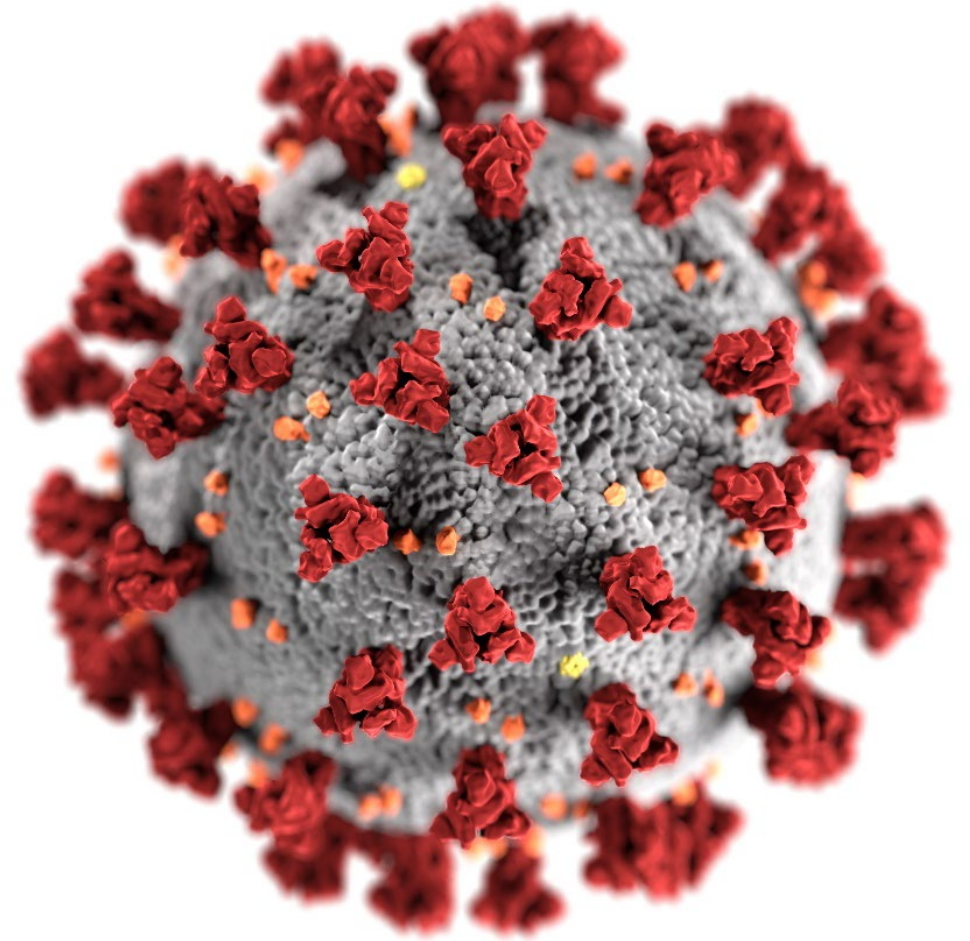


ACIP COVID-19 Vaccines Work Group

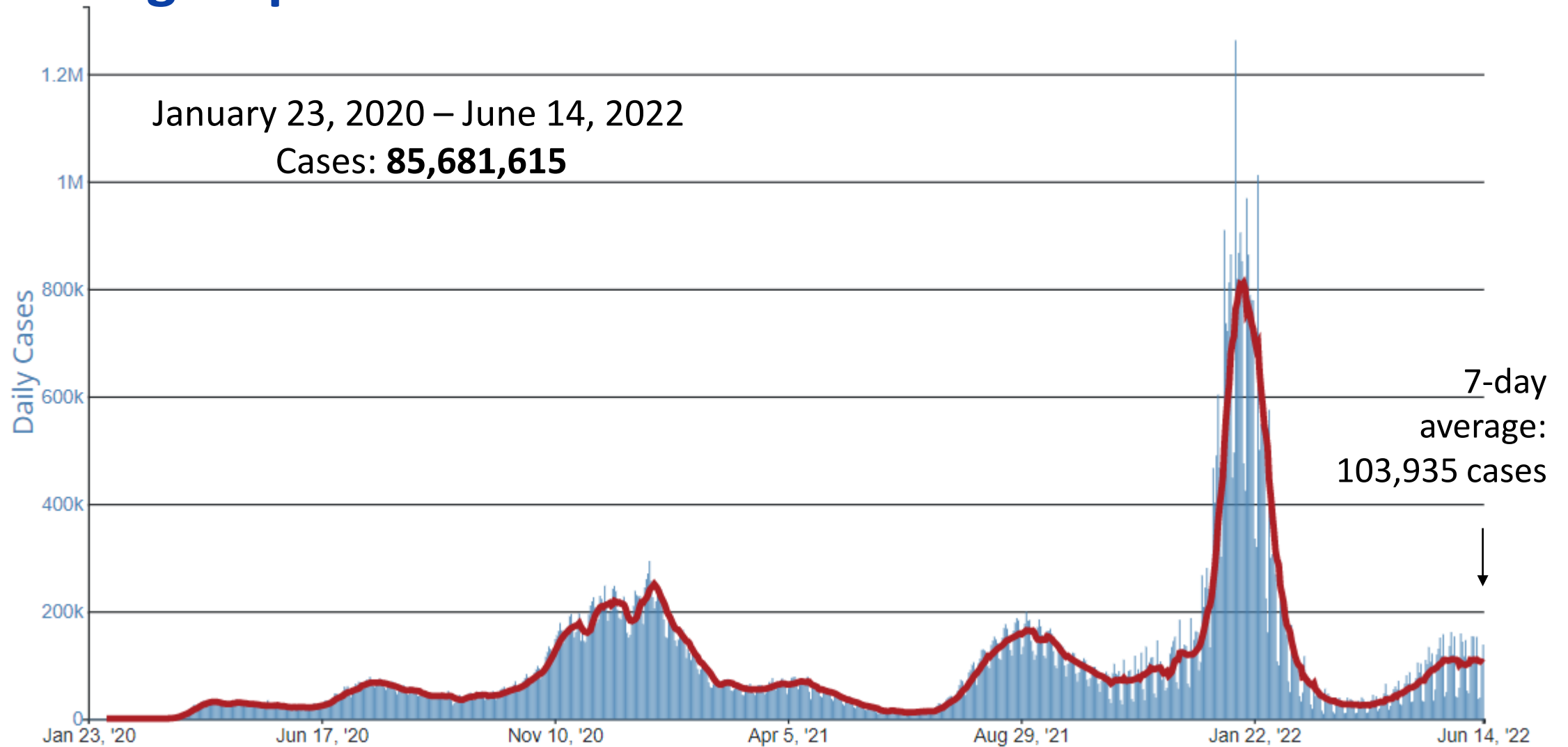
Dr. Matthew F. Daley, Work Group Chair

June 17, 2022

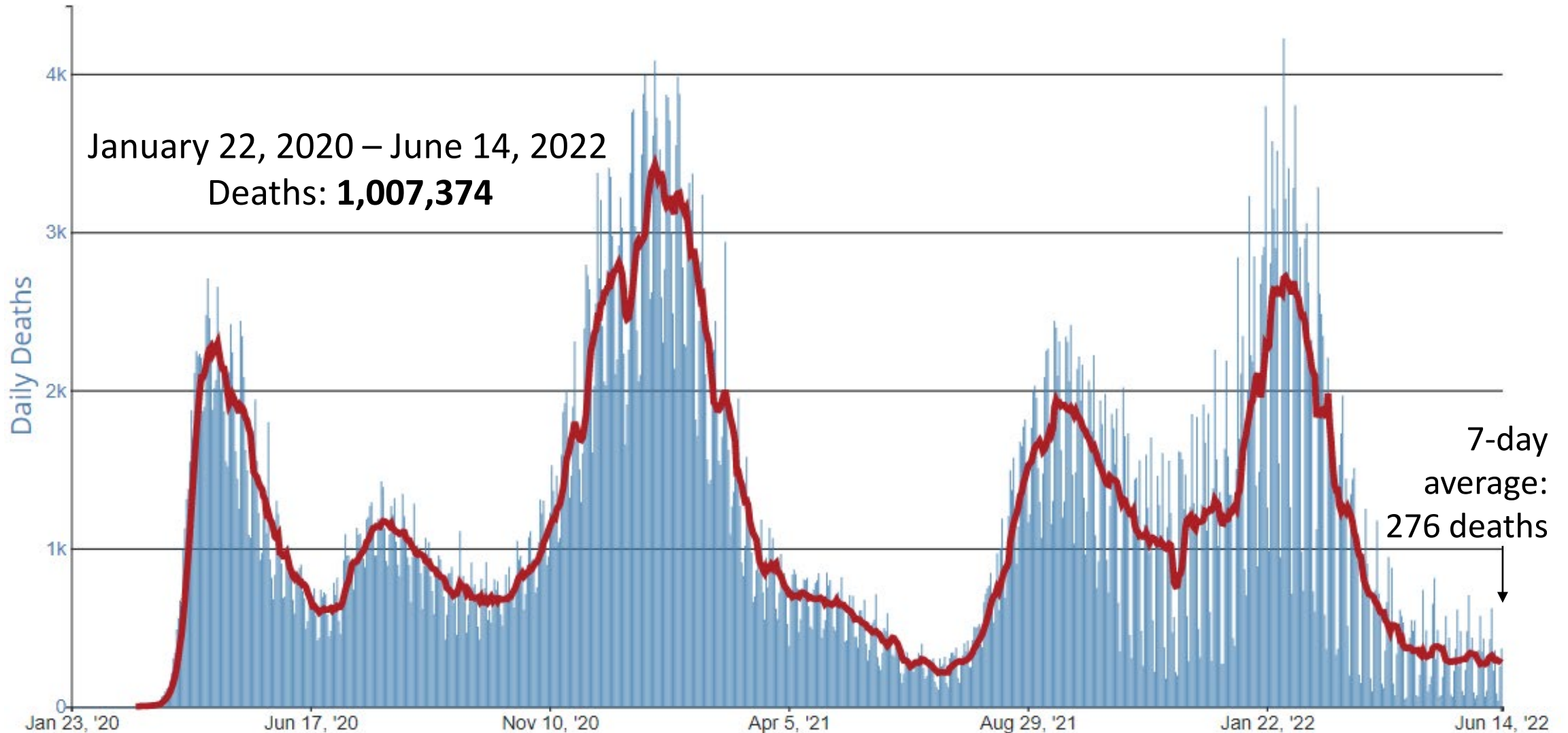


cdc.gov/coronavirus

Trends in number of COVID-19 cases in the United States among all persons

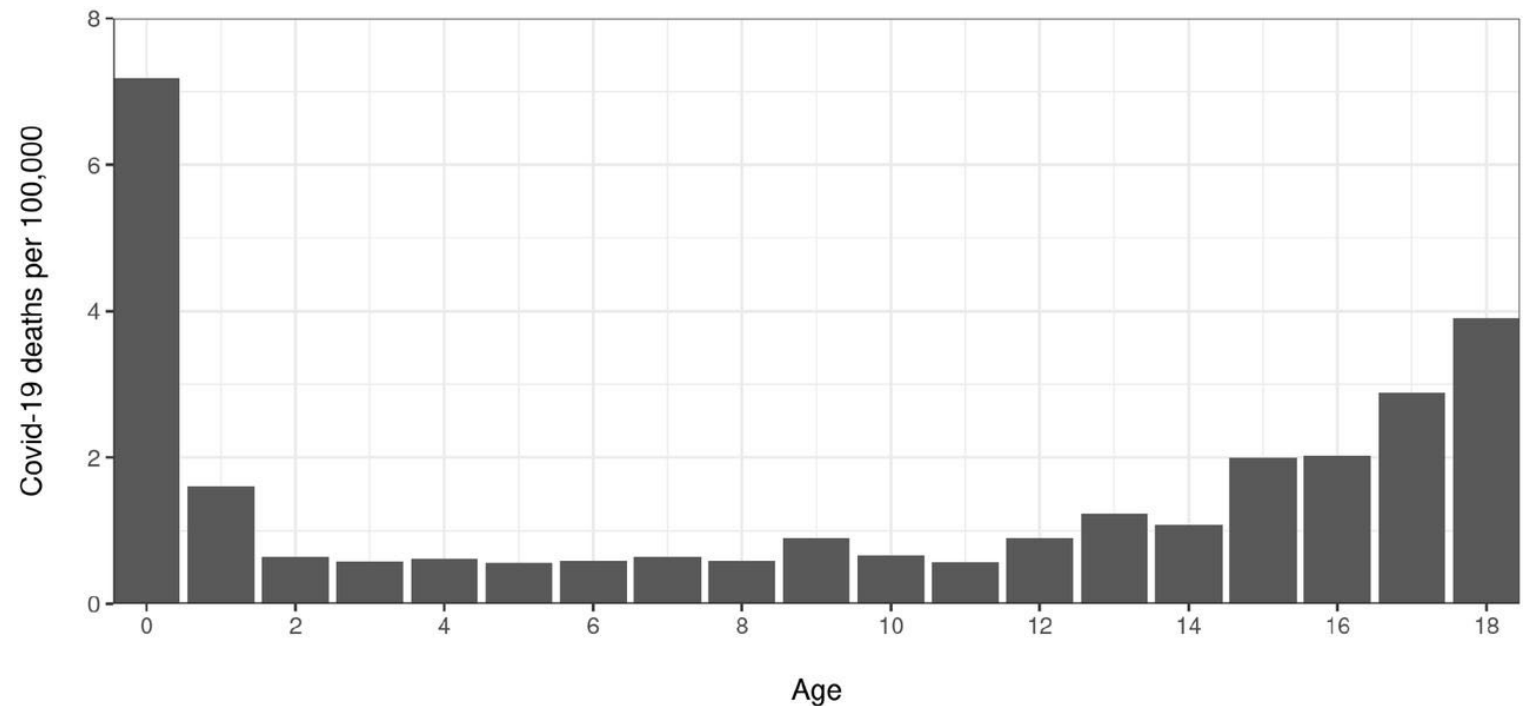


Daily Trends in Number of COVID-19 Deaths, United States



COVID-19 death rate among children by age, United States, March 1, 2020—April 30, 2022

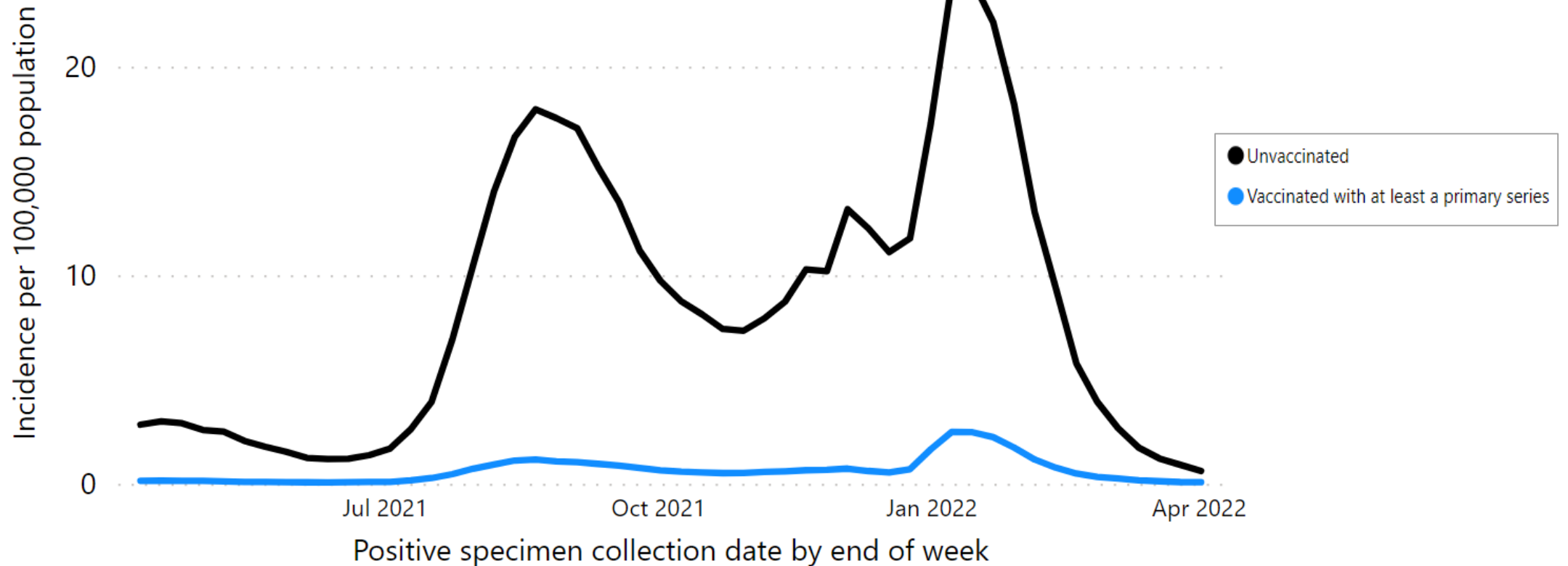
- Based on cumulative total incidence, COVID-19 is the **leading** cause of death among **infectious diseases** for people ages 0-19
 - COVID-19 is the **seventh** most common of **all** causes of death for people ages 0-19
- Among people ages 1-4, COVID-19 is the **fifth** most common of **all** causes of death



Based on death certificate data from the National Center for Health Statistics. COVID-19 based on cumulative total incidence of COVID-19 deaths from March 1, 2020-April 30, 2022.

Source: Preprint: Flaxman S, Whittaker C, Semenova E et al. Covid-19 is a leading cause of death in children and young people ages 0-19 years in the United States. medRxiv 2022.05.23.22275458; doi: <https://doi.org/10.1101/2022.05.23.22275458>

Rates of COVID-19 deaths by vaccination status in people ages ≥ 5 years, United States, April 4, 2021—April 2, 2022



Unvaccinated people ages ≥ 5 years had **10X** the risk of dying from COVID-19 through March compared to people vaccinated with at least the primary series.

Pediatric vaccine preventable diseases:

Deaths per year in the United States prior to recommended vaccines

	Hepatitis A ¹	Meningococcal (ACWY) ²	Varicella ³	Rubella ⁴	Rotavirus ⁵	COVID-19 ⁶
Age	<20 years	11–18 years	5–9 years	All ages	<5 years	6 months – 4 years
Time period	1990–1995	2000–2004	1990–1994	1966–1968	1985–1991	Jan 2020–May 2022
Average deaths per year	3	8	16	17	20	86

¹Vogt TM , Wise ME, Bell BP, Finelli L. Declining hepatitis A mortality in the United States during the era of hepatitis A vaccination. J Infect Dis 2008; 197:1282–8.

²National Notifiable Diseases Surveillance System with additional serogroup and outcome data from Enhanced Meningococcal Disease Surveillance for 2015-2019.

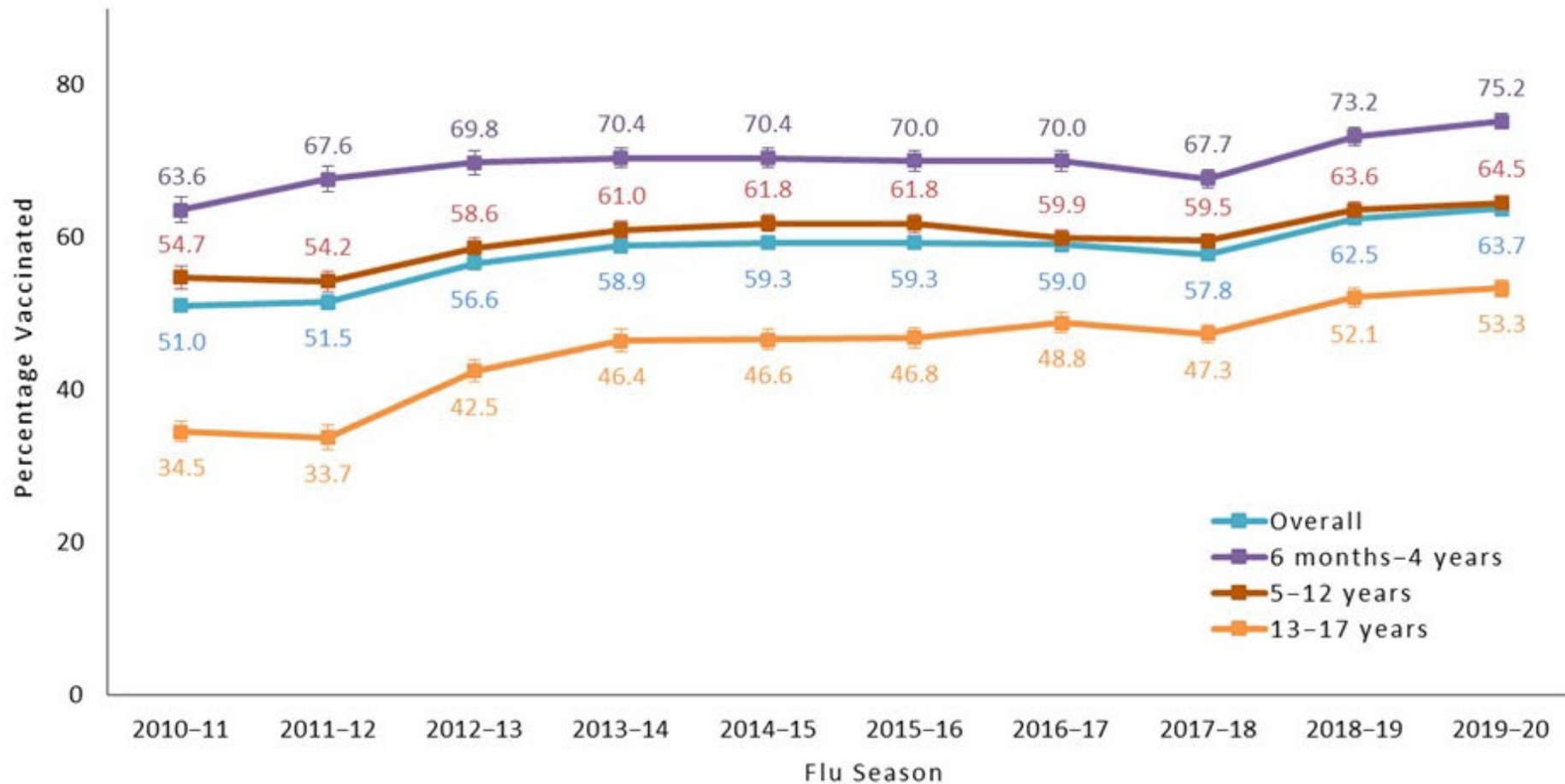
³Meyer PA, Seward JF, Jumaan AO, Wharton M. Varicella mortality: trends before vaccine licensure in the United States, 1970-1994. J Infect Dis. 2000;182(2):383-390. doi:10.1086/315714

⁴Roush SW , Murphy TV; Historical comparisons of morbidity and mortality for vaccine-preventable diseases in the United States. JAMA 2007; 298:2155–63.

⁵Glass RI, Kilgore PE, Holman RC, et al. The epidemiology of rotavirus diarrhea in the United States: surveillance and estimates of disease burden. J Infect Dis. 1996 Sep;174 Suppl 1:S5-11.

⁶<https://data.cdc.gov/NCHS/Provisional-COVID-19-Deaths-Counts-by-Age-in-Years/3apk-4u4f/data>.

Flu Vaccination Coverage by Age Group, Children 6 months—17 years, United States, 2010—2020



Data Source: National Immunization Survey-Flu (NIS-Flu)
Error bars represent 95% confidence intervals around the estimates.

Estimated influenza illnesses, medical visits, hospitalizations and deaths averted by seasonal flu vaccine among children ages 6 months—4 years in the United States, 2010—2020

Among children ages 6 months—4 years, seasonal flu vaccines have averted¹⁻²:



4.3-20.1 million **illnesses**



2.9-15.5 million **visits**



32,000-164,000 **hospitalizations**



130-2350 **deaths**

In the context of:

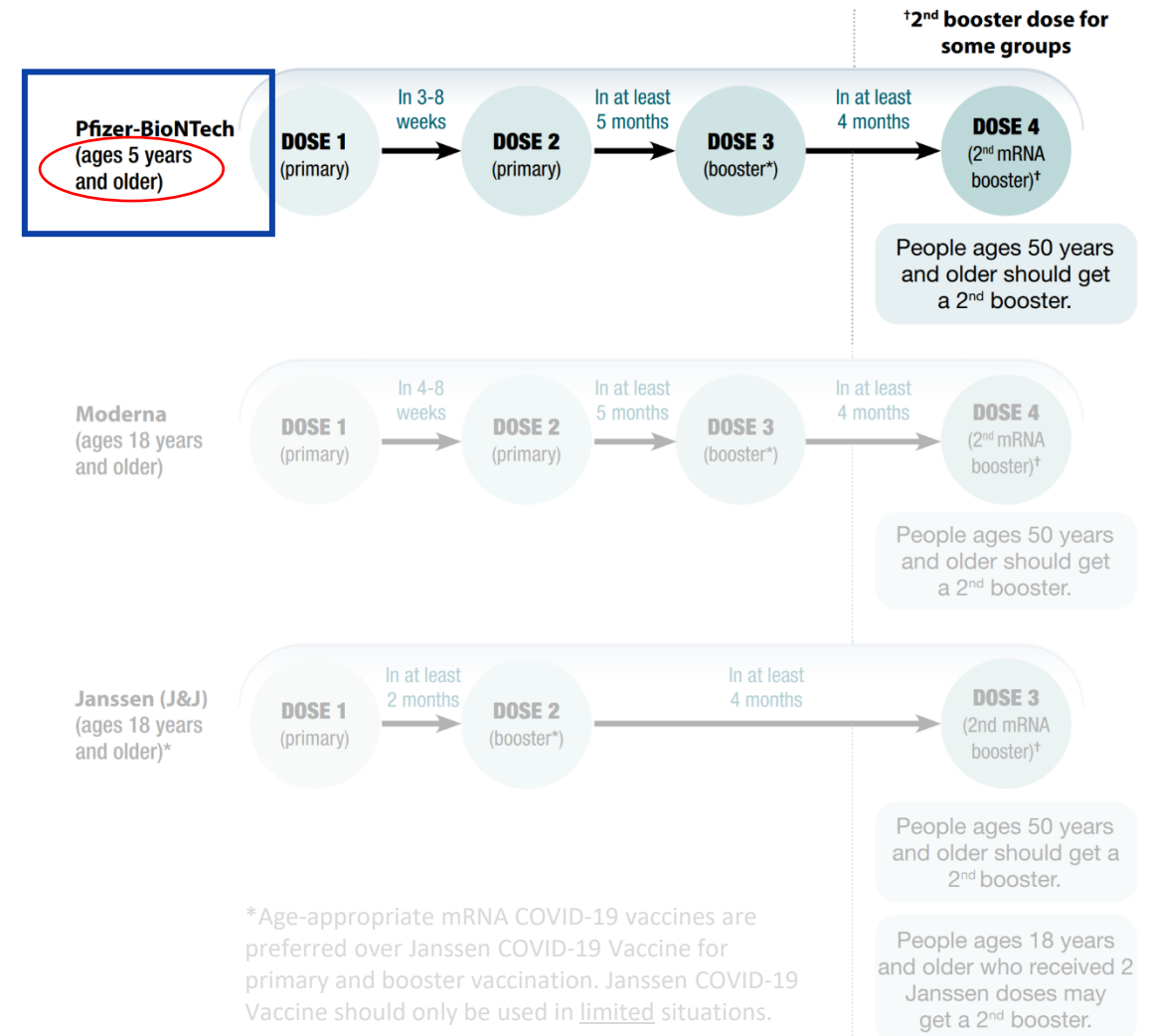
- Substantial disease burden
 - Seasonal incidence of about 5-20%³
- Variable vaccine efficacy (VE)
 - Vaccine efficacy estimates ranging from 19-60% from 2010—2020⁴
- Consistent vaccine coverage
 - 63.6-75.2% flu vaccine coverage among children 6 months—4 years from 2010—2020⁵

1. Rolfes MA, Flannery B, Chung JR, et al.; US Influenza Vaccine Effectiveness (Flu VE) Network; Influenza Hospitalization Surveillance Network; Assessment Branch, Immunization Services Division, Centers for Disease Control and Prevention. Effects of influenza vaccination in the United States during the 2017–2018 influenza season. *Clin Infect Dis* 2019;69:1845–53. 10.1093/cid/ciz075 2. www.cdc.gov/flu/about/burden-averted/2019-2020.htm Accessed June 13, 2022. 3. Jerome I Tokars, Sonja J Olsen, Carrie Reed, Seasonal Incidence of Symptomatic Influenza in the United States, *Clinical Infectious Diseases*, Volume 66, Issue 10, 15 May 2018, Pages 1511–1518. 4. U.S. Flu VE Network. www.cdc.gov/flu/vaccines-work/effectiveness-studies.htm Accessed June 13, 2022. 5. National Immunization Survey—Flu. <https://www.cdc.gov/flu/fluview/coverage-1920estimates.htm> Accessed June 13, 2022.

Current recommendations for COVID-19 vaccines

- There is **no** COVID-19 vaccine currently authorized for use in children less than 5 years of age
- Only the Pfizer-BioNTech vaccine is currently authorized for use in children ages 5—17 years

Number and intervals of COVID-19 vaccine doses



FDA update

Convenings of the Vaccines and Related Biological Products Advisory Committee (VRBPAC)

- June 14, 2022: VRBPAC meeting to review the request for EUA for the Moderna COVID-19 vaccine in children and adolescents ages 6—17 years
- June 15, 2022: VRBPAC meeting to review requests for EUA for:
 - The Moderna COVID-19 vaccine in children ages 6 months—5 years
 - The Pfizer-BioNTech COVID-19 vaccine in children ages 6 months—4 years

COVID-19 vaccine Work Group activities

Late May- Early June 2022

Reviewed and discussed:

- Vaccine safety, immunogenicity and efficacy data—including both immunobridging and laboratory-confirmed direct efficacy—for the Moderna COVID-19 vaccine for children and adolescents ages 6 months—5 years and 6—17 years.
- Vaccine safety, immunogenicity and efficacy data—including both immunobridging and laboratory-confirmed direct efficacy—for the Pfizer-BioNTech COVID-19 vaccine for children and adolescents ages 6 months—4 years
- COVID-19 epidemiology and outcomes in children ages 6 months—5 years
- Post-authorization vaccine effectiveness of COVID-19 vaccines in children and adolescents ages 5—17 years
- Grading of Recommendations, Assessment, and Evaluation (GRADE) and Evidence to Recommendations Frameworks for both Moderna and Pfizer-BioNTech COVID-19 vaccines for children ages 6 months—5 years

Agenda: Friday June 17, 2022

- **Epidemiology of COVID-19 in young children** Dr. Fleming-Dutra (CDC)
- **COVID-19 vaccine effectiveness in children and adolescents** Dr. Link-Gelles (CDC)
- Break*
- **Safety and immunogenicity of Moderna 2-dose primary series in children ages 6 months—5 years** Dr. Das (Moderna)
- **Safety and immunogenicity of BNT 162b2 3-dose primary series in children ages 6 months—4 years** Dr. Gruber (Pfizer)
- **mRNA COVID-19 vaccines in young children: Summary and Work Group interpretation** Dr. Oliver (CDC)
- **PUBLIC COMMENT**

Work Group members

ACIP members

- Matthew Daley (chair)
- Beth Bell
- Grace Lee
- Keipp Talbot
- Oliver Brooks

Ex-officio/government members

- FDA: Doran Fink, Rachel Zhang, Lucia Lee
- NIH: Chris Roberts
- IHS: Uzo Chukwuma
- DOD: Bryan Schumacher
- CMS: Jeff Kelman
- BARDA: Christine Oshansky
- HHS: David Kim

CDC Leads

- Sara Oliver
- Evelyn Twentyman

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- AAP: Sean O’Leary
- ACOG: Denise Jamieson (primary),
Laura Riley (alternate)
- ACP: Jason Goldman
- ADS: Emily Kahn
- AGS: Ken Schmader
- AIM: Rob Shechter (primary),
Jane Zucker (alternate)
- AMA: Sandra Fryhofer
- ANA: Kendra McMillan (primary),
Ruth Francis (alternate)
- APhA: Michael Hogue
- ASTHO: Marcus Plescia
- CSTE: Susan Lett, Paul Cieslak, Christine
Hahn
- IDSA: Jeff Duchin (primary)

Liaisons, cont’d

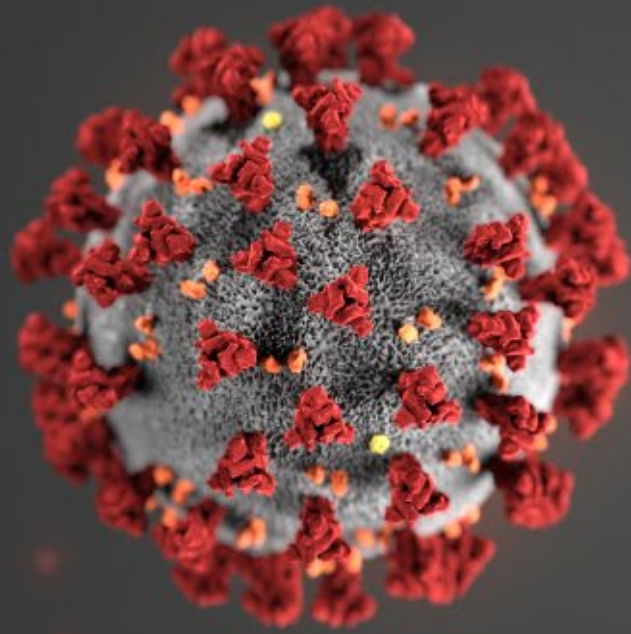
- NACCHO: Matt Zahn (primary),
Jeff Duchin (alternate)
- NACI: Matthew Tunis (primary),
Kelsey Young (alternate)
- NFID: Bill Schaffner (primary),
Marla Dalton (alternate)
- NMA: Patricia Whitley-Williams
- SHEA: Marci Drees

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- Kathy Kinlaw
- Dayna Matthew
- Kathleen Neuzil
- Stanley Perlman
- Peter Szilagyi
- Jose Romero
- Hank Bernstein

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- Monica Godfrey
- Susan Goldstein
- Stephen Hadler
- Elisha Hall
- Valerie Morelli
- Danielle Moulia
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- Megan Wallace
- JoEllen Wolicki
- Amanda Cohn
- Jessica MacNeil
- Elfriede Agyemang
- Karen Broder
- Allison Ciesla
- Kathleen Dooling
- Ashley Fowlkes
- Samuel Graitcer
- Rebecca Greco Kone
- Katherine Grusich
- Rita Helfand
- Joy Hsu
- Terri Hyde
- Jefferson Jones
- Cynthia Jorgensen
- Andrew Kroger
- Ruth Link-Gelles
- Lauri Markowitz
- Kristen Nordlund
- Tamara Pilishvili
- Heather Scobie
- Tom Shimabukuro
- John Su
- Natalie Thornburg
- Melinda Wharton
- Ryan Wiegand
- Janet Wright
- Patricia Yu
- Yon Yu



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.

