Vaccines for Covid-19: Effectiveness and Value

Public Meeting — June 25, 2026

Meeting materials available at: https://icer.org/assessment/covid-19-2025/

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AN ICER PROGRAM
NEW ENGLAND CEPAC
COMPARATIVE EFFECTIVENESS PUBLIC ADVISORY COUNCIL

Participating Members of the New England CEPAC

Jason H. Wasfy, MD, MPhil, Associate Professor, Harvard Medical School; Director of Outcomes Research, Massachusetts General Brigham Cardiology Division

- **Rena Conti, PhD,** Professor, Questrom School of Business, Boston University
- **Marthe Gold, MD, MPH,** Senior Research Scholar, New York Academy of Medicine
- **Yngve Falck-Ytter, MD, AGAF,** Professor of Medicine, Case Western Reserve University; Chief, Gastroenterology and Hepatology VA Northeast Ohio Healthcare System, Cleveland*
- **David Kim, PhD,** Assistant Professor, University of Chicago*
- **Donald Kreis, JD,** Consumer Advocate, N.H. Office of the Consumer Advocate
- **Julie Kueppers, PhD, NP,** Vice President, Clinical Alera Group, Quantum Health
- **Aaron Mitchell, MD, MPH,** Assistant Attending, Memorial Sloan Kettering Cancer Center
- **Jim Rebitzer, PhD,** Peter and Deborah Wexler Professor, Boston University Questrom School of Business
- **Joseph Ross, MD, MHS**, Professor of Medicine and Public Health, Yale University
- **Stephanie Vail, PharmD, MPH, BCPP, BCPS, FCCP,** Professor, University of New England School of Pharmacy
- **Rishi Wadhera, MD, MPP, MPhil,** Associate Professor, Harvard Medical School; Associate Director, Smith Center for Outcomes Research at Beth Israel Deaconess Medical Center
- **Stuart Winston, DO,** Cardiologist in the Sub-Specialty of Cardiac Electrophysiology, Trinity Health IHA Medical Group, Ann Arbor, MI; Physician Lead, Professional Enhancement Program, Trinity Health IHA Medical Group, Ann Arbor, MI*

*Members of Midwest CEPAC

Experts

Patient Expert: Omar A. Escontrías, DrPH, MPH, Chief Programs & Research Officer, National Health Council

- *Omar A. Escontrías is a full-time employee of the National Health Council. Half (50%) of the National Health Council's annual funding is from health care companies. Pfizer and Sanofi are industry members of the National Health Council, and they support the organization through membership dues and special projects.*

Patient Expert: Leigh Purvis, MPA, Prescription Drug Policy Principal, AARP

- *Leigh Purvis is a full-time employee of AARP. A sizable share of AARP's funding comes from royalties from third-party providers of member benefits programs—the largest of these royalty agreements is with UnitedHealthcare.*

Experts

<u>Clinical Expert:</u> Elbert Huang, MD, MPH, Professor of Medicine and Public Health Sciences, University of Chicago

- *No conflicts to disclose.*

<u>Subject Matter Expert:</u> Jason L. Schwartz, PhD, Associate Professor, Department of Health Policy and Management, Yale School of Public Health

- *No conflicts to disclose.*

ICER Speakers

Sarah K. Emond, MPP
President & CEO

Dan Ollendorf, PhD, MPH
Chief Scientific Officer and Director of HTA Methods and Engagement

David Rind, MD, MSc
Evidence Author,
Chief Medical Officer

R. Brett McQueen, PhD
Lead Modeler,
University of Colorado Anschutz

Lisa A. Prosser, PhD
Consultant,
University of Michigan

Why are we here today?

RFK Jr.'s ACIP narrowly votes down recommendation for COVID-19 vaccine prescriptions

Update: ACIP meeting adds to COVID-19 vaccine confusion

Confusion persists after US FDA approves new COVID-19 vaccines

The 2025–26 shots are approved only for certain risk groups, but one insurer tells C&EN it'll cover the shots for everyone

Changing COVID-19 Booster Policies and Florida's Decision to End Vaccine Mandates Create Confusion

https://cen.acs.org/pharmaceuticals/vaccines/Confusion-persists-US-FDA-approves/103/web/2025/08
https://www.kff.org/health-information-trust/changing-covid-19-booster-policies-and-floridas-decision-to-end-vaccine-mandates-create-confusion/
https://primaryimmune.org/resources/news-articles/update-acip-meeting-adds-covid-19-vaccine-confusion
https://www.fiercepharma.com/pharma/kennedys-acip-narrowly-avoids-vote-require-covid-19-vaccine-prescriptions

Why are we here today?

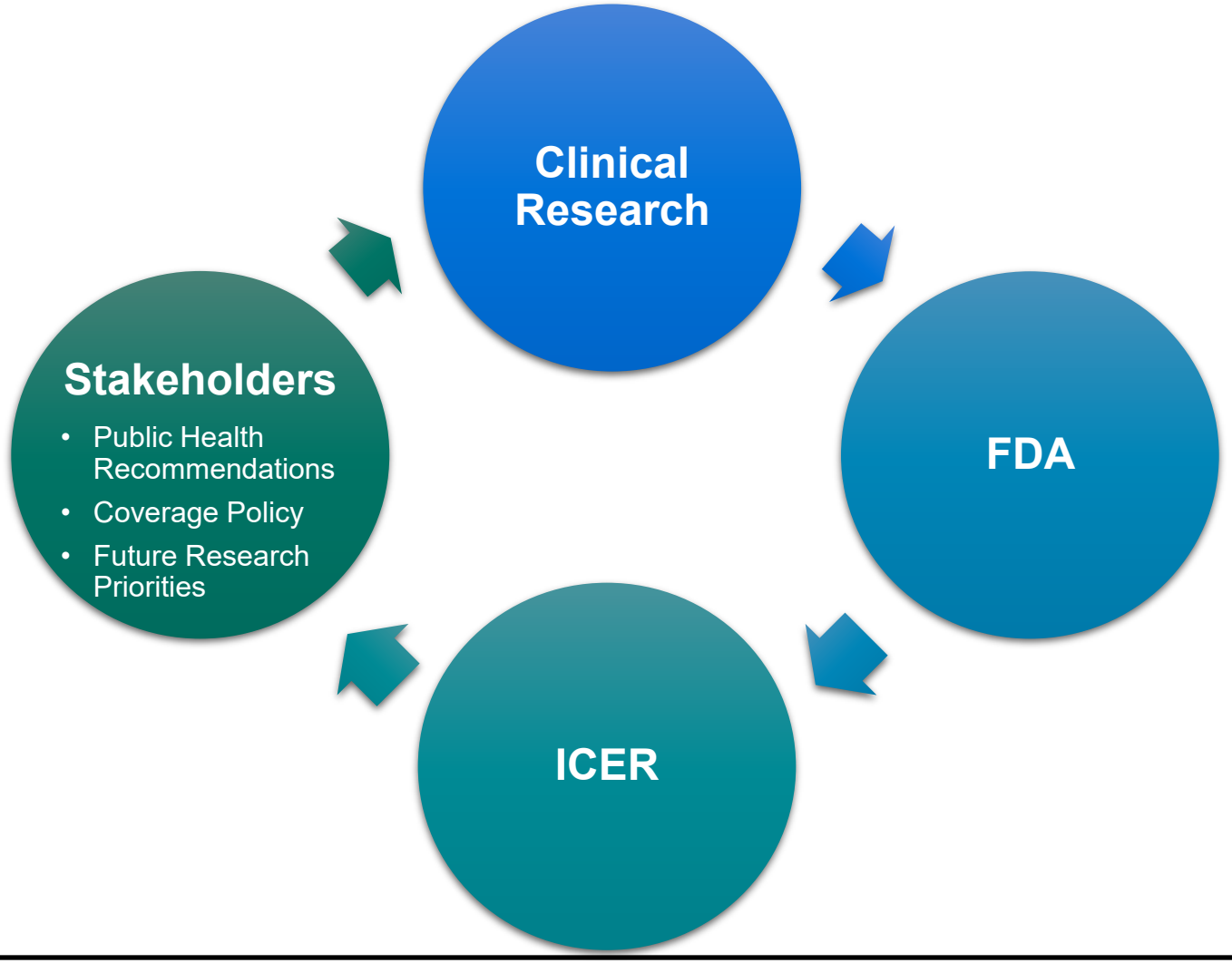
Americans' Deepening Mistrust of Institutions

https://www.pew.org/en/trend/archive/fall-2024/americans-deepening-mistrust-of-institutions

Why Are We Here Today?

- Independent expertise is needed now more than ever
- Policymakers, especially public health leaders, need reliable, unbiased assessments of comparative effectiveness
- Public deliberation rebuilds trust
- Future research needs to support evidence-based vaccination policy

Where Does ICER Sit in the Health Care Ecosystem?



FDA: Food and Drug Administration

The Impact on Rising Health Care Costs for Everyone

GALLUP®

APRIL 1, 2025

In U.S., Inability to Pay for Care, Medicine Hits New High

Rates among Hispanic, Black adults and those with lower incomes worsen markedly since 2021

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Healthy workers ditch company insurance to save $1,000 a month

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FINANCE

Only 1 in 4 employers able to 'absorb' increasing health benefit costs without impacting business

By Cailey Gleeson · Apr 29, 2026 1:00pm

https://news.gallup.com/poll/658148/inability-pay-care-medicine-hits-new-high.aspx
https://www.fiercehealthcare.com/finance/only-1-4-healthcare-orgs-able-absorb-increasing-health-benefit-costs-without-impacting
https://www.modernhealthcare.com/insurance/mh-healthy-workers-company-insurance-premiums/

Organizational Overview

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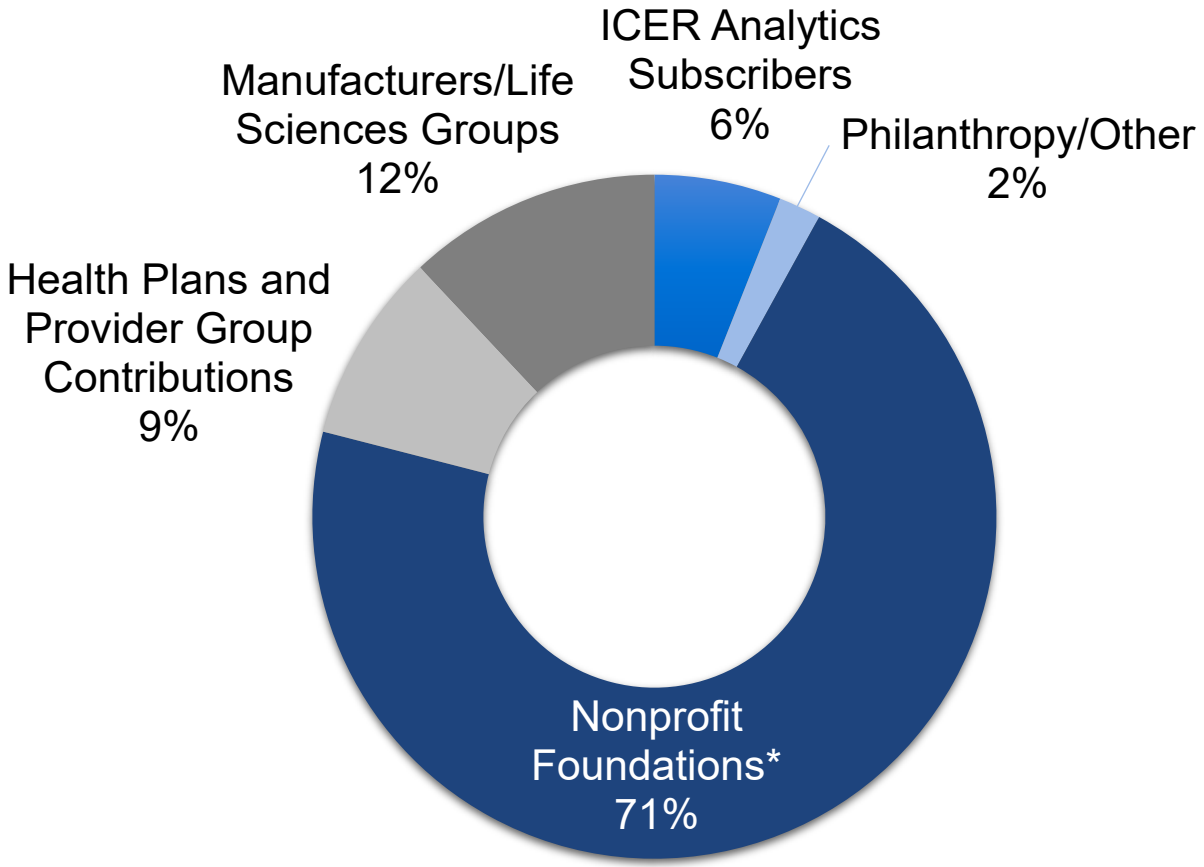
2026 Funding and Managing COIs



Read our policies to manage potential conflicts of interest: https://icer.org/our-approach/policies/policies-to-manage-conflicts-of-interest/

ICER Policy Summit and non-report activities only

*ICER received significant funding from Arnold Ventures and the Peterson Center on Healthcare, LLC (represented on our "Sources of Funding" page under "Non-profit Foundations").

How Was the ICER Report Developed?

Guidance from patients, clinical experts, manufacturers, and other stakeholders

Evidence analysis by ICER team and cost-effectiveness modeling in collaboration with the University of Colorado

- **Rebecca Kirch, JD**, Executive VP of Policy and Programs, National Patient Advocate Foundation
- **Eric A. Meyerowitz, MD**, Associate Professor of Medicine, Montefiore Medical Center
- **Ashleigh Tuite, PhD, MPH, MSc**, Manager, Health Economics and Modelling, Public Health Agency of Canada
- **Rochelle Walensky, MD, MPH,** Professor of Medicine, Harvard Medical School, Medical Advisor, Vaccine Integrity Project

Structured to support New England CEPAC voting and policy discussion

Value Assessment Framework: Long-Term Value for Money

Agenda (ET)

10:00 AM	Meeting Convened and Opening Remarks
10:20 AM	Presentation of the Clinical Evidence
11:00 AM	Presentation of the Economic Model
11:40 AM	Public Comments and Discussion
11:50 AM	Lunch Break
12:40 PM	New England CEPAC Deliberation and Vote
2:00 PM	Break
2:10 PM	Policy Roundtable Discussion
3:40 PM	Reflections from New England CEPAC
4:00 PM	Meeting Adjourned

Presentation of the Clinical Evidence

David Rind, MD, MSc

Chief Medical Officer

ICER

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20 YEARS

Key Team Members

Name	Title
David Rind, MD, MSc	Evidence Author; Chief Medical Officer, ICER
Avery McKenna, BS	Research Lead, ICER
Sophia Cassim, BA	Research Assistant, ICER

Disclosures

DR, AM, and SC are employees of ICER and have no conflicts to disclose.

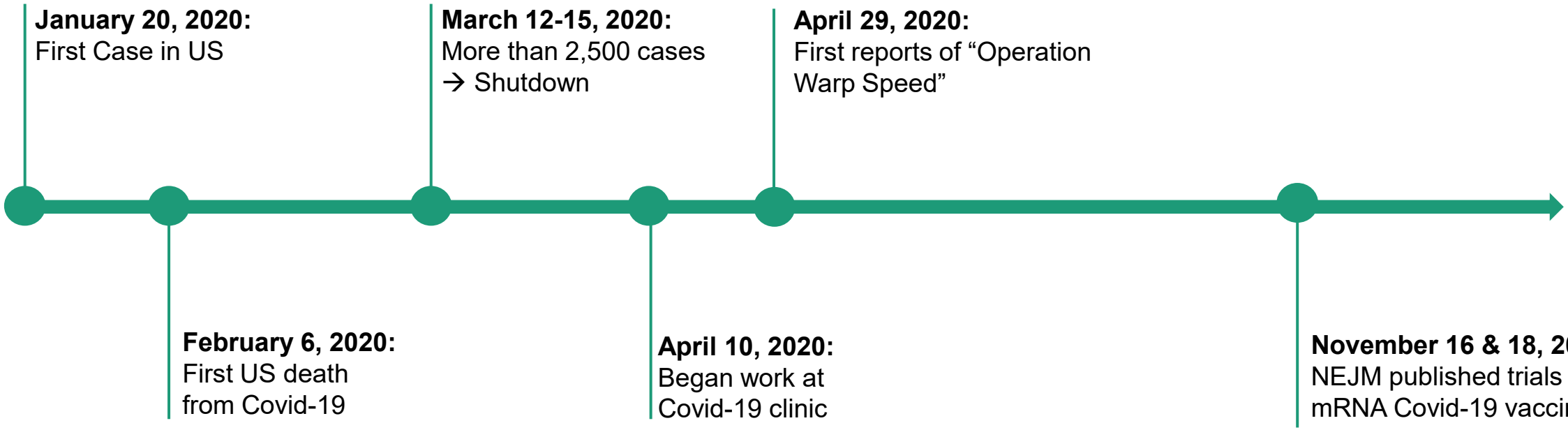
ICER's full policy for managing and disclosing potential conflicts of interest can be found here.

Covid-19

Disease Background

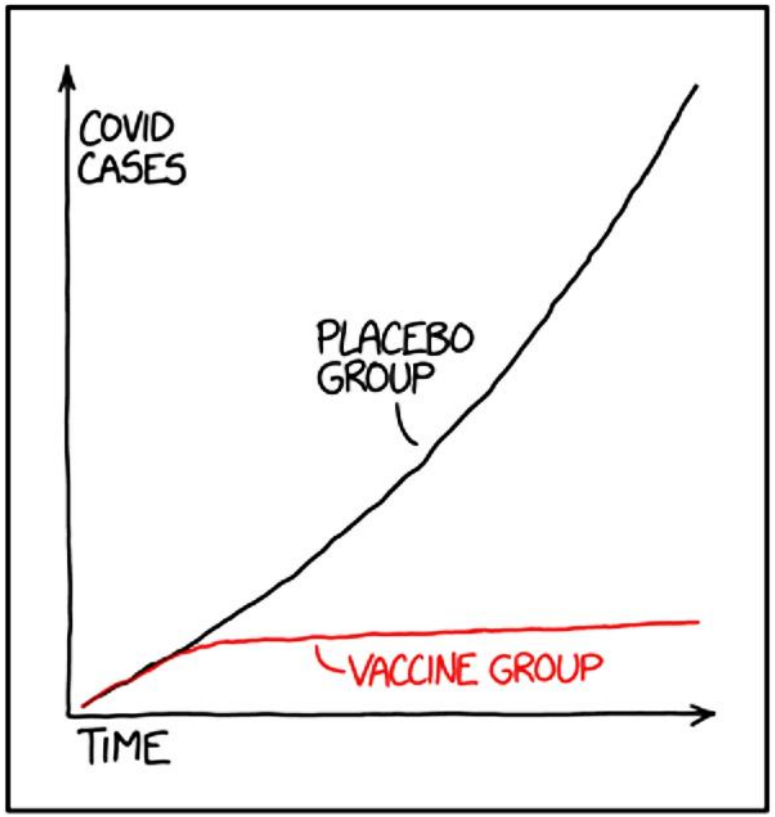
- Pandemic!
- More than 1.2 million deaths in the US

Timeline



mRNA: messenger ribonucleic acid, NEJM: New England Journal of Medicine, US: United States

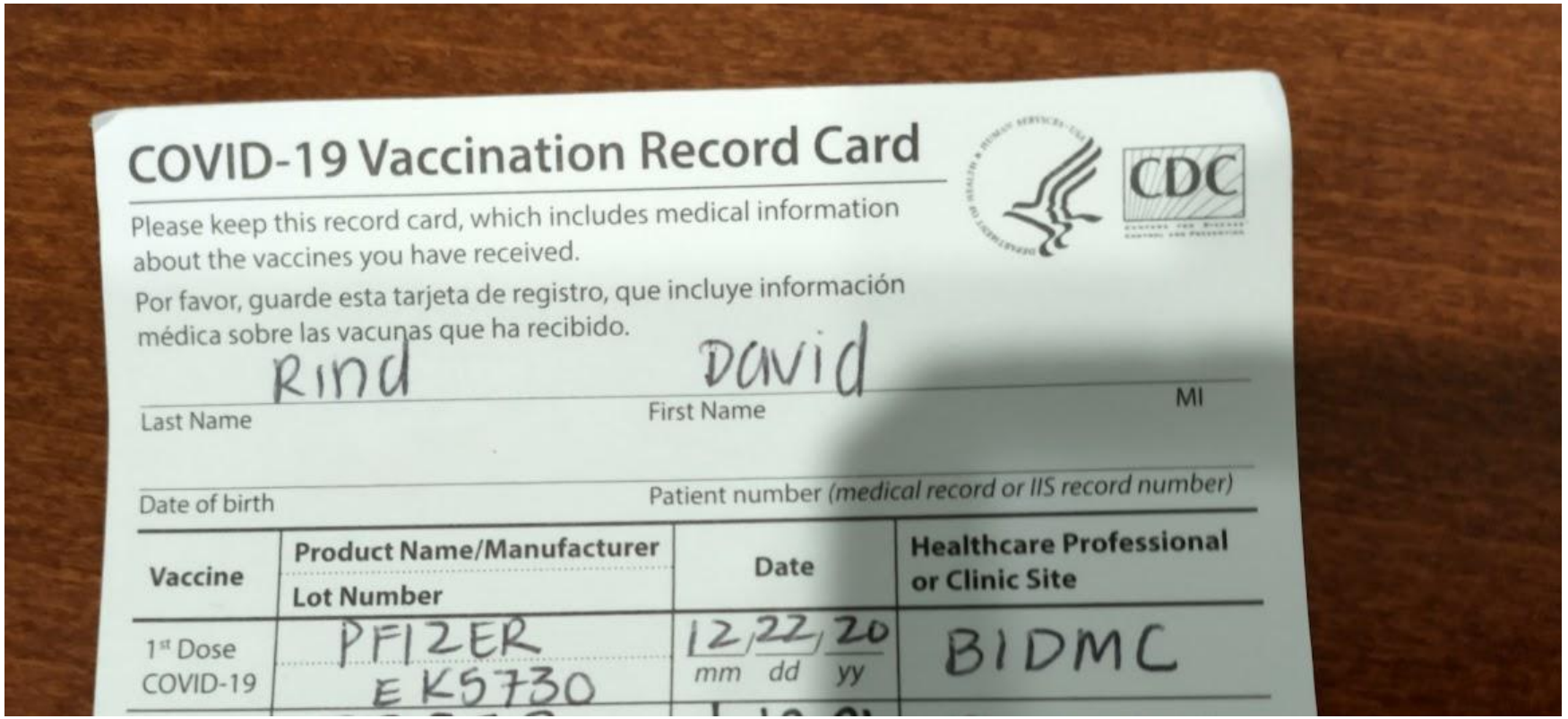
December 2020



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

Source: xkcd: Statistics

Vaccine Administration



COVID-19 Vaccination Record Card

Please keep this record card, which includes medical information about the vaccines you have received.

Por favor, guarde esta tarjeta de registro, que incluye información médica sobre las vacunas que ha recibido.

Rind — Last Name

David — First Name

MI

Date of birth

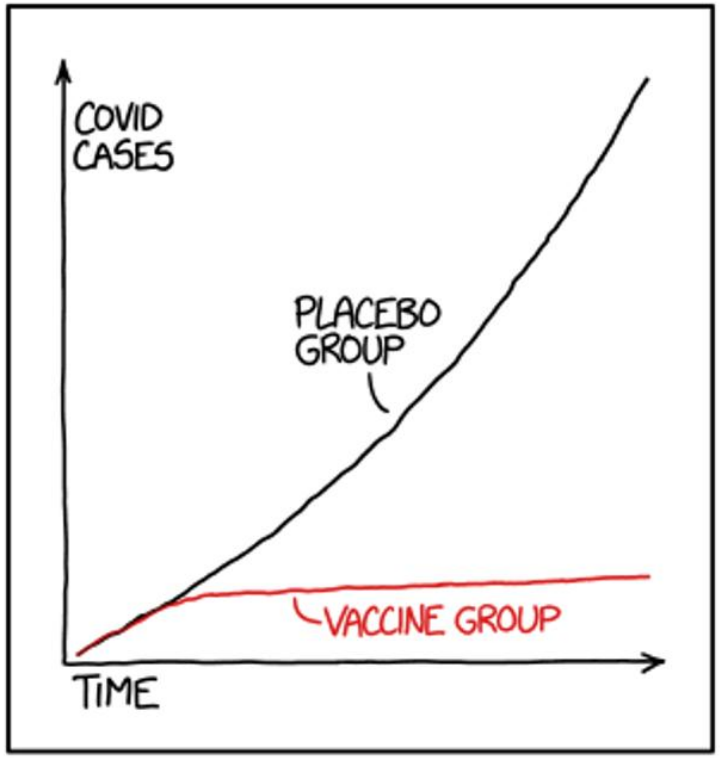
Patient number (medical record or IIS record number)

Vaccine	Product Name/Manufacturer / Lot Number	Date	Healthcare Professional or Clinic Site
1st Dose COVID-19	PFIZER EK5730	12/22/20 (mm dd yy)	BIDMC

Vaccine Administration

- 300 million doses administered in US by June 2021

That was then…



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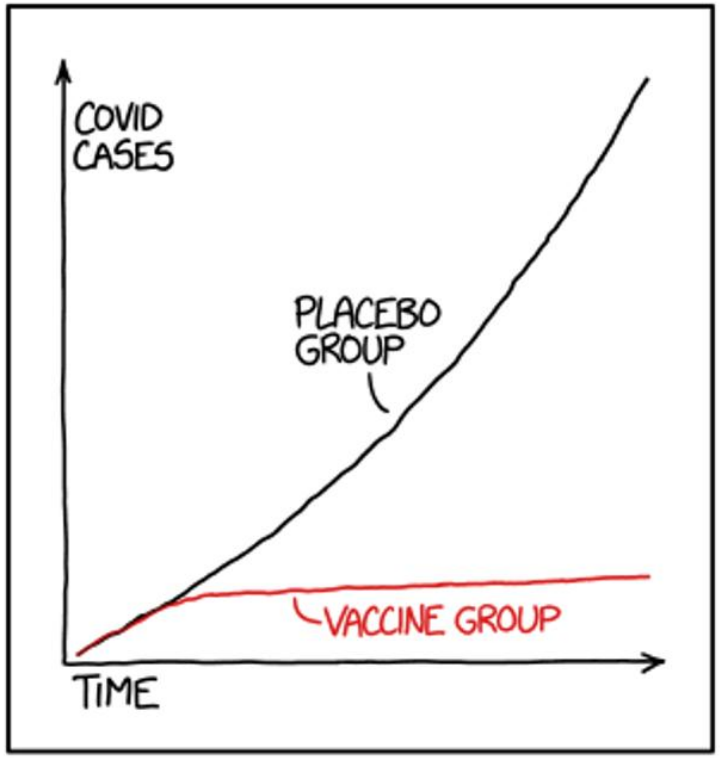
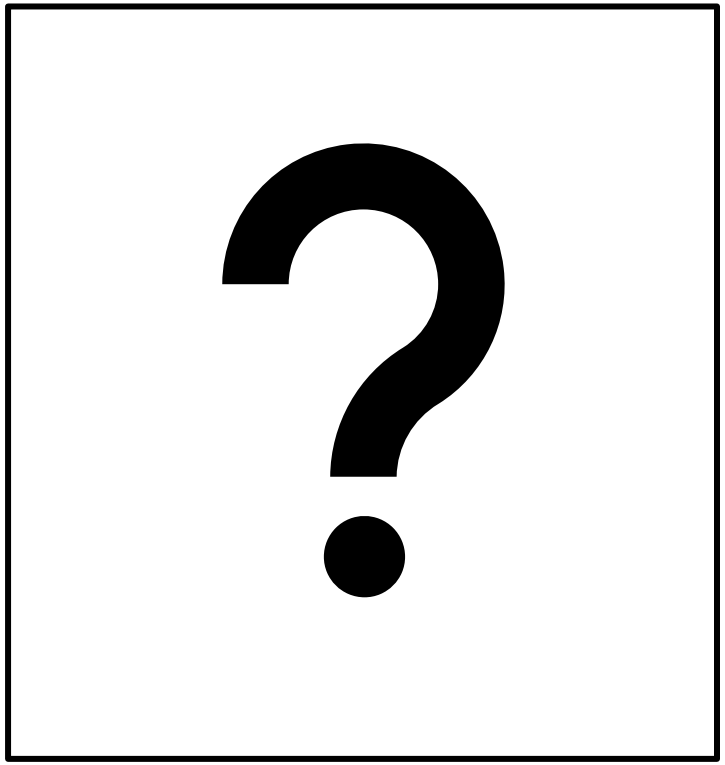


STATISTICS TIP: ALWAYS TRY TO GET DATA THAT'S GOOD ENOUGH THAT YOU DON'T NEED TO DO STATISTICS ON IT

and now?

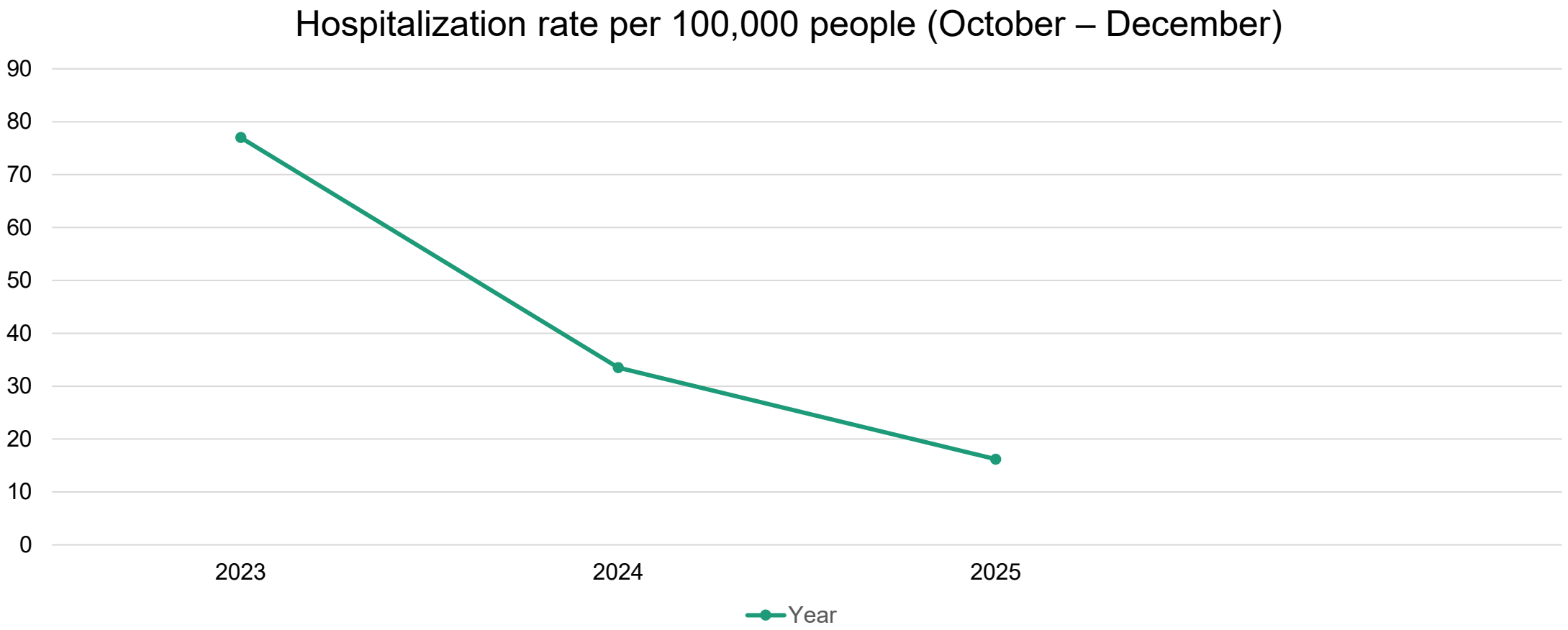


Source: xkcd: Statistics

2026

- Most people have been infected, vaccinated, or both (multiple times)
- Strains evolve
- No large RCTs of current vaccines in current population at risk for current strains

Declining Severity of Covid-19



Source: https://www.cdc.gov/covid/php/covid-net/index.html

Population/Patient Insights

- Vaccine concerns
  - Communities
- Long Covid
- Anger

Best Evidence

- Recent data
  - Extrapolate recent data versus use old data
- Unconfounded data
- Subgroup data
- Epidemiologic data in subgroups

Clinical Evidence

Available Vaccines

mRNA

- Comirnaty (Pfizer, BioNTech)
- Spikevax (Moderna)
- mNEXSPIKE (Moderna)

Protein-based

- Nuvaxovid (Sanofi)

Evidence Base (2024-2025 Season)

- Test negative studies
  - “Adult CDC Study”
  - “Childhood CDC Study”

CDC: Centers for Disease Control and Prevention
Adult CDC Study: Link-Gelles et al., 2025
Childhood CDC Study: Irving et al., 2025

Evidence Base (2024-2025 Season)

- "VA Study" (Cai, NEJM October 8, 2025)
  - Mean age 71; 92% male
  - N=295,971
    - 131,839 influenza vaccine
    - 164,132 influenza vaccine and Covid-19 vaccine
  - Nearly all Covid-19 vaccine was mRNA vaccine

mRNA: messenger ribonucleic acid, NEJM: New England Journal of Medicine, VA: Veterans Affairs
VA Study: Cai et al., 2025

VA Study

- “What a beautiful observational study!”
  - Nearly ideal comparator population
  - Outcomes captured in VA System
  - Negative controls

Negative Outcome Controls for The VA Study

Negative Outcome Controls	Risk Ratio (95% CI)
SARS-Cov-2 Test Positive Within 10 Days of T_0	1.00 (0.68, 1.46)
Emergency Department Visit for Renal Colic/Kidney Stone	0.94 (0.73, 1.19)
Emergency Department Visit for Ankle Sprain	1.08 (0.58, 1.85)
Clinical Encounter for Tinnitus or Hearing Aid Fitting	1.01 (0.96, 1.06)
Seasonal Influenza-Associated Negative Outcome Controls	
Influenza-Associated Emergency Department Visit	1.00 (0.89, 1.11)
Influenza-Associated Hospitalization	0.98 (0.78, 1.20)
Composite of Influenza-Associated Emergency Department Visit, Hospitalization, or Death	1.00 (0.89, 1.11)
Influenza Test Positivity	1.01 (0.91, 1.10)
Receipt of Influenza Testing	0.98 (0.95, 1.00)

CI: confidence interval, T_0: time zero

Risk of Covid-19

Negative Outcome Controls	Risk Ratio (95% CI)
SARS-Cov-2 Test Positive Within 10 Days of T_0	1.00 (0.68, 1.46)
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CI: confidence interval, T_0: time zero

Access to Health Care

Negative Outcome Controls	Risk Ratio (95% CI)
SARS-Cov-2 Test Positive Within 10 Days of T_0	1.00 (0.68, 1.46)
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Frailty

Negative Outcome Controls	Risk Ratio (95% CI)
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CI: confidence interval, T_0: time zero

Vaccine Effectiveness

- Definition: 1- RR
- VA Composite (ED, hospitalization, death): 0.28
- Adult CDC (ED or urgent care): 0.33
- Childhood CDC (ED or urgent care): 0.56
- We extrapolated from 0.28 for adults and 0.56 for children

CDC: Centers for Disease Control and Prevention, ED: emergency department, RR: relative risk, VA: Veterans Affairs

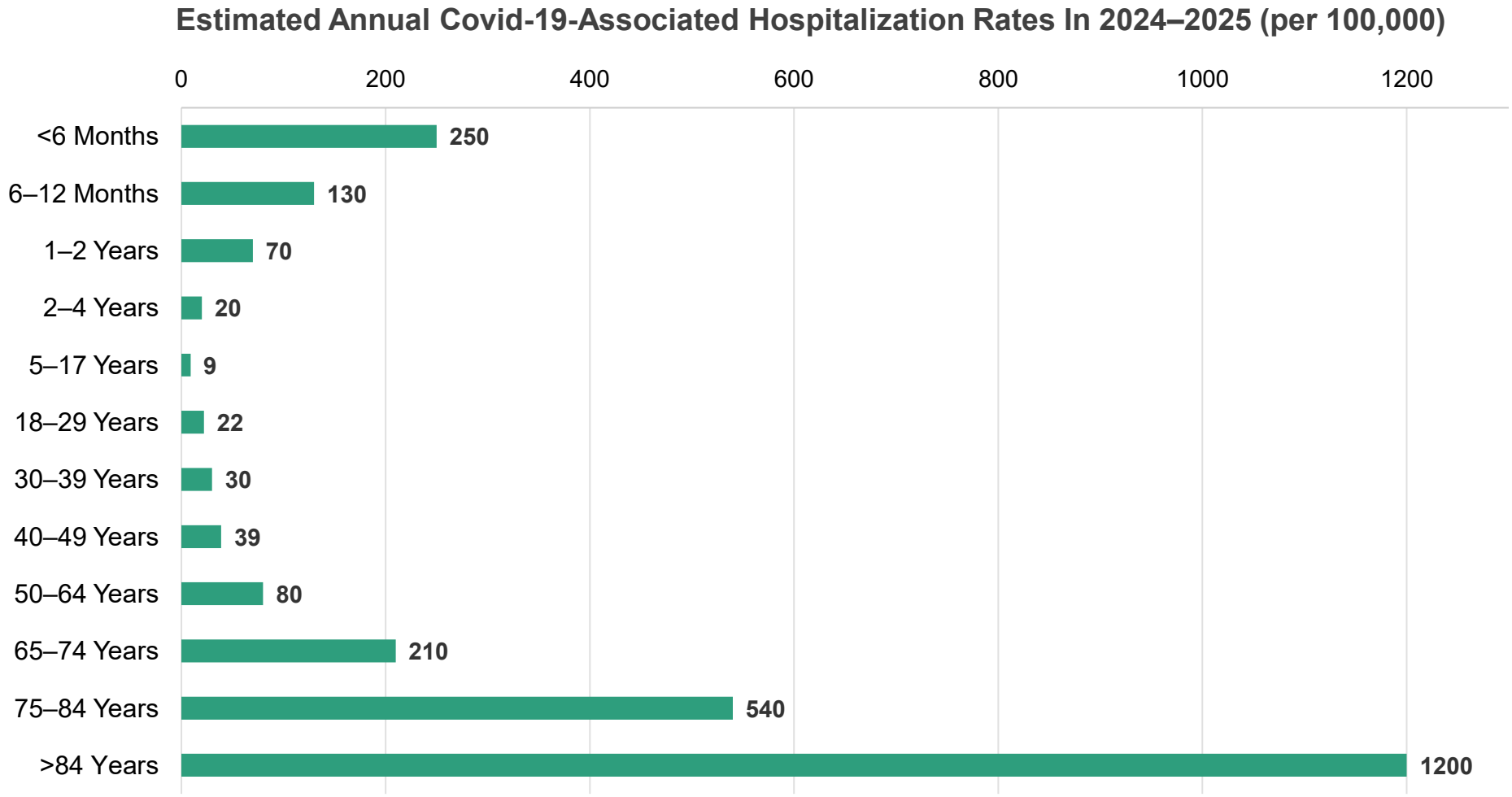
Extrapolations

- *Adults over 65 used VA results*
- *Children used childhood CDC study*
- VA Population to Adults Under 65
  - Comorbidities
  - Pregnant Women
- Biologic Plausibility to Newborn Babies

Vaccine Harms

- Fever, malaise, aches
- Likely more common with mRNA vaccines (~16% with fever) than with Nuvaxovid (~6% with fever) in original RCTs
- Myocarditis?

Epidemiology



Source: https://www.cdc.gov/covid/php/covid-net/index.html

Estimates

Population	Fewer Hospitalizations Per 1,000 Vaccinated Persons	Vaccinations Needed to Prevent One Hospitalization*	Fewer Deaths Per 1,000 Vaccinated Persons	Vaccinations Needed to Prevent One Death*
Children 6–12 Months	0.99	1,000	NE	NE
Children 1–2	0.53	1,900	NE	NE
Children 2–5	0.15	6,600	NE	NE
Children 5–18	0.05	20,000	NE	NE
Young Adults	0.06	16,000	0.02	55,000
Adults 50–64	0.22	4,500	0.06	15,000
Adults 65+	0.75	1,300	0.22	4,500
Adults 85+	3.36	300	0.99	1,000
Young Pregnant Women	0.21	4,800	0.06	16,000
Older Pregnant Women	0.29	3,500	0.08	12,000
Comorbidities In People Under 65†	0.17	6,000	0.05	20,000
People Under 65 With CKD	0.13	7,900	0.04	27,000

*Rounded Estimates
†Comorbidities other than CKD

Estimates

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Young Adults	0.06	16,000	0.02	55,000
Adults 50–64	0.22	4,500	0.06	15,000
Adults 65+	0.75	**1,300**	0.22	4,500
Adults 85+	3.36	**300**	0.99	**1,000**
Young Pregnant Women	0.21	4,800	0.06	16,000
Older Pregnant Women	0.29	3,500	0.08	12,000
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People Under 65 With CKD	0.13	7,900	0.04	27,000

*Rounded Estimates
†Comorbidities other than CKD

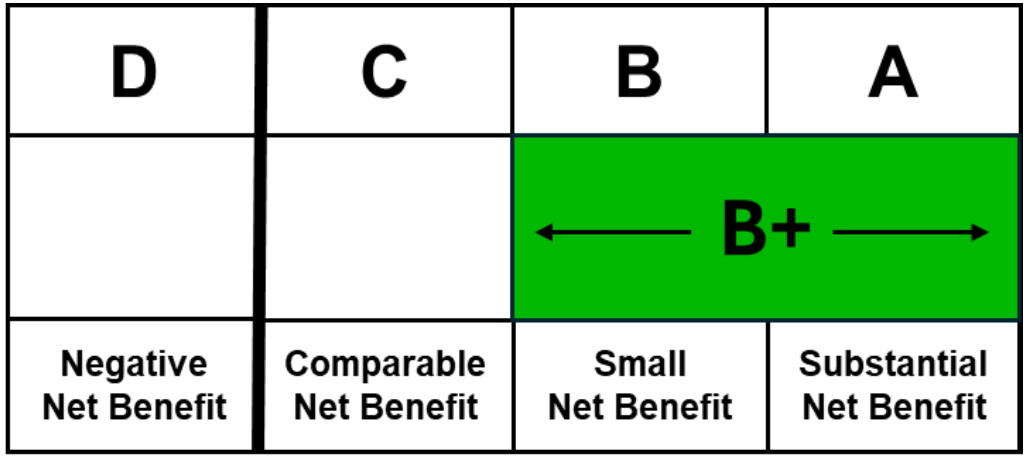
Uncertainties

- Conservative estimate
- Extrapolations
- Transmission
- Long Covid (after non-severe disease)

Public Comments

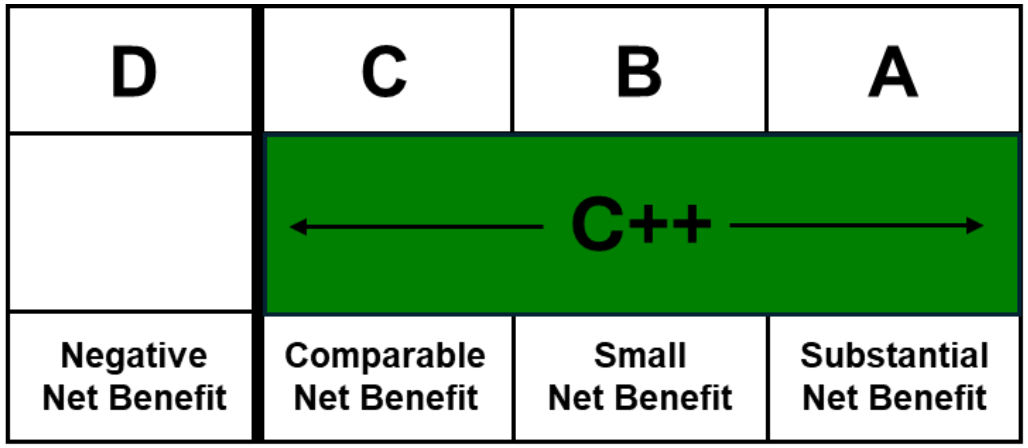
- Concerns about how the report will be interpreted

Adults Over 65
Women During Pregnancy
Children 6-12 Months



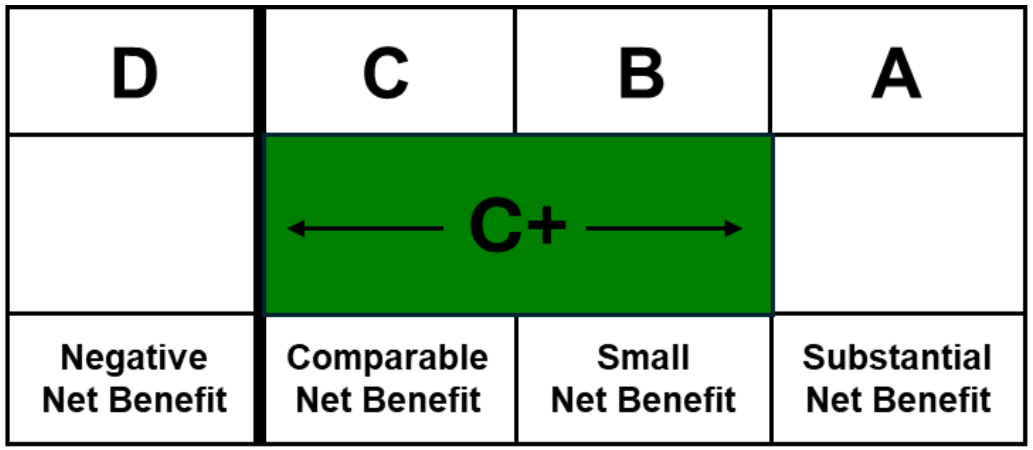
At least a small net health benefit, and possibly substantially better

Children Ages 1 to 2
People Under Age 65 With Comorbidities



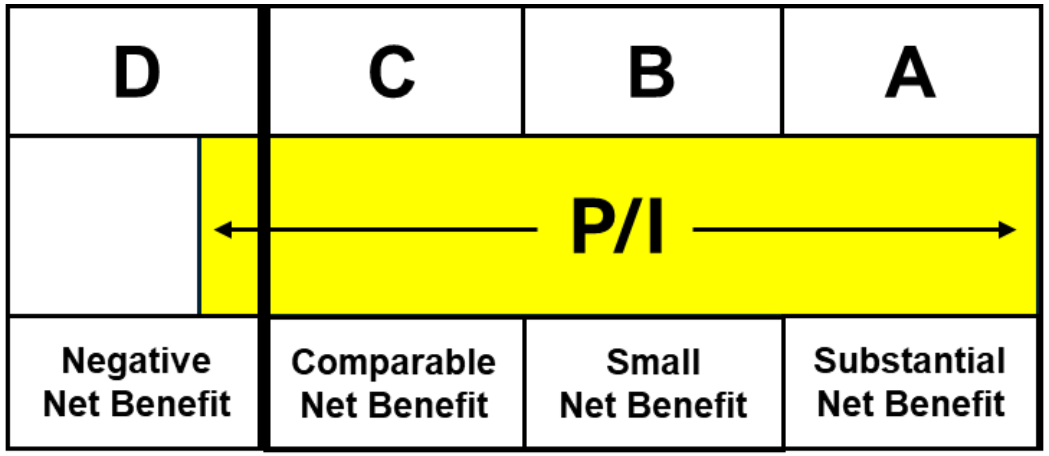
At least as good, and possibly somewhat to substantially better

Adults 18 to 65 (Excluding Men Ages 18 to 24)
Children Ages 2 to 18 (Excluding Boys Ages 12 to 18)



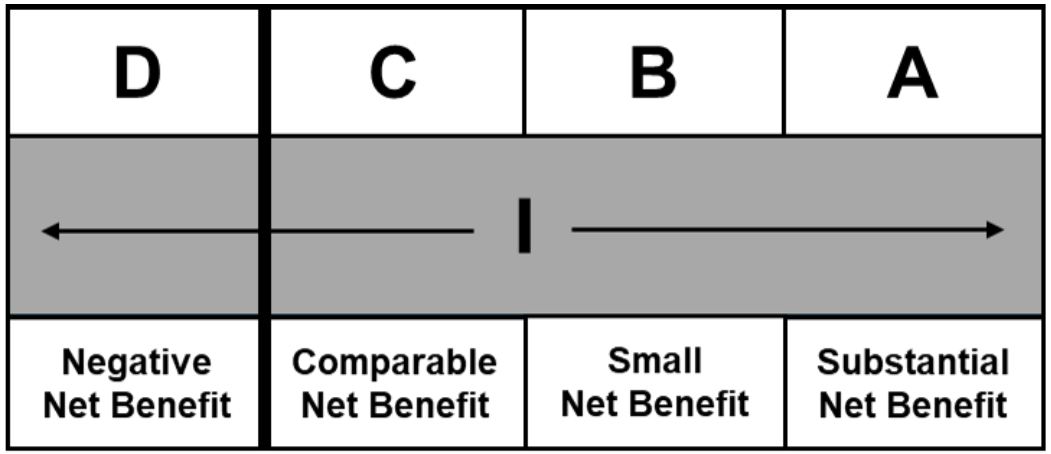
At least as good, and possibly somewhat better

Males Ages 12 to 24



May be somewhat better, but possibly slightly worse

Vaccines Against Each Other



Insufficient evidence

Benefits Beyond Health and Special Ethical Priorities

- Race and disease burden
  - Black, American Indian, and Alaskan Native communities are at increased risk
- Socioeconomic status and disease burden
  - Frontline workers (“essential workers”)
- Health care workers

Conclusions

- Risk of severe disease from Covid-19 is declining over time
- There are still subgroups at high risk from Covid-19
  - Newborns, infants, adults over age 65
- There are still subgroups at increased risk from Covid-19
  - Young toddlers, pregnant women, people with comorbidities
- Vaccines reduce risk
- Vaccines cause frequent minor harms and very rare severe harms

Questions?

Presentation of the Economic Model

R. Brett McQueen, PhD

Associate Professor

University of Colorado Anschutz Medical Campus

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Key Team Members

Name	Title
R. Brett McQueen, PhD	Lead Modeler, Associate Professor, University of Colorado Anschutz Medical Campus
Antal Zemplenyi, PhD	Modeler, Assistant Research Professor, University of Colorado Anschutz Medical Campus
Harry Gyimah Gyamfi, MSc	Research Assistant, University of Colorado Anschutz Medical Campus
Lisa A. Prosser, PhD	Marilyn Fisher Blanch Research Professor of Pediatrics, University of Michigan
Marina Richardson, PhD	Associate Director, HTA Methods and Health Economics, ICER
Marie Phillips, BA	Health Economics Research Assistant, ICER

Disclosures

Financial support provided to BM from the Institute for Clinical and Economic Review (ICER). BM reports consulting fees from Sanofi unrelated to vaccines.

AZ, HG, and LP have no conflicts to disclose. MR and MP are employees of ICER and have no conflicts to disclose.

ICER's full policy for managing and disclosing potential conflicts of interest can be found here.

Objective

- The aim of this analysis was to evaluate the cost-effectiveness of the updated 2026-2027 Covid-19 vaccines compared with no updated Covid-19 vaccination.

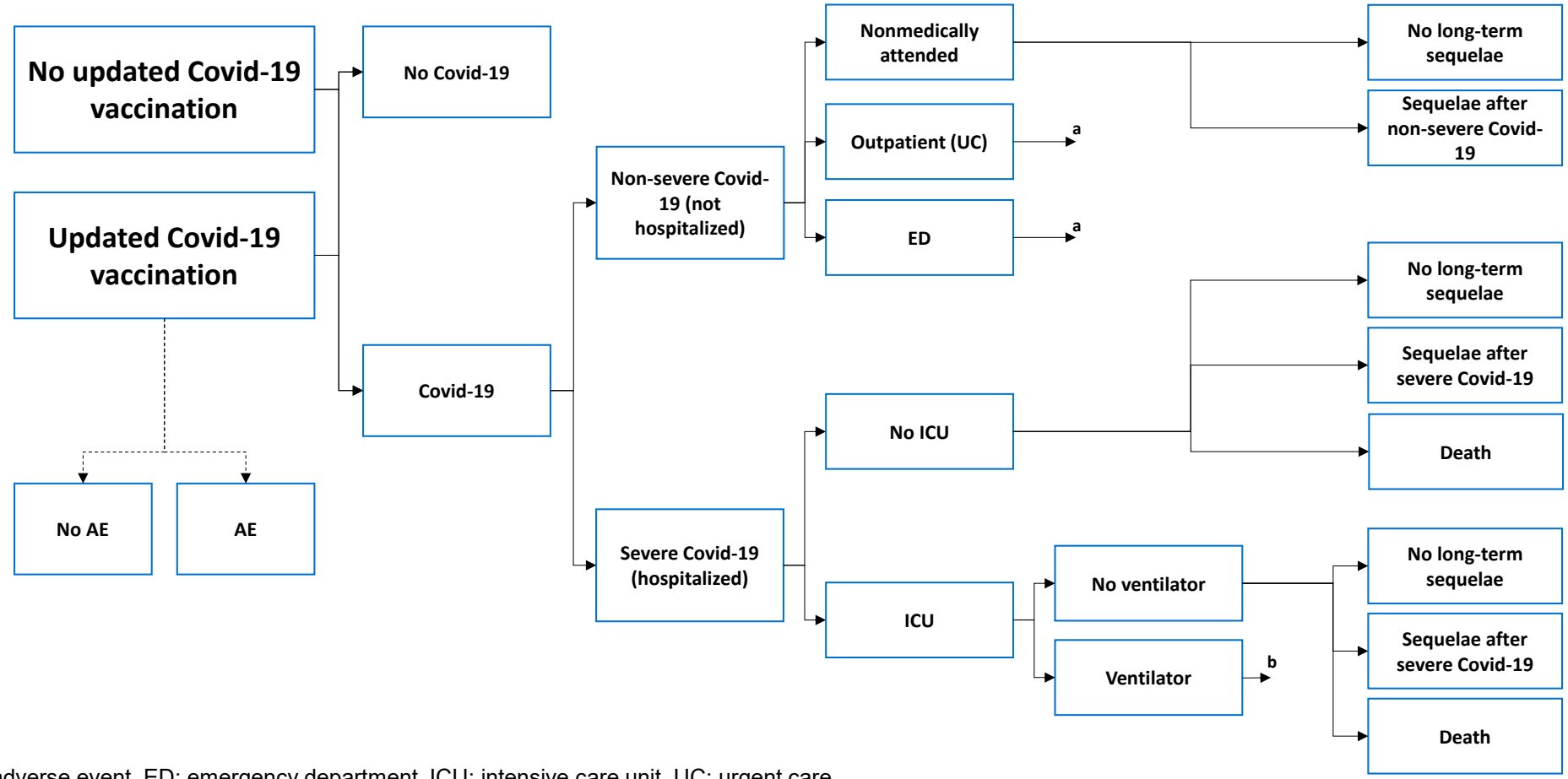
Methods in Brief

Methods Overview

Domain	Approach
Model	Decision tree and Markov model
Setting	United States
Perspective	Health Care Sector Perspective and Modified Societal Perspective
Time Horizon	1-year decision tree and a lifetime Markov model to estimate the quality of life and cost impacts from long-term severe sequelae that may extend beyond year 1
Discount Rate	3% per year (costs and outcomes)
Cycle Length	1-year
Primary Outcome	Total and incremental cost per evLY, QALY, life-years, and hospitalizations per 100,000 individuals

evLY: equal value of life years gained, QALY: quality-adjusted life years

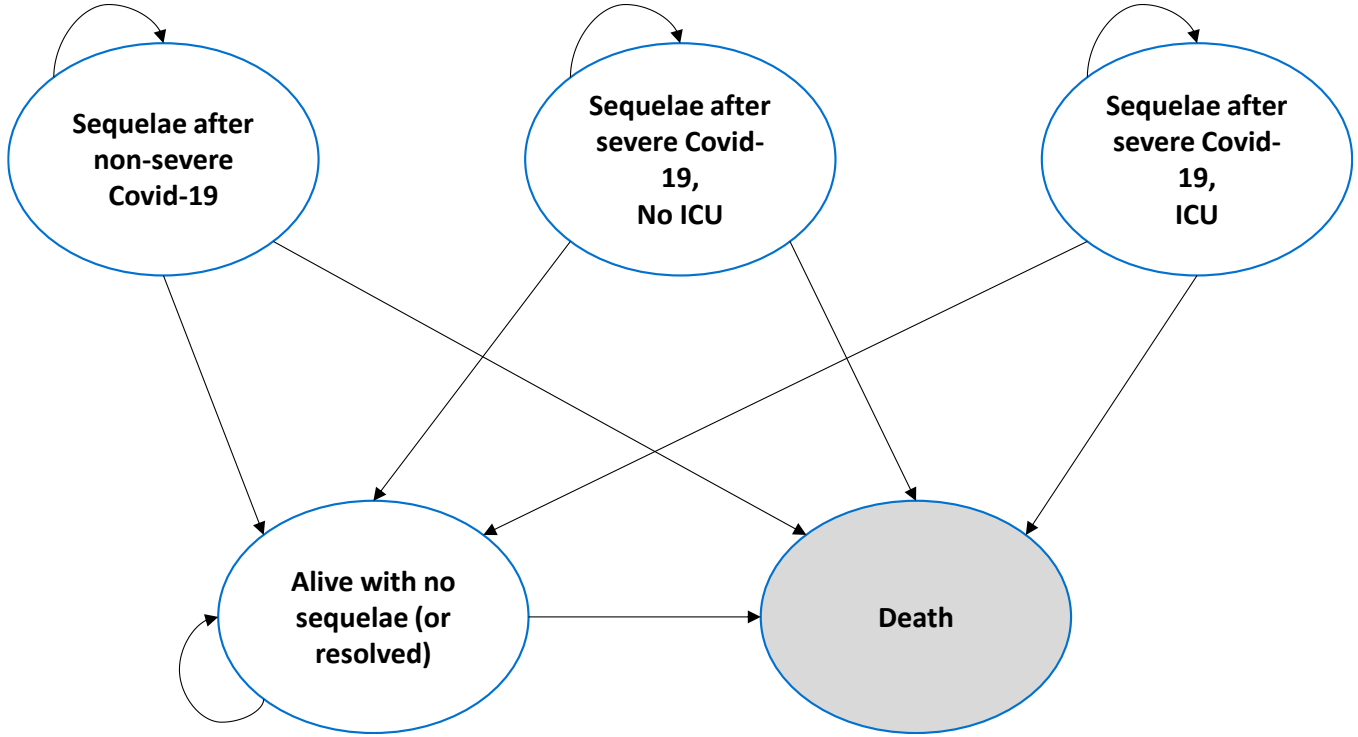
Model Schematic: Decision Tree (1 Year)



AE: adverse event, ED: emergency department, ICU: intensive care unit, UC: urgent care

Notes: [a]Outpatient/urgent care and emergency department encounters may result in: no long-term sequelae, sequelae after non-severe Covid-19, [b]ICU encounters with mechanical ventilation may result in: no long-term sequelae, sequelae after severe Covid-19, or Covid-19 attributable death.

Model Schematic: Markov Model (Sequelae Lasting Beyond 1 Year)



Notes: Individuals exit the decision tree and enter one of four health states: sequelae after non-severe Covid-19, sequelae after severe Covid-19 (no ICU), sequelae after severe Covid-19 (ICU), or alive with no sequelae. All states allow transition to death (shaded, absorbing state) in each annual cycle. Sequelae states also allow transition to alive with no sequelae upon resolution. All alive states include a self-loop reflecting the possibility of remaining in the same state across cycles.

Model Characteristics

Parameter	Subgroup	Eligible for Vaccination Based on Age and High-Risk Status*
Cohort Average Age	≥65 yrs	N=61 million
	50–64 yrs	N=39 million
	18–49 yrs	N=39 million
	12–17 yrs	N=1.8 million
	5–11 yrs	N=1.9 million
	6 mo–4 yrs	N=1.2 million
Percent Female	All	50.51%

*At least one comorbidity associated with severe Covid-19 per CDC criteria; population sizes used to weight results.

CDC: Centers for Disease Control and Prevention, mo: months, yrs: years

Key Assumptions

- Vaccine effectiveness (VE) represents incremental protection above baseline immunity from prior vaccination and/or infection.
- Base-case VE for the 2026–2027 season is assumed equal to observed real-world VE from the 2024–2025 season, applied to emergency department/urgent care encounters, hospitalization, and death.
- A time-weighted average VE is applied over the 2026–2027 season. VE is not modeled as time-varying within year one, and waning beyond year one is not explicitly modeled.
- Decrements to quality of life and increases in costs to manage long-term sequelae after Covid-19 were assumed to resolve after one year for individuals with a non-severe Covid-19 episode, and after three years for those with severe Covid-19. Excess mortality from severe sequelae was assumed only for year one.

Key Model Inputs: Baseline Risk Without Vaccination

Parameter	Age Group*	Base Case	Source
Annual Probability of Symptomatic Covid-19 (No Vaccination)	All ages	0.0512	CDC 2024-2025 US Covid-19 Burden Estimate, US Census, Authors' estimation
Annual Probability of Outpatient/ED Visits (No Vaccination)	All ages	0.0134	
Annual Probability of Hospitalization (Subgroups) (No Vaccination)	6 mo–11 yrs	0.0005	COVID-NET Surveillance System, 2024-25, Authors' estimation
	12–17 yrs	0.0002	
	18–49 yrs	0.0008	
	50–64 yrs	0.0025	
	≥65 yrs	0.0062	

*Age groups from 6 months to 64 years include individuals with at least one underlying condition, representing high-risk populations.

CDC: Centers for Disease Control and Prevention, ED: emergency department, mo: months, US: United States, yrs: years

Key Model Inputs: Effectiveness

Parameter	Age Group*	Base Case	Source
Vaccine Effectiveness (Outpatient/ED Encounter)	≥18 yrs	22.7%	Cai et al., 2025
Vaccine Effectiveness (Outpatient/ED Encounter)	<18 yrs	47.0%	Childhood CDC Study, 2025; Estimated as the weighted average of effectiveness for 9 mo–4 yrs and 5–17 yrs
Vaccine Effectiveness (Hospitalization With or Without ICU)	≥18 yrs	30.3%	Cai et al., 2025
	<18 yrs	47.0%	Assumption: same as for Outpatient/ED
Vaccine Effectiveness (Death)	All ages	49.5%	Cai et al., 2025

*Age groups from 6 months to 64 years include individuals with at least one underlying condition, representing high-risk populations.

ED: emergency department, ICU: intensive care unit, yrs: years

Key Model Inputs: Vaccine Pricing

Parameter	Age Group	Base Case	Source
Spikevax Price	6 mo–11 yrs 12–17 yrs 18 yrs+	$103 $112 $142	CDC, weighted public/private price applied for the pediatric population
Comirnaty Price	5–11 yrs 12–17 yrs 18 yrs+	$73 $129 $170	CDC, weighted public/private price applied for the pediatric population
Nuvaxovid Price	12–17 yrs 18 yrs+	$122 $168	CDC, weighted public/private price applied for the pediatric population
mNEXSPIKE	12–17 yrs 18 yrs+	$139 $177	CDC, weighted public/private price applied for the pediatric population. The mNEXSPIKE pediatric price is assumed based on the ratio of the Spikevax pediatric price to the adult price.

CDC: Centers for Disease Control and Prevention, mo: months, yrs: years

Key Model Inputs: Costs

Parameter	Age Group	Base Case	Source
Cost Of Hospitalization (Non-ICU)	≥65 yrs	$22,444	Prosser et al., 2025
Cost Of ICU Stay (No Ventilator)	≥65 yrs	$25,240	Prosser et al., 2025
Cost Of ICU Stay (Ventilator)	≥65 yrs	$60,064	Prosser et al., 2025
Covid-19-Related Cost of Mortality	≥65 yrs	$22,540	Jiao & Basu, 2021

ICU: intensive care unit, yrs: years

Key Model Inputs: Utility Decrements

Parameter	Age Group	Base Case	Source
Symptomatic Covid Utility Decrement	All ages	0.006	Prosser et al., 2025
Hospitalized Covid Non-ICU Utility Decrement	All ages	0.027	
Hospitalized Covid ICU Utility Decrement	All ages	0.054	
Reactogenicity Utility Decrement	All ages	0.0004	
Myocarditis Utility Decrement	All ages	0.0100	
Anaphylaxis Utility Decrement	All ages	0.0137	

ICU: intensive care unit

Results

Base-Case Results

Treatment	Intervention Acquisition Costs*	Intervention-Related Costs†	Non-Interve-ntion Costs‡	Total Costs*	Hospitaliza-tions per 100,000	QALYs	evLYs	Life Years
No Vaccine	$0	$0	$120,408	$120,408	354	15.050968	15.050968	17.691035
Spikevax	$141	$24	$120,366	$120,531	247	15.053135	15.053136	17.693442
Comirnaty	$167	$24	$120,366	$120,557	247	15.053135	15.053136	17.693442
Nuvaxovid	$164	$21	$120,366	$120,552	247	15.053174	15.053175	17.693441
mNEXSPIKE	$173	$24	$120,366	$120,563	247	15.053135	15.053135	17.693441

Results are weighted by the following age groups where indicated: high risk 6 months to 4 years of age (N=1,175,406), high risk 5–11 years of age (N=1,994,667), high risk 12–17 years of age (N=1,822,671), high risk 18–49 years of age (N=39,424,898), high risk 50–64 years of age (N=39,392,528), and 65+ years of age (N=61,179,918).

*Based on weighted average price, including the Vaccines for Children program.

†Intervention-related costs include vaccine administration and adverse event management costs.

‡Non-intervention costs include Covid-19 management-based costs (e.g., inpatient admission), unrelated medical costs, and mortality costs.

Base-Case Incremental Results

Treatment	Base-Case Population‡	Comparator	Cost per QALY Gained*	Cost per evLY Gained*	Cost per Life Year Gained*	Cost per Hospitalization Avoided
Spikevax	6 mo–64 yrs high risk, 65+	No vaccine†	$57,000	$57,000	$51,000	$114,000
Comirnaty	6 mo–64 yrs high risk, 65+		$69,000	$69,000	$62,000	$138,000
Nuvaxovid†	6 mo–64 yrs high risk, 65+		$65,000	$65,000	$60,000	$134,000
mNEXSPIKE†	6 mo–64 yrs high risk, 65+		$71,000	$71,000	$64,000	$145,000

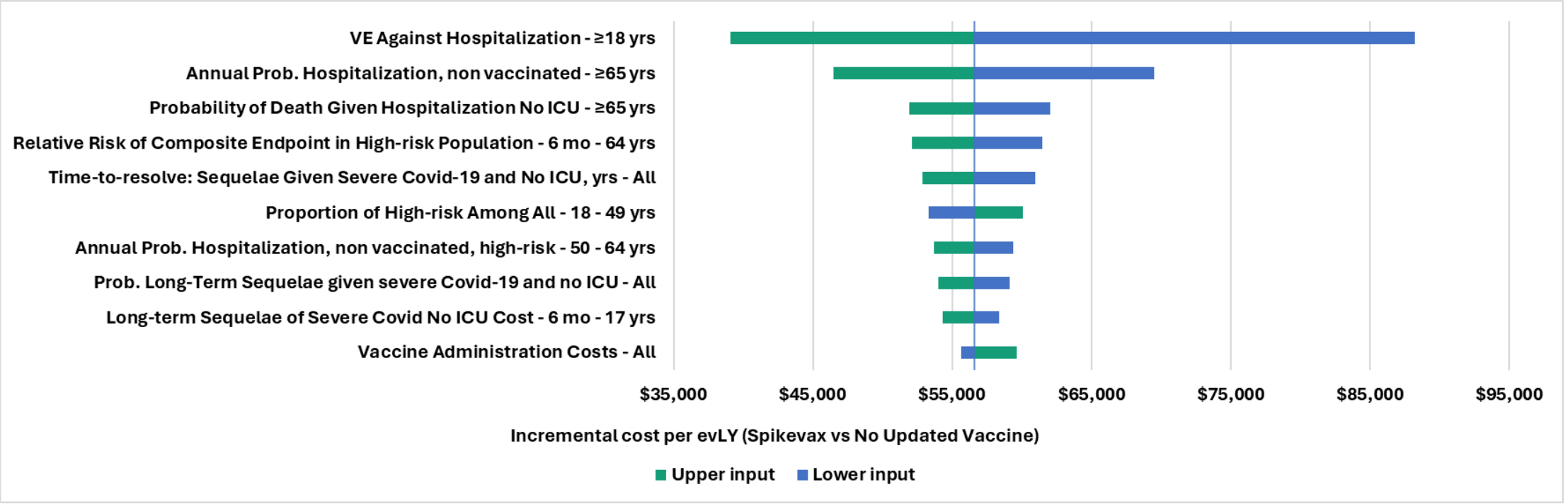
*Based on weighted average price, including the vaccines for children program

†The comparator of no vaccine is adjusted for appropriate indicated age groups. In addition, because Nuvaxovid and mNEXSPIKE are FDA-indicated only for age 12+, no vaccination was assumed for individuals age 6 months – 11 years.

‡Results are weighted by the following age groups where indicated: 65+ years of age (N=61,179,918), high risk 50-64 years of age (N=39,392,528), high risk 18-49 years of age (N=39,424,898), high risk 12-17 years of age (N=1,822,671), high risk 6 months to 11 years of age (N=3,633,018).

evLYs: equal value of life years, FDA: Food and Drug Administration, mo: months, QALY: quality-adjusted life year

One Way Sensitivity Analyses



evLY: equal value of life year, mo: months, VE: vaccine effectiveness; ICU: intensive care unit, yrs: years

Probabilistic Sensitivity Analysis

Drug	Cost-Effective at $50,000 per evLY*	Cost-Effective at $100,000 per evLY*	Cost-Effective at $150,000 per evLY*
Spikevax	31%	100%	100%
Comirnaty	11%	95%	100%
Nuvaxovid	15%	97%	100%
mNEXSPIKE	10%	92%	100%

*Based on weighted average price, including the Vaccines For Children program

Scenario Analyses

Treatment	Base-Case Results (per evLY)*	Scenario Analysis 1 (per evLY)*	Scenario Analysis 2 (per evLY)*	Scenario Analysis 3 (per evLY)*	Scenario Analysis 4 (per evLY)*	Scenario Analysis 5 (per evLY)*	Scenario Analysis 6 (per evLY)*
Spikevax	$57,000	$150,000	$74,000	$126,000	$47,000	$56,000	$154,000
Comirnaty	$69,000	$161,000	$89,000	$157,000	$59,000	$68,000	$170,000
Nuvaxovid	$65,000	$72,000	$84,000	$144,000	$56,000	$65,000	$152,000
mNEXSPIKE	$71,000	$165,000	$93,000	$164,000	$62,000	$71,000	$170,000

*Based on weighted average price, including the Vaccines For Children program

- **Scenario 1: Modified Societal Perspective**
- **Scenario 2: Lower Bound of Illness and Hospitalization Rate (i.e., Lower Bound of Confidence Interval)**
- **Scenario 3: 5-Year Time Horizon**
- **Scenario 4: Exclusion of Unrelated Medical Costs**
- **Scenario 5: Every Child Assumed to be Eligible for the Vaccines for Children (VFC) Program (52% in Base Case; 100% in Scenario)**
- **Scenario 6: Vaccination of All Individuals Aged ≥6 Months, Irrespective of Risk Status**

Health Benefit Price Benchmark (HBPB)

Range in WAC per Administration*	Threshold Price Calculation	Unit Price at $100,000 Threshold†	Unit Price at $150,000 Threshold†	Discount from WAC to Reach Threshold Prices
Spikevax				
$103–$142	evLYs and QALYs Gained	$235	$343	No discount needed
Comirnaty				
$73–$170	evLYs and QALYs Gained	$237	$346	No discount needed
Nuvaxovid				
$122–$168	evLYs and QALYs Gained	$246	$359	No discount needed
mNEXSPIKE				
$139–$177	evLYs and QALYs Gained	$240	$351	No discount needed

*Range based on weighted average price, including the Vaccines for Children program
†Threshold prices do not reflect weighted average pricing

Limitations

- Evidence of vaccine effectiveness limited in its generalizability to a broader population outside of the VA as well as populations in the 2026–2027 season.
- Data were lacking for epidemiology in multiple subgroups, particularly for the pediatric population.
- Data were lacking on impacts of long-term sequelae.
- The net impact on cost-effectiveness of additional doses is uncertain, as any incremental clinical benefit would need to be weighed against the costs of additional vaccination.

Comments Received

- Updated pricing
- Modeling decisions based on limited evidence on long-term sequelae from Covid-19
- Productivity loss assumptions
- Adverse event assumptions

Conclusions

- Administration of Covid-19 vaccination for the 2026–2027 season adds costs to the health care system at current prices but would also meet commonly cited cost-effectiveness thresholds.
- Key drivers of the cost-effectiveness estimates include vaccine effectiveness against hospitalization and the probability of hospitalization conditional on Covid-19 exposure.
- Individuals ≥50 years of age contributed the greatest weight to the results.

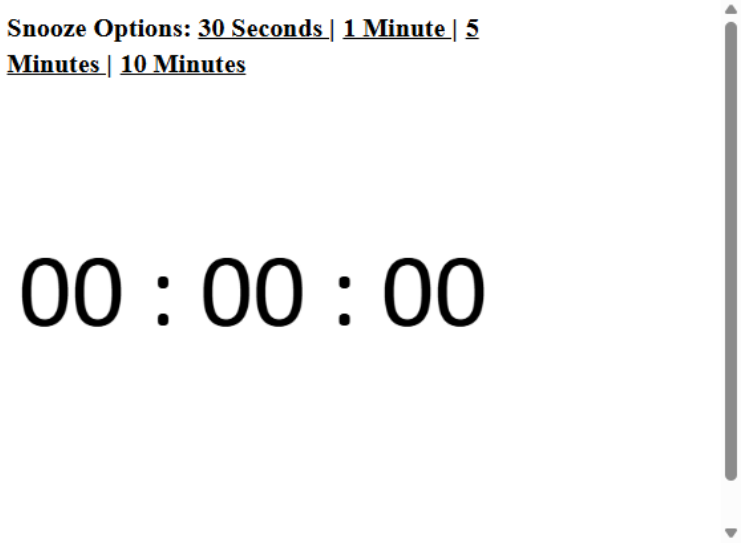
Questions?

Public Comment and Discussion

Rebekah SM Angove, PhD, Chief Science Officer Patient Advocate Foundation

Conflicts of Interest:

- *Patient Advocate Foundation receives less than 5% of its operational funding from health care companies whose products are being reviewed.*



Allison Hill, PharmD, RPh, Director, Professional Affairs
American Pharmacists Association

Conflicts of Interest:

- *6.2% of funding to APhA comes from health care companies including Moderna.*

00 : 05 : 00

Lunch

Meeting will resume at 12:40 PM ET

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Voting Questions

Population of interest for all questions: People living in the United States in 2026

Special Ethical Priorities

To help inform judgments of overall long-term value for money, please answer the following questions:

Discussion: Voting Questions 1-3

1. Are there particular obligations because of Covid-19 severity and/or current levels of unmet need?

2. Are there particular obligations because Covid-19 disproportionately affects those from a racial/ethnic group that have not been equitably served by the health care system?

3. Apart from issues around disease severity/unmet need and race/ethnicity, are there other particular obligations?

1. Are there particular obligations because of Covid-19 severity and/or current levels of unmet need?

2. Are there particular obligations because Covid-19 disproportionately affects those from a racial/ethnic group that have not been equitably served by the health care system?

3. Apart from issues around disease severity/unmet need and race/ethnicity, are there other particular obligations?

Clinical Evidence

For questions 4 through 13, the intervention is updated vaccination for Covid-19 for the 2026-2027 season:

Discussion: Voting Questions 4-6

4. For **adults 18–65 years old (excluding men ages 18–24)**, is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

5. For **children 5–18 years old (excluding boys 12–18)**, is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

6. For **children 2–5 years old**, is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

4. For adults 18–65 years old (excluding men ages 18–24), is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

5. For children 5–18 years old (excluding boys 12–18), is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

6. For children 2–5 years old, is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

7. For adults 65+ years old, is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

8. For people under age 65 with chronic comorbidities, is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

9. For children 6–12 months old, is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

10. For children 1–2 years old, is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

11. For women who are pregnant, is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

12. For males 12-24 years old, is the current evidence adequate to demonstrate that the net health benefit of vaccination is greater than that of no vaccination?

13. Is the currently available evidence adequate to distinguish the net health benefit among Comirnaty, Spikevax, mNexspike, and Nuvaxovid?

Benefits Beyond Health

To help inform judgments of overall long-term value for money, please answer the following question about vaccination when compared to no vaccination:

14. Is vaccination likely to improve caregivers' quality of life and/or ability to pursue their own education, work, and family life?

Long-Term Value for Money

Given the available evidence on comparative clinical effectiveness and incremental cost effectiveness, and considering benefits beyond health and special ethical priorities…

15. What is the long-term value for money of currently available vaccines for Covid-19 compared to no vaccination at current pricing?

Break

Meeting will resume at 2:10 PM ET

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Policy Roundtable

Policy Roundtable

Participant	Conflict of Interest
Kate Berry, MPP Senior Vice President, Clinical Innovation, AHIP	Kate Berry is a full-time employee of AHIP.
Omar A. Escontrías, DrPH, MPH Chief Programs & Research Officer, National Health Council	Omar A. Escontrías is a full-time employee of the National Health Council. Half (50%) of the National Health Council's annual funding is from health care companies. Pfizer and Sanofi are industry members of the National Health Council, and they support the organization through membership dues and special projects.
Elbert Huang, MD, MPH Professor of Medicine and Public Health Sciences, University of Chicago	No conflicts to disclose.
Kimberly Leonard Medicaid Pharmacy Director, Office of Health Insurance Programs, New York State Department of Health	Kimberly Leonard is a full-time employee of the New York State Department of Health.
Leigh Purvis, MPA Prescription Drug Policy Principal, AARP	Leigh Purvis is a full-time employee of AARP. A sizable share of AARP's funding comes from royalties from third-party providers of member benefits programs—the largest of these royalty agreements is with UnitedHealthcare.
Jason L. Schwartz, PhD Associate Professor, Department of Health Policy and Management, Yale School of Public Health	No conflicts to disclose.

New England CEPAC Council Reflections

Next Steps

- Meeting recording posted to ICER website next week
- Final Report published on or around July 28th, 2026
    - Includes description of New England CEPAC votes, deliberation, policy roundtable discussion
- Materials available at: https://icer.org/assessment/covid-19-2025/

Adjourn

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