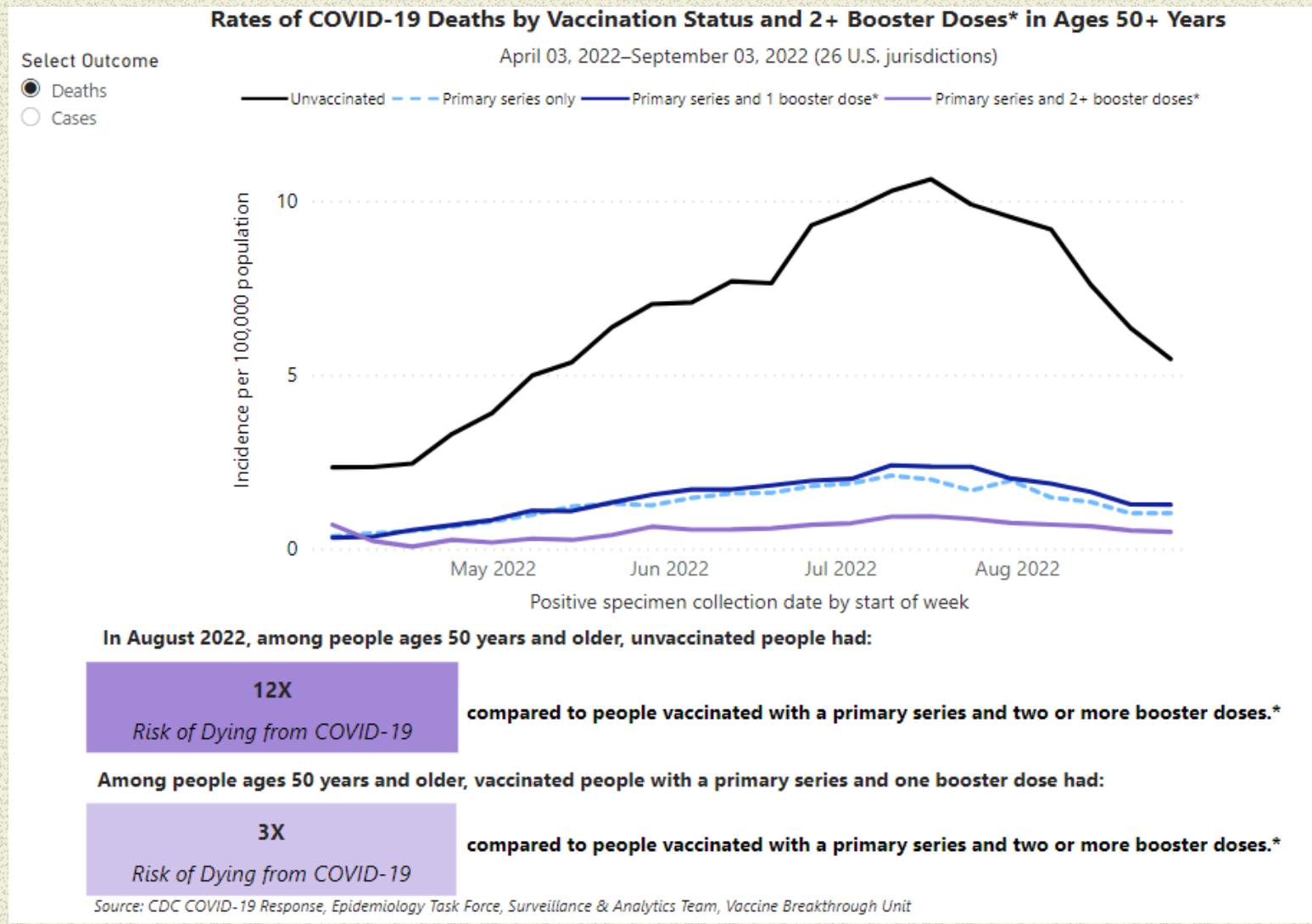
CDC COVID 19 DATA: https://covid.cdc.gov/covid-data-tracker, date accessed 10/29/2022

Rates of COVID-19 deaths by vaccination 5 years and older



CDC COVID 19 DATA: https://covid.cdc.gov/covid-data-tracker, date accessed 10/29/2022

Rates of COVID-19 deaths in ages 50+ years



CDC COVID 19 DATA: https://covid.cdc.gov/covid-data-tracker, date accessed 10/29/2022

Allegheny County COVID 19 vaccination rate (1,216,045)

People Vaccinated	At Least One Dose	Completed Primary Series
Total	1,036,685	894,401
% of Total Population	85.3%	73.5%
Population ≥ 5 Years of Age	1,025,617	887,600
% of Population ≥ 5 Years of Age	89%	77%
Population ≥ 12 Years of Age	980,917	849,309
% of Population ≥ 12 Years of Age	92.1%	79.7%
Population ≥ 18 Years of Age	925,125	800,963
% of Population ≥ 18 Years of Age	93.5%	80.9%
Population ≥ 65 Years of Age	242,537	217,538
% of Population ≥ 65 Years of Age	95%	92.5%

CDC COVID 19 DATA: https://covid.cdc.gov/covid-data-tracker, date accessed 10/29/2022

Allegheny County COVID 19-at least 1 booster

People with a First Booster Dose ǂ	Boosters
Total	471,582
% of People with a Completed a Primary Series Who Have a First Booster Dose	52.7%
People with a Completed a Primary Series ≥ 5 Years of Age Who Have a First Booster Dose	471,576
% of People with a Completed Primary Series ≥ 5 Years of Age Who Have a First Booster Dose	53.1%
People with a Completed a Primary Series ≥ 12 Years of Age Who Have a First Booster Dose	463,301
% of People with a Completed Primary Series ≥ 12 Years of Age Who Have a First Booster Dose	54.6%
People with a Completed a Primary Series ≥ 18 Years of Age Who Have a First Booster Dose	445,310
% of People with a Completed Primary Series ≥ 18 Years of Age Who Have a First Booster Dose	55.6%
People with a Completed a Primary Series ≥ 65 Years of Age Who Have a First Booster Dose	162,400
% of People with a Completed Primary Series ≥ 65 Years of Age Who Have a First Booster Dose	74.7%

CDC COVID 19 DATA: https://covid.cdc.gov/covid-data-tracker, date accessed 10/29/2022

Allegheny County COVID 19-with 2 boosters

People with a Second Booster Dose	Boosters
Residents 50+ with a second booster dose	132,283
Percent of first booster dose 50+ pop with a second booster dose	46.8%
Residents 65+ with a second booster dose	89,063
Percent of first booster dose 65+ pop with a second booster dose	54.8%

CDC COVID 19 DATA: https://covid.cdc.gov/covid-data-tracker, date accessed 10/29/2022

Questions

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