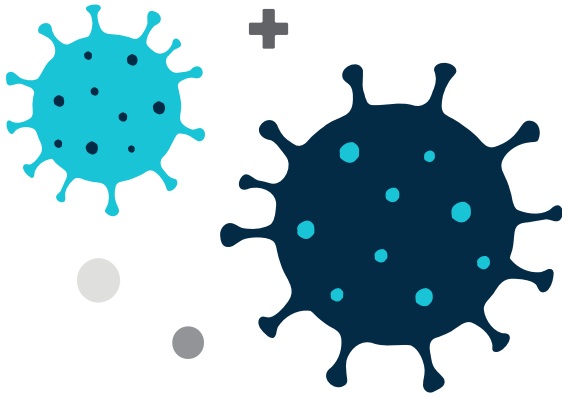


COVID-19 Therapeutics

COVID-19 and Omicron

February 8, 2022

CalHHS California Health & Human Services Agency | CALIFORNIA MEDICAL ASSOCIATION | IN PARTNERSHIP WITH | CAPA California Academy of PAs | Osteopathic Physicians & Surgeons of California

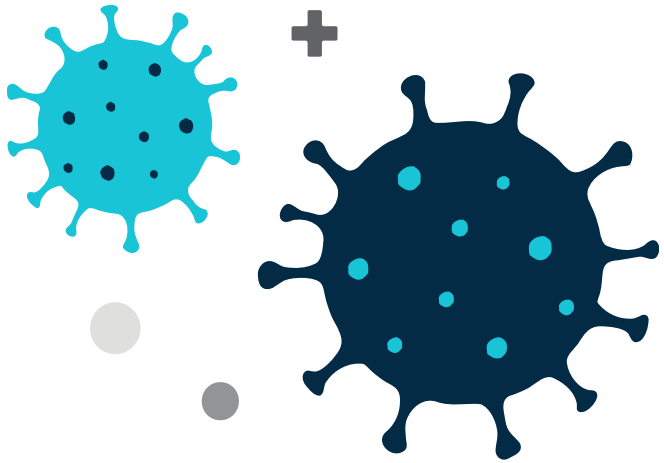
Disclosure

The following speakers disclose no relevant financial relationships with ineligible companies: Kimberly Newell Green, M.D.; Erica Pan, M.D., MPH; and Linsey Marr, Ph.D.

All other planners, staff and others involved with this activity have reported no relevant financial relationships with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

This activity has not received commercial support.

Agenda



- State of COVID-19 in California
  - Erica Pan, M.D., MPH
- Mitigation for Community Transmission
  - Linsey C. Marr, Ph.D.
- Q&A

Continuing Medical Education (CME) Offered

Learning Objectives:

- Summarize the current epidemiology of COVID-19 in California
- Discuss with patients the vaccination progress in California, including pediatric vaccines and boosters.
- Assess the status of COVID-19 variants.
- Discuss the aerosol transmission patterns of COVID-19 and other respiratory viruses with patients.
- Counsel patients and others regarding methods to decrease indoor transmission of viral infections.
- Counsel patients and community members of use of masks, their efficacy, and the effectiveness of different types of masks

Kimberly Newell Green M.D. – Moderator

Immediate Past President,

San Francisco Marin Medical Society

Associate Clinical Professor,

University of California, San Francisco

Erica Pan, M.D., MPH

California State Epidemiologist and Deputy Director

California Department of Public Health (CDPH) Center of Infectious Diseases

Vaccinate ALL 58

Together we can end the pandemic.
Juntos podemos acabar con la pandemia.
我們可以一起終止疫情。

COVID-19 California Epidemiology

Dr. Erica Pan, MD, MPH, FAAP

California State Epidemiologist
Deputy Director, Center for Infectious Diseases
California Department of Public Health
@ericapanMD_CDPH

UCSF Clinical Professor
Pediatric Infectious Diseases

February 8, 2022

Agenda

- California COVID-19 Epi & Vaccinations
- Pediatric Data
- CA Mask Case Control Study
- CDPH Updates

7-Day Average of

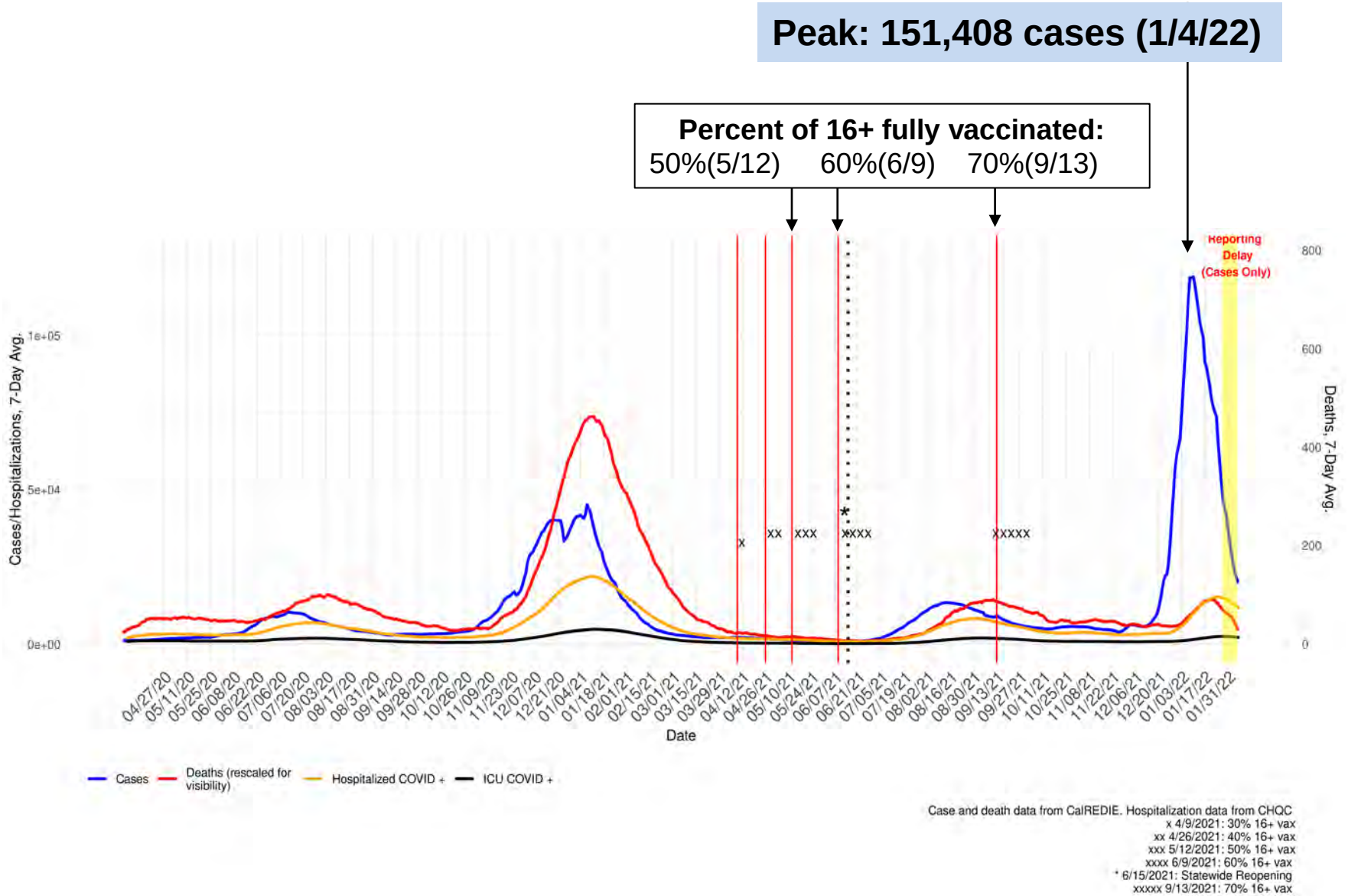
Cases by Episode Date,

Total Hospitalizations,

Total ICU Admissions,

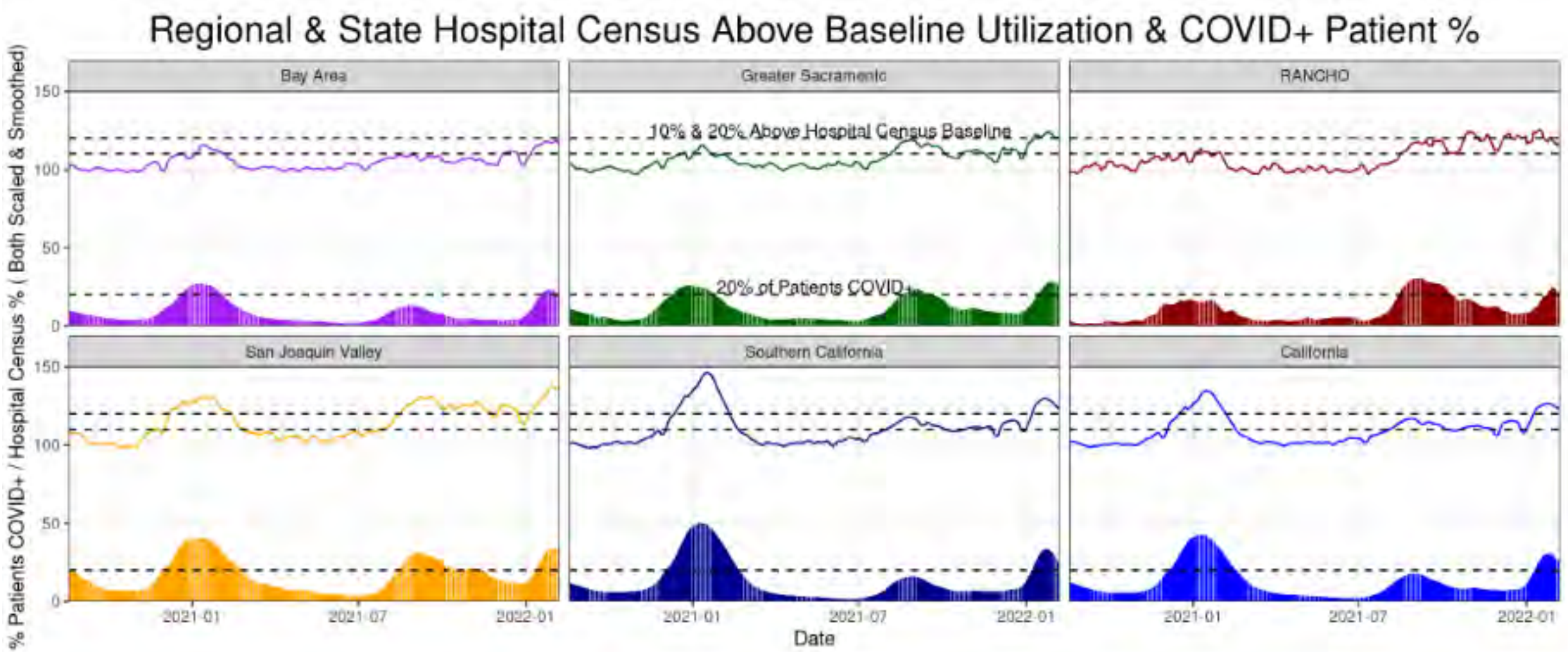
Deaths

As of February 7, 2022

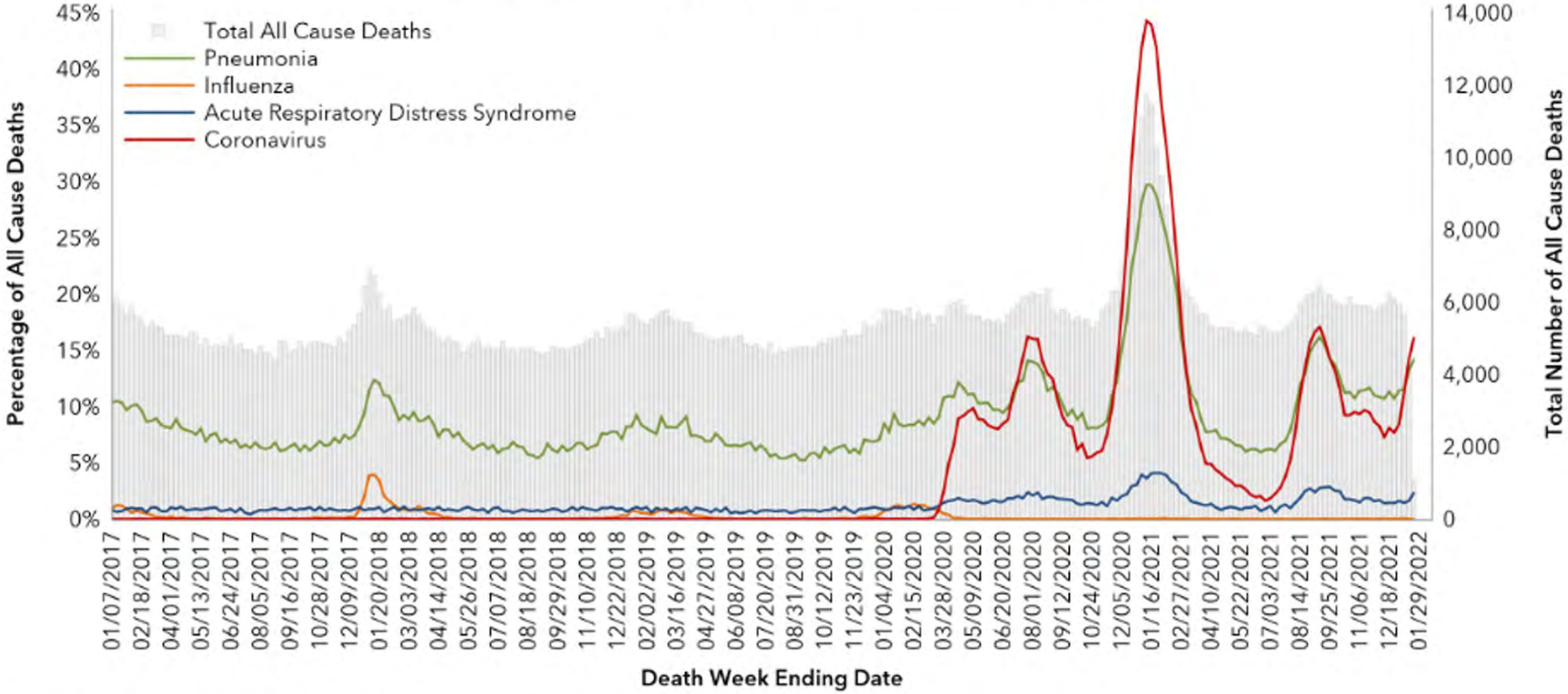


CHA Hospitalizations Report (Region)

Last compiled February 7, 2022

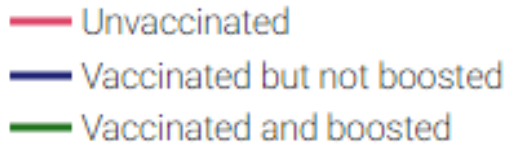


Percentage of Deaths with Pneumonia, Influenza, Acute Respiratory Distress Syndrome (ARDS), and Coronavirus (including COVID-19) Anywhere on the Death Certificate*

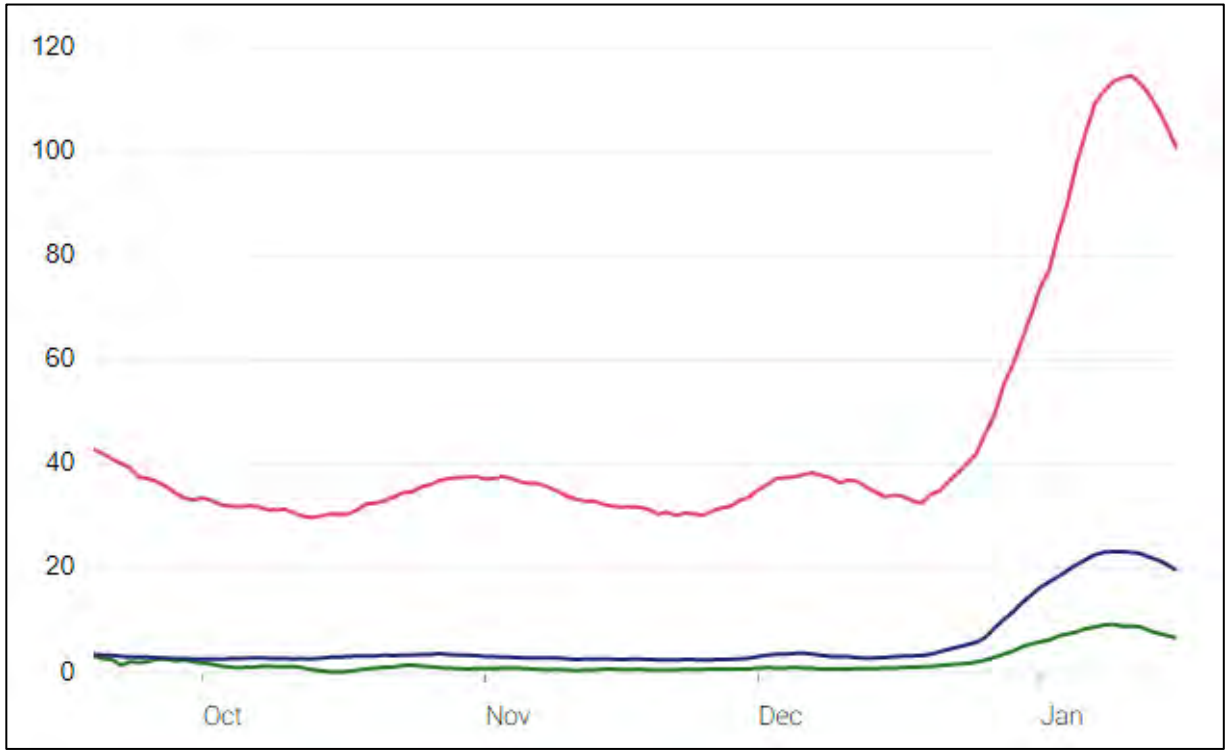


*Reporting lag is approximately 2 weeks. Data are provisional and subject to change.

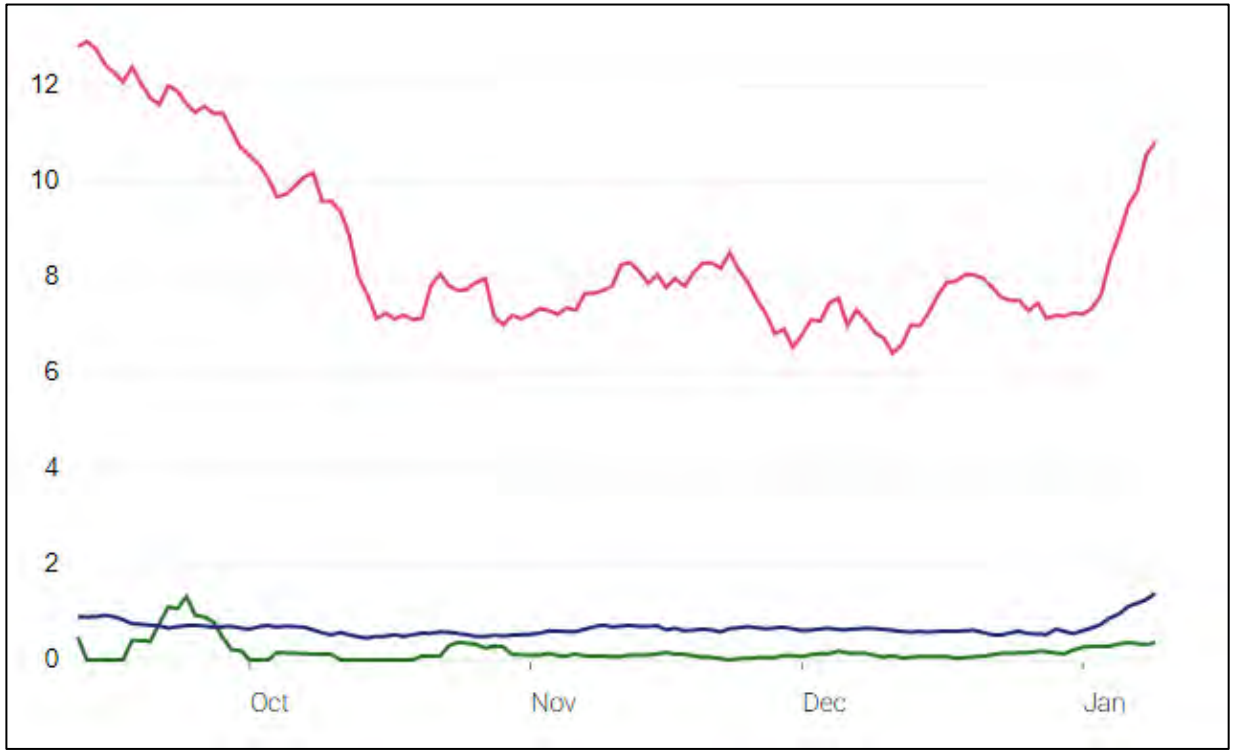
Unvaccinated and Vaccinated Data



Hospitalizations

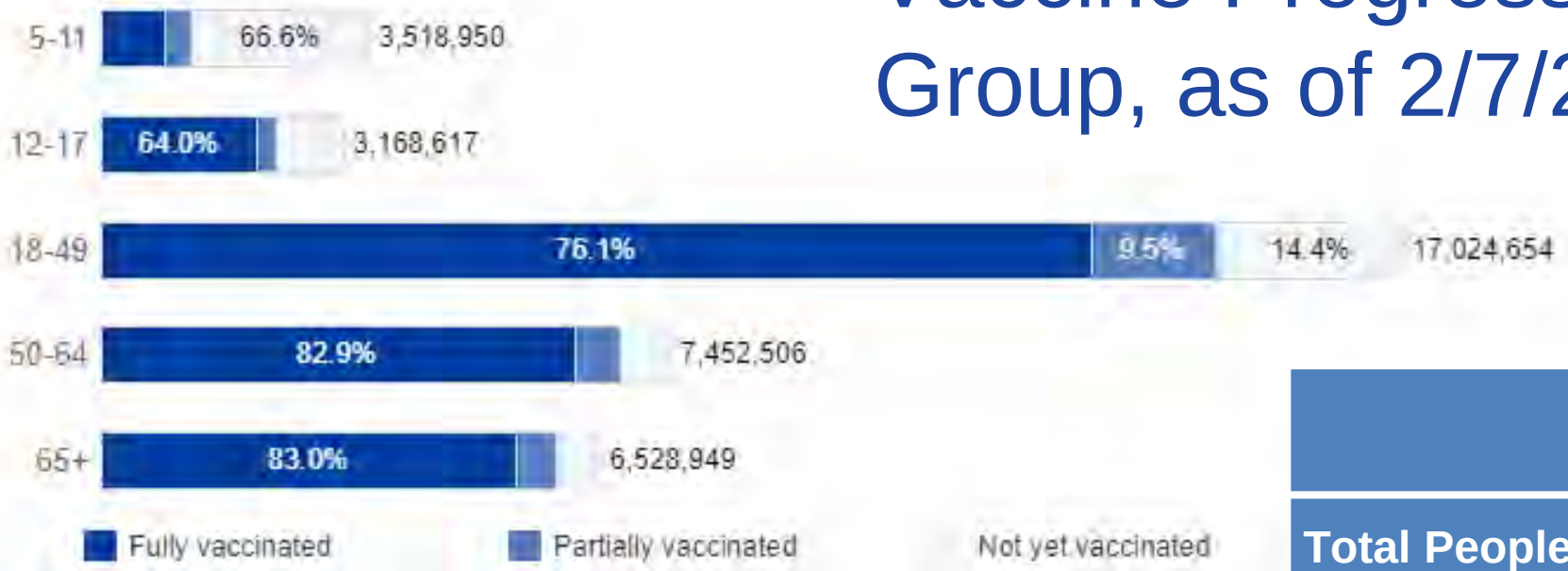


Deaths



Data downloaded 2/8/22
https://covid19.ca.gov/state-dashboard/

Vaccine Progress by Age Group, as of 2/7/2022

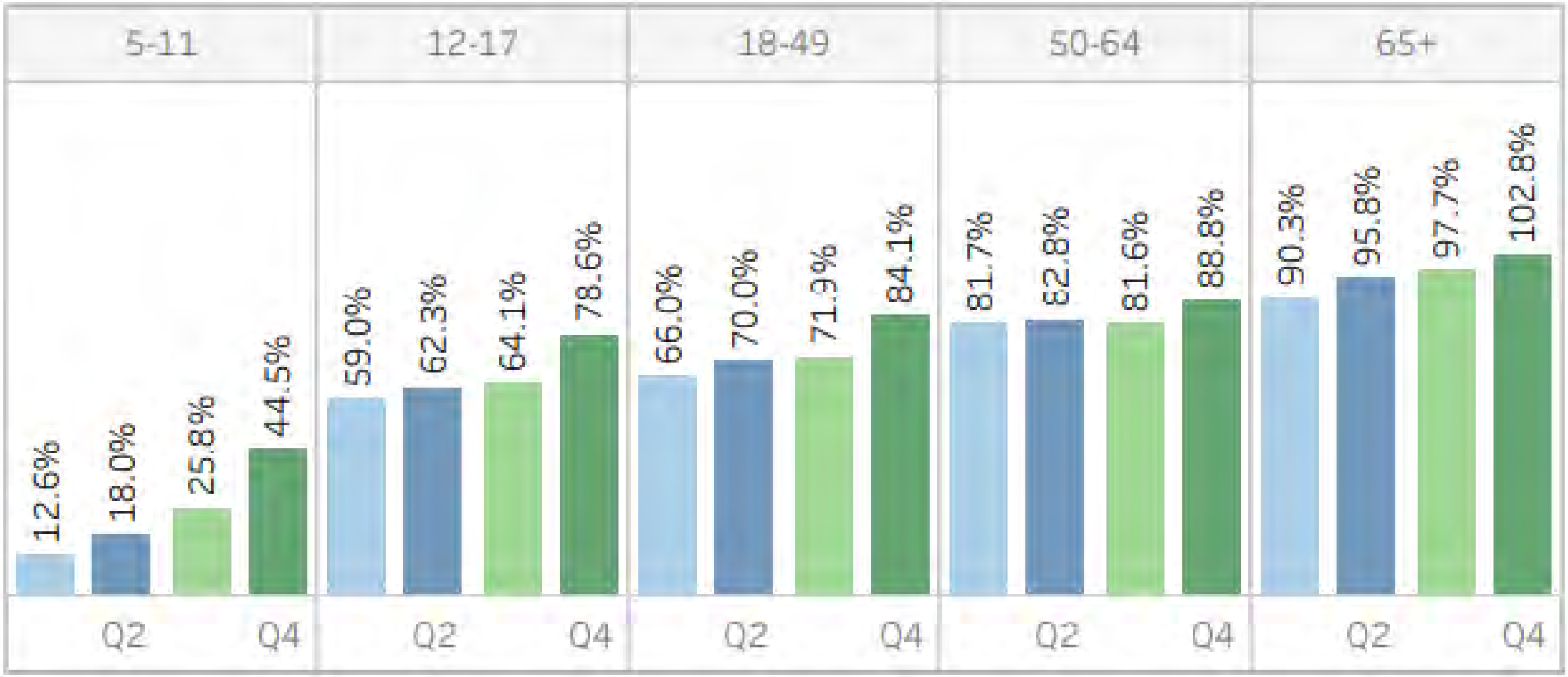


	California	
	Number	Percent of pop.
Total people 5-11 years with 1+ dose	1,175,749	33.4%
Total people 12-17 years with 1+ dose	2,288,250	72.2%

	Booster Doses (n, % of eligible)	
Total People (12+)	13,317,885	55%
65+ Years Old	3,688,871	72%
5-11 Years Old	Not eligible	

https://covid19.ca.gov/vaccination-progress-data/

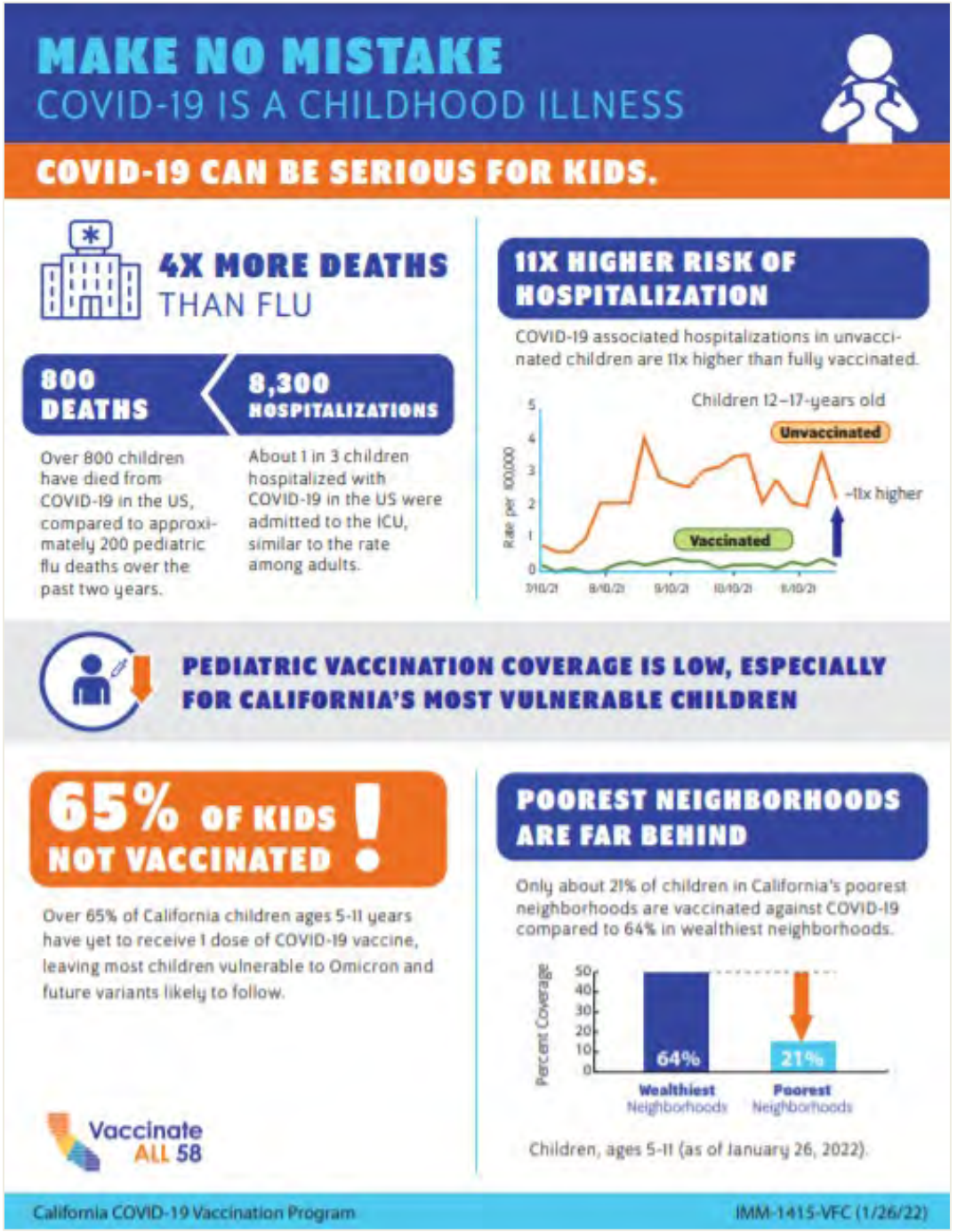
Cumulative Fully Vaccinated Percentage by Age and HPI



COVID-19 is a Childhood Illness

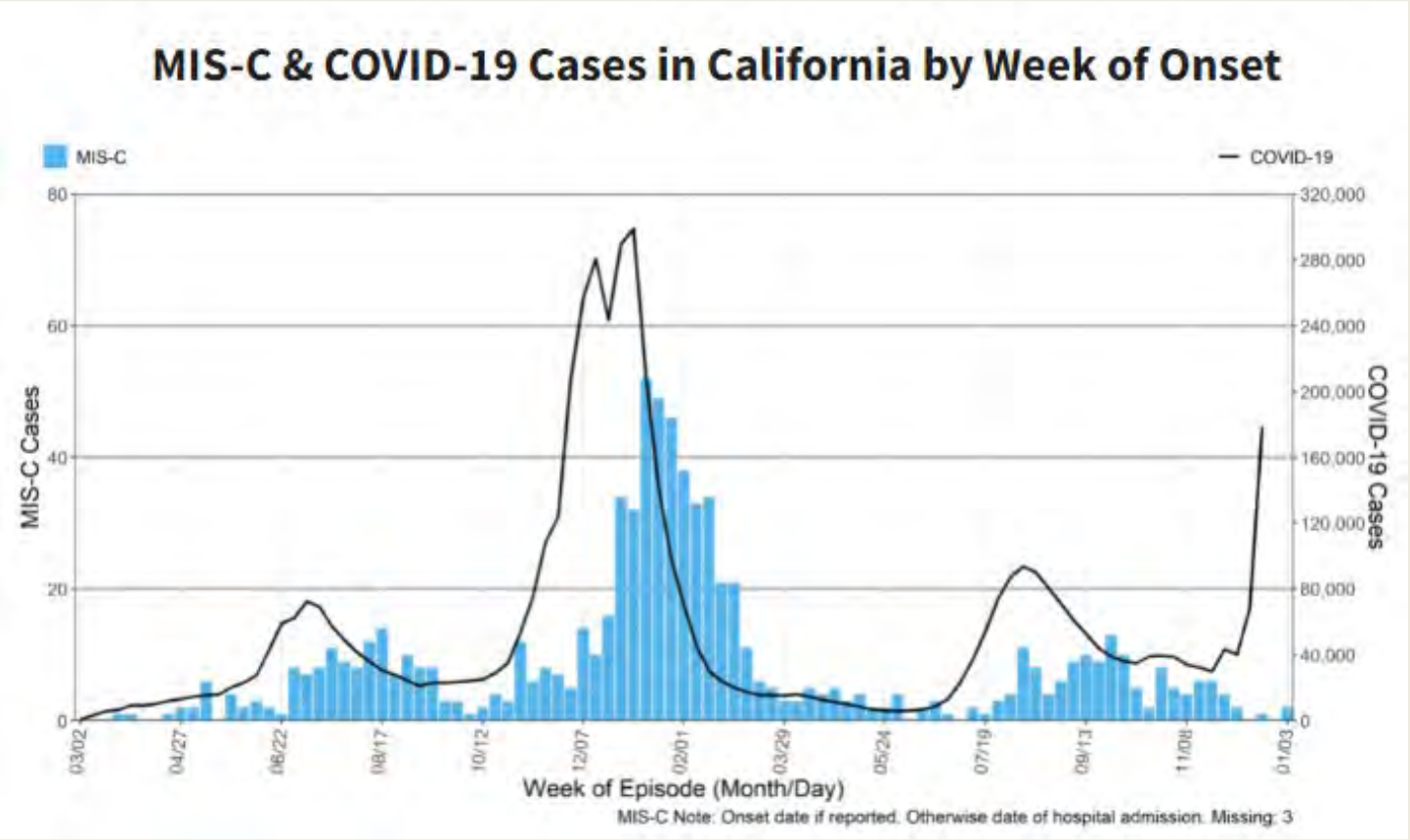
- 4x more deaths than flu
- 11x higher risk of hospitalization
- Poorest Neighborhoods are far behind
- 65% of kids not vaccinated

[Infographic: COVID-19 is a Childhood Illness]



COVID-19 and Multisystem Inflammatory Syndrome in Children (MIS-C)

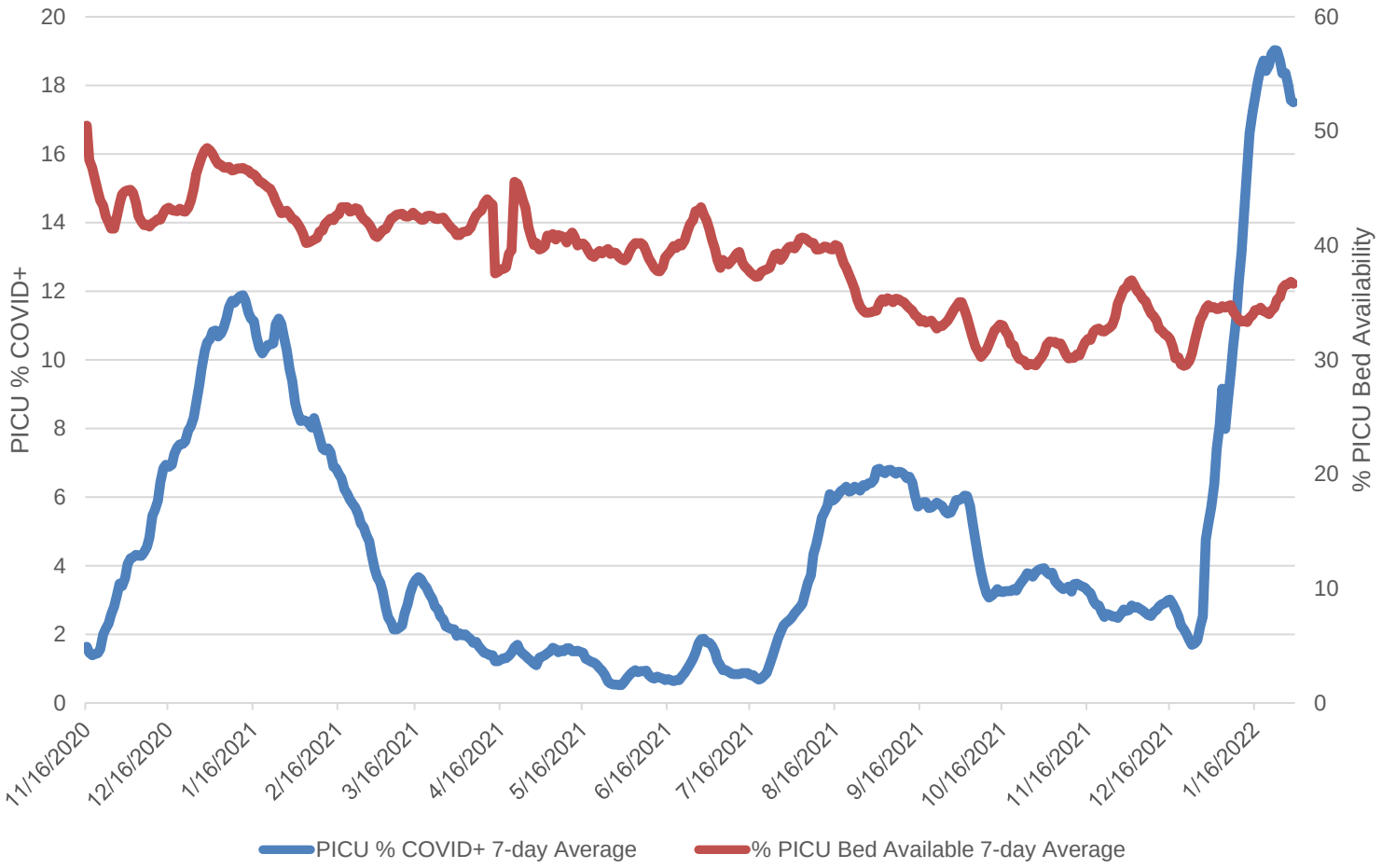
- Usually presents ~2-6 weeks post COVID-19 infection.
- >809 reported in CA to date
- ~1/2 previously healthy
- ~1/2 admitted to ICU
- Co-morbidities include obesity, lung disease, congenital heart disease or other malformation, seizures, or cancer



Graph as of 2/7/22

CDC Information about MIS-C
CDC COVID Data Tracker: MIS-C
CDPH Multisystem Inflammatory Syndrome in Children (MIS-C) Data

% PICU Patients COVID+ & % PICU Beds Available, 7-day Avg
November 16, 2020, to January 30, 2022



Pediatric Deaths

- Total deaths: 50
- Median Age: 10 years
  Range: (0, 17) | IQR: (2, 15)
  12 Infant Deaths
- Female: 21 (42%) |
  Male: 29 (58%)
- Symptoms
  - Yes: 30 (60%)
  - No: 2 (4%)
  - Unknown: 18 (36%)

64.0% of Covid Pediatric (0-17) Deaths had at least One Reported Underlying Medical Condition

Top Conditions	n (% of total deaths)
Chronic Lung Disease	11 (22.0%)
Obesity	11 (22.0%)
Genetic or Congenital Disease	10 (20.0%)
Neurologic / neuro-developmental	10 (20.0%)
Immunocompromised	6 (12.0%)
Asthma	6 (12.0%)

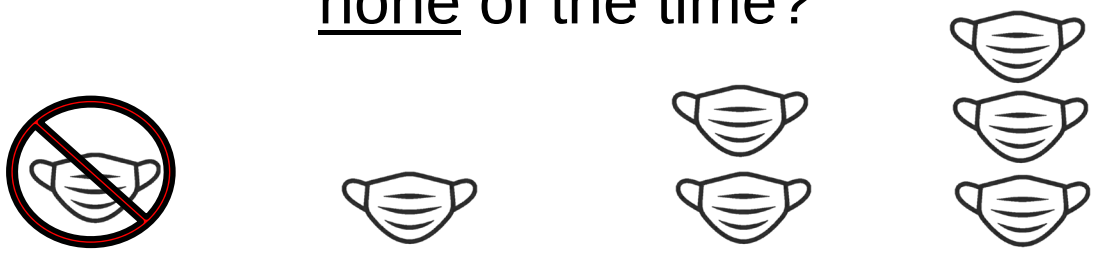
Source: CalREDIE
Deaths as of 01/27/2022

California COVID-19 Case Control Study

Frequency of Mask Use

All study respondents
N = 1947

At all the indoor public settings we discussed, did you wear a face mask all, most, some, or none of the time?



Never Sometimes Mostly Always

Type of mask

All participants enrolled after Sept 9
N = 580

At all the indoor public settings we discussed, what type of face mask did you typically wear?

N95/ KN95 Surgical Fabric

Masking exhibited a dose-response dependent effectiveness by frequency of use in indoor, public settings

Masking frequency

No mask use

reference

Sometimes

29% effective

aOR= 0.71
(95% CI: 0.35–1.46)

Most times

45% effective

aOR= 0.55
(95% CI: 0.29–1.05)

Always

56% effective

aOR= 0.44
(95% CI: 0.24–0.82)

People who reported always wearing a mask in indoor public settings were less likely to test positive for COVID-19 than people who didn't*

CDC

bit.ly/MMWR7106

* Matched case-control study, 1828 people, Feb 10–Dec 1, 2021
† Compared people with similar characteristics (e.g., vaccination)
§ Not statistically significant

MMWR

https://www.cdc.gov/mmwr/volumes/71/wr/mm7106e1.htm?s_cid=mm7106e1_w

Acknowledgments

California Department of Public Health
Kristin L. Andrejko
Seema Jain, MD
James Watt, MD
Jake Pry, PhD
Jenn Myers, MPH
John Openshaw, PhD

UC Berkeley
Joe Lewnard, PhD

California COVID-19 Case Control Study Team
Helia Samani, Nikolina Walas, Erin Xavier, Diana J. Poindexter, Najla Dabbagh, Michelle M. Spinosa, Shrey Saretha, Adrian F. Cornejo, Hyemin Park, Christine Wan, Miriam I. Bermejo, Amanda Lam, Amandeep Kaur, Ashly Dyke, Diana Felipe, Maya Spencer, Savannah Corredor, Yasmine Abdulrahim Nozomi Birkett, Jennifer L. DeGuzman, Camilla M. Barbaduomo, Zheng N. Dong, Anna T. Fang, Paulina M. Frost, Timothy Ho, Mahsa H. Javadi, Sophia S. Li, Vivian H. Tran, Christine Wan

COVID Mitigation

- Schools: Shift to group tracing
- Gradual return to pre-Omicron rules
  - HCW Isolation & Quarantine back to prior guidance (2/1)
  - Visitation requirements to hospitals and SNFs (2/7)
- After 2/15th
  - Universal indoor masking only *required* in specific settings:
    - Healthcare, SNF, LTCF, schools, childcare, public transport, shelters, jails/prisons
  - Mega Events:
    - 1000 indoors
    - 10,000 outdoors

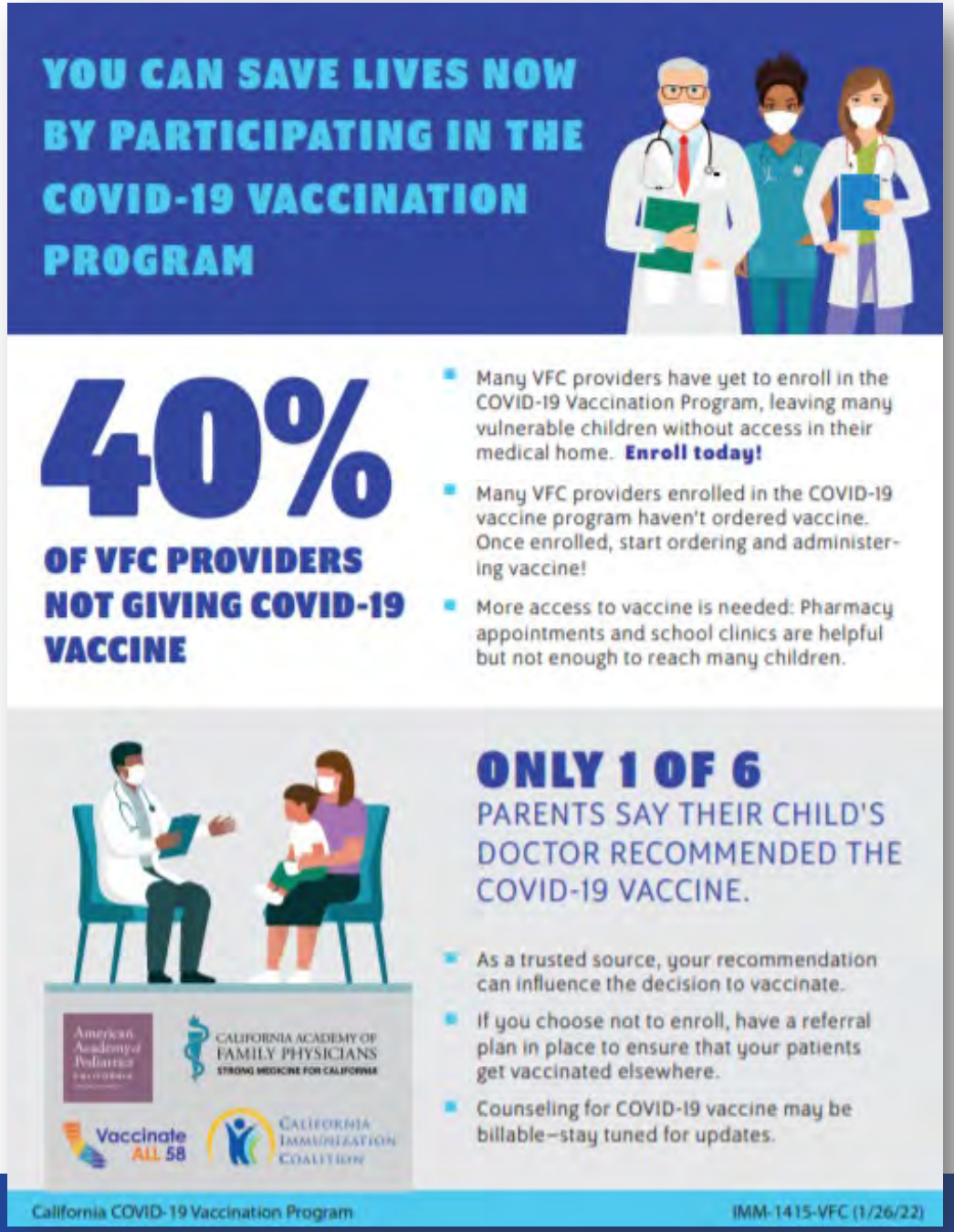
- Close equity gaps & increase vaccine & booster coverage
- Increasing treatment availability
- Prioritizing resources to the highest risk settings & situations
  - Increasing automated notifications
  - Focused PH investigations

Pediatric Providers are Needed

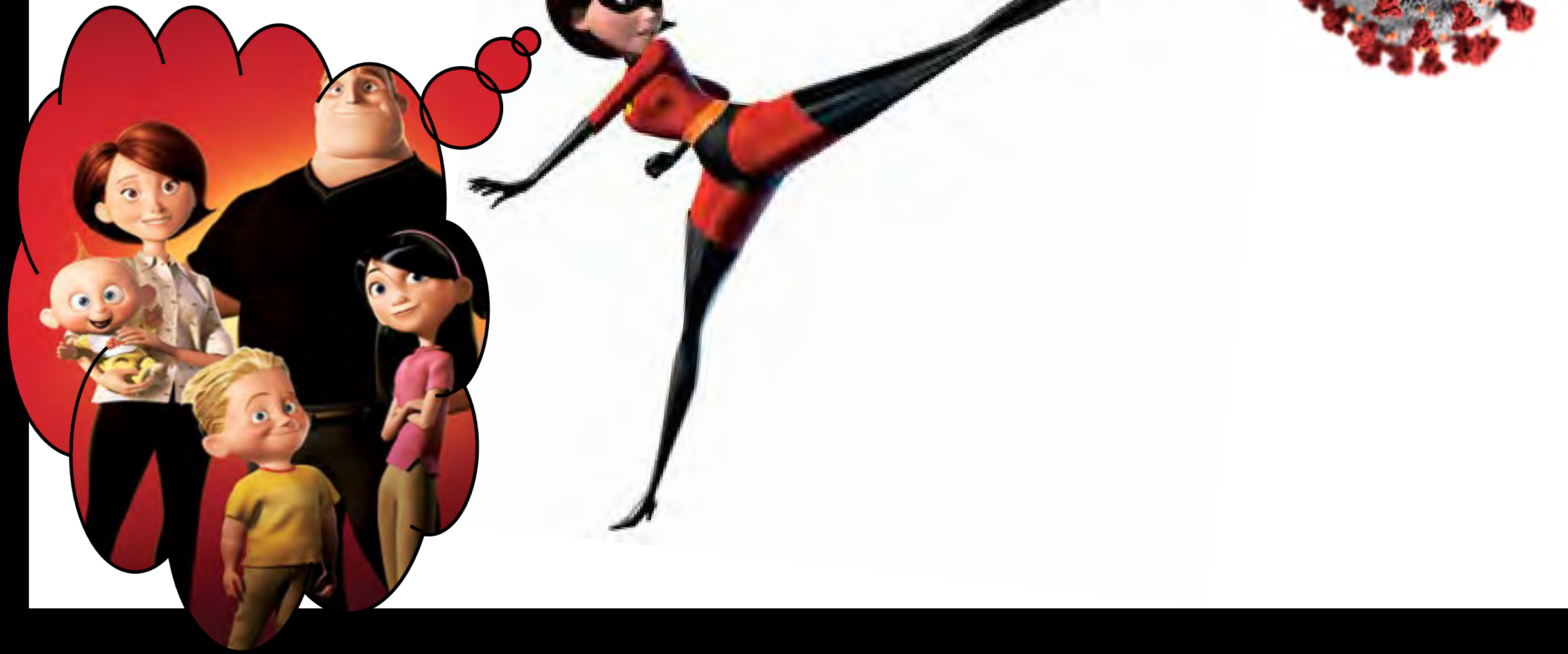
- Pfizer application for EUA authorization for children under 5
- VRBAC 2/15th

- CA 6mos – 4yo population ~2.25 Million
- If approved, vaccines could arrive by the end of February

The time for vaccinating children is now!



Infographic: COVID-19 is a Childhood Illness



Question & Answer

Thank you!

https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/vsafe.html

Top 5 Reason to Get Kids Vaccinated

Unvaccinated children are at risk of getting COVID-19, + potential serious complications, and/or long-term impacts.

The vaccine is safe and effective, and no long-term problems have been seen for any vaccine.

Getting those who are eligible vaccinated can help keep schools & communities safe.

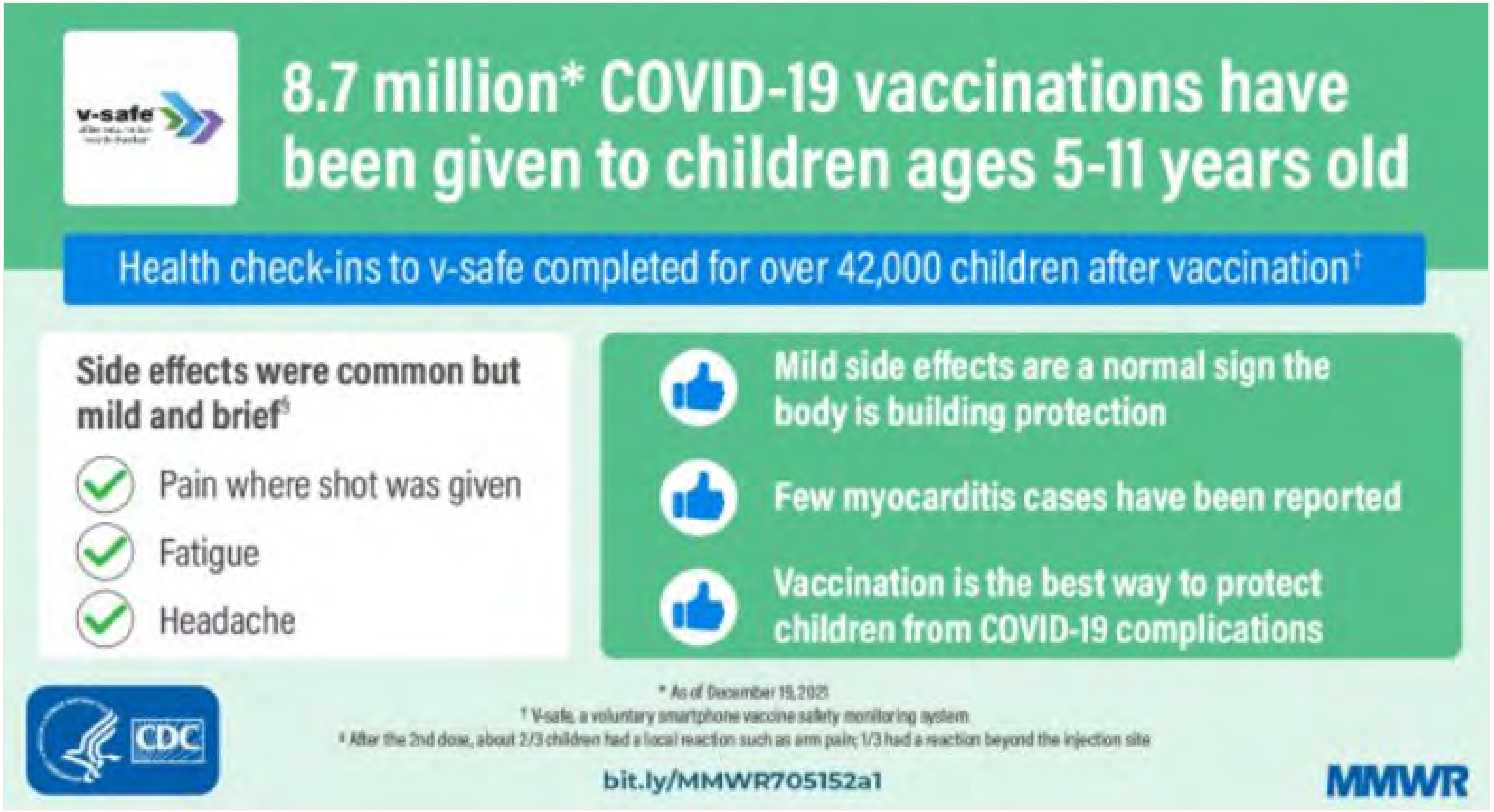
Getting them safely back to the classroom and their favorite after school activities supports mental health & wellness.

Vaccines are safe, effective, and free.

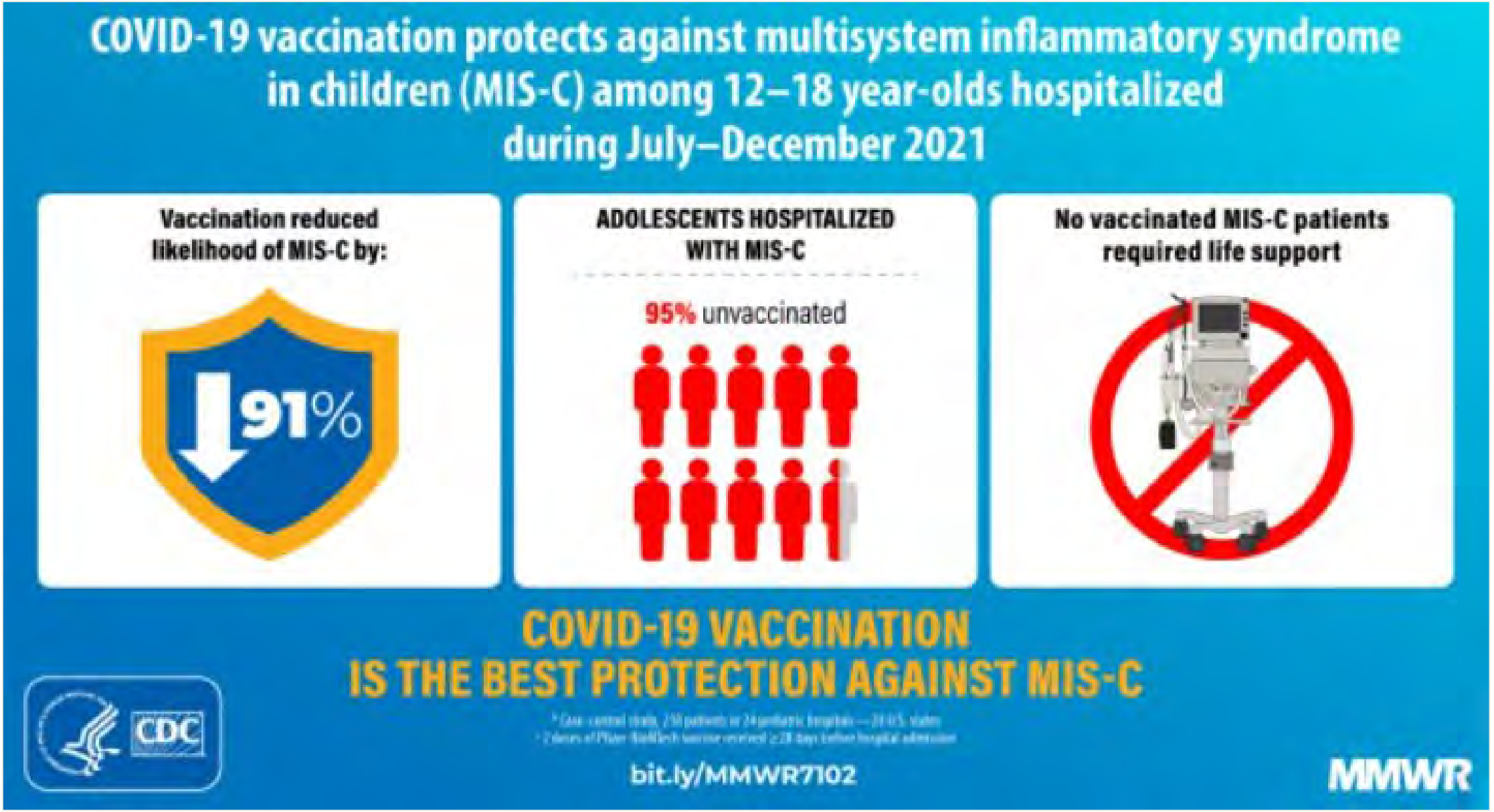
COVID-19 Vaccine are Safe for Children

Summary of VAERS findings-Reports after Pfizer-BioNTech COVID-19 Vaccination Among Children and Adolescents Ages 5-11 and Ages 12-15 Years

- Since authorization, 8.7 million doses of Pfizer-BioNTech COVID-19 vaccine were administered to children ages 5-11 years, and 18.7 million doses to children and adolescents ages 12-15 years, in the United States.
- Regardless of age group, most reports (≥92%) were non-serious
  - Distribution by sex, race, and ethnicity is similar between two age groups
  - Most frequently reported adverse events (AEs) were known and well-characterized AEs associated with Pfizer-BioNTech COVID-19 vaccination, or consistent with vaccination errors or workup for myocarditis or MIS-C
  - Reported myocarditis among children ages 5-11 years:
    - Male predominance and mostly after dose 2, similar to older age groups
    - **Reporting rates for males ages 5-11-years substantially lower for males ages 12-17 years.**
- CDC will continue monitoring COVID-19 vaccine safety among these age groups.

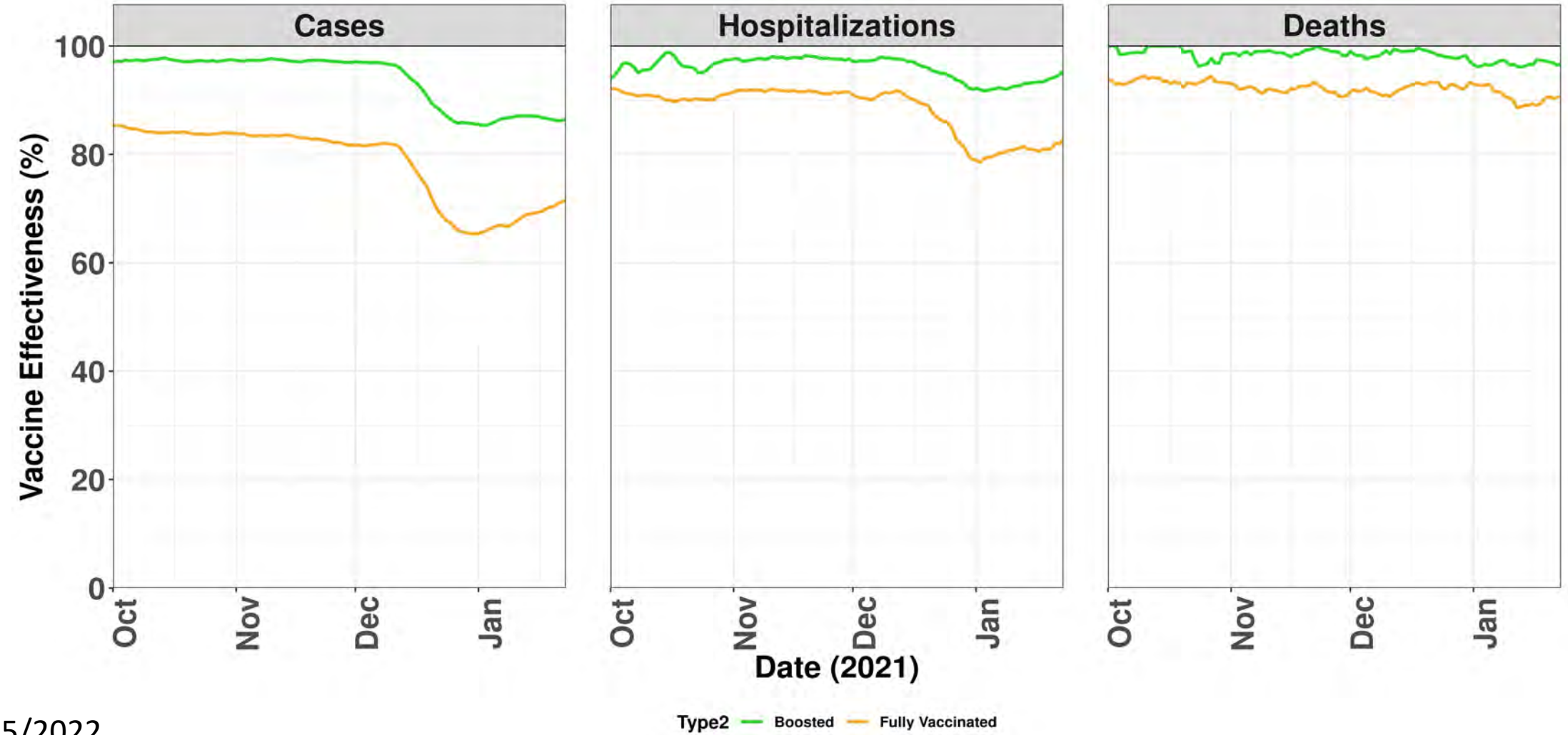


CDC COVID-19 Vaccine Safety in Children Aged 5-11 Years



MMWR (1/14/22): Effectiveness of BNT162b2 (Pfizer-BioNTech) mRNA Vaccination Against Multisystem Inflammatory Syndrome in Children Among Persons Aged 12-18 Years

COVID-19 Vaccine and Booster Effectiveness in California



1/25/2022

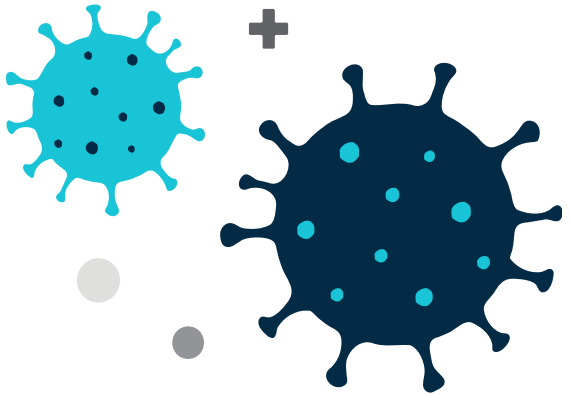
Vaccination status groups are mutually exclusive

Resources for Providers

- Therapeutics
  - https://healthdata.gov/Health/COVID-19-Public-Therapeutic-Locator/rxn6-qnx8/data
  - https://protect-public.hhs.gov/pages/therapeutics-distribution
  - https://emsa.ca.gov/medical-health-operational-area-coordinator/

Linsey Marr, Ph.D.

Charles P. Lunsford Professor of Civil and Environmental Engineering, Virginia Tech



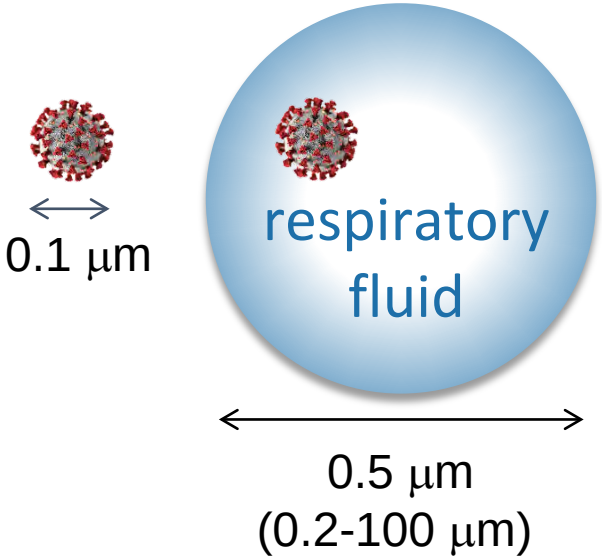
Mitigations for Community Transmission

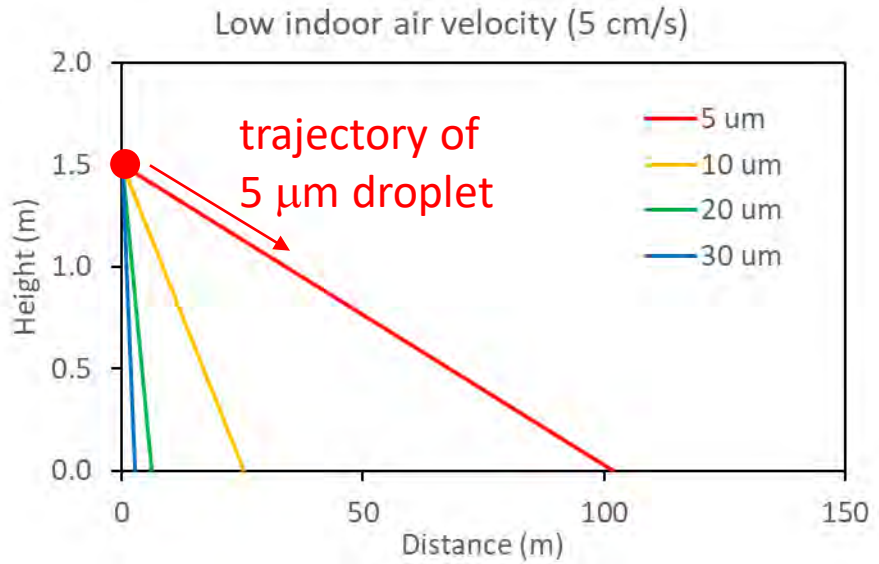
VIRGINIA TECH

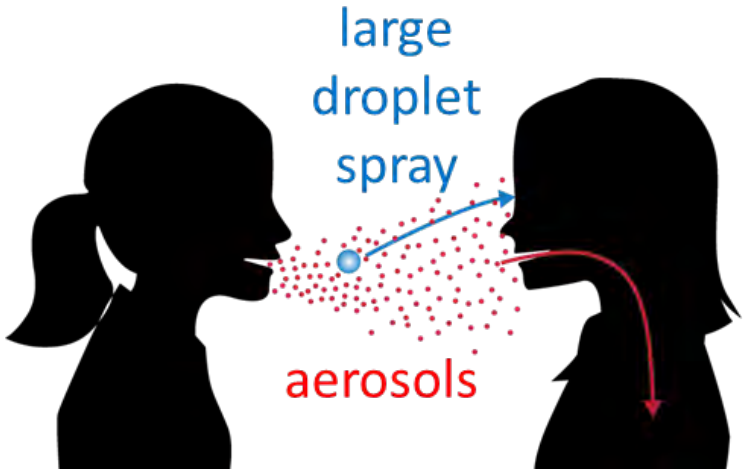
Linsey C. Marr, Ph.D.
Charles P. Lunsford Professor of Civil and Environmental Engineering

8 February 2022

Viruses are carried in respiratory particles of varying sizes. We know how these behave in the air.



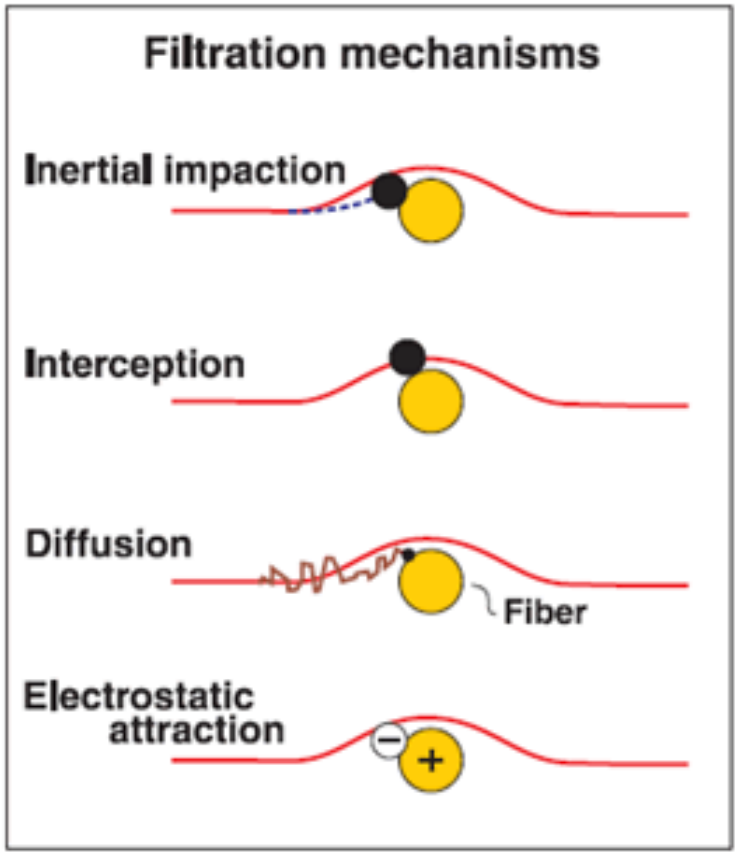


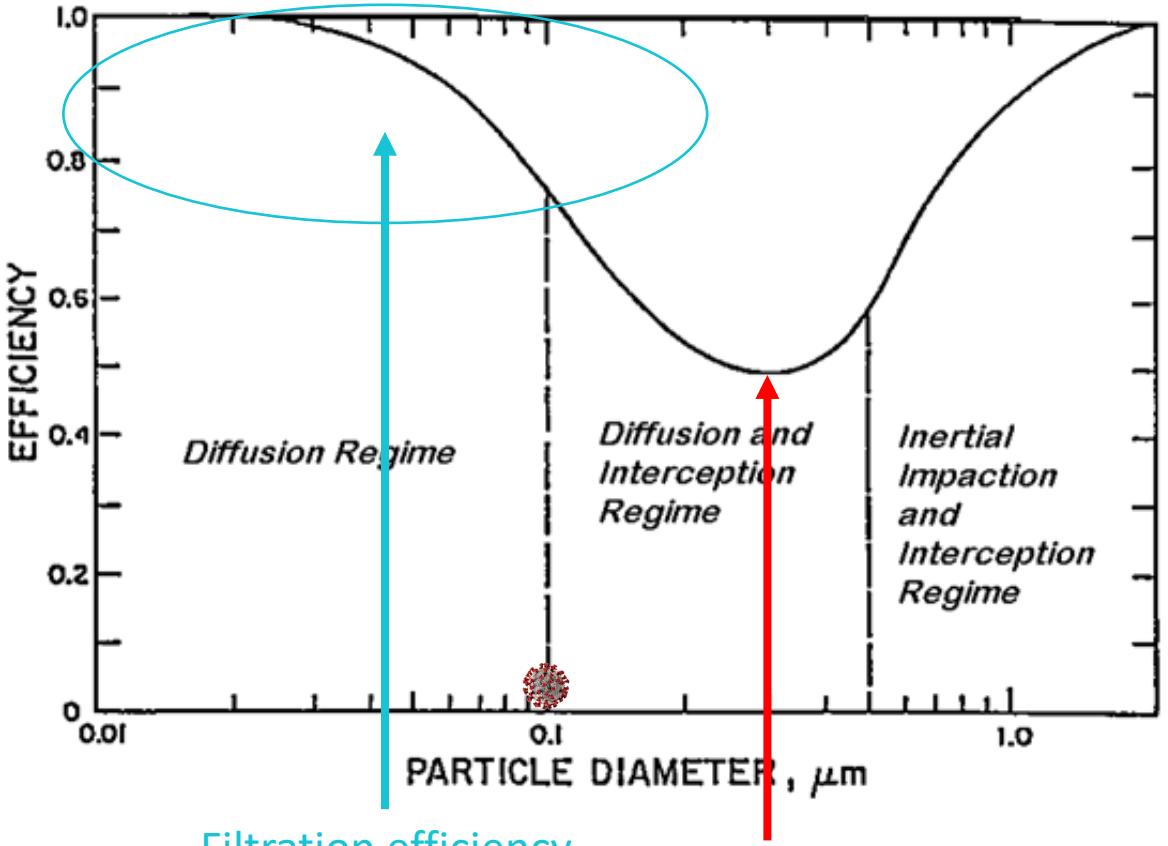


Exposure is dominated by inhalation of aerosols at all but uncomfortably close distances

https://www.nationalacademies.org/event/08-26-2020/airborne-transmission-of-sars-cov-2-a-virtual-workshop

Masks are not sieves. They are filters.



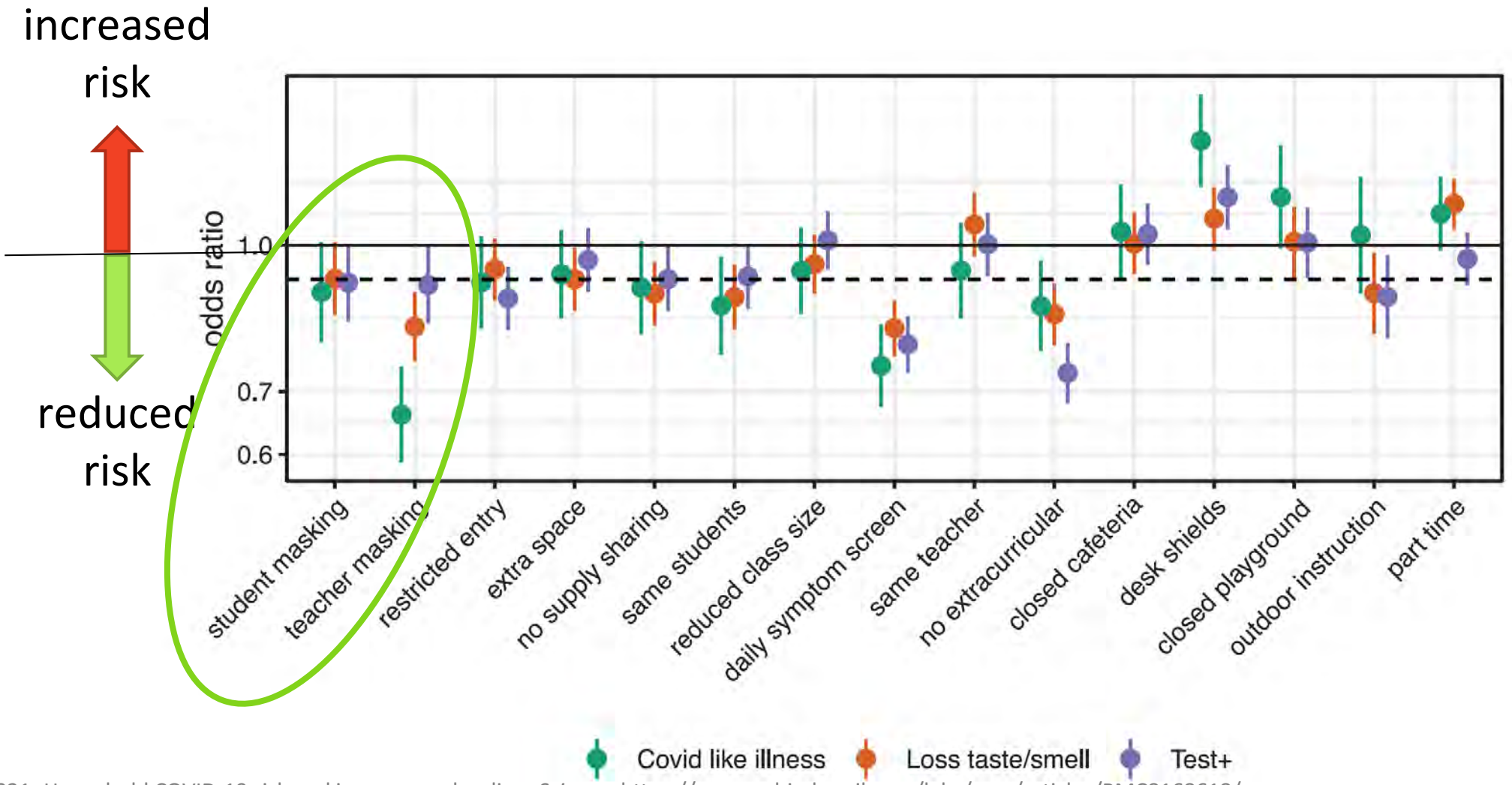


Filtration efficiency is higher for the smallest particles

Minimum filtration efficiency is at ~0.3 μm

https://blogs.cdc.gov/niosh-science-blog/2009/10/14/n95/, https://www.cdc.gov/coronavirus/2019-ncov/variants/spheres.html

Masks reduce but do not eliminate transmission.



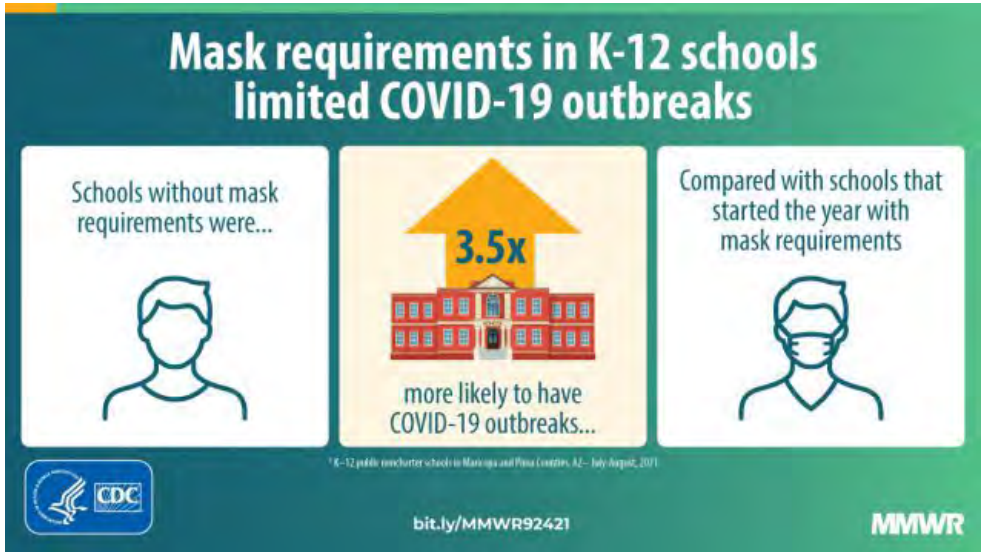
Lessler et al., 2021, Household COVID-19 risk and in-person schooling, *Science*, https://www.ncbi.nlm.nih.gov/labs/pmc/articles/PMC8168618/

What about that CDC study?

Mask Use and Ventilation Improvements to Reduce COVID–19 Incidence in Elementary Schools — Georgia, November 16–December 11, 2020

Weekly / May 28, 2021 / 70(21);779–784

Characteristic	Covid-19 incidence RR (95% CI)	
Masks for teachers and staff		
Optional	Ref	
Required	0.63 (0.47-0.85)	37% lower
Masks for students		
Optional	Ref	
Required	0.79 (0.50-1.08)	21% lower
Ventilation improvements		
No	Ref	
Yes	0.61 (0.43-0.87)	39% lower



https://www.cdc.gov/mmwr/volumes/70/wr/mm7021e1.htm, https://www.cdc.gov/mmwr/volumes/70/wr/mm7039e1.htm?s_cid=mm7039e1_w, https://www.cdc.gov/mmwr/volumes/71/wr/mm7106e1.htm?s_cid=mm7106e1_w

Masks vary widely in their effectiveness.

respirator (N95,KN95,KF94)		medical		cloth *with filter
90-95%	>	20-90%	>	0-80*%

1. Comfort 2. Fit 3. Filtration

https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/free-n95-manufacturers.html, https://www.army.mil/article/237153?dmd&linkId=93727146, https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/masks.html

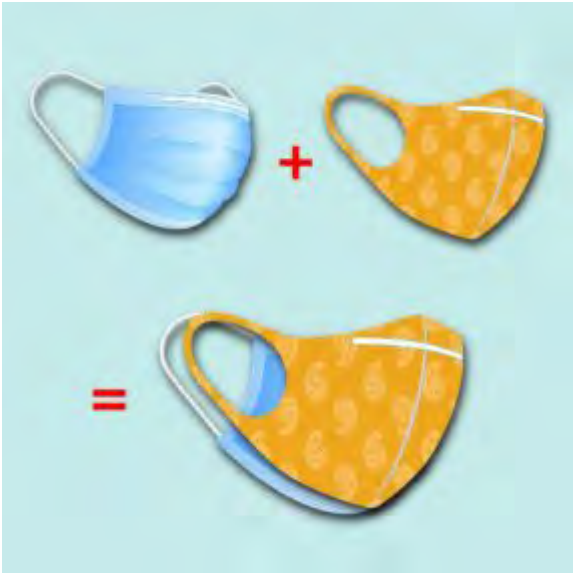
CalHHS California Health & Human Services Agency | CALIFORNIA MEDICAL ASSOCIATION | IN PARTNERSHIP WITH | CAPA California Academy of PAs | Osteopathic Physicians & Surgeons of California

You can modify a mask to improve performance.

Bend the nose wire to fit closely around your bridge. Use toggles or a strap to pull the earloops tight.

Knot and tuck: make a knot in the earloops close to the mask, and fold and tuck the excess material under the side.

Use a brace or fitter on top of the mask to eliminate gaps and leaks.



Double mask: add a tight-fitting cloth mask on top of a medical mask.

These modifications can improve performance from 20-50% to 70-90%

https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/mask-fit-and-filtration.html

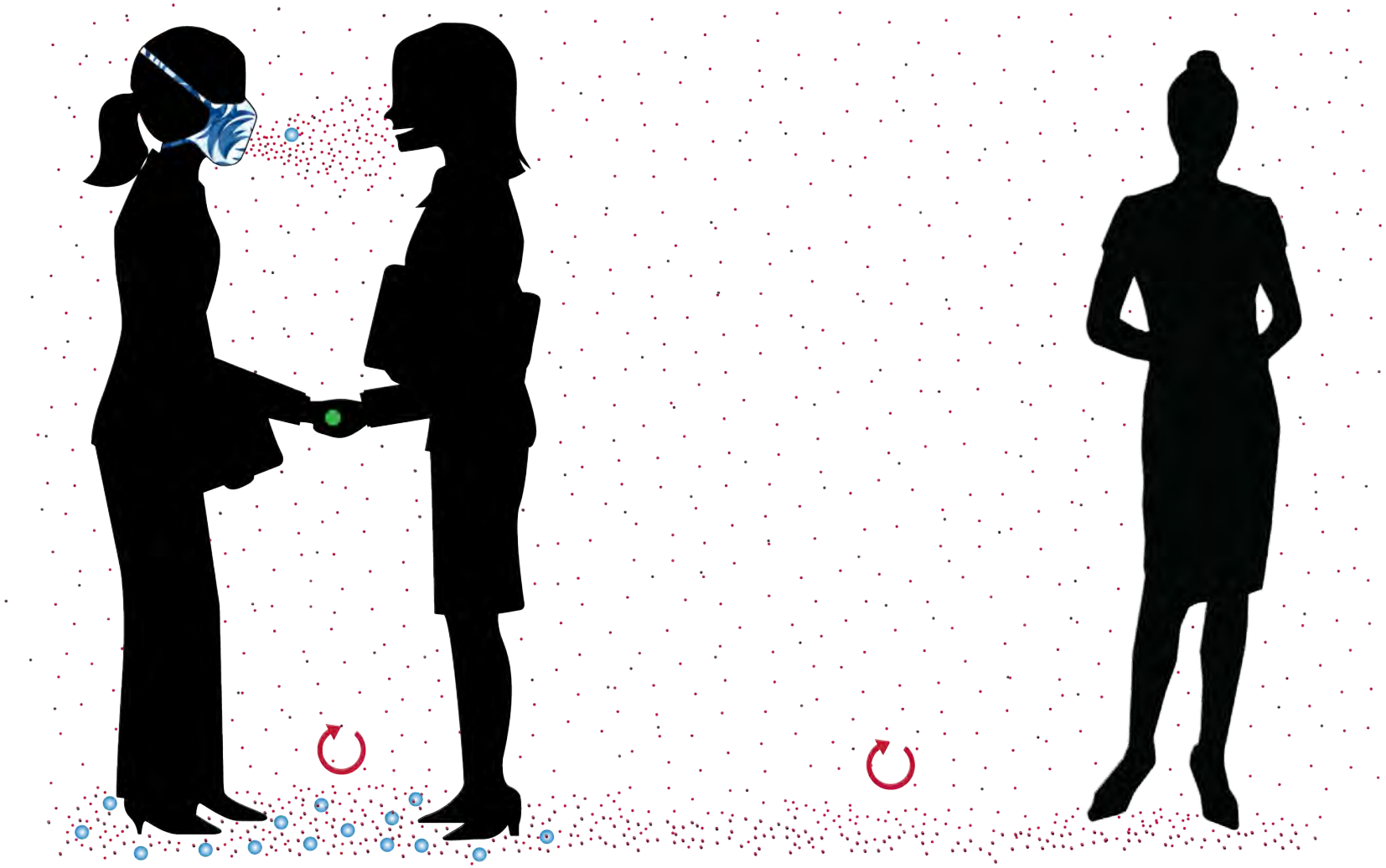
You can reuse a respirator.

Replace if...

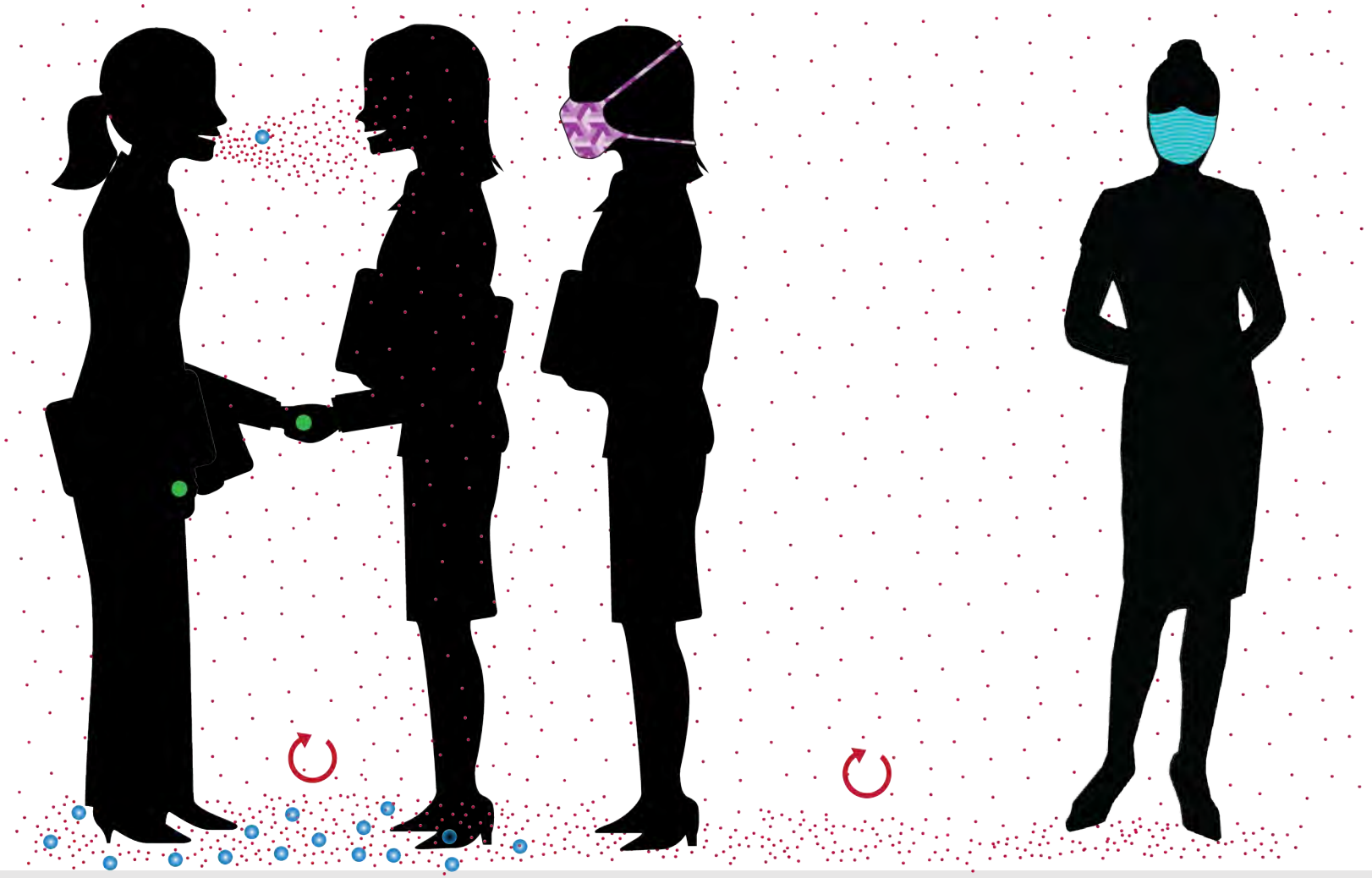
- it gets torn, creased, or otherwise physically damaged
- it is visibly soiled
- straps break or get too loose
- it gets soaking wet

Our preliminary results indicate that aerosolized virus deposited on an N95 decreases by 10x in 30 minutes

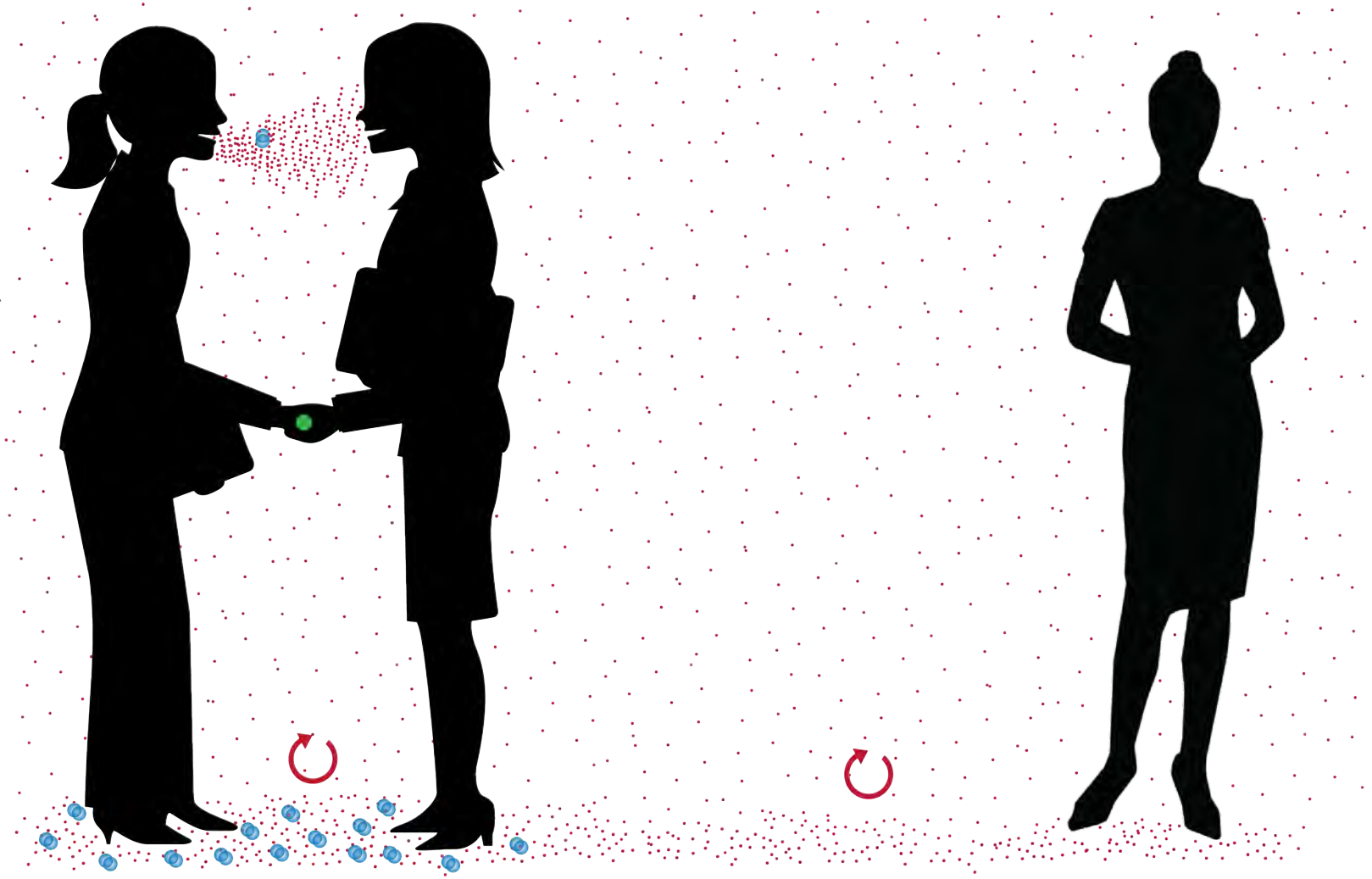
Masks aid in source control…



...and personal protection (distancing also shown).



Ventilation and filtration are important layers of protection for reducing the amount of virus in the air.



IN
PARTNERSHIP
WITH

THANK YOU

GrandRounds@cmadocs.org

Question and Answer

Kimberly Newell Green, M.D.

Erica Pan M.D., MPH

Linsey C. Marr, Ph.D.

CALIFORNIA MEDICAL ASSOCIATION

Webinar

COVID-19 Testing: During and After the Omicron Surge

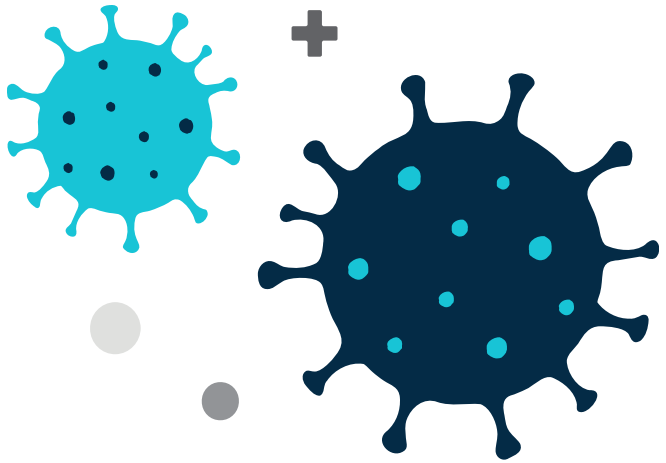
****LIVE ONLY****

Overview:

CMA is pleased to host Michael Mina, M.D., and Wilbur Lam, M.D., Ph.D. Dr. Mina, a public advocate for more and smarter testing as a method of COVID-19 mitigation will discuss the different types of COVID-19 tests, share data on their accuracy and discuss optimal uses of testing during the current surge of COVID-19 and in future stages of the pandemic. Dr. Lam, will discuss the role of the academic scientific community and government agencies in ensuring safe and effective consumer testing..

February 10, 2022

Next Webinars in Series



- Tuesday, March 8, 2022
- More information at www.covidroundsca.org
- Time changing to 12:00 – 1:00pm (1-hour sessions)

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- Will receive an email after this webinar with an evaluation around 5pm
- Upon receiving your response, you will receive a CME certificate

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