K-12 Schools and COVID-19: Update, Fall 2020

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Take-aways

- Whether children transmit more / less / equally, compared to adults
  - Difficult to answer from available contact tracing and epidemiologic studies
  - Less relevant than understanding the impact of community transmission rates and mitigation strategies
- Data are beginning to emerge about in-school transmission
  - Seems to be very rare, even with moderate / high community rates
  - Usually associated with lack of masking
- Access to testing for staff and students with symptoms is variable
- Screening of asymptomatic staff/students may be valuable

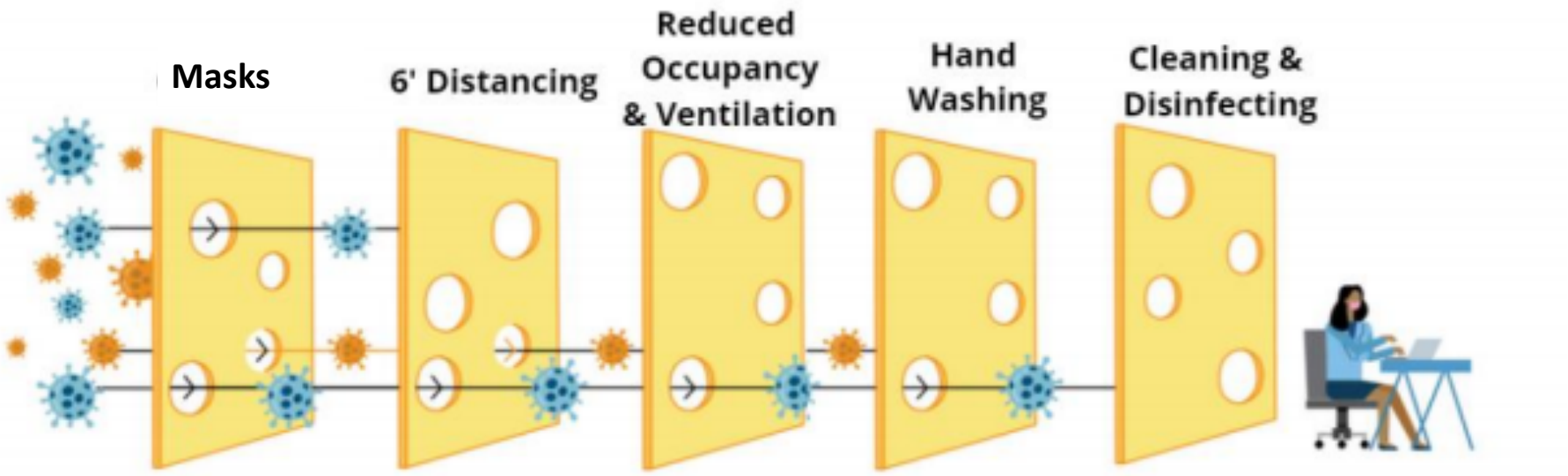
Background (1): Simultaneous considerations

- Children and COVID-19
  - Children become severely ill much less than adults
  - Debate about degree to which children transmit
  - Balance of health outcomes: COVID-19, other physical health, mental health
- Educator health a key priority
  - 25-50% of educators at high risk for complications of COVID-19 or have high-risk household members
- Equity considerations critical
  - Across the US, Black and Latinx communities disparately affected by COVID-19; less often have option for in-person school; when offered, choose in-person school less often than white families

Background (2): Two key factors

- Risk that someone with COVID-19 will enter a school
  - Community rates and out-of-school exposures
- Risk that a person with COVID-19 will transmit in school
  - Mitigation strategies

“Swiss Cheese” model: COVID-19 prevention



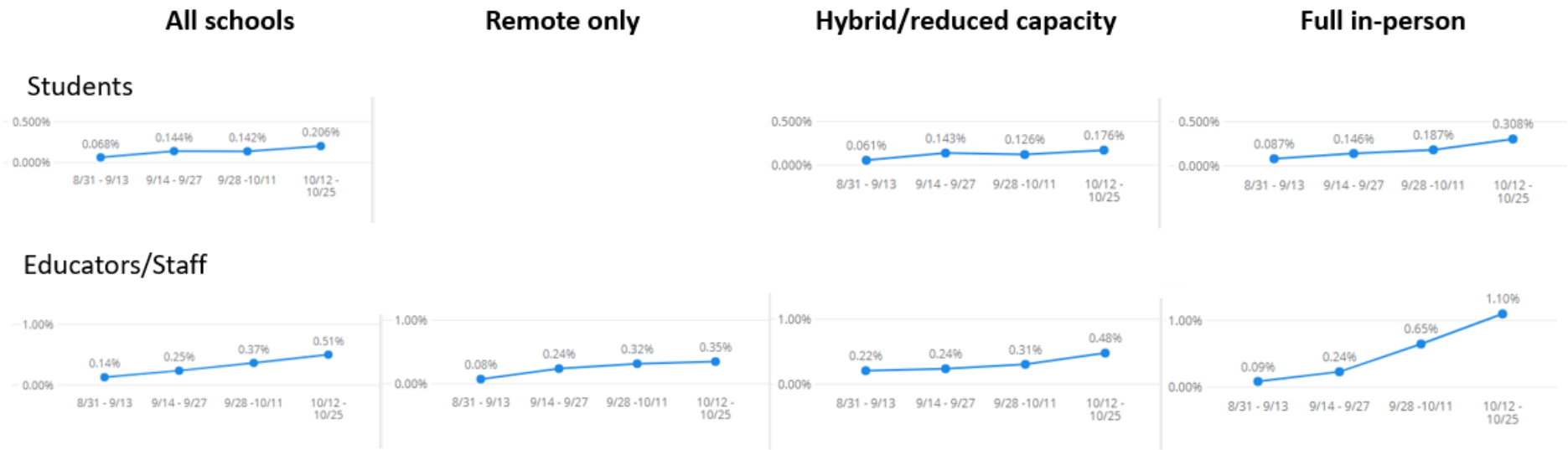
PolicyLab adapted this graphic from the Cleveland Clinic’s “Swiss Cheese Approach to COVID Mitigation”

Data from K-12 schools, Fall 2020

- Previous: Reassuring international data (low community rates)
- Spain, Germany, UK: no impact of Fall 2020 school opening on community rates, large numbers of students in school with few outbreaks
- Massachusetts, Oct 15-21: 73 of 75,000 staff (0.09%), 129 of 450,000 students (0.03%)
- New York City: Random testing >16,000 staff and students; 28 positive (0.17%)

AASA/Brown Data Dashboard

- Limited by voluntary reporting (direction of bias?), no statistical comparison
- School-associated cases, not in-school transmission
- Overall (US): 0.5% staff, 0.2% students with COVID-19



Cautionary lessons, Fall 2020

- Day care centers in UT: 3 facilities with in-facility transmission
  - Students mostly unmasked (young)
  - Staff unmasked, worked while household contacts were ill with COVID-19
- Lincoln, NE public schools (anecdotal, lay press):
  - 4 examples in 9 individuals
  - 2 HS students (1 each lunch in school, lunch outside)
  - 2 staff members without student contact, shared office without masks
  - 5 staff members, lunch together without masks
- Israeli middle/high school: large outbreak (crowding, no masks)

Children's Hospital of Pennsylvania Policy Lab

- Strong school safety plans have mitigated risk for transmission, even within communities with moderate incidence (>35 cases/100K)
- Although mitigation strategies (masking, distancing, ventilation) can withstand higher community incidence, the tipping point is unknown
- Most school-associated transmission has occurred outside of school or because of poor adherence to masking protocols
  - Student gatherings outside of school
  - Shared meals among staff (in school and out of school)
  - Youth sports (mostly off the field of play: sidelines, locker rooms, meals, parties)
- Teachers, staff, caregivers more likely to become ill and to transmit
  - Flexible sick leave and adequate space for breaks/eating are needed

Thresholds for remote learning: community rates

- Arizona: 100 per 100K
- Washington: 75 per 100K
- Oklahoma: 14-25 per 100K
- Harvard Global Health Institute: 10-25 per 100K
- Massachusetts: 8 per 100K
  - Clarified 10/22: continue in-person learning at >8/100K if no in-school transmission
- Previous Children's Hospital of Pennsylvania: 5/100K
- Test positivity rates also "considered," usually <5% (CHOP 9%)

Types of Testing

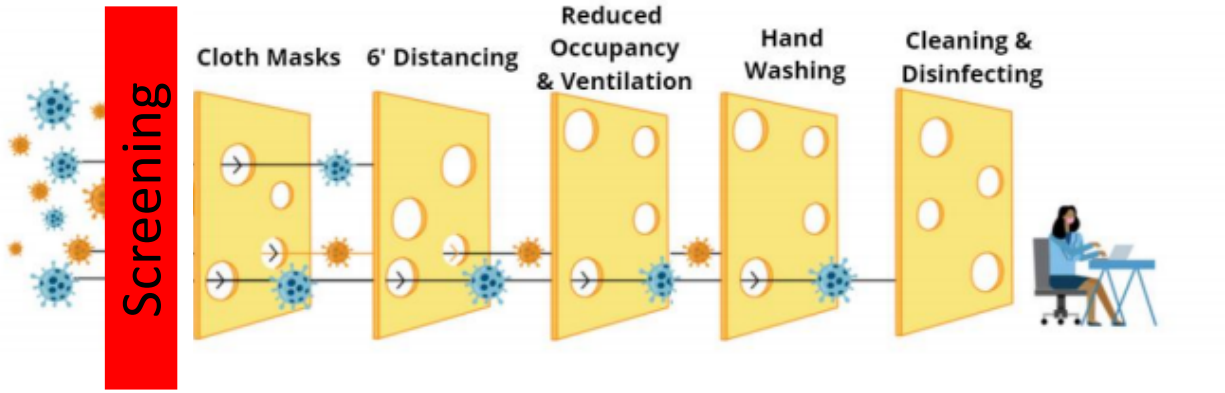
- Diagnostic testing
  - For people with symptoms possible due to COVID-19
- Screening
  - For people without symptoms, to detect asymptomatic infection and stop transmission
- Surveillance
  - For groups of people, to detect infection in a setting (e.g., wastewater)
  - Individual results not identified, but positive signal → individual screening

Testing for symptomatic students and staff

- Anecdotal data: access to testing and time to result-return highly variable
- Helps ensure accurate reporting of symptoms
- Facilitates timely return to school/work if negative, isolation and contact tracing if positive
- Suggest use of lab-based PCR over rapid tests

Screening of asymptomatic students and staff

- May be another layer of protection



- Widely implemented in many colleges and universities, K-12 private schools in MA
- Computer models: screening may permit full-time in-person at risk = hybrid
  - Especially with high community transmission rates
- K-12 public schools piloting weekly screening: MA Safer Teachers/Safer Student Collaborative (Wellesley, Watertown), Cambridge (staff only), NYC, others across US

Thank You

Questions?