

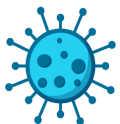
# Safe and Successful Schools

Naomi S. Bardach, MD MAS

Lead, Safe Schools for All Team

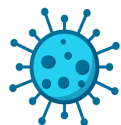
CA Health and Human Services

Associate Professor Pediatrics & Health Policy, UCSF

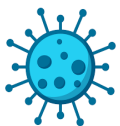


# The pathway forward (this...)

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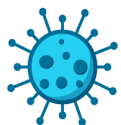


# The pathway forward (not this...)



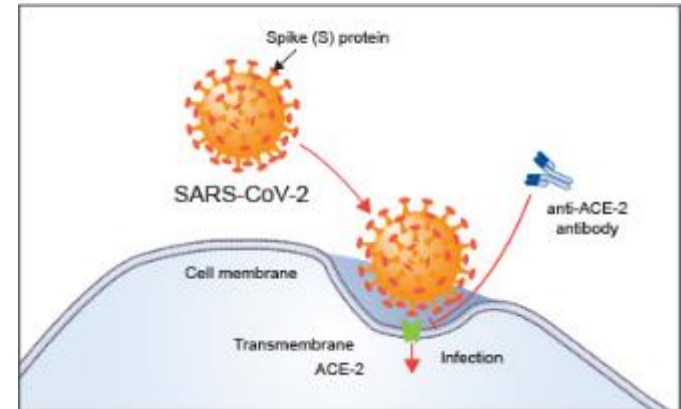


We know more than we did in March

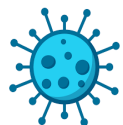


# Why do children get COVID-19 infrequently with less severe disease?

- ACE2 receptors are the entryway for COVID
  - Ability to make ACE2 receptors varies with age
    - Elementary students < middle and high school students < adults
- **Implications: fewer doors → less disease and more mild disease**

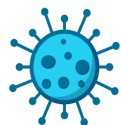
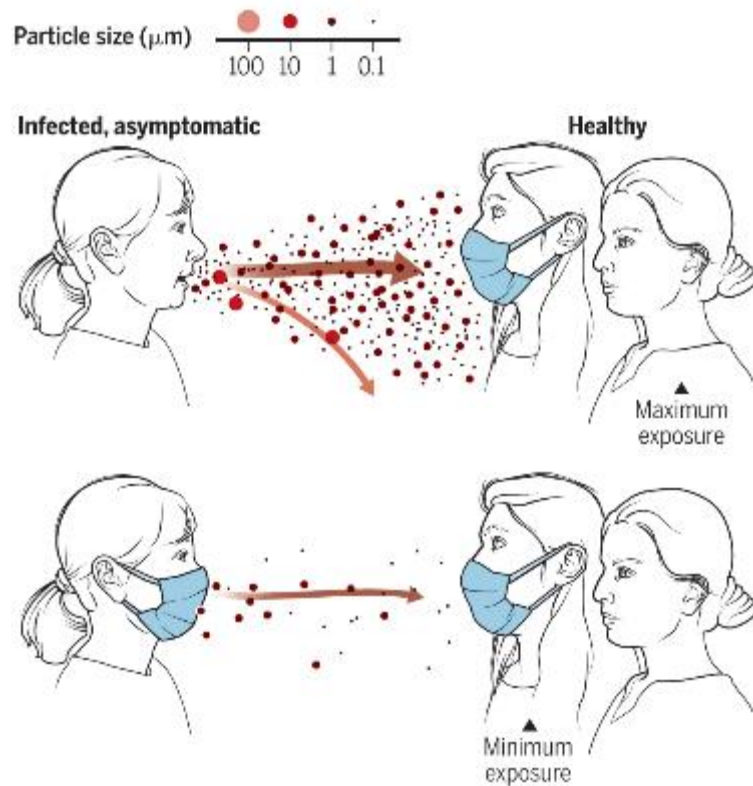


Bunyavanich et al. JAMA 2020



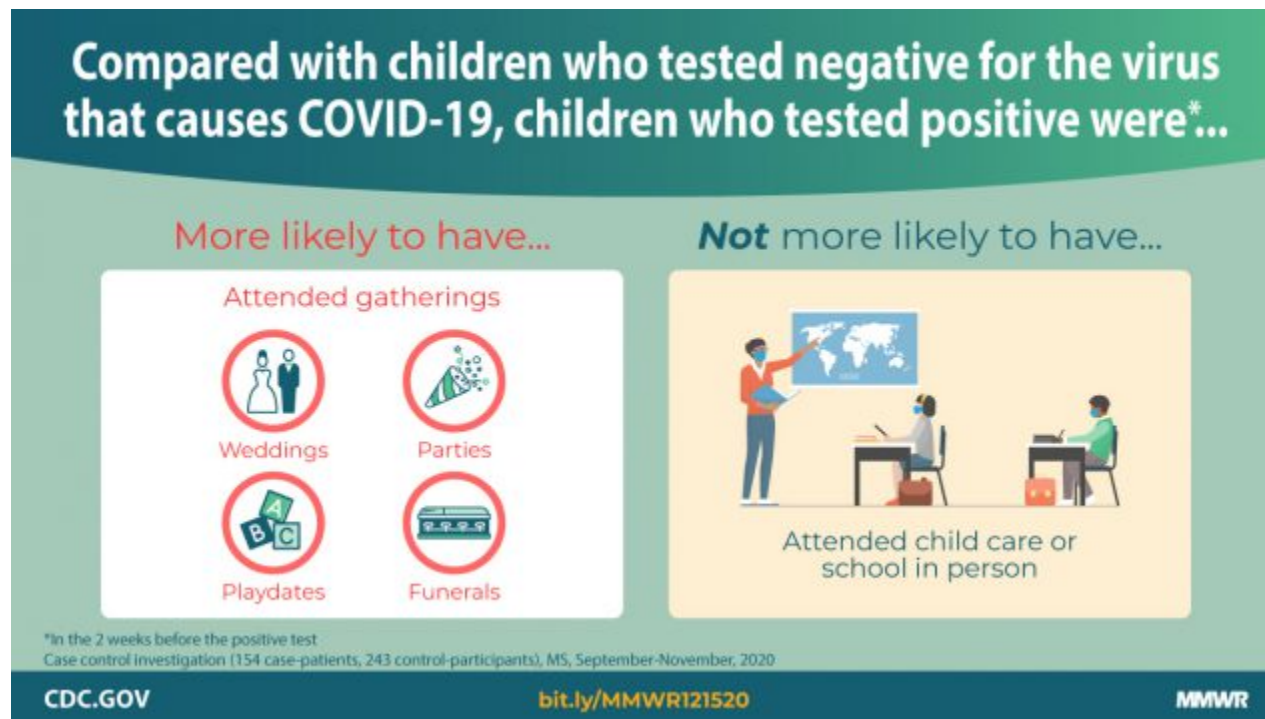
# Why don't children transmit as efficiently?

- Practical considerations:
  - **Smaller lungs** → smaller clouds of viral particles
  - **Less severe disease** → less coughing → less spread
  - **Children are shorter than adults** → gravity pulls respiratory droplets down

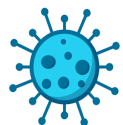




# Where are children getting COVID?



Hobbs, et al. Factors Associated with Positive SARS-CoV-2 Test Results in Outpatient Health Facilities and Emergency Departments Among Children and Adolescents Aged <18 Years — Mississippi, September–November 2020. MMWR 2020; ePub: 15 December 2020.



# Transmission in schools with high community prevalence (1)



- **Study in North Carolina Sept-Nov 2021**
- **Community rates up to 29 cases/100,000 per day**
- **ABC schools: the 3 Ws (wear your mask, wait 6 feet, wash your hands)**
- **773 community cases, 32 cases of in-school transmission in ABC schools**
  - Three clusters in ABC schools, one due to no masking in pre-kindergarten, 2 in special needs setting, 1 with eating in close proximity.
- **No child-to-adult transmission cases documented**

<https://pediatrics.aappublications.org/content/pediatrics/early/2021/01/06/peds.2020-048090.full.pdf>







# Transmission in schools with high community prevalence (2)

- NC residents with COVID19 infected approximately 1 other individual
- If the same number of transmissions occurred in schools→800-900 cases in the schools
- Other reasons for success: detailed plans for all activities within school, contact tracing with county health departments, public reporting of infections, and **the ability to share lessons learned peer-to-peer.**

**Implications:** Mitigation strategies make a difference, key to prevention especially when high community rates. Data suggest that schools safer than community if mitigation in place

# What not to do: An Outbreak in a High School/Middle School in Israel

- Re-open in mid-May
- Outbreak in late May
- >150 infections
- Heat wave a few days after re-opening
- Stopped masking
- Index cases present & symptomatic
- + Air conditioning, closed windows



Stein-Zamir et al. Eurosurveillance Jul 2020



# What not to do: A High School/Middle School in Israel

- **Implications:** masks, physical distancing, ventilation are all key. Symptom screening could have potentially helped.



Stein-Zamir et al. Eurosurveillance Jul 2020



# Physical distancing: Low secondary attack rate in schools with 3 feet distancing between students

- Salt Lake city 20 elementary schools
- 51 index patients, 1,042 contacts
- Secondary attack rate of 0.7%
- Median distance between seats 3 feet



[Hershow RB](#) , et al. “Low SARS-CoV-2 Transmission in Elementary Schools — Salt Lake County, Utah, December 3, 2020–January 31, 2021”. MMWR 2021; March 19, 2021.



# Physical distancing: Low case rates in MA schools with 3 feet and 6 feet policies

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- 251 school districts; 537K students; 99K staff; 16 weeks of school in Sept 2020-Jan 2021
- Masking required
- Incident rate ratios similar 3 vs 6 ft
  - Students: 0.89(0.59-1.3)
  - Staff: 1.1 (0.75-1.4)



## Low case rates in MA schools with 3 feet and 6 feet policies (2)

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- Community case rates varied over time
- Adjusted for community case rates
- Limitation: case rates only; written policies, but would have to have had 3 feet schools be placing students at 6 feet in order to change the implications of the article





# Limited transmission with masking, stable groups, and physical distancing



# Low attack rate in Chicago Parochial Schools with limited physical distancing in cohorts

- 94 K-12 schools in Chicago Aug-Oct 2020
- Attack rate 0.2%
- 6 feet required between cohorts, but not within cohorts
- Masking, hand hygiene, cleaning and disinfection, daily symptom monitoring, contact tracing, and 14-day quarantine for close contacts



[Fricchione MJ](#), Seo JY, Arwady MA. Data-Driven Reopening of Urban Public Education Through Chicago's Tracking of COVID-19 School Transmission. J Public Health Manag Pract. 2020; December 30, 2020.



# Physical distancing: Implications

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- Taken together, compelling case to change to a 3 feet of physical distancing policy
- Supports twin goals: safe and successful schools





# We Know More than We Did in March

**Masks, masks, masks, masks**

**Physical Distancing**

**Stay Home when Sick/Screening**

**Ventilation**

**Symptomatic and asymptomatic testing**

**Small, Stable Groups**





# We Know More than We Did in March

**Masks, masks, masks, masks**

**Physical Distancing**

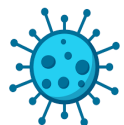
**Stay Home when Sick/Screening**

**Ventilation**

**Symptomatic and asymptomatic testing**

**Stable Groups**

**Disinfection**



# Equity in the Safe Schools Plan

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- Communities of color disproportionately impacted
  - Essential workers
  - Overcrowded housing, high density living situations
  - Face barriers obtaining health information
  - Historically low resourced schools





# Equity Implementation in the Schools Plan, cont.

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- Community Engagement & Communications
  - Target
    - Community Based Organizations
    - Local Education Agencies
    - Parent groups
  - Mechanisms
    - Webinars
    - 1:1 meetings
    - Trainings



# Equity Implementation in the Schools Plan, cont.

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- Targeted Technical Assistance
  - Degree of in-person instruction
    - Target school districts without or low in-person instruction
  - Title 1 Schools
- High percent (>%60) of free and reduced lunch
- High community case rates



# Equity Implementation in the Schools Plan, cont.

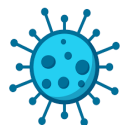
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- Technical Assistance Focused on
  - Health & Safety support
  - Testing
  - Vaccines
  - Communications
  - Transparency and data-informed decisions



# Excess COVID Mortality Among Californians 18-65, by race/ethnicity, March-October 2020

	All races	Asian	Black	Latino	White
All sectors	1.22 (1.20–1.24)	1.18 (1.14–1.23)	1.28 (1.24–1.33)	1.36 (1.29–1.44)	1.06 (1.02–1.12)
Food or agriculture	1.39 (1.32–1.48)	1.18 (1.05–1.33)	1.34 (1.19–1.54)	1.59 (1.47–1.75)	1.16 (1.09–1.24)
Transportation or logistics	1.28 (1.24–1.33)	1.26 (1.12–1.44)	1.35 (1.26–1.46)	1.40 (1.31–1.52)	1.10 (1.02–1.20)
Facilities	1.27 (1.22–1.32)	1.24 (1.08–1.46)	1.25 (1.17–1.34)	1.38 (1.27–1.51)	1.11 (1.04–1.20)
Unemployed or missing	1.23 (1.19–1.27)	1.08 (1.04–1.14)	1.31 (1.22–1.40)	1.31 (1.22–1.41)	1.09 (1.01–1.20)
Manufacturing	1.23 (1.18–1.28)	1.18 (1.06–1.33)	1.13 (1.01–1.30)	1.44 (1.34–1.57)	1.00 (0.92–1.10)
Health or emergency	1.19 (1.17–1.22)	1.40 (1.33–1.49)	1.27 (1.17–1.40)	1.32 (1.18–1.51)	1.02 (0.96–1.10)
Retail	1.18 (1.14–1.23)	1.10 (1.00–1.22)	1.36 (1.21–1.55)	1.40 (1.28–1.55)	1.08 (1.04–1.13)
Government or community	1.14 (1.11–1.18)	1.22 (1.07–1.41)	1.20 (1.09–1.33)	1.42 (1.32–1.53)	0.96 (0.89–1.04)
Not essential	1.11 (1.08–1.14)	1.14 (1.06–1.23)	1.23 (1.15–1.33)	1.29 (1.20–1.41)	1.00 (0.95–1.07)



# Implications

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- Some families perceive that Latinx and Black people, including students, are more likely to GET COVID-19, physiologically
- Message to families and schools: Occupation drives much of the higher rates of COVID for people of color and it is not something inherent to them. Decrease fear and stigma
- Policy implications: Resource allocations to schools and school communities to support in-person instruction



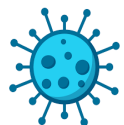


# **The current pathway forward?**

**The data are necessary but not sufficient—in-person instruction pathway is about hearts and minds**

**Informing teachers, staff, and families about the mitigation layers and that they will allow for safe schooling, but also building trust**

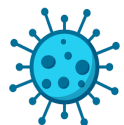
**Goal: Teachers and families who have a sense of control and confidence that the school is a safe learning and workplace environment**







# Looking ahead: 2021-22 School Year



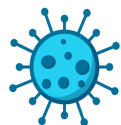
# How do vaccines change the school decision-making and considerations?

**Original rational for closing schools:**

**Prevent outbreaks and community spread**

**Pandemic costs of closing schools:**

**Substantial educational losses, inequity, social and emotional consequences**



# Harms associated with school closure

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- Survey of 1290 parents with child in public or private school (October-November 2020)
  - 46% all virtual; 31% all in-person; 23% hybrid
- Worse reported student outcomes for those in hybrid or virtual learning
  - Decreased physical activity
  - Time spent outside
  - In-person time with friends
  - Worsened mental or emotional health

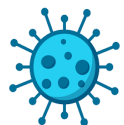


<https://www.cdc.gov/mmwr/volumes/70/wr/mm7011a1.htm>

# Harms associated with school closure

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- Worse reported parent outcomes for those in hybrid or virtual learning
  - Loss of work
  - Loss of job stability
  - Emotional distress
  - Difficulty sleeping



<https://www.cdc.gov/mmwr/volumes/70/wr/mm7011a1.htm>

# How do vaccines change the school decision-making and considerations?

**Fall Forecast: HS and 12 and older have been offered vaccine since early summer**

**Vaccines provide a protective layer around all school-affiliated adults**

**Vaccines provide a protective layer around elementary students by decreasing community transmission, decreasing the risk of community cases in the school**

**The balance changes between the known risks of distance learning and the low risks of in-school transmission**



# **Role of Testing: Key questions**

**Rationale for testing?**

**What role might testing play now and in the Fall?**

**How can school leadership begin to think about the role testing can play in the Fall?**





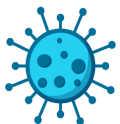
# **Rationales for Testing Cadence**

## **Surveillance for Decision-making**

- **Changes to testing frequency**

## **Screening to break transmission chains**

- **At higher case rates**

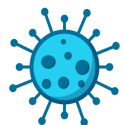




# NYC school experience: Testing for surveillance

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- 1594 public schools, ~50% students back, in hybrid learning
- Rise in community cases October, leading to 120 schools temporarily shutting
- Ongoing surveillance testing of staff and sample of students in every school (10-20%) every month
- 234,132 people tested, 986 positive (0.4%) Oct-Dec 2020
- Implications: Helpful to understand what is happening in schools, as rates shift in the community



# **Rationales for Testing Cadence**

## **Surveillance for Decision-making**

- **Changes to testing frequency**

## **Screening to break transmission chains**

- **At higher case rates**



# Testing Uses

## For remainder of school year and summer school

- In the event that **overall case rates rise again** or **summer travel and activities** causes a surge

## For Fall instruction, planning for testing to support school staying open confidently

- Protect against risks related to **new variants, reduction in efficacy of vaccines over time, and changes in vaccine rollout trajectory**

## Potential operational uses in the Fall instruction for unvaccinated students

- Symptomatic testing
- Shortening quarantine



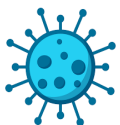
# Coming soon

## Funding support

- Test cost
- Insurance

## Potential for student pooled testing

## Guidance regarding testing in vaccinated populations



# **Addressing Trust, Social-Emotional effects, Mental health**

**Trust regarding vaccines, school safety**

**Transparency**

**Communications**

**Partnership with CBOs, schools, Public  
health**

**Social-emotional curriculum, trauma-  
informed education, mental health supports**



# Questions and Answers

