



Nicole Bilotta <nbilotta@bbrsd.org>

EBCFA data

Jessica Deglialberti <jdegialberti@bbrsd.org>
To: Nicole Bilotta <nbilotta@bbrsd.org>

Thu, Sep 21, 2023 at 9:38 AM

Nicole,

Please put under the EBCFA folder for Tuesday's meeting.

Thank you, Jessica

----- Forwarded message -----

From: **Jessica Deglialberti** <jessica.t.moore@gmail.com>
Date: Thu, Sep 21, 2023 at 9:00 AM
Subject: Fwd: Your ACIP cliff notes
To: <jdegialberti@bbrsd.org>

Of note, in this article is information about hospitalizations of children.

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From: **Katelyn Jetelina from Your Local Epidemiologist** <yourlocalepidemiologist@substack.com>
Date: Tue, Sep 12, 2023 at 5:39 PM
Subject: Your ACIP cliff notes
To: <jessica.t.moore@gmail.com>

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Your ACIP cliff notes

Who is eligible for a Covid-19 vaccine this fall?

KATELYN JETELINA
SEP 12



READ IN APP ↗

Today [ACIP](#)—an external advisory committee to CDC—had a much-anticipated [meeting](#) with one goal: determine *who* is eligible for an updated Covid-19 vaccine this fall in the United States.

This 6-hour meeting was information-packed.

Here are your cliff notes.

Bottom Line Up Front (BLUF)

Everyone over 6 months is eligible for an updated Covid-19 vaccine this fall. I strongly agree, as the benefits of vaccines outweigh the risks across all age groups.

First up, Novavax.

Yesterday, the FDA approved mRNA vaccines for this fall, but did not include Novavax. FDA isn't allowed to comment on *why*. (My guess is Novavax faced delays in approval for manufacturing—they've had trouble with this in the past).

CDC recognized the concern on the ground (for the record, this is a fantastic way to build trust) and clarified today's recommendation was intentionally designed to be broad enough to cover Novavax when the FDA gives the "okay."

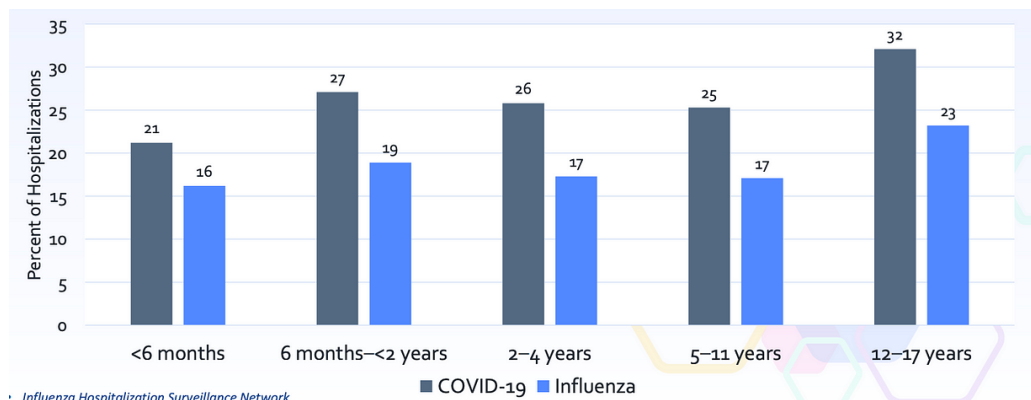
Novavax stated:

- A fall vaccine is still planned. I'm optimistic.
- A vaccine **will** be available to those who previously had an mRNA vaccine.

Severe disease for kiddos is similar to flu.

One of the biggest questions was whether vaccine benefits continue to outweigh the risks for kids. Updated stats were presented:

- More than half of children hospitalized for Covid-19 do **not** have a co-morbidity.
- Behind adults 75+ years, infants (<6 months) had the highest rate of Covid-19 hospitalization. The burden of severe illness is lowest among children ages 5–17 years compared to other age groups.
- For kids, hospitalization rates were lower or comparable to flu. Once hospitalized, though, more kids went to the ICU for Covid-19 than for flu.



Percent of COVID-19- and Influenza-Associated Hospitalizations with ICU Admission among Infants, Children, and Adolescents by Age Group — COVID-NET and FluSurv-NET*, October 2022– April 2023. [Source here.](#)

- Covid-19 hospitalization rate is higher than other vaccine-preventable diseases.

	Hepatitis A ¹	Varicella ² (Chickenpox)	Vaccine-type Invasive Pneumococcal Disease ³	COVID-19 ⁴
Age	5–14 years	0–4 years	0–4 years	6 months–<18 years
Time period	2005	1993–1995	1998–1999	2021–2022 2022–2023
Hospitalization Burden (Annual rate per 100,000 population)	<1	29–42	40 ⁵	≤4 years: 92–220 5–11 years: 15–47 12–17 years: 20–80

¹ <https://www.cdc.gov/mmwr/preview/mmwrhtml/ss5603a1.htm>

² Davis MM, Patel MS, Gebremariam A. Decline in varicella-related hospitalizations and expenditures for children and adults after introduction of varicella vaccine in the United States. *Pediatrics*. 2004;114(3):786–792. doi:10.1542/peds.2004-0012

³ Centers for Disease Control and Prevention (CDC). Direct and indirect effects of routine vaccination of children with 7-valent pneumococcal conjugate vaccine on incidence of invasive pneumococcal disease—United States, 1998–2003. *MMWR Morb Mortal Wkly Rep*. 2005 Sep 16;54(36):893–7. PMID: 16163262.

⁴ COVID-NET data October 2021 – September 2022 and October 2022 – July 2023. COVID-19 rates have not been adjusted for reason for admission. COVID vaccine first introduced in 12–17 years in May 2021; in 5–11 years in November 2021 and in 6 months – 4 years in June 2022.

Other pediatric vaccine-preventable diseases: Annual hospitalizations per 100,000 population prior to recommended vaccines compared to COVID-19. [Source here.](#)

Myocarditis was not a safety signal last fall.

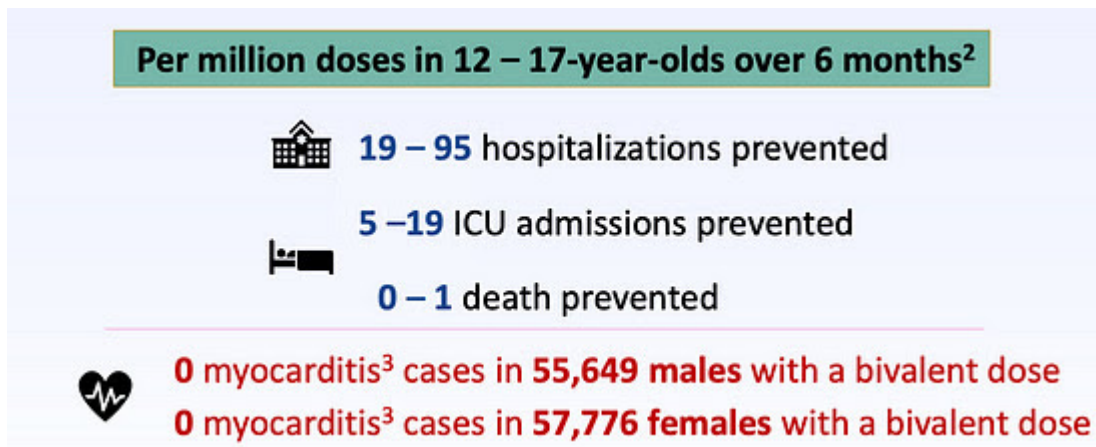
After last fall's updated Covid-19 vaccine, 2 myocarditis cases were verified out of ~650,000 doses. This is a much smaller rate for than the primary series. (We think this is because the increased time interval between doses reduces risk.) However, there is limited data, so this estimate has some uncertainty.

Age Group (yrs)	Dose 2 primary series Pfizer-BioNTech			Monovalent booster dose Pfizer-BioNTech			Bivalent Booster Doses (Pfizer and Moderna)		
	Cases	Total Dose 2 (N)	Incidence rate/ million doses (95% CI)	Cases	Total Doses (N)	Incidence rate/ million doses (95% CI)	Cases	Total Doses (N)	Incidence rate/ million doses (95% CI)
Pfizer									
12–17									
Males	45	308,046	146.1 (106.6–195.5)	14	129,487	108.1 (59.1–181.4)	0	55,649	0.0 (0.0–53.8)
Females	6	311,247	19.3 (7.1–42.0)	2	139,118	14.4 (1.7–51.9)	0	57,776	0.0 (0.0–51.9)
18–29									
Males	27	331,889	81.4 (53.6–118.4)	7	166,973	41.9 (16.9–86.4)	1	60,338	16.6 (0.4–92.3)
Females	2	400,321	5.0 (0.6–18.0)	1	240,226	4.2 (0.1–23.2)	0	95,162	0.0 (0.0–31.5)
30–39									
Males	5	341,527	14.6 (4.8–34.2)	3	197,554	15.2 (3.1–44.4)	0	97,171	0.0 (0.0–30.8)
Females	3	410,713	7.3 (1.5–21.3)	1	268,412	3.7 (0.1–20.8)	0	133,305	0.0 (0.0–22.5)
Moderna									
18–29									
Males	19	195,809	97.0 (58.4–151.5)	7	109,337	64.0 (25.7–131.9)	0	22,247	0.0 (0.0–134.7)
Females	0	243,560	0.0 (0.0–12.3)	1	156,707	6.4 (0.2–35.6)	0	35,393	0.0 (0.0–84.6)
30–39									
Males	8	216,583	36.9 (15.9–72.8)	1	149,468	6.7 (0.2–37.3)	1	41,820	23.9 (0.6–133.2)
Females	1	259,780	3.9 (0.1–21.4)	2	191,765	10.4 (1.3–37.7)	0	55,816	0.0 (0.0–53.7)

* Primary series and monovalent booster data through August 20, 2022; source: Goddard K, et al. Incidence of Myocarditis/Pericarditis Following mRNA COVID-19 Vaccination Among Children and Younger Adults in the United States. Ann Intern Med. 2022;175:1169-1771. **Bivalent booster data through March 11, 2023** 50

Incidence Rates of Verified Myocarditis or Pericarditis in the 0–7 Days After Bivalent Booster in Ages 12–39 years. [Source here.](#)

The benefits of a vaccine for severe disease among adolescents outweigh the risks.

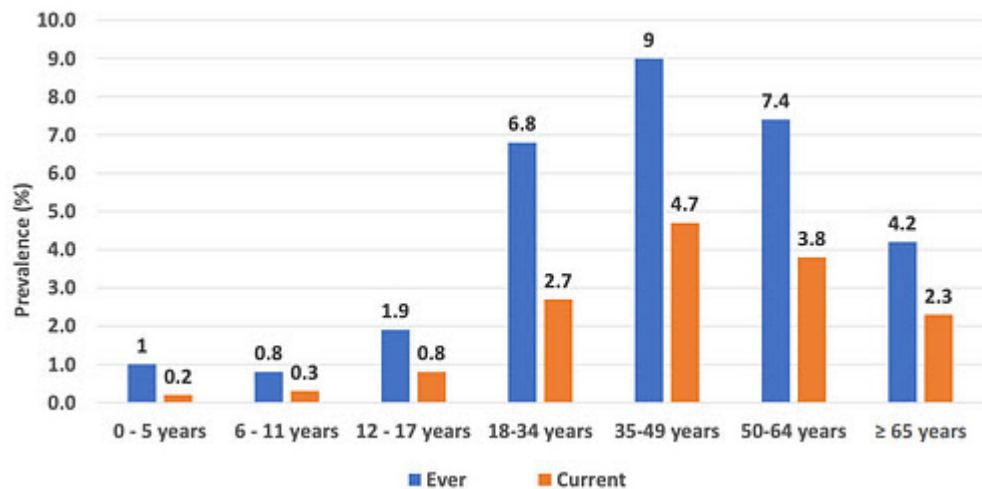


Estimated COVID-19 hospitalizations prevented vs. potential myocarditis cases for every million mRNA COVID-19 vaccine doses: 12 – 17-year-olds. Source [here](#). Vaccines reduce long Covid.

Long Covid remains a risk.

Long Covid is a driving factor for many to remain vigilant. I was happy to see CDC presented data on this. One ACIP member noted: “This is the first time we’ve discussed a vaccine preventing acute and chronic health problems.”

- Prevalence has declined (thanks to immunity and virus changes) but remains a risk. Prevalence is highest among young adults.



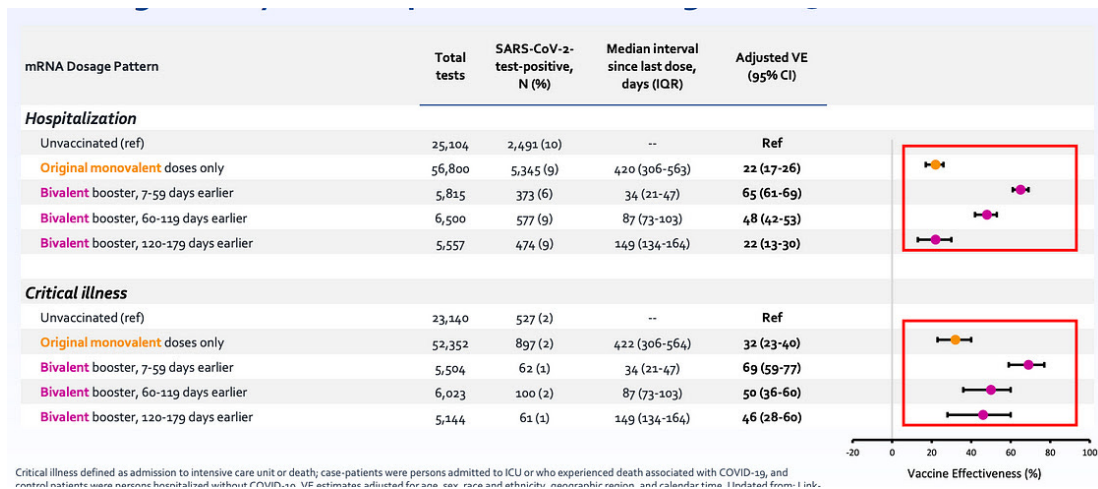
Prevalence of ongoing symptoms lasting at least 3 months after COVID-19 by age. [Source here.](#)

- Vaccines reduce long Covid, particularly among those who stay up-to-date. This applies to adults and children.

Updated vaccines worked last fall.

How well? Pretty darn well.

- ***Emergency department and urgent care visits:*** 60% effectiveness among kids and adults. (As a comparison, this effectiveness is higher than for the flu vaccine.)
- ***Hospitalizations:*** 65% effectiveness, but this waned over time (→ 22% six months later). There is sustained protection against ICU admission.
 - Remember, effectiveness is “relative” to some combination of prior vaccination, prior infection, or both. This means the 65% benefit is above and beyond an individual's underlying immunity.



Absolute VE of original monovalent and bivalent booster doses against hospitalization and critical illness among immunocompetent adults aged ≥ 18 years – September 2022 – August 2023. Source [here](#).

Vaccines are cost-effective for those >65 years old.

This is the first time the government is not paying for Covid-19 vaccines. Pfizer/Moderna is charging ~\$120 per dose and Novavax is ~\$75. (I think the cost of these vaccines is absurd given taxpayers funded Operation Warp Speed.)

Nonetheless, is the bang worth the buck? The University of Michigan conducted an analysis and found:

- **65+ years old:** Vaccines provide cost-saving in every scenario.
- **18-64 years:** There was an average societal cost (\$33,000) for every 1,000 quality life-years gained from the vaccine. This decreases if we get a surge of cases or the virus mutates to become more severe. In addition, it's likely cost-effective among those with risk factors like comorbidities, but data wasn't presented.

Age group	Base case*	2x base case	3x base case	4x base case
18-49 y	\$115,588	\$51,978	\$14,541	Cost-saving
50-64 y	\$25,787	Cost-saving	Cost-saving	Cost-saving
65+ y	Cost-saving	Cost-saving	Cost-saving	Cost-saving

QALY=Quality-adjusted life year

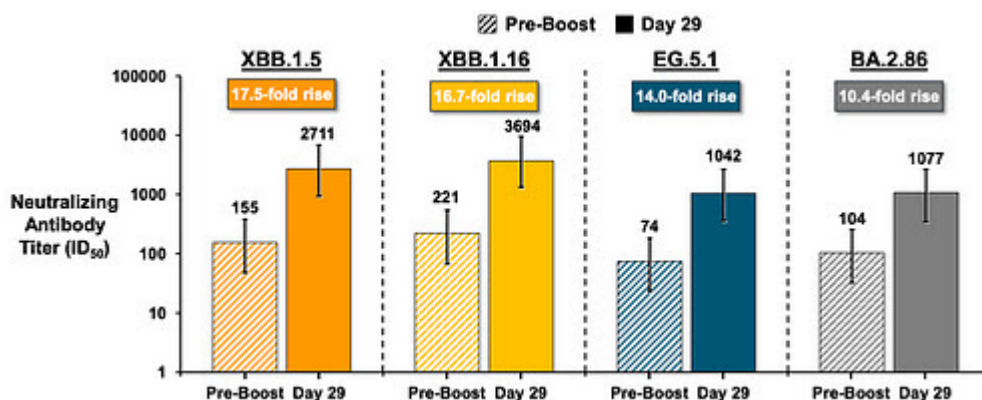
*Base case probability of hospitalization 18-49 y- 0.00144; 50-64 y-0.00335; 65+ - 0.01453

Scenario analysis: Probability of hospitalization preliminary estimates. [Source here](#).

- **<18 years:** Unable to estimate given low numbers and high uncertainty.

Updated vaccine formula remains a good choice.

Pharma companies showed increased antibodies against currently circulating variants, including the newer BA.2.86.



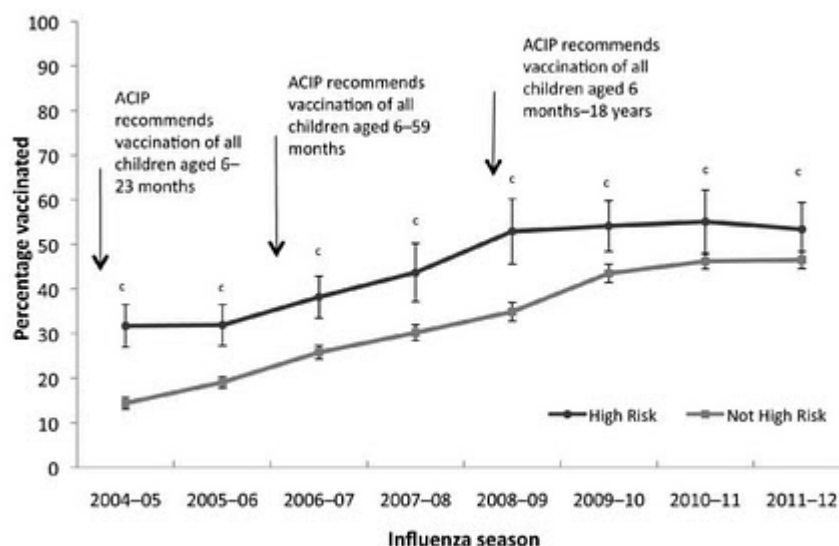
Cross Neutralization Results (Day 29) After XBB.1.5 Vaccine in Adults – Duke Assay. [Source: Moderna.](#)

Discussion

Three noteworthy items were brought up:

1. **Access** may be challenging because this vaccine is now privatized. For example, pharma requires pediatricians to purchase at least 200 virals. This is a risk to providers and will unintentionally drive inequities.
2. **Timing after previous vaccine/infection.** This was not covered in presentations, which was incredibly disappointing. During the discussion, committee members asked and CDC's answer was:
 - a. **Previous vaccine:** Wait at least 2 months.
 - b. **Previous infection:** No specific requirements, but 3 months was suggested.
(I think this is too short; I'll pull some evidence for a future YLE post.)
3. **Universal vs. targeted.** One ACIP member preferred a recommendation for specific groups— like those over 65 years— or words like “should” vs. “may” to communicate urgency. Other members (and I) strongly support universal recommendations because of four reasons:

- a. **More lives saved.** “Compared with only vaccinating those 65+ years, universal vaccine recommendations projected to prevent about 200,000 more hospitalizations and 15,000 more deaths over the next 2 years.”
- b. **Close loopholes for private insurance.** They must now cover the vaccine for all.
- c. **Promotes equity** among those who don’t have a physician.
- d. **Increases uptake among *vulnerable* people.** It’s less confusing. We’ve already learned this lesson from the flu.



ACIP voted (13-1) to recommend Covid-19 vaccines for everyone >6 months old. While the benefit profile differs significantly across age groups and time, risks of vaccination and infection remain outweighed for all ages.

What’s next?

This goes to the CDC Director for approval. Then, technically, you’ll be able to get a vaccine. However, access may be delayed or challenging, and waiting may make sense for some (more on this later).

My family will be getting a fall Covid-19 vaccine this fall. I hope you’ll join.

Love, YLE

“Your Local Epidemiologist (YLE)” is written by Dr. Katelyn Jetelina, M.P.H. Ph.D.—an epidemiologist, wife, and mom of two little girls. During the day, she is a senior scientific consultant to several organizations. At night, she writes this newsletter. Her main goal is to “translate” the ever-evolving public health world so that people will be well-equipped to make evidence-based decisions. This newsletter is free, thanks to the generous support of fellow YLE community members. To support this effort, subscribe below:

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Sincerely,

Jessica Moore Deglialberti