California Institution for Women (CIW) Site Visit Report

5 November 2021

UCSF University of California San Francisco

Berkeley Public Health

Richard and Rhoda Goldman School of Public Policy, University of California Berkeley

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* attended site visit

Given the rapidly evolving understanding of the novel SARS-CoV-2 virus and disease (COVID-19), CalPROTECT and its partners may not revise all publications and resources as new information becomes available. This report was produced based on the most updated research and our understanding of the CDCR facilities as of Nov 5, 2021.

We encourage continued engagement with public health and medical communities regarding how best to implement the most updated recommendations based on science and evidence to prevent and manage COVID-19.

Presentation Outline

- About CalPROTECT
- Overview of select CIW-specific and CDCR-wide observations and recommendations
  - Epi and testing
  - Behavioral science
  - Environmental
- Discussion

1. About CalPROTECT:

Overarching goal, approach and methodology

About CalPROTECT (California Prison Roadmap for Targeting Efforts to Address the Ecosystem of COVID Transmission)

CalPROTECT is a multidisciplinary team of experts from public health, medicine and infectious disease, behavioral science, public policy, environmental health, and economics from the **UC San Francisco Department of Medicine** and the **UC Berkeley Schools of Public Health and Public Policy.**

CalPROTECT was launched at the request of Federal Receiver Clark Kelso to:

1. Collect and analyze data about COVID-19 transmission and responses in CDCR facilities
2. Provide recommendations and as-needed feedback regarding best practices and opportunities to optimize COVID-19 response efforts in order to improve conditions for staff and residents in CDCR facilities

UCSF University of California San Francisco

UCSF Center for Vulnerable Populations Department of Medicine

AMEND CHANGING CORRECTIONAL CULTURE

Berkeley Public Health

Richard and Rhoda Goldman School of Public Policy University of California Berkeley

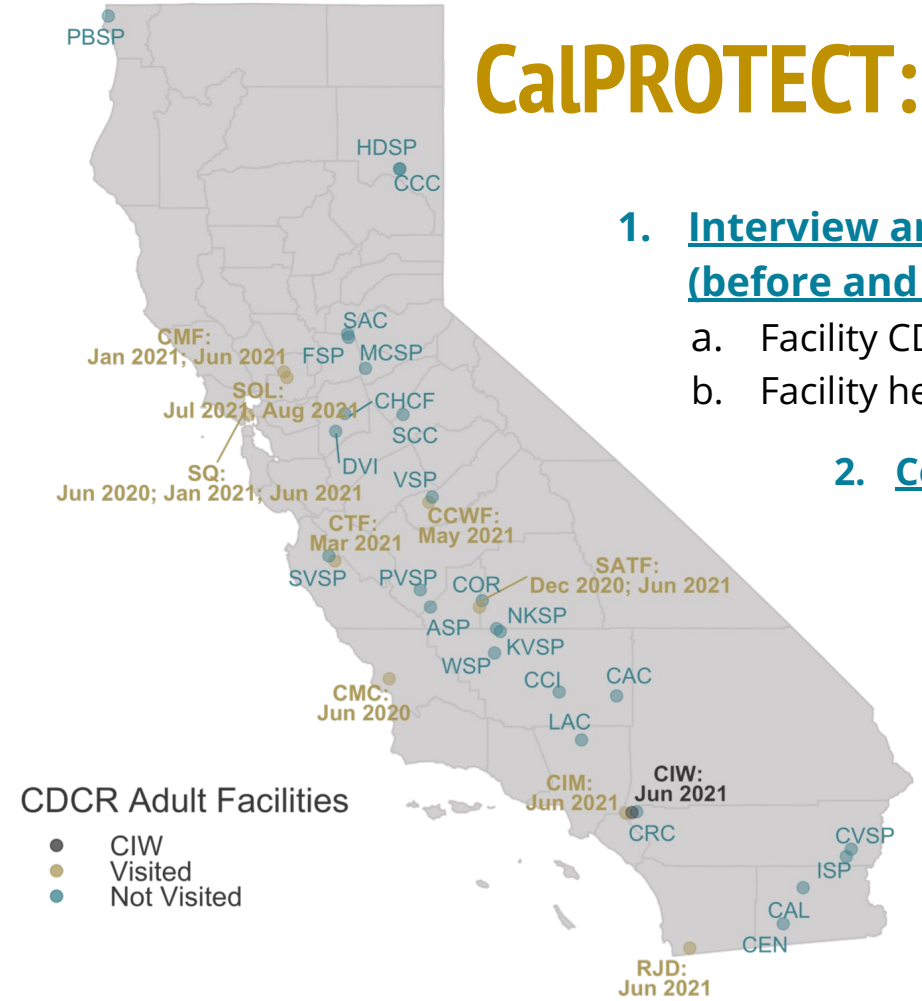
The People Lab

CalPROTECT: Output

Our work will culminate in an end-of-year report that will:

- Draw upon qualitative data, environmental assessments, policies, and CDCR-wide administrative data
- Document our findings and provide recommendations to inform future decision making
- Be comprised of multiple, interrelated mini-reports presented together - each section is self-contained and can be read as part of the whole

CalPROTECT: Methodology CIW Visit



1. **Interview and have conversations with key stakeholders (before and during visits):**
   a. Facility CDCR/CCHCS leadership
   b. Facility healthcare, custody, plant/engineering staff

2. **Conduct onsite data collection**
   a. Focus groups and conversations with residents and staff
   b. Physical observation of facilities
   c. Indoor air quality assessments
   d. Collect site-specific announcements and policies

3. **Share information**
   a. Arrival and departure debriefs with leadership

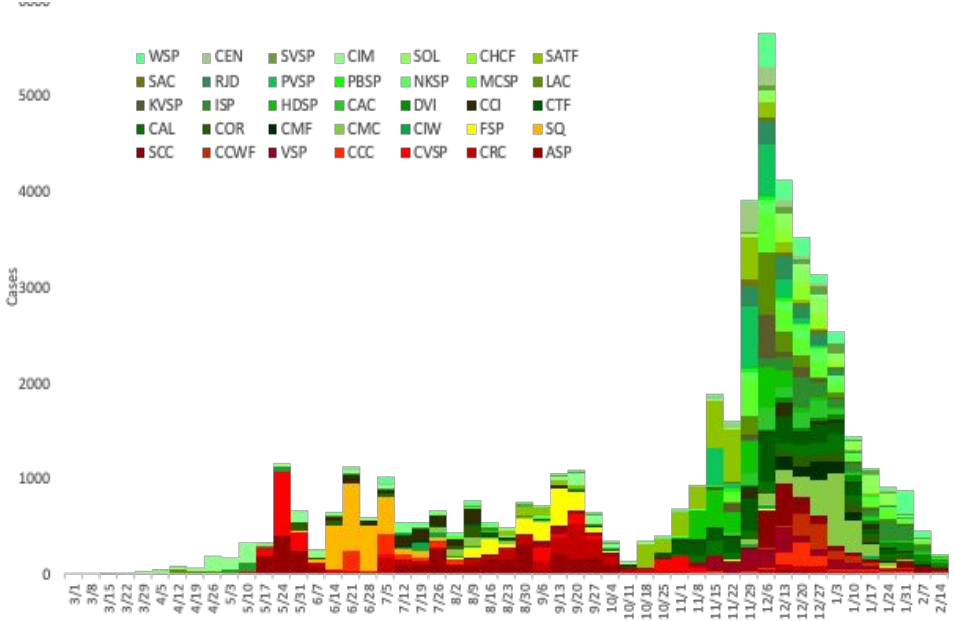
2. Epidemiology and Testing Strategies

The impact of aerosol transmission changed in late fall 2020

- Summer 2020 focus was on ventilating shared airspace (open doors, windows);
- Fall 2020, heat was turned on, focus shifted to optimizing HVAC (reducing recirculation)

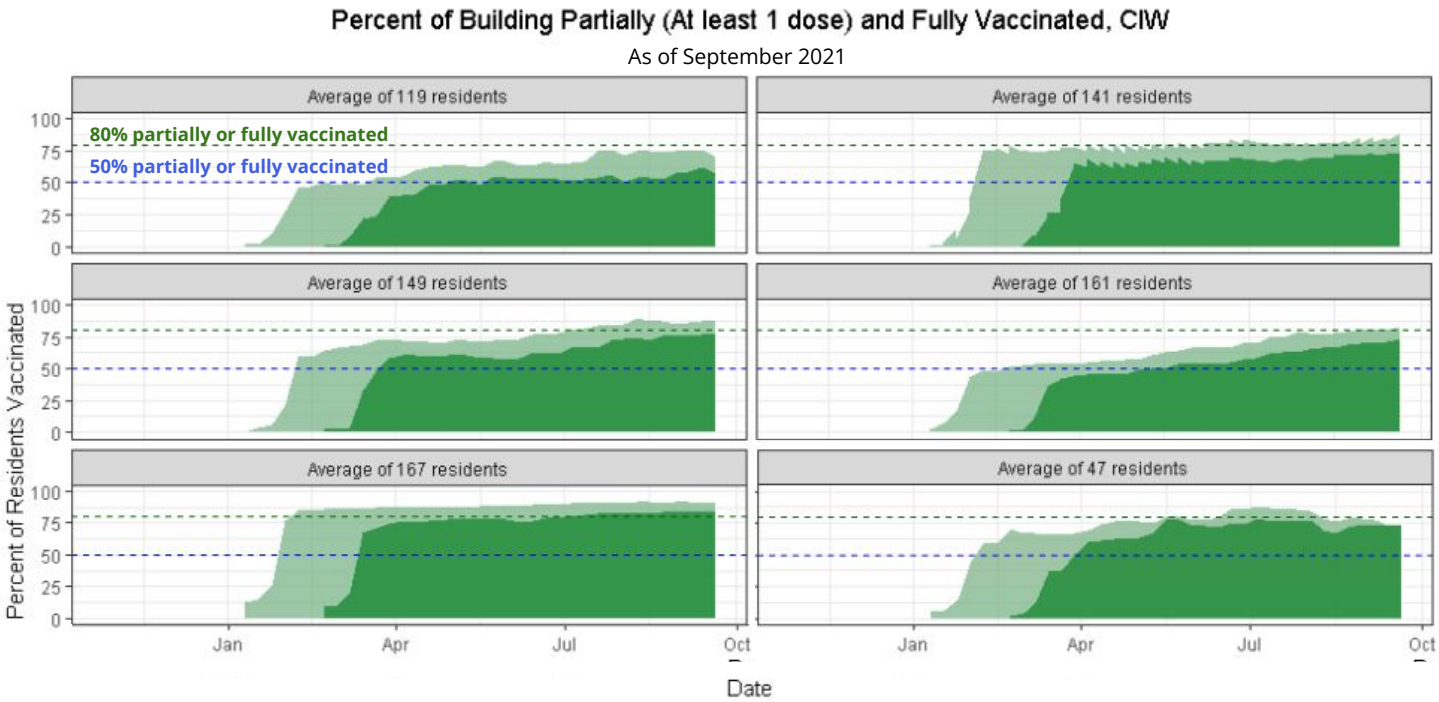
This graph displays CCHCS statewide COVID-19 cases (N = 48,984) by institution and housing type

- COVID-19 outbreaks in summer 2020 predominantly occurred in facilities that were mostly **dorms, pods and barred cells**.
- Beginning in mid-October, outbreaks occurred in facilities with **majority solid-walled cells**



Note: Figure by Dr. Heidi Bauer and Dr. Justine Hutchinson from CCHCS (February 2021)

Differential risk in CIW buildings based on vaccination rates: as of 9/2021, rates in large CIW housing units ~55% to ~80%



As of Nov 1, 2021, 82% of 1,043 residents and 66% of 1,378 staff have been fully vaccinated at CIW

Vaccination Percentages

- Percent with at least one dose
- Percent fully vaccinated

Note: Yards and buildings are anonymized in CDCR data; as such, the number of residents is given instead of building names.

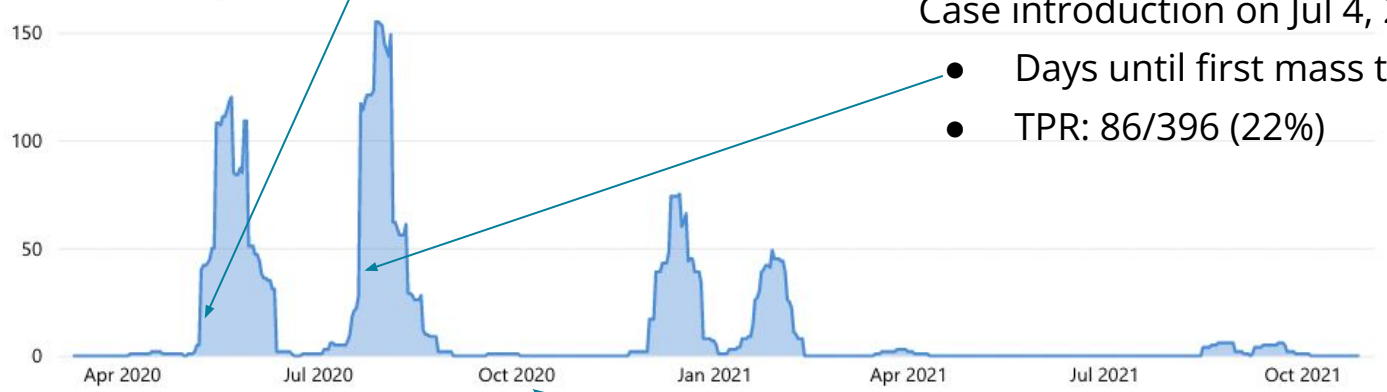
Controlling outbreaks becomes increasingly difficult when there is a delay between case introduction and mass testing

Case introduction on May 2, 2020:

- Days until first mass testing: **6**
- TPR: 35/185 (19%)

Case introduction on Jul 4, 2020:

- Days until first mass testing: **17**
- TPR: 86/396 (22%)



Case introduction on Sep 18, 2020:

- Days until first mass testing: **2**
- TPR: 1/162 (0.6%)

Mass testing is >100 tests done in 1 day
TPR = test positivity rate

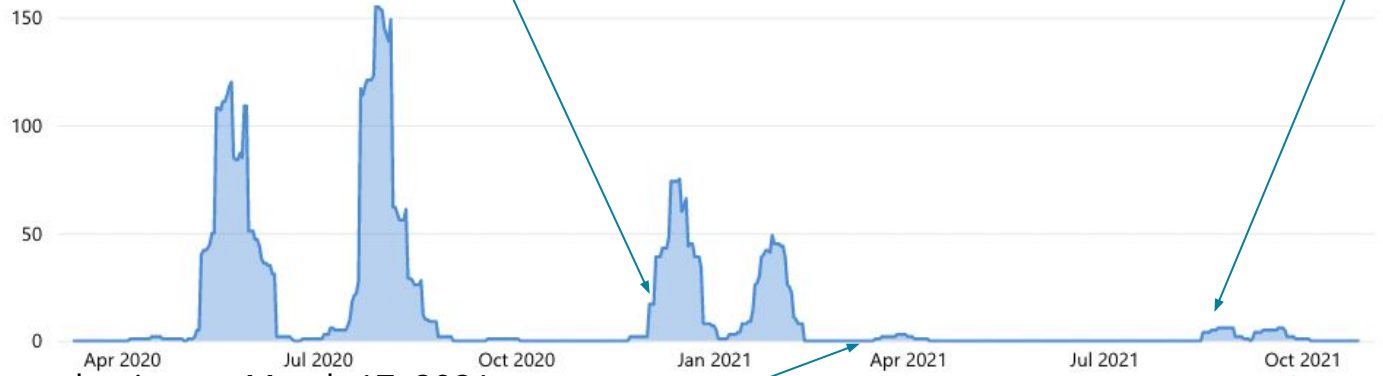
Controlling outbreaks becomes increasingly difficult when there is a delay between case introduction and mass testing

Case introduction on Nov 23, 2020:

- Days until first mass testing: **2**
- TPR: 0/307 (0%)

Case introduction on Aug 16, 2021:

- Days until first mass testing: **3**
- TPR: 0/320 (0%)



Case introduction on March 17, 2021:

- Days until first mass testing: **Same day**
- TPR: 1/291 (0.3%)

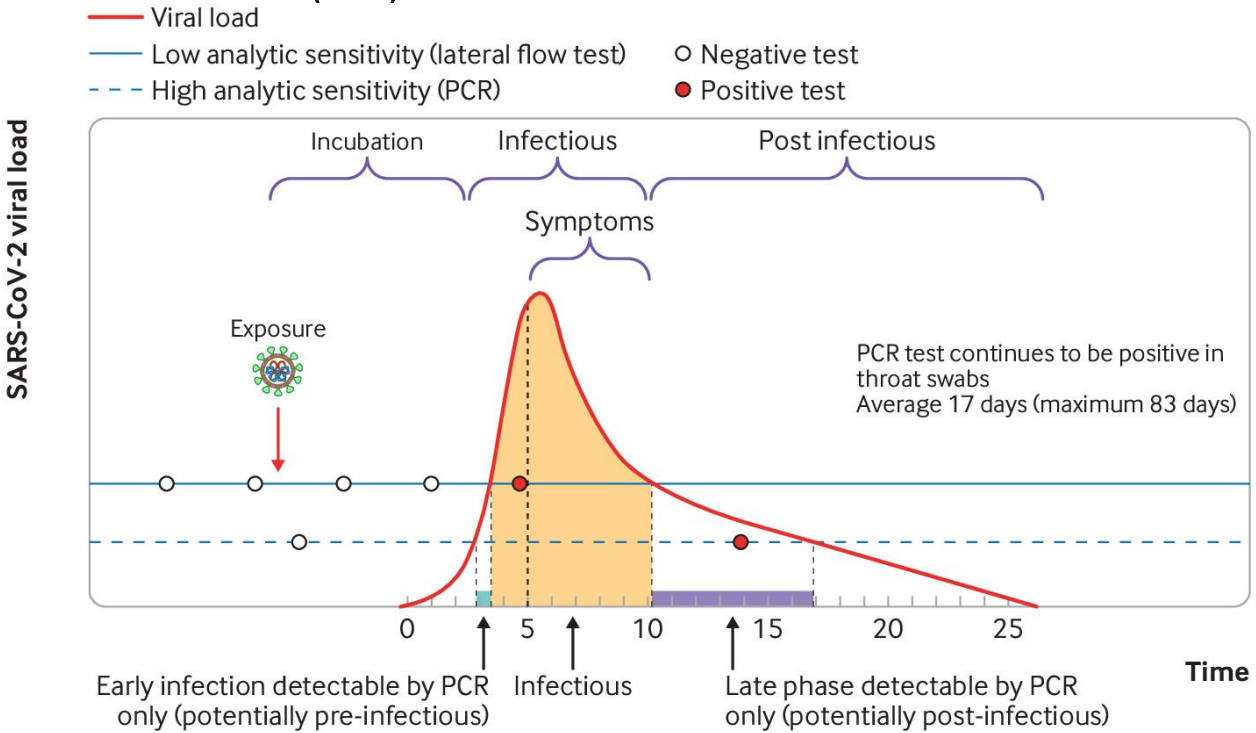
Case introduction on September 8, 2021:

- Days until first mass testing: **Same day**
- TPR: 1/290 (0.3%)

Mass testing is >100 tests done in 1 day

Rapid Antigen vs PCR Testing

- Rapid Ag tests: lower sensitivity (may pick up cases 1d after PCR, corresponding with infectivity)
- PCR tests: higher sensitivity (case detection 1d earlier and in post-infectious period) but longer turnaround time (TAT)

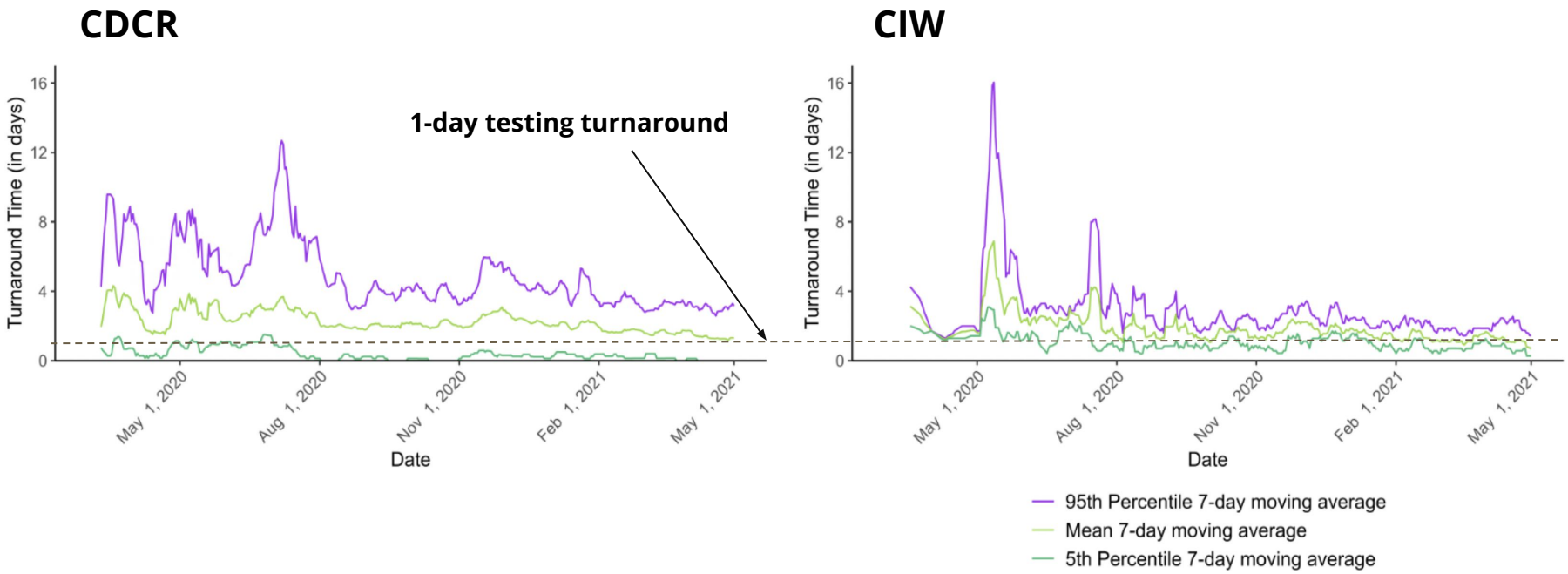


Conclusion

Ag tests likely superior to PCR tests for detecting cases for isolation if there are no safe quarantine options (particularly if PCR TAT is >1d)

SOURCE: https://thepressfree.com/put-to-the-test-use-of-rapid-testing-technologies-for-covid-19/

Testing turnaround time (TAT)



Notes:
(1) We found that the number of tests per day did not impact test turnaround time,
(2) although we show 2-day testing turnaround, same-day testing turnaround is more favorable.

Findings and Recommendations

1. **Outbreaks in solid-walled cells last fall/winter highlight concern for spread of aerosols through HVAC systems.**
2. **Differential vaccination rates across buildings** can help identify buildings that would benefit most from additional efforts to decrease the risk of transmission.
3. **Early deployment of mass testing** is an opportunity for rapid detection of cases and appropriate contact tracing, quarantine, and isolation before rising cases overrun an institution.
4. **Rapid antigen testing performs better than PCR at preventing secondary cases in an active outbreak** (if PCR TAT is >1d) when you cannot safely quarantine all potentially exposed patients.

3. Behavioral Science Data Collection:

Staff and Resident Experiences of COVID-19

The approach: Site Visits

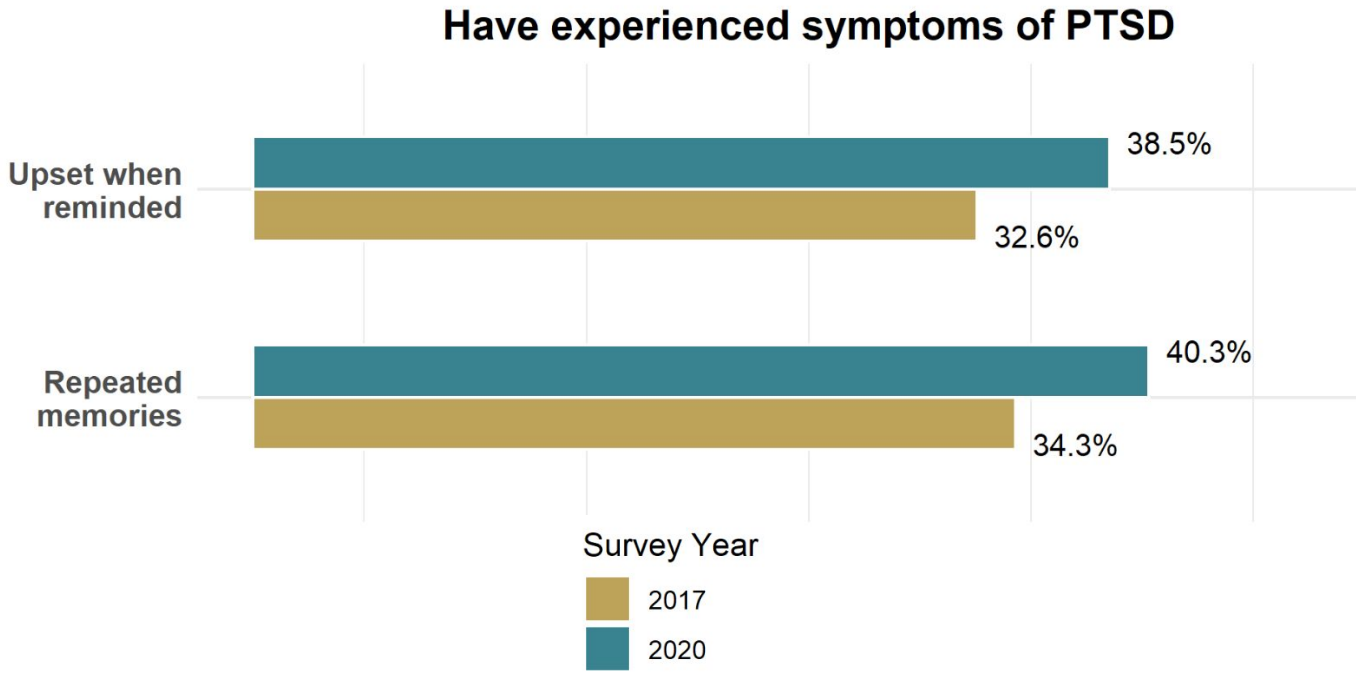
- **What we did:** We conducted conversations with residents, staff and leadership across the system on medical, nursing, mental health and correctional teams.
  - **Custody staff** (N=26)
  - **Medical/Mental health staff** (N = 60)
  - **Incarcerated people** (N=92)

- **Why we did it:** To understand the experience of COVID-19 among those who live or work at CDCR institutions, in order to learn more about what is needed to recover from the pandemic and how to respond to future emergencies.

The approach: Custody Survey

- **What we did:** We implemented a population-wide email survey of custody staff.
  - **n=1,761** across all facilities, representative by race and gender
  - **n=8,334**; a subset of questions were repeated from the CCOS, a survey of custody staff conducted by The People Lab in May 2017.
- **Why we did it:** To gain broader insight into the experiences, needs, and attitudes of correctional staff related to the COVID-pandemic.

Survey Data: Staff mental health is worse during COVID-19

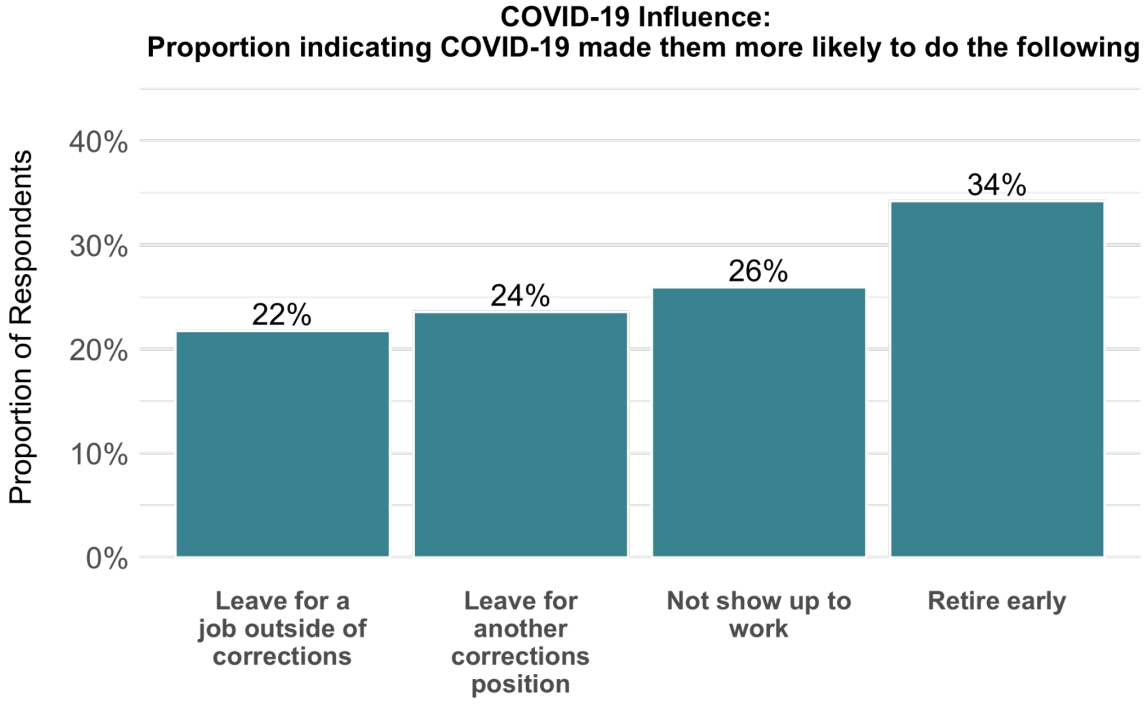


2017 Data are from the CCOS (n=8,334)

2020 Data are from the COVID-19 CO Survey (n=1,761)

Both surveys include custody staff across all facilities and respondents are broadly representative of the population by race and gender

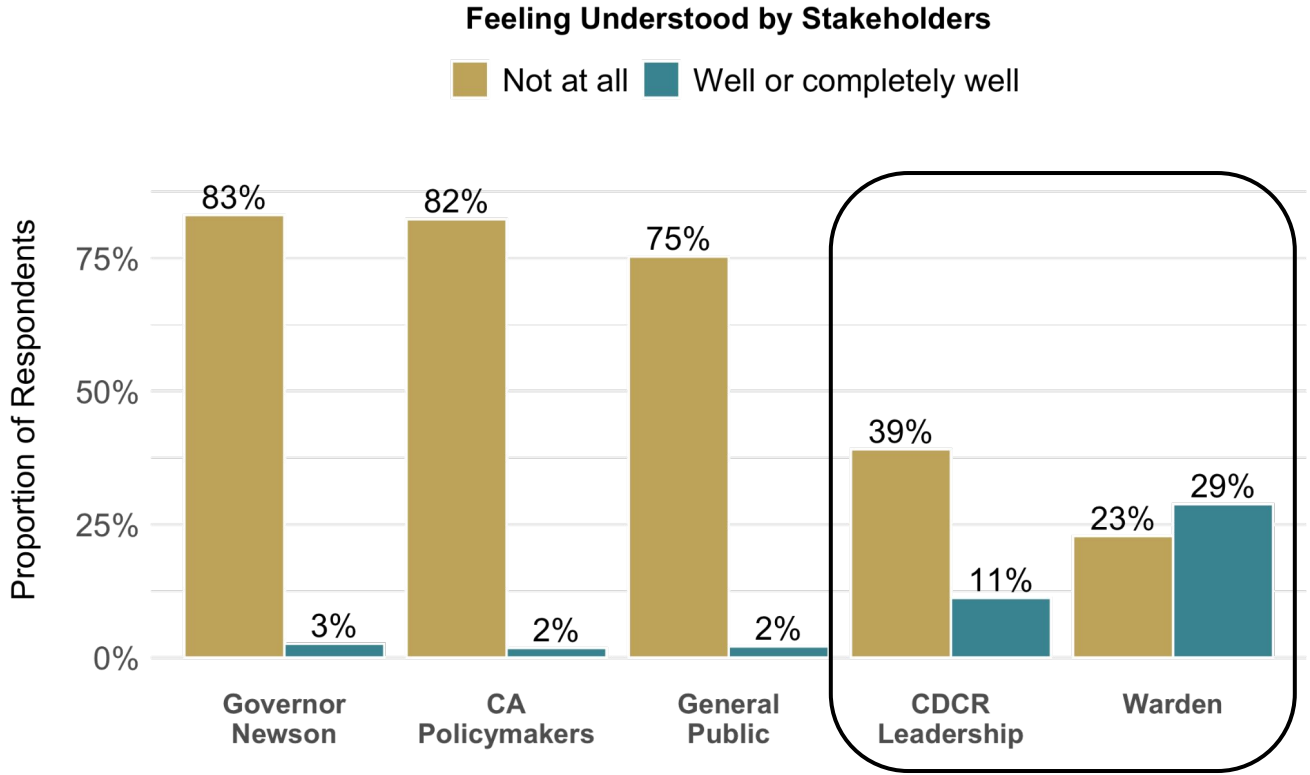
Survey Data: Threat of burnout and staff turnover due to COVID-19 is significant



COVID-19 data are based on survey responses (N=1,761) across all facilities, (representative by race and gender), May 2020

Survey Data: Staff report low levels of feeling understood

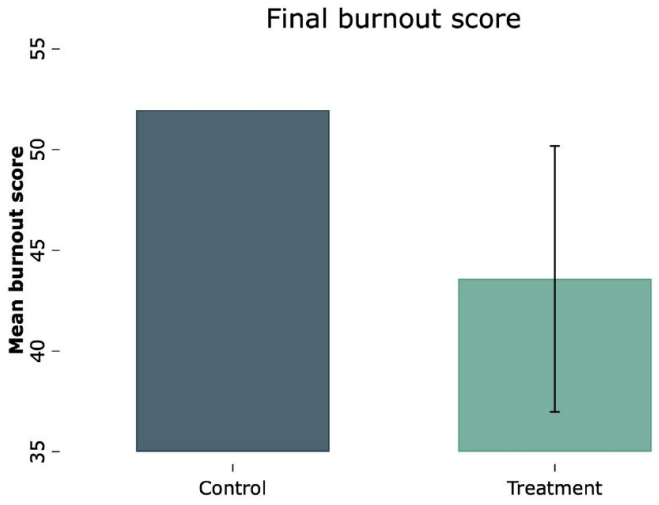
This presents a unique opportunity for wardens and other prison leadership to leverage feelings of being understood in order to improve wellbeing among staff

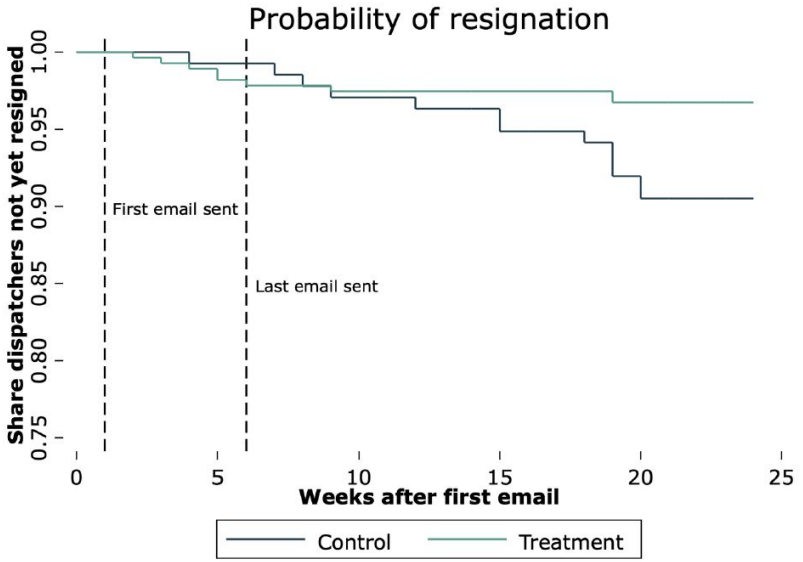


Opportunities for Building Strength

Staff voiced significant concerns about existing supports.

But low-cost interventions can help:





Opportunities for Building Strength

A critical moment to:

- **Continue empowering people** to understand “why” policies are being implemented and what is their intent

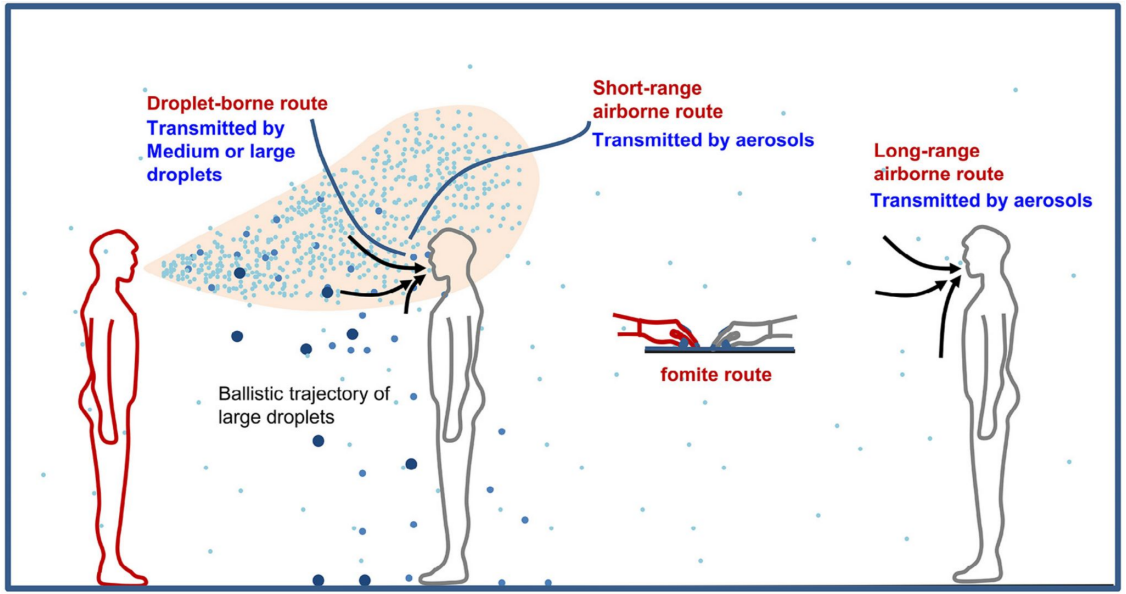
Opportunities for Building Strength

A critical moment to:

- **Continue empowering people** to understand “why” policies are being implemented and what is their intent
- **Reinforce culture of learning**, including from mistakes
  - Reassure staff that you know they faced impossible decisions under extreme uncertainty, and they had no choice but to find a(n imperfect) solution

4A. Environmental Assessment: Background

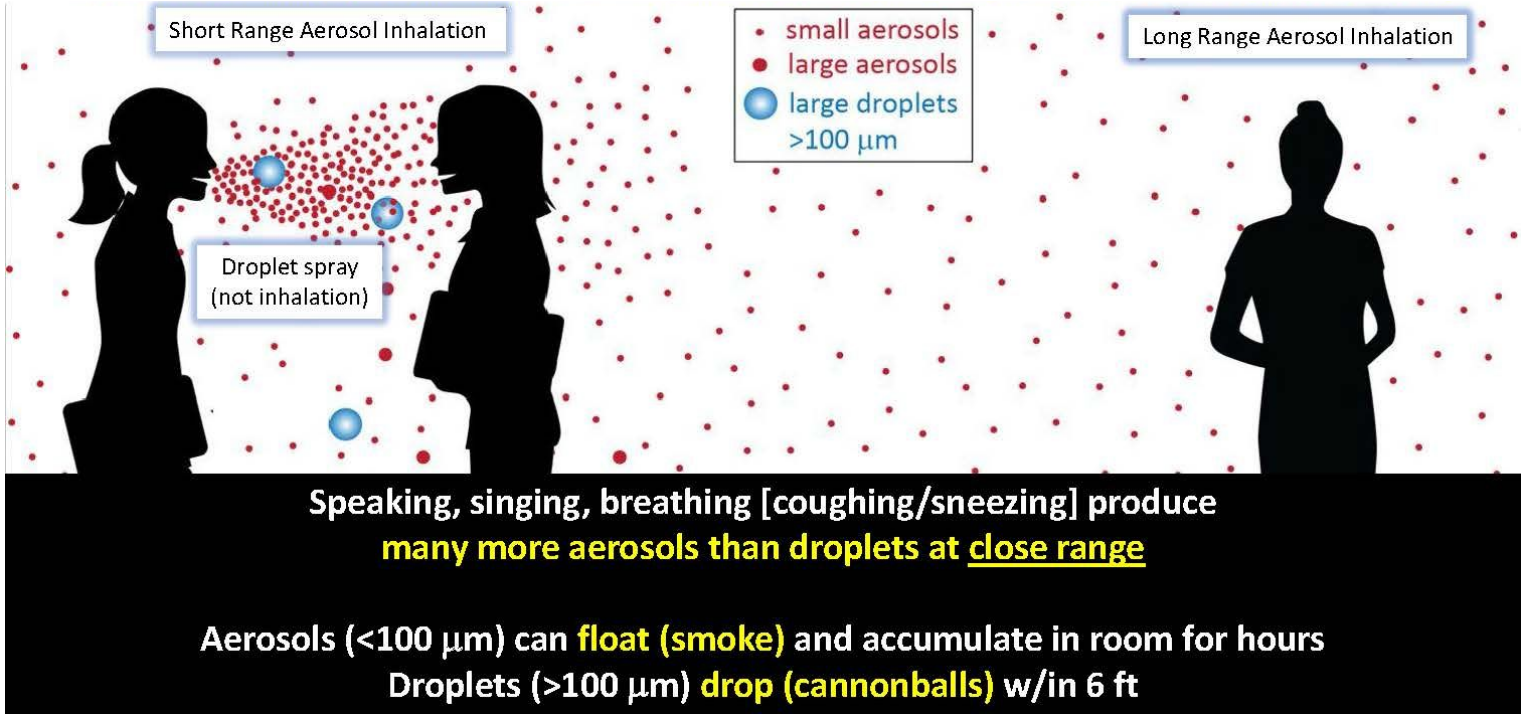
There is overwhelming evidence that SARS-CoV-2 is transmitted primarily through exhaled aerosol suspended in indoor air



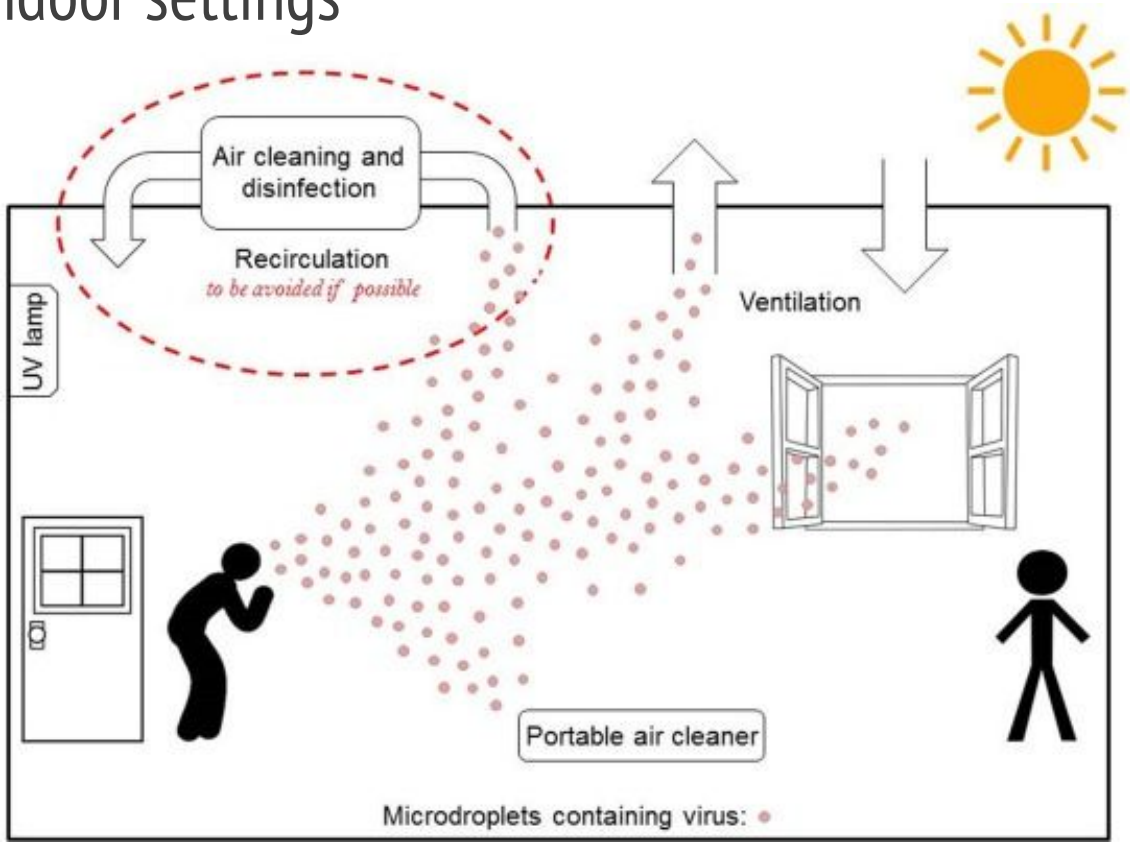
- Large droplets (>100 μm) : Fast deposition due to the domination of gravitational force
- Medium droplets between 5 and 100 μm
- Small droplets or droplet nuclei, or aerosols (< 5 μm): Responsible for airborne transmission

Sources:
Prather, K. A., Marr, L. C., Schooley, R. T., McDiarmid, M. A., Wilson, M. E., and Milton, D. K. (2020). Airborne transmission of sars-cov-2. Science, 370(6514):303–304.
Morawska, L. and Cao, J. (2020). Airborne transmission of SARS-CoV-2: The world should face the reality. Environment International, 139:105730.
Morawska, L. and Milton, D. K. (2020). It is time to address airborne transmission of COVID-19. Clinical Infectious Diseases, 71:2311–2313.
Jayaweera, M., Perera, H., Gunawardana, B., and Manatunge, J. (2020). Transmission of COVID-19 virus by droplets and aerosols. Environ Res., 188(109819).
Zhang, J., Litvinova, M., Liang, Y., Wang, Y., Wang, W., Zhao, S., Wu, Q., Merler, S., Viboud, C., Vespignani, A., et al. (2020a). Changes in contact patterns shape the dynamics of the COVID-19 outbreak in china. Science, 368:1481–1486.

Indoor transmission through aerosols occurs when people are breathing, speaking, coughing/sneezing



Why is ventilation important? It controls the concentration of infected aerosols in indoor settings

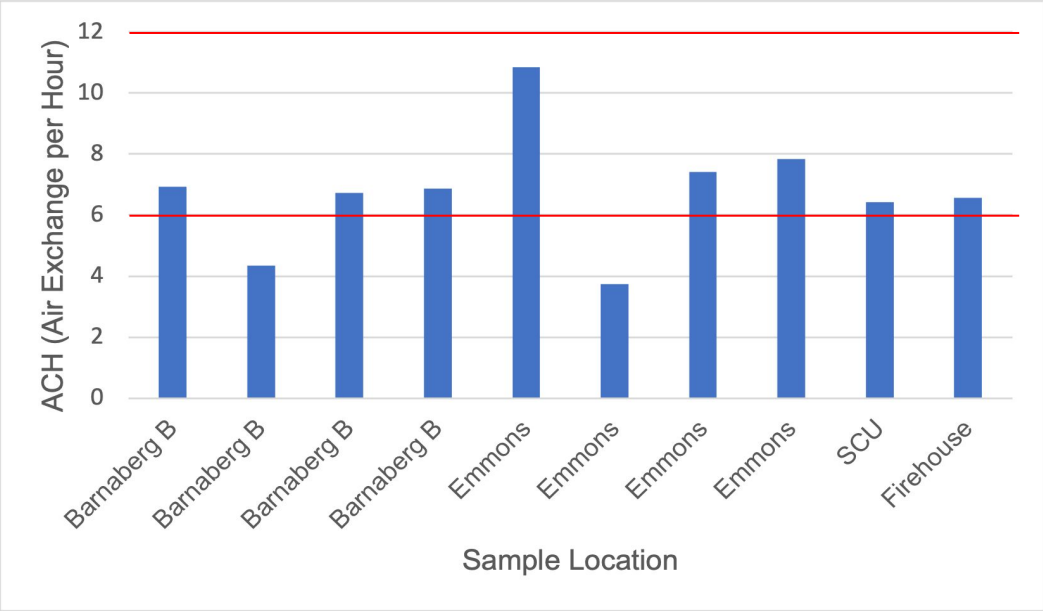


4B. Environmental Assessment:

What are we finding at CIW?

Even in our small sample, air exchange rates measured fell below infection control standards.

Like hospitals, CDCR facilities need to control infection.



20% of rooms sampled fell below recommended air exchange rate standards

Recommendations for medical centers/quarantine facilities:

ACH 12 + Negative Pressure: recommended for protective environment rooms/ airborne isolation by *WHO, ASHRAE, OSHA*

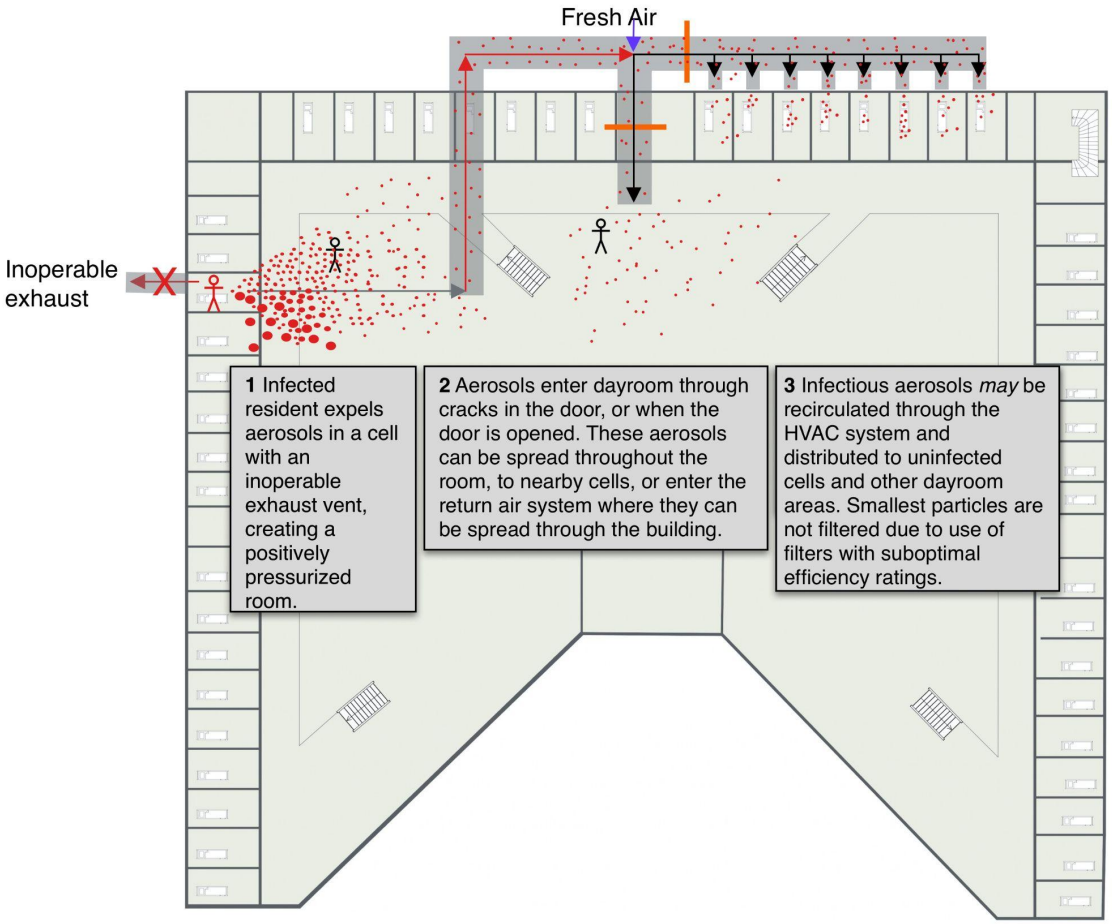
ACH 6: recommended for General Hospital wards and classrooms by *WHO, ASHRAE*

Other Observations

- Intake dampers were closed in several buildings visited--percentage of outside air coming into these buildings was minimal
- Rooms were observed in SCU in which both supply and return vents were non-functional

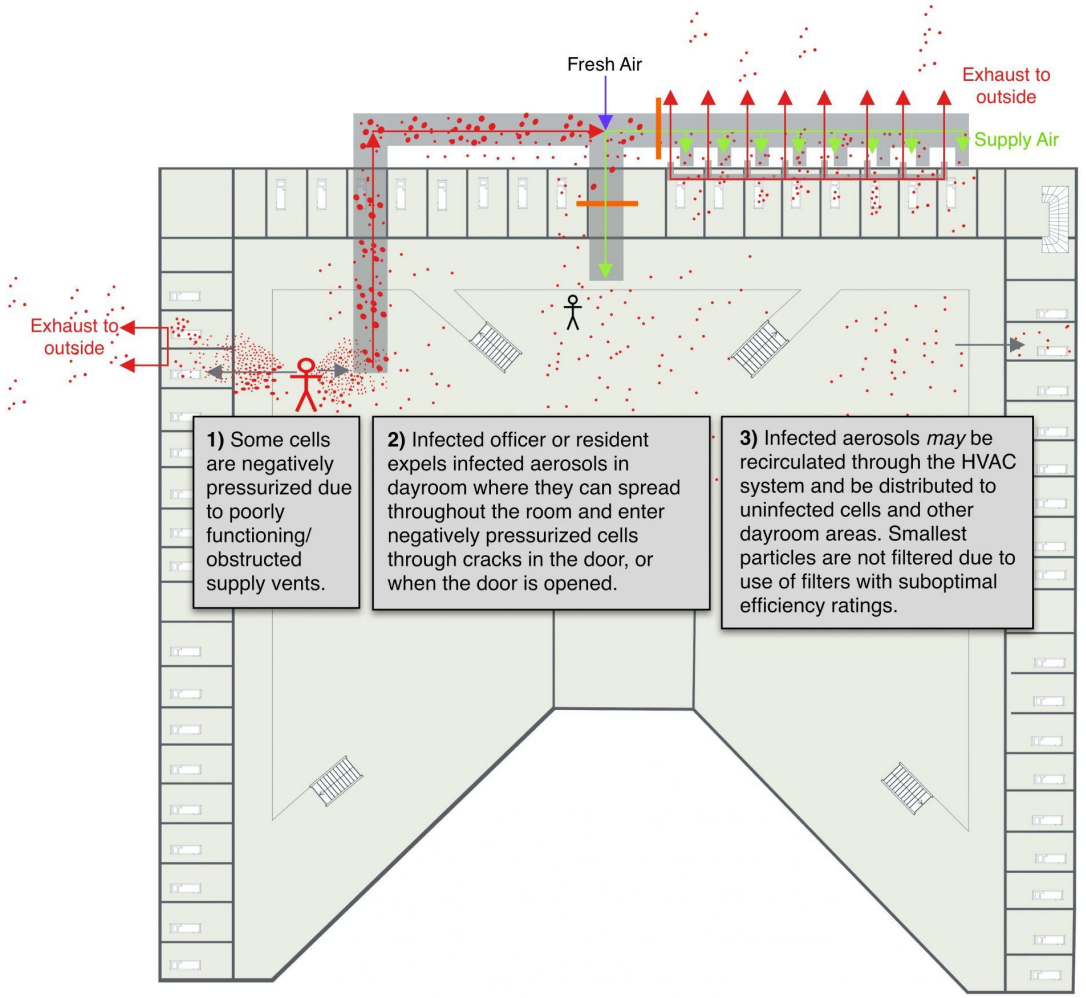
A pictorial example:

How <u>inadvertent **positive**</u> pressure may cause movement of infected air to clean spaces



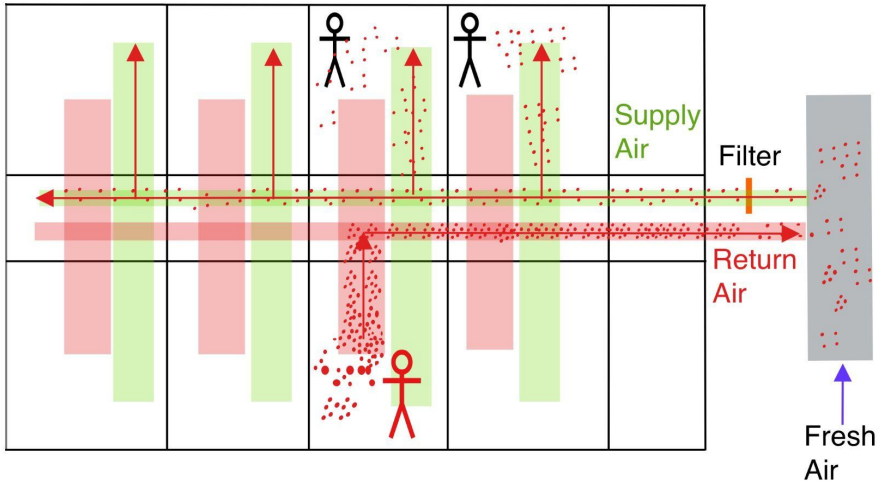
A pictorial example:

How <u>inadvertent **negative**</u> pressure may cause movement of infected air to clean spaces



Recirculation (Heat or AC) combined with improper filtration may also move infected air to clean spaces

Infected aerosols *may* be recirculated through the HVAC system and be distributed to uninfected dorms. Smallest viral particles are not filtered without the use of a high grade (MERV 13+) filter.



4C. Environmental Assessment:

What might you do at this juncture?

Reduce indoor concentrations of SARS-CoV-2 with Ventilation

1. **Ensure that all ventilation systems are functioning** at height of their capacity and correctly
    - At a minimum, functioning exhausts throughout the system should be exhausting to the outdoors
    - Clean all vents
2. **Continue ventilating the space while occupants are outside** at yard to clear additional Sars-CoV-2 aerosols from the rooms
3. **Open windows and doors** when and wherever possible

Reduce indoor concentrations of SARS-CoV-2 with Filtration

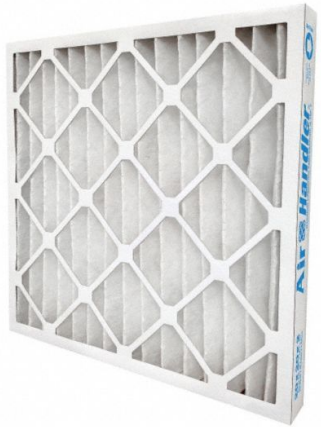
Use high grade filters to "scrub" air and reduce viral concentrations in congregate areas

MERV 13+ filters should be installed in HVAC systems where recirculation is necessary

Supplemental air cleaners can be used to pull infectious agents out of the air before they infect people

➔ For a CADR (clean air delivery rate) of 250, place one in every 250 square feet

MERV-13



Corsi-Rosenthal Box - box fan + MERV-13 filters

Reduce indoor concentrations through Source Reduction

1. **Reducing occupancy** to reduce the density of infectious emissions in an indoor space
2. **Masking indoors** to reduce the emissions from individual sources
3. **Moving all high respiration activities** (e.g. exercising) **to outdoors** reduces the rate of emissions from individual sources.
    - Yard time also allows aerosol levels to fall indoors
4. **Vaccinating** reduces the emissions of virus in a room

Additional time sensitive opportunities related to environmental assessments

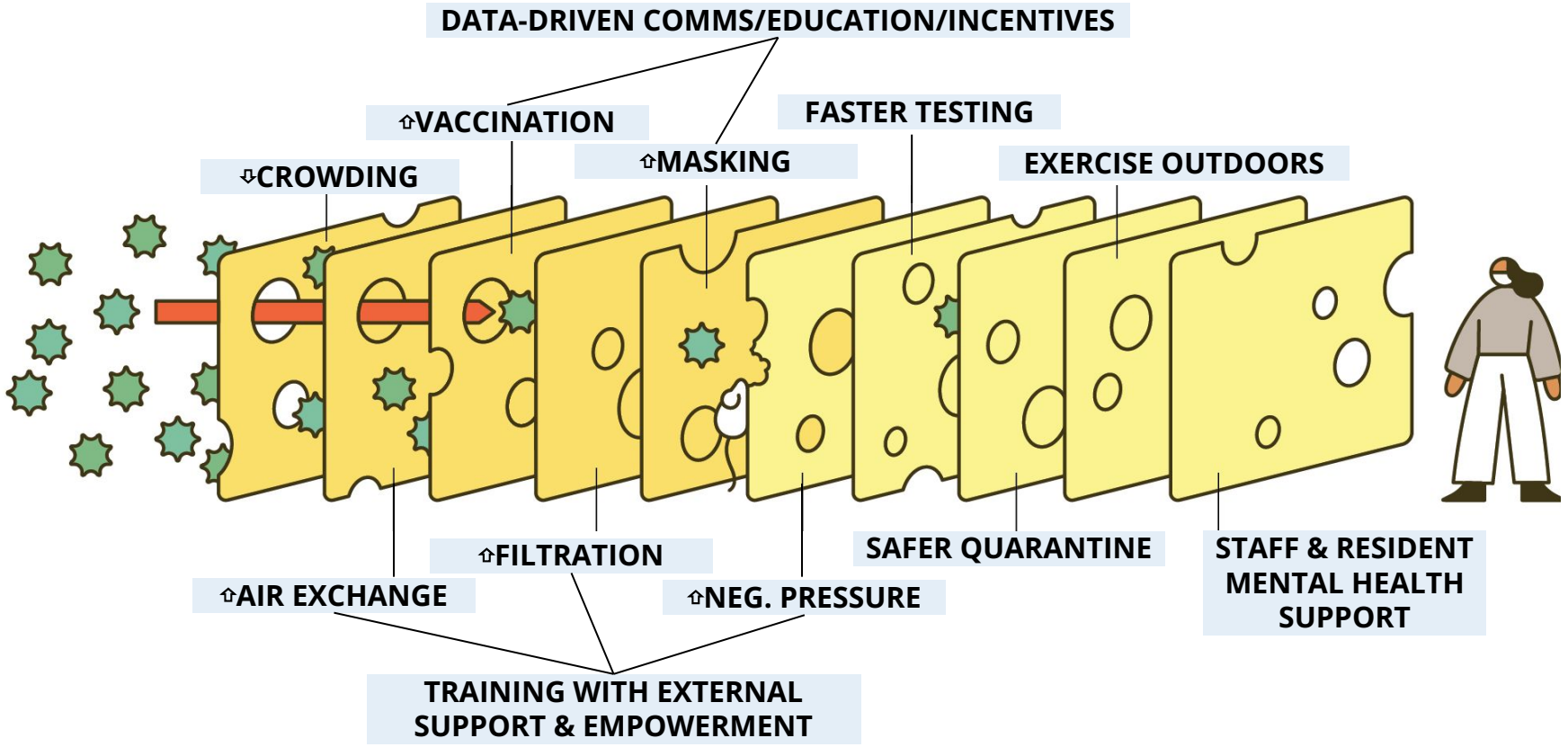
1. **Develop a strict protocol for buildings in quarantine and regular and frequent checks** as these units have the most immediate need for optimized and high functioning systems

2. **Contract with a licensed Test and Balance Engineer (TBE)** to ensure the proper functioning and balance of your ventilation systems

3. **Determine next most critical locations to focus resources**:
   - Consider using **CO2 concentrations to identify areas with poor ventilation** (although important to recognize that low readings do not necessarily equal low risk - but high readings definitely suggest high risk)

5. Final thoughts

No solution is sufficient alone



Source: Adapted from New York Times and Ian M. Mackay (virologydownunder.com) and James T. Reason. Illustration by Rose Wong.

Other important areas we were not able to touch on today:

- **Epidemiology and transmission dynamics:** in each facility/housing type (EPI curves)
- **Screening and testing:** evolution of testing protocols; testing turnaround time; and screening/testing recommendations
- **Behavioral science:** experiences of staff and residents, challenges and opportunities
- **Environmental assessment:** structures and ventilation, vulnerabilities and recommendations
- **Movement and isolation/quarantine:** Focus on movement between facilities
- **Vaccination:** trends and demographics at the institution & compared to the system
- **Pandemic preparedness**: rapid response plan and communication

Thank you for welcoming our team into CIW and allowing us to learn from your experiences.

- The past year and a half has been incredibly difficult. You, your staff, and the people living in California's prisons were faced with immense pressures and impossible decisions.

- We are grateful for your transparency and willingness to collaborate.

Acknowledgments

The Wardens, Associate Wardens, Leadership, Custody,
CEOs, CMEs, CNEs, medical leadership and staff, Plant Managers, Chief Engineers, Inmate Councils, and other staff and residents
at SQ, CMC, SATF, CMF, CTF, CCWF, RJD, CIM, CIW, SOL.

In particular at CIW, we thank:

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Receiver Mr. Clark Kelso

Dr. Joseph Bick

Dr. Heidi Bauer

Dr. Justine Hutchinson

Mr. John Dovey

Dr. David Leidner

Mr. Dean Borg

Ms. Sarah Bronstein

Dr. Ilana Garcia-Grossman

Ms. Liz Gransee