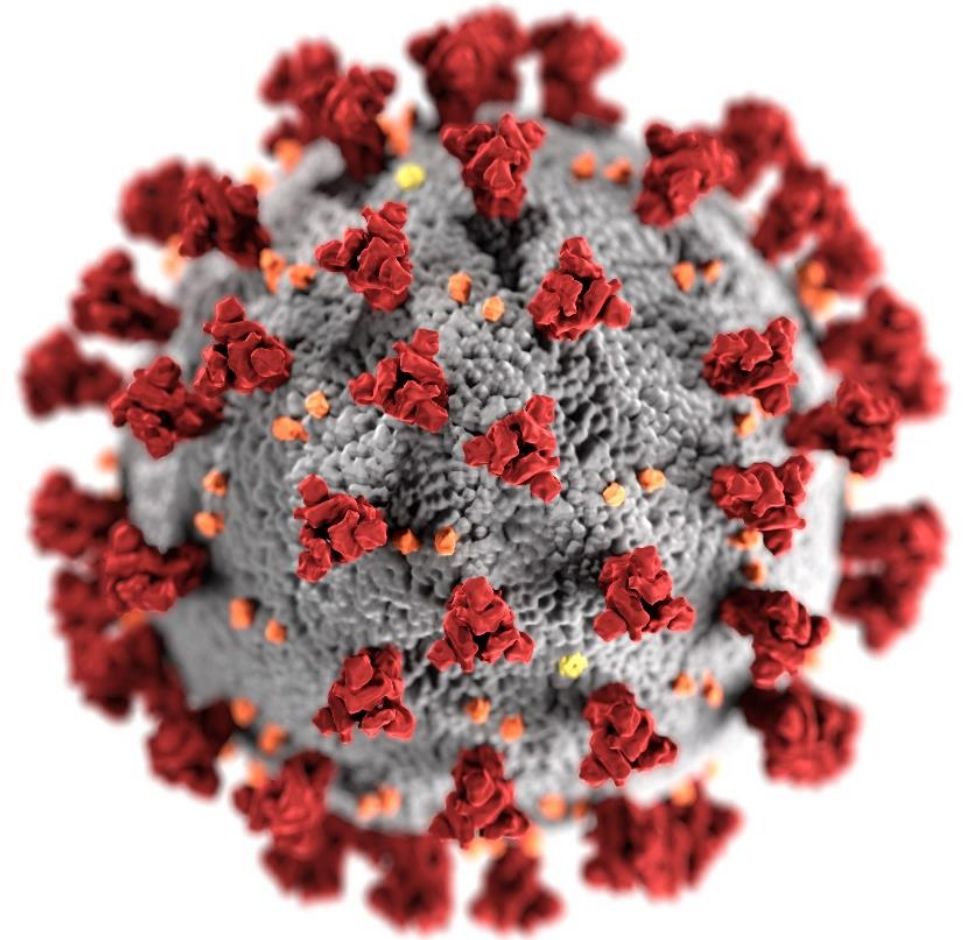


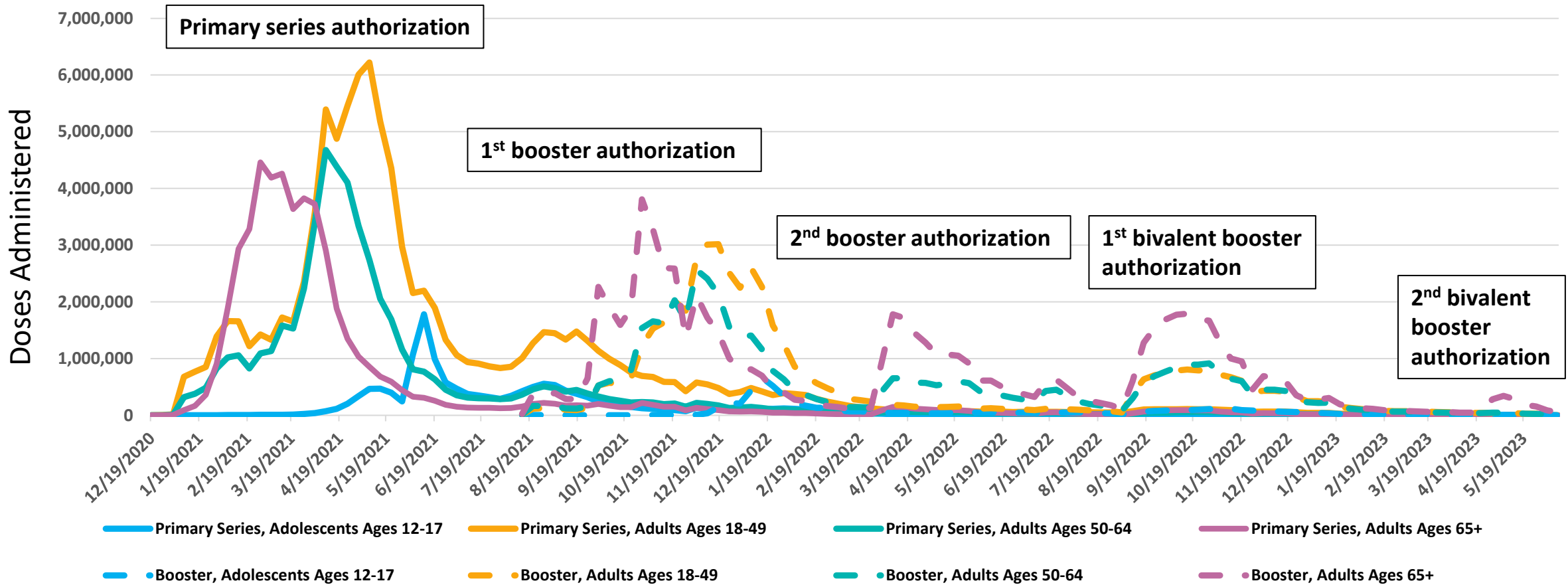
Summary and Work Group Considerations

Megan Wallace, DrPH, MPH
ACIP Meeting
June 23, 2023



cdc.gov/coronavirus

U.S. COVID-19 vaccine uptake among ages ≥ 12 years, August 2021-June 2023



U.S. COVID-19 Vaccination Coverage (%) of Total Population by Age Group — May 10, 2023

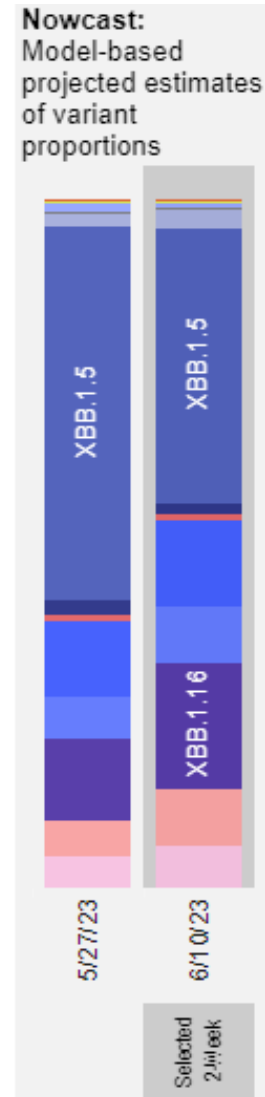
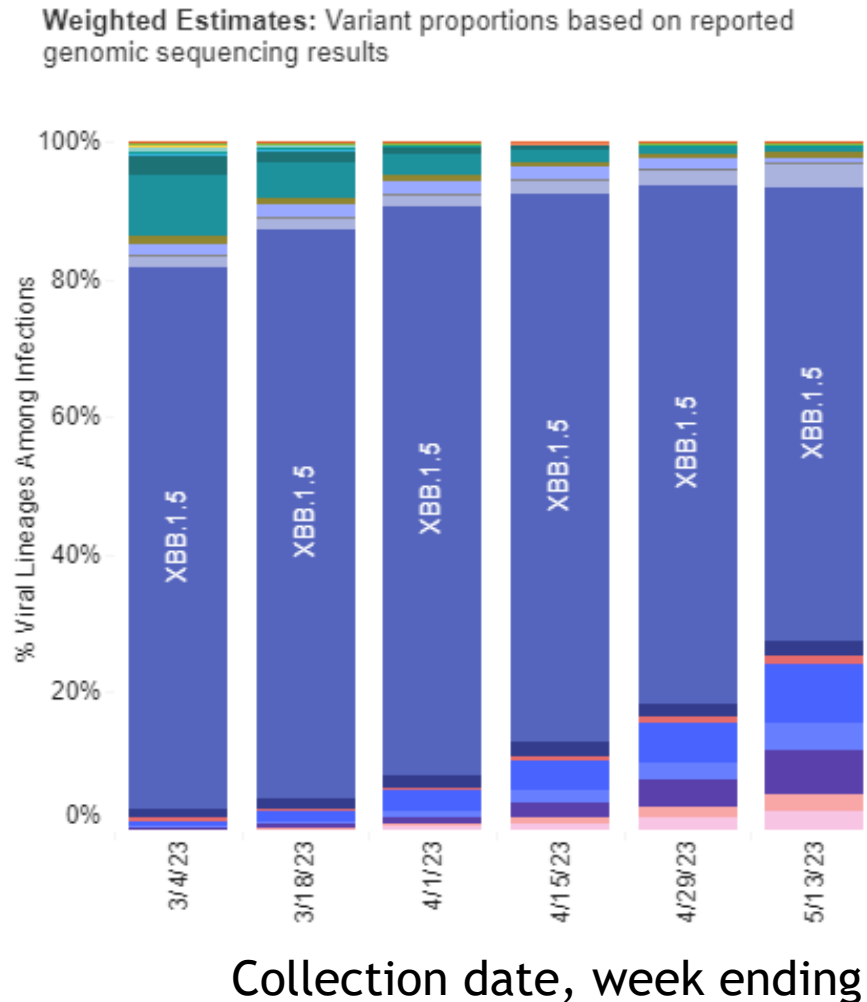
Coverage / Age (years)	<2	2-4	5-11	12-17	18-24	24-49	50-64	≥65
At least one dose†	8.9	10.9	40.0	72.2	82.3	85.5	95.0	95.0
At least one bivalent dose	0.6	0.6	4.8	7.8	7.4	12.1	21.7	43.3
Unvaccinated	91.1	89.1	60.0	27.8	17.7	14.5	—†	—†

†Note: Coverage is capped at 95%

Source: <https://covid.cdc.gov/covid-data-tracker/#vaccination-demographics-trends> Updated June 1, 2023

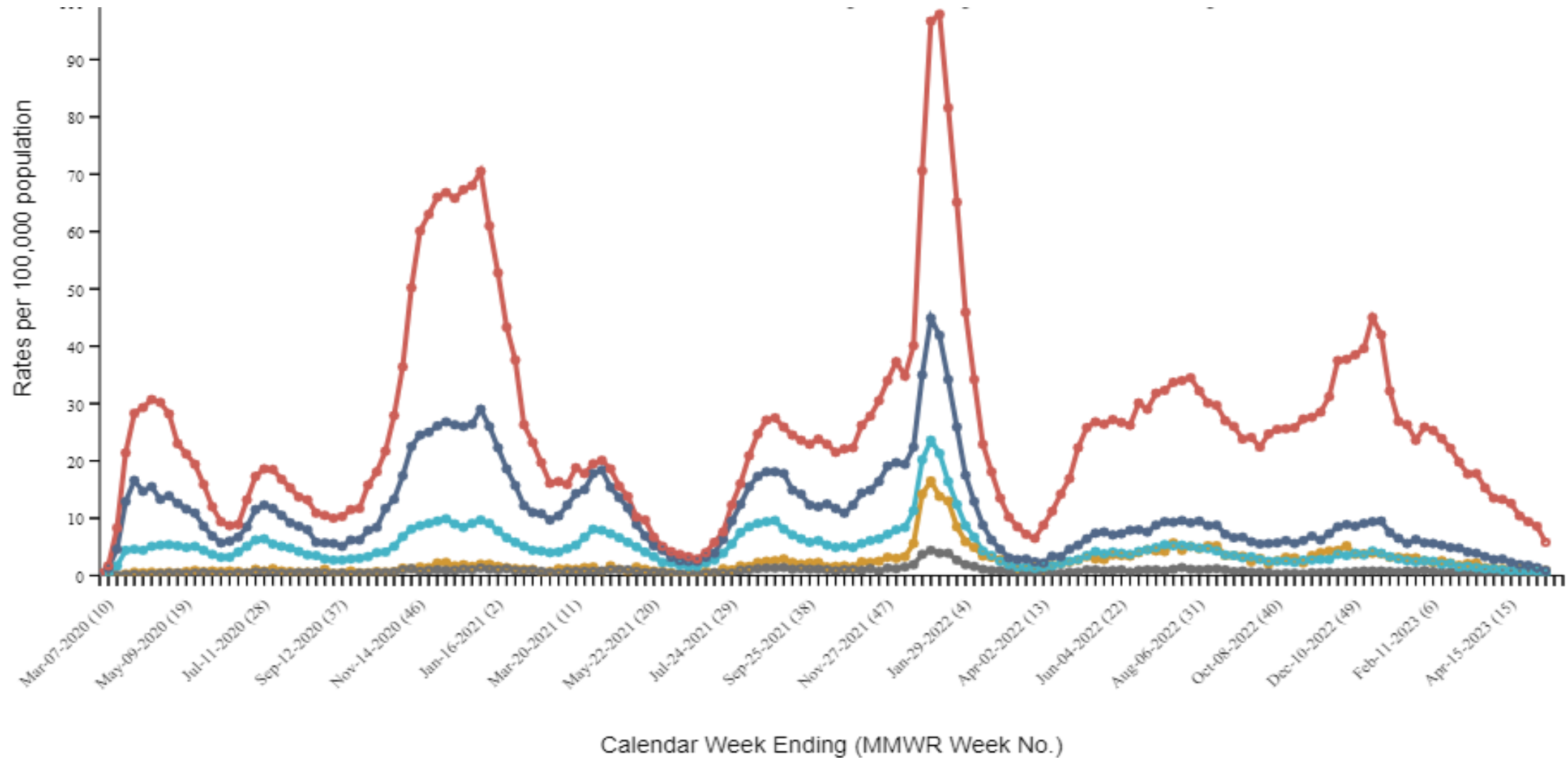
Trends in weighted variant proportion estimates & Nowcast

United States, February 19, 2023-June 10, 2023



WHO label	Lineage #	US Class	%Total	95%PI	
Omicron	XBB.1.5	VOC	39.9%	36.7-43.2%	
	XBB.1.16	VOC	18.2%	15.5-21.2%	
	XBB.1.9.1	VOC	12.5%	11.0-14.3%	
	XBB.1.16.1	VOC	8.4%	6.1-11.5%	
	XBB.1.9.2	VOC	8.4%	6.3-11.1%	
	XBB.2.3	VOC	6.0%	4.4-8.1%	
	XBB	VOC	3.0%	2.0-4.7%	
	XBB.1.5.1	VOC	1.6%	1.2-2.1%	
	FD.2	VOC	0.9%	0.3-2.1%	
	XBB.1.5.10	VOC	0.8%	0.5-1.3%	
	CH.1.1	VOC	0.2%	0.1-0.2%	
	BQ.1.1	VOC	0.1%	0.0-0.1%	
	BQ.1	VOC	0.0%	0.0-0.0%	
	BA.2	VOC	0.0%	0.0-0.0%	
	BA.5	VOC	0.0%	0.0-0.0%	
	BA.2.75	VOC	0.0%	0.0-0.0%	
	BN.1	VOC	0.0%	0.0-0.0%	
BF.7	VOC	0.0%	0.0-0.0%		
Other	Other*		0.0%	0.0-0.0%	

Weekly population-based rates of COVID-19-associated hospitalizations by age group— COVID-NET, March 2020–May 2023



COVID-19 in pregnant people

Summary

- COVID-19 during pregnancy is associated with severe maternal health outcomes and adverse pregnancy outcomes
- Risk of complications lower, but still elevated, during the Omicron predominant period compared to pre-Omicron period
 - Possibly due to the impact of prior infection and vaccination
- Most hospitalized pregnant persons with a positive SARS-CoV-2 test were not up to date with vaccinations

COVID-19 in infants

Summary

- COVID-19-associated hospitalization rates in infants ages 0 – 5 months increased in the Omicron period
 - Hospitalization rates similar to those in adults ages 65 – 75 years
- Majority of infants ages 0 – 5 months hospitalized with a positive SARS-CoV-2 test were hospitalized with COVID-19-like symptoms
- Vaccination at any point in pregnancy appears to be beneficial to infants <6 months

Work Group interpretation

COVID-19 in pregnant people and infants

- Pregnancy remains a risk factor for severe maternal disease and adverse pregnancy outcomes, even with new variants
- COVID-19 vaccination **improves outcomes** for pregnant people, their pregnancies and their infants
- Growing body of evidence that COVID-19 mRNA vaccines are **safe** during pregnancy¹
- Current uptake of updated COVID-19 vaccine is low among pregnant people
 - **23%** of pregnant people received an updated dose²
- Work group emphasized that pregnant people should receive recommended COVID-19 vaccine dose for protection of themselves and their infants
- Continue to review data and evaluate COVID-19 recommendations for pregnant people as needed

1. <https://www.cdc.gov/vaccinesafety/research/publications/index.html> . COVID-19 Vaccine Safety Articles and Studies by Topic. Pregnancy.

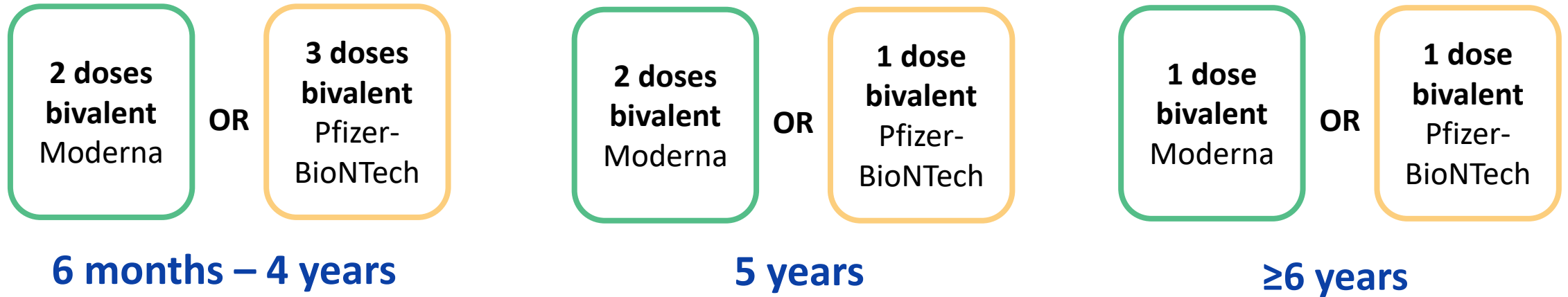
2. <https://covid.cdc.gov/covid-data-tracker/#vaccinations-pregnant-women>

Infection-induced and hybrid immunity

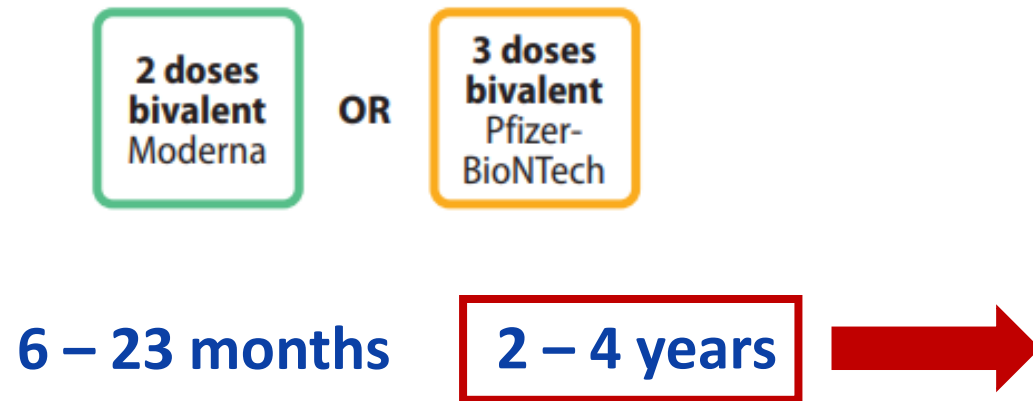
Summary

- Hybrid immunity likely provides better protection than either infection or vaccination alone
- Protection likely influenced by cumulative number of vaccine doses, number of times infected, timing of most recent vaccination or infection, and how closely the circulating variant matches the vaccine or prior infection
- Protection can wane over time after both infection and vaccination
- Receipt of updated vaccine dose can provide additional protection beyond that received by prior doses or infection and restore protection after waning

Current recommendations for mRNA COVID-19 vaccines



Current recommendations for mRNA COVID-19 vaccines



Question discussed by the Work Group:

Do children ages 2–4 years continue to need a multi-dose initial series, or could they also move to a single (annual?) dose like older populations

Possible future recommendations for simplification mRNA COVID-19 vaccines



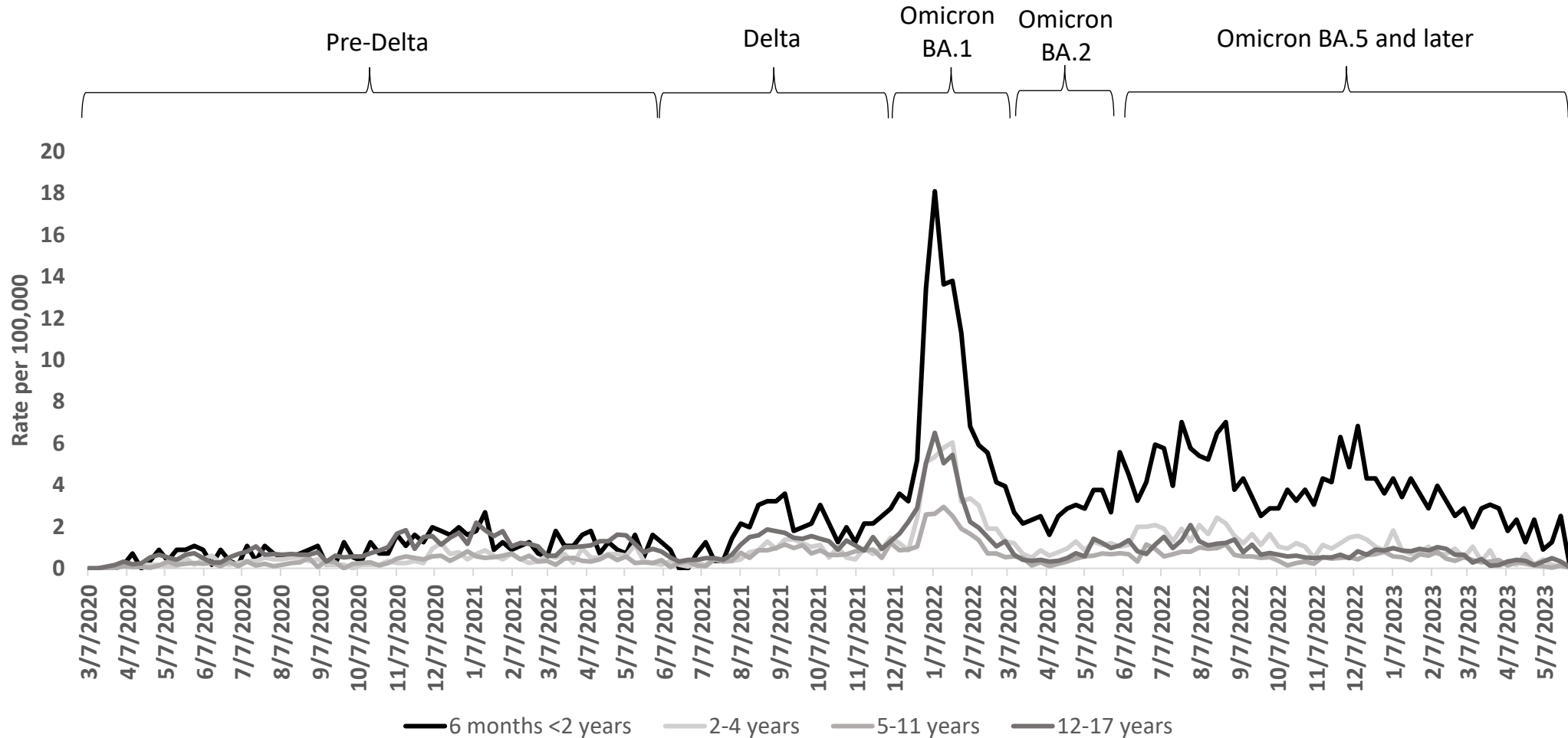
6–23 months



≥2 years



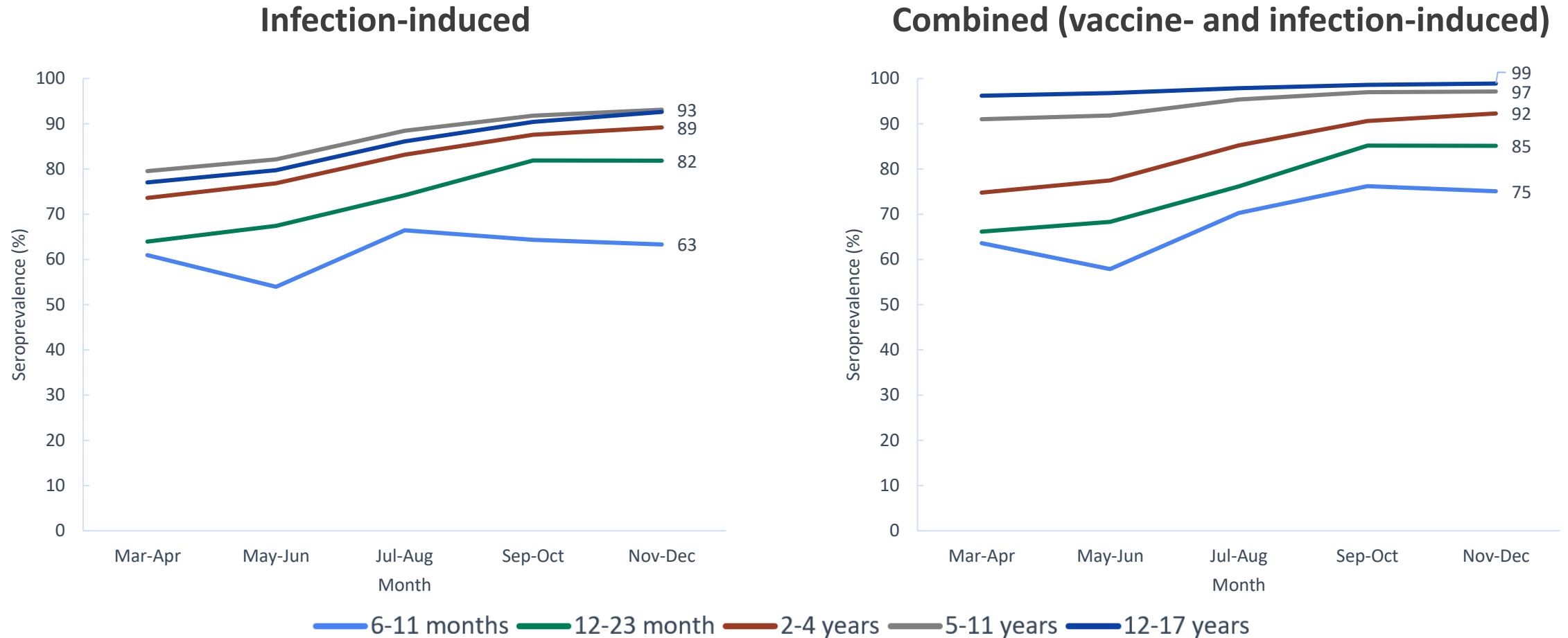
COVID-19-associated hospitalization rates in infants, children and adolescents aged 6 months through <18 Years — COVID-NET, March 2020–May 2023



Source: COVID-NET: <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covid-net/purpose-methods.html>. Data March 1, 2020 through March 31, 2023. Pre-Delta: March 1, 2020 – June 19, 2021; Delta: June 20–December 18, 2021; Omicron BA.1: December 19, 2021–March 19, 2022; Omicron BA.2: March 20–June 18, 2022; Omicron BA.5 (June 19, 2022–May 27, 2023)

Pediatric infection-induced and combined (vaccine- and infection-induced)

Seroprevalence from U.S. commercial laboratories — March–December 2022



Source: <https://covid.cdc.gov/covid-data-tracker/#pediatric-seroprevalence> and unpublished data (CDC) Data from repeat, cross-sectional study on blood specimens collected by commercial laboratories. Vaccine history is unknown in this study. Infection-induced seroprevalence estimated from blood specimens tested for anti-nucleocapsid antibodies: the number of specimens per 2-month collection period were, by age group: 6–11 months: 157; 12–23 months: 724; 2–4 years: 2,165; 5–11 years: 9,247; and 12–17 years: 14,570. Combined (vaccine- and infection-induced seroprevalence estimated from specimens tested for both spike and nucleocapsid antibodies: >99% of samples tested for anti-nucleocapsid antibodies were tested for anti-spike antibodies.

Children ages 2–4 years

Multiple initial doses or single (annual?) dose

- Children ages 6 – 23 months have higher COVID-19 hospitalization rates; hospitalization rates among children ages 2 – 4 years similar to rates in children 5 – 17 years
- Children ages ≥ 2 years more likely to be seropositive and may have multiple exposures through either infection or vaccination
- However, no randomized, clinical trials compared efficacy or immunogenicity of single dose versus multiple dose in young pediatric population in the context of high seroprevalence

Work Group interpretation

Multiple doses in children ages 2-4 years

- COVID-19 vaccines effectively protect children from hospitalization and severe disease from COVID-19
 - Uptake of COVID-19 vaccines in children remains low
- Work Group would be supportive of a move toward recommendation for a single (possibly annual) dose in ages 2 – 4 years based on hospitalization rates and rates of seropositivity in this age group
 - Work Group did highlight differences in transition to a single dose series from a two-dose series, compared to a three-dose series
- **Simple** recommendations may lead to increased coverage
- Continue to review data and evaluate COVID-19 vaccine program in context of evolving epidemiology

Steps toward recommendation of updated vaccine

- June 15, 2023 FDA's Vaccines and Related Biological Products Advisory Committee (VRBPAC) met to discuss fall strain composition
- VRBPAC unanimously voted that the vaccine composition be updated to a monovalent COVID-19 vaccine with an XBB-lineage of the Omicron variant
- FDA advised manufacturers to develop vaccines with a monovalent XBB.1.5 composition
- Anticipate updated vaccine doses will be broadly available in the fall
- Following updated vaccine authorizations, ACIP will review evidence to inform updated recommendations

Planning for Fall 2023

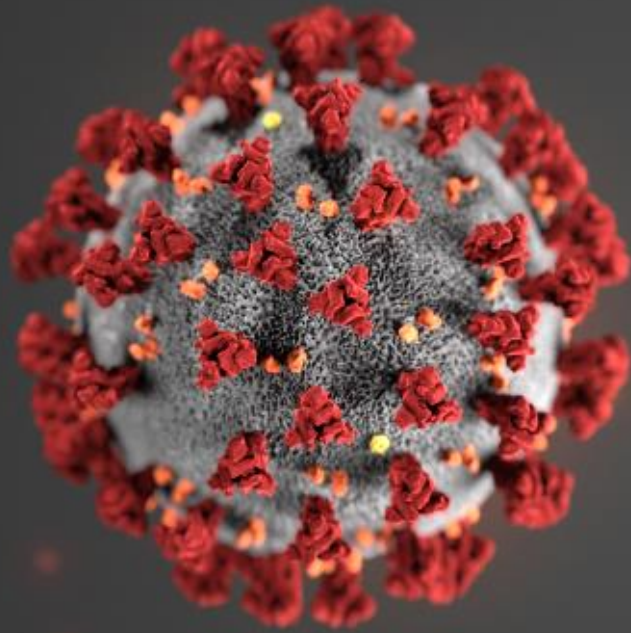
- COVID-19 vaccines and treatments will likely transition to the commercial marketplace in fall 2023
 - CDC continues to partner closely with state, local, and interagency partners toward continued successful distribution of COVID-19 vaccines and treatments during this time, including clarification of processes for ordering, shipping and distribution
 - Guidance for partners will be published in summer 2023, prior to the transition to the commercial marketplace
- Most Americans will continue to pay nothing out-of-pocket for the COVID-19 vaccine due to their insurance coverage
- However, approximately 25 million uninsured adults will lose access to affordable COVID-19 vaccines and treatments if no action were taken
- The ***Bridge Access Program for COVID-19 Vaccines and Treatment*** is a public-private partnership which serves as a temporary measure to prevent the loss of under- and uninsured adults' access to COVID-19 vaccines and treatments at no-cost after commercialization

Summary

- COVID-19 continues to cause substantial morbidity and mortality across the population, particularly in groups like **older adults** and **persons with immunocompromising conditions**
- COVID-19 vaccines continue to be the **most effective tool** we have to prevent serious illness, hospitalization and death from COVID-19
- COVID-19 vaccination is important for **pregnant people** for the protection of themselves and their **infants**
- Most of the population hasn't received a bivalent vaccine dose
- Ongoing review of data to continue efforts toward simplification
 - Work Group would be supportive of additional simplification for children ages 2 – 4 years in the future
- FDA advised manufacturers to develop vaccines with a monovalent XBB.1.5 composition
- Anticipate benefits from updated vaccine prior to possible increases in cases over the winter; ACIP can discuss future vaccine recommendations at upcoming meetings following updated vaccine authorizations

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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.

