

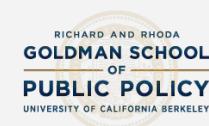


California Institution for Men (CIM) Site Visit Report

14 December 2021



University of California
San Francisco



Presented by: A. Kwan*, J. Harney*, E. Noth, R. Sklar*, S. Bertozzi*
Work done with: M. Adee, H. Archer, K. Lacey, A. Lerman, E. Linos, S. McCoy,
R. Schell, D. Sears, B. Williams*, *on behalf of the CalPROTECT team*

* 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 Dec. 14, 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 CIM-specific and CDCR-wide observations and recommendations
 - Epi, vaccination, 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 from **UCSF** and **UC Berkeley**.

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 to optimize COVID-19 response efforts and to improve conditions for staff and residents in CDCR facilities

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 CIM Visit

1. Interview and have conversation with key stakeholders (before and during visits):

- Facility CDCR/CCHCS leadership
- Facility healthcare, custody, plant/engineering staff

2. Conduct onsite data collection

- Focus groups and conversations with residents and staff
- Spatial observation of facilities
- Indoor air quality assessments
- Collect site-specific announcements and policies

3. Share information

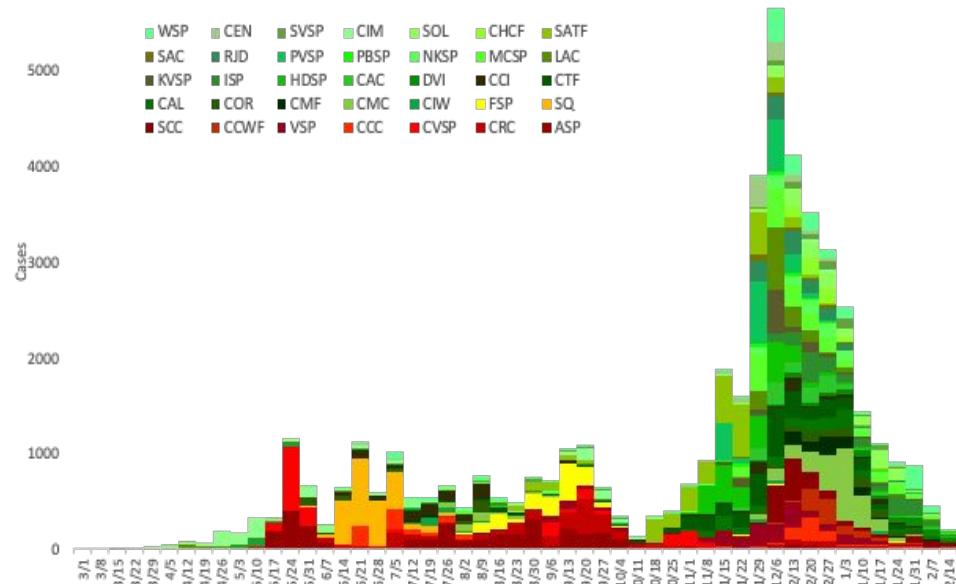
- Arrival and departure debriefs with leadership

2. Epidemiology and Transmission Dynamics, Testing Turnaround Time and Recommendations

Aerosol transmission has caused outbreaks in dorms and cells through different seasons

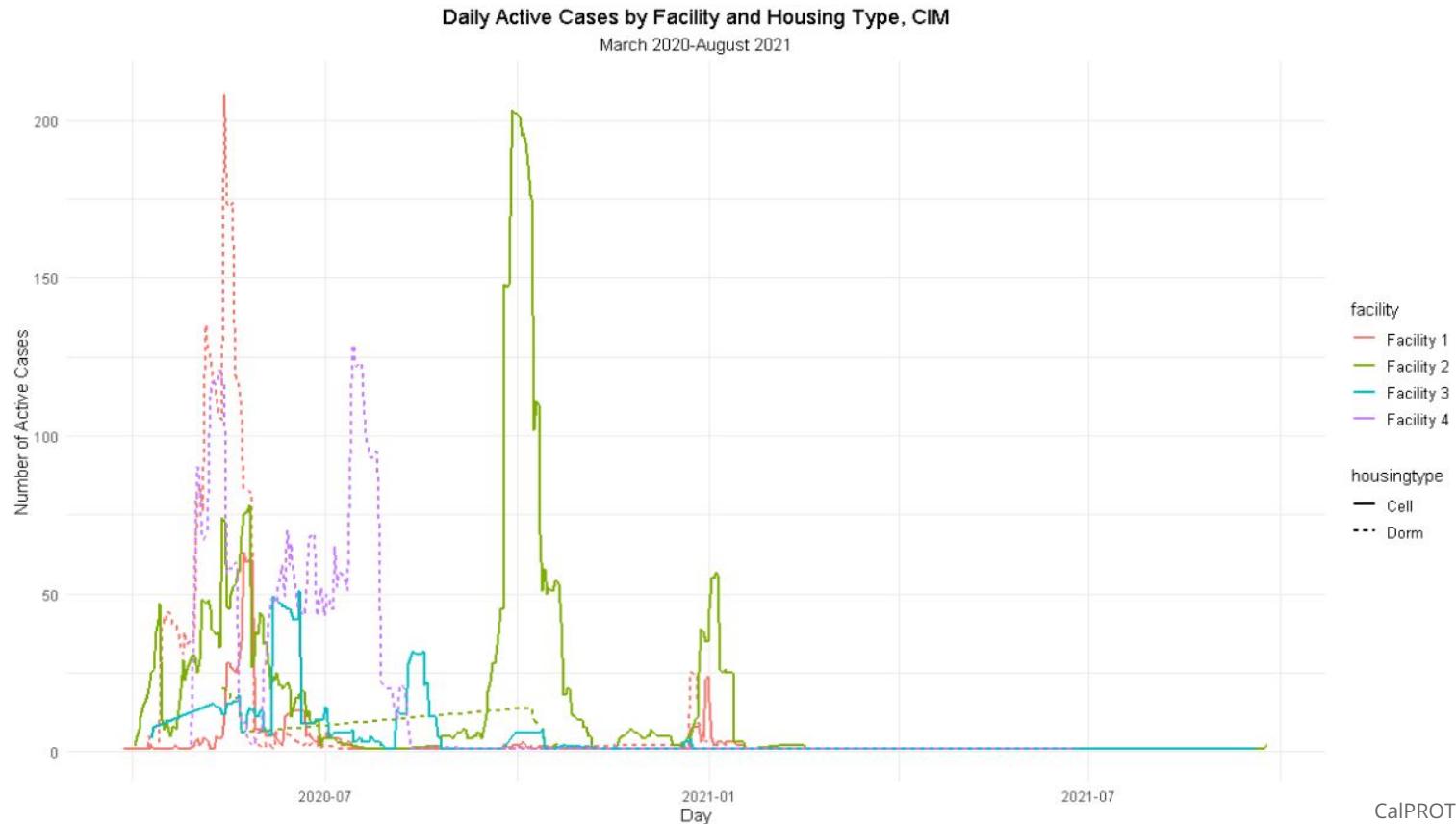
This graph displays the frequency of COVID-19 cases (N = 48,984) by institution and housing type

- COVID-19 outbreaks in summer 2020 predominantly occurred in institutions that were majority **dorms, pods and barred cells**.
- Beginning in mid-October, large outbreaks also occurred in institutions that were **majority cells with solid walls and doors**.



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

CIM experienced large surges early on, particularly in dorm settings.



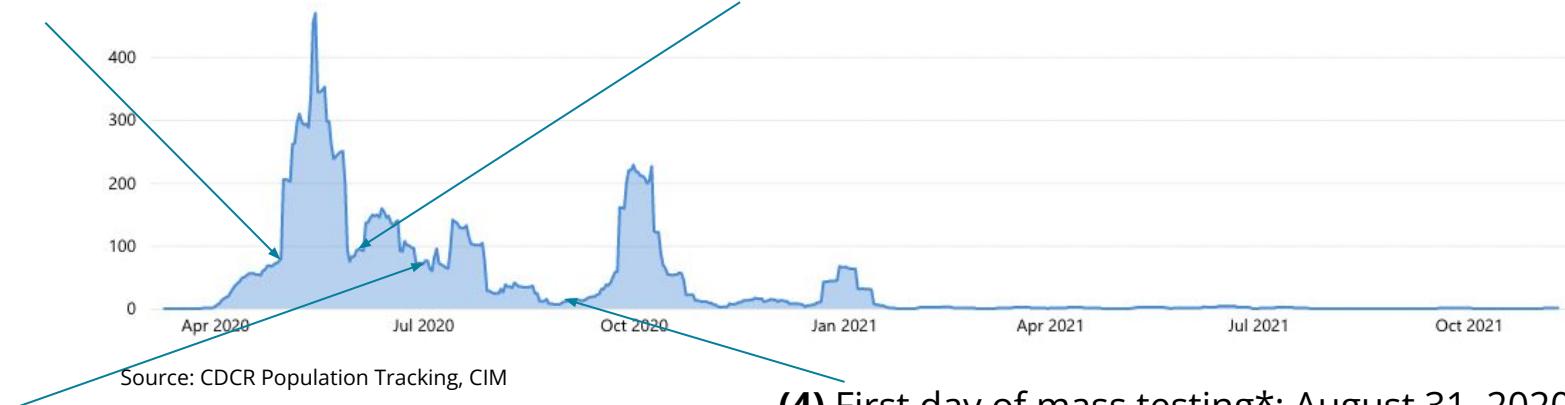
Controlling outbreaks becomes increasingly difficult when there is a delay between case introduction and mass testing

(1) First day of mass testing*: May 1, 2020

- Positives/Tests: 128/223 (TPR 57%)

(2) First day of mass testing*: June 6, 2020

- Positives/Tests: 44/102 (TPR 43%)



(3) First day of mass testing*: July 2, 2020

- Positives/Tests: 5/124 (TPR 4%)

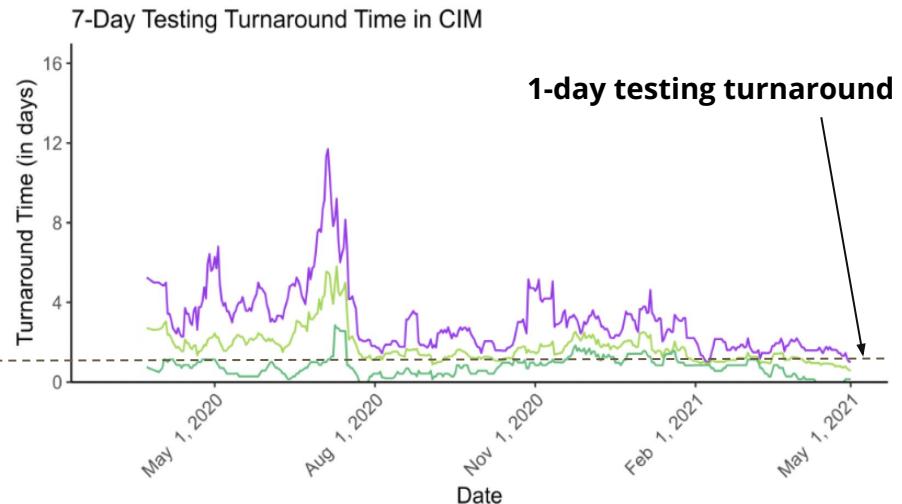
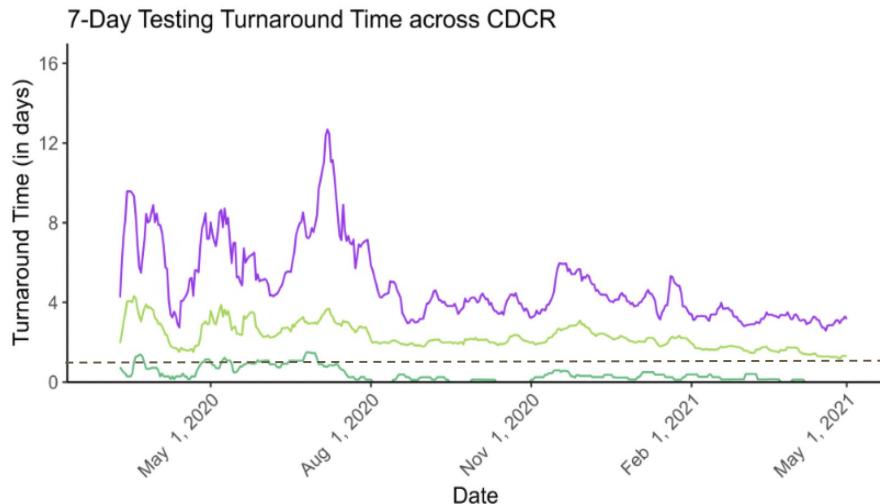
(4) First day of mass testing*: August 31, 2020

- Positives/Tests: 4/153 (TPR 3%)

*First day of mass testing = first day in any two week period when at least 100 tests are conducted

TPR = test positivity rate

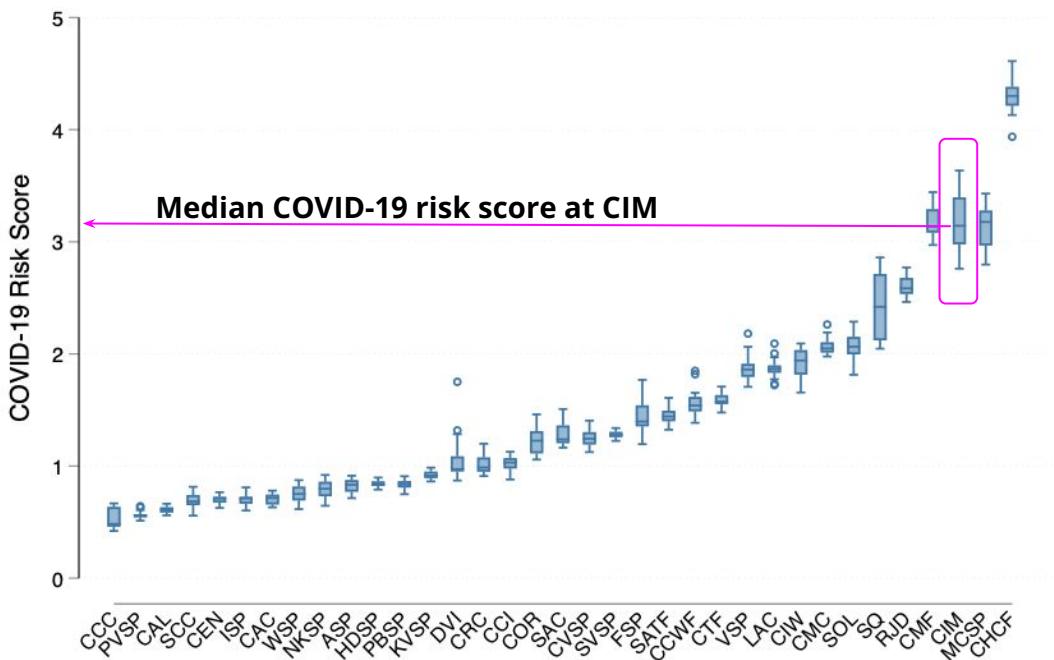
CDCR (left) & CIM (right) testing turnaround



- Summer 2020 exposed the challenge of making quarantine and isolation decisions with extended testing turnaround times at CIM which averaged ~6 days (and was as high as 12)
- We found that the number of tests per day did not impact test turnaround time

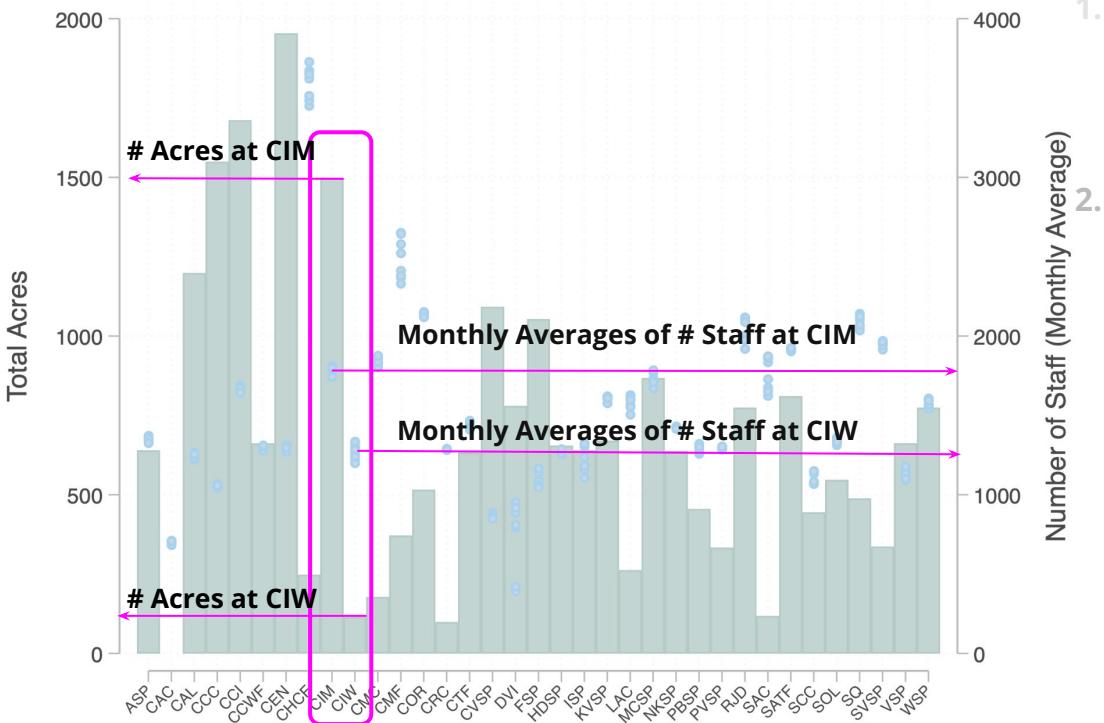
— 95th Percentile 7-day moving average
— Mean 7-day moving average
— 5th Percentile 7-day moving average

Aspects of CIM that differ from other institutions we visited



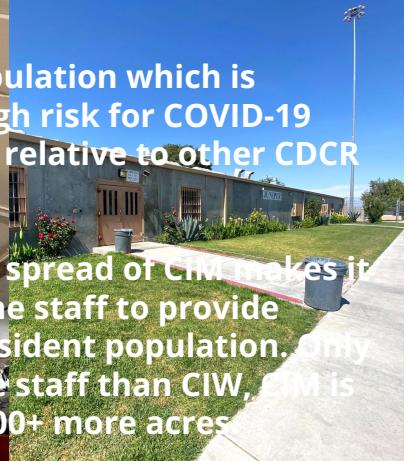
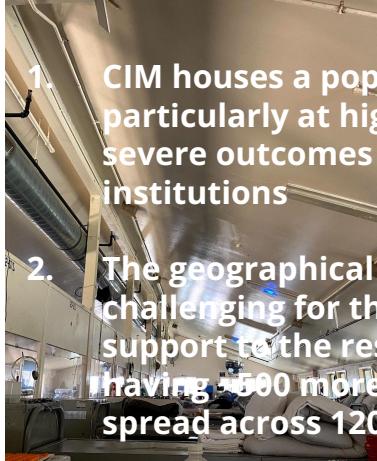
1. CIM houses a population which is particularly at high risk for COVID-19 severe outcomes relative to other CDCR institutions

Aspects of CIM that differ from other institutions we visited



1. CIM houses a population which is particularly at high risk for COVID-19 severe outcomes relative to other CDCR institutions
2. The geographical spread of CIM makes it challenging for the staff to provide support to the resident population. Only having ~500 more staff than CIW, CIM is spread across 1200+ more acres.

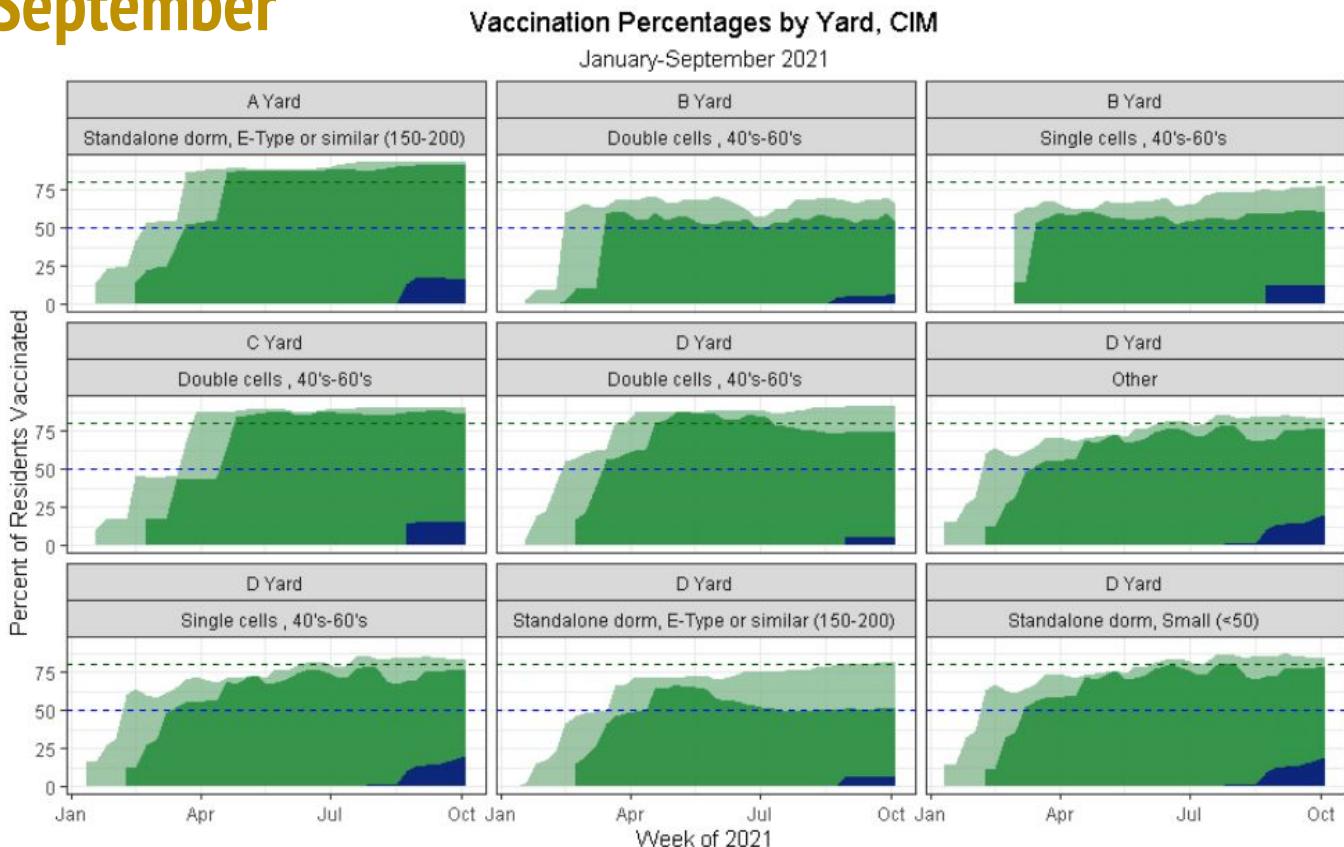
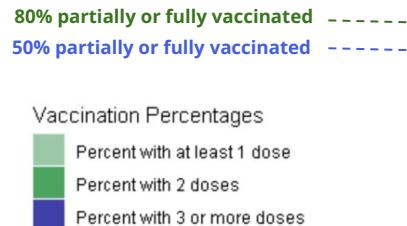
Aspects of CIM that differ from other institutions we visited



1. CIM houses a population which is particularly at high risk for COVID-19 severe outcomes relative to other CDCR institutions
2. The geographical spread of CIM makes it challenging for the staff to provide support to the resident population. Only having >500 more staff than CIW, CIM is spread across 1200+ more acres
3. Few places existed with closed-door cells, and the ability to move people was restricted by variation in security levels, ADA accessible cells, crowding, and other medical needs. We heard about a lot of efforts to create new more space to spread people out.
4. CIM was receiving a lot of intake from Wasco, Kern, LA County

Yards varied largely in vaccination rates across CIM, with some still at 50% in September

As of Dec 7, 2021,
86% of 2,752
residents and
69% of 1,863 staff
have been fully
vaccinated at CIM
per CDCR
definitions



Findings and Recommendations

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

3. Behavioral Science Data Collection:

Staff and Resident Experiences of COVID-19

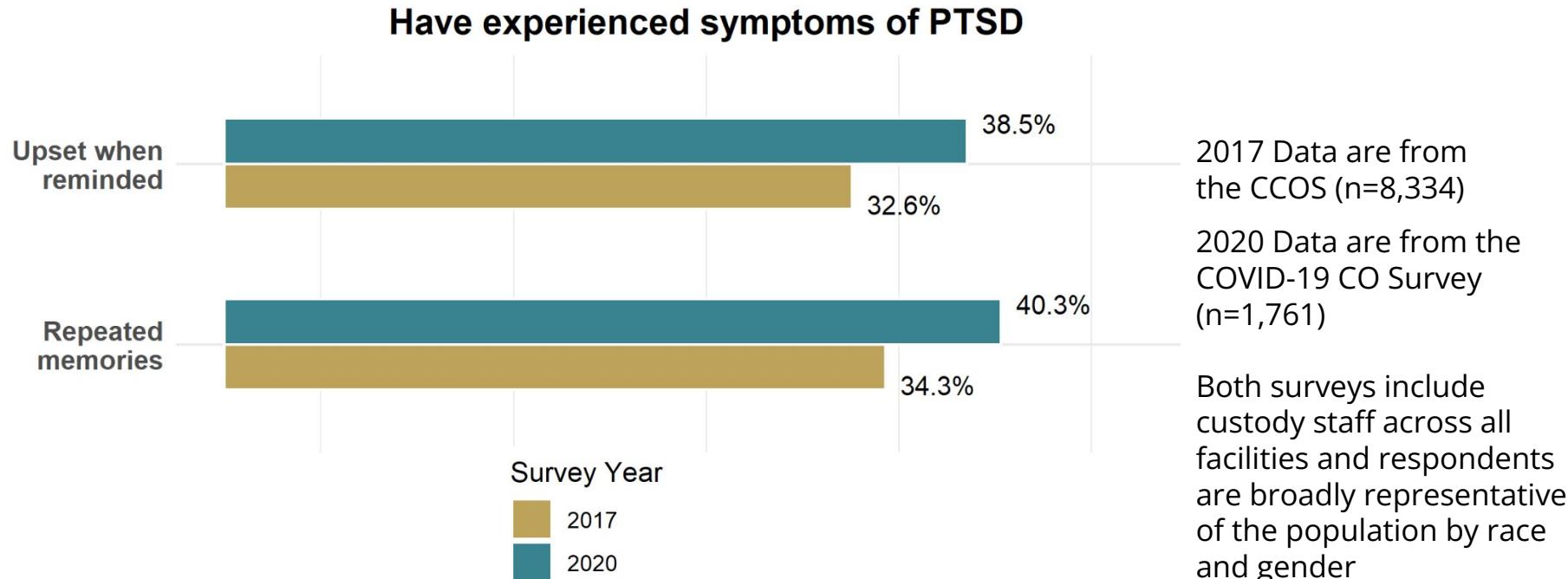
The approach: Site Visits

- **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.

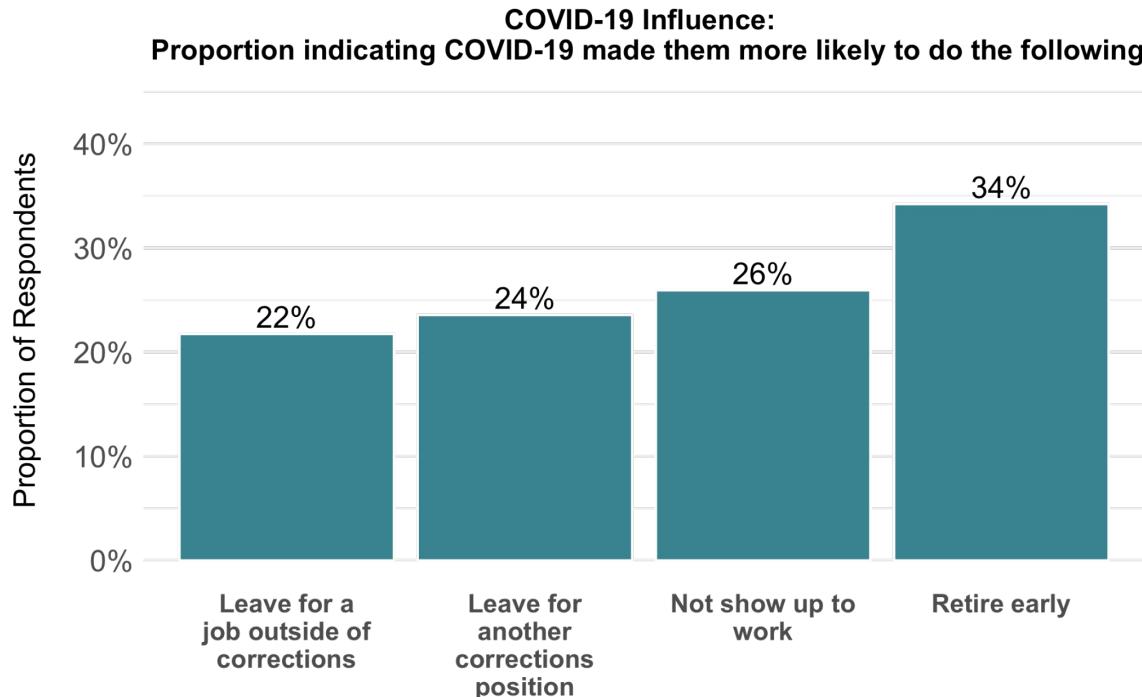
The approach: Custody Survey

- **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



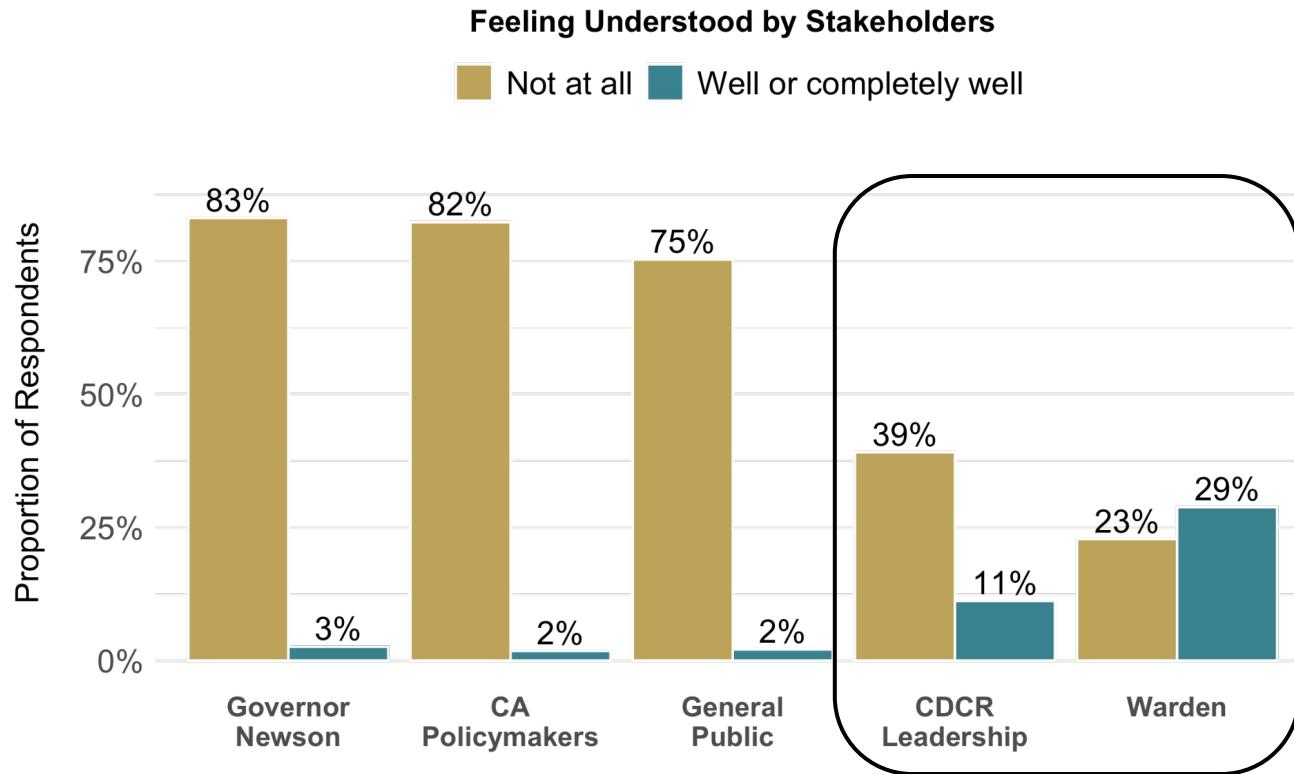
Survey Data: Threat of burnout and staff turnover due to COVID-19 is significant



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

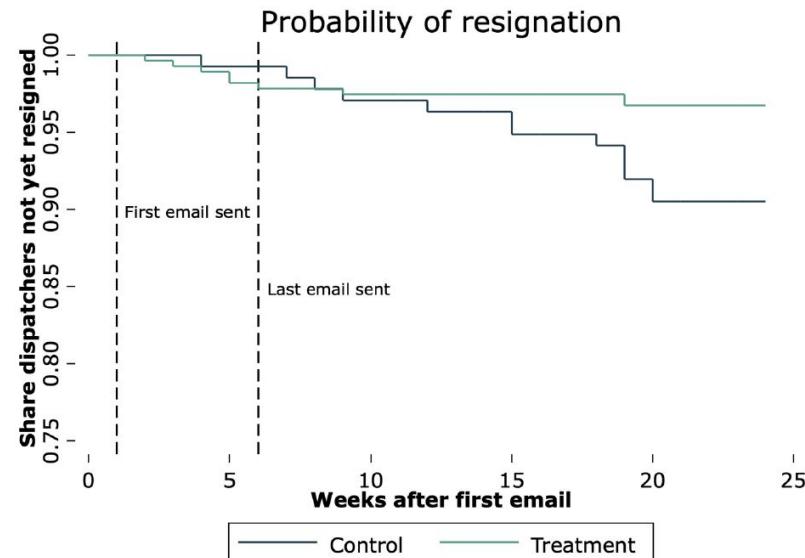
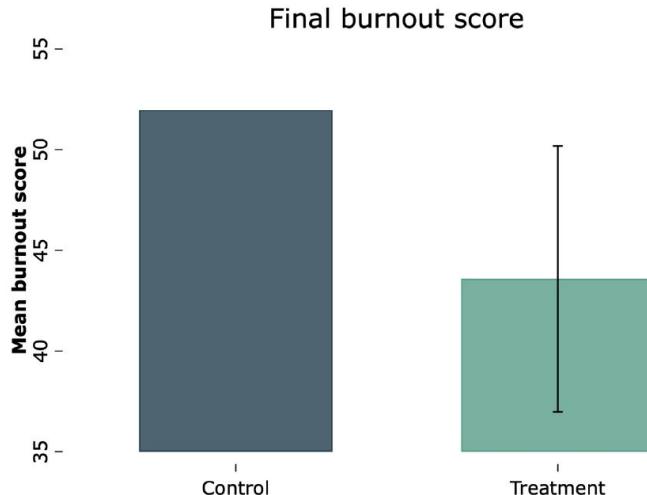
This presents a unique opportunity for wardens and other prison leadership to leverage feelings of being understood in order to improve wellbeing among staff



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

“[Custody officers] are more institutionalized than us”

- Resident at CIM

Opportunities for Building Strength

A critical moment to:

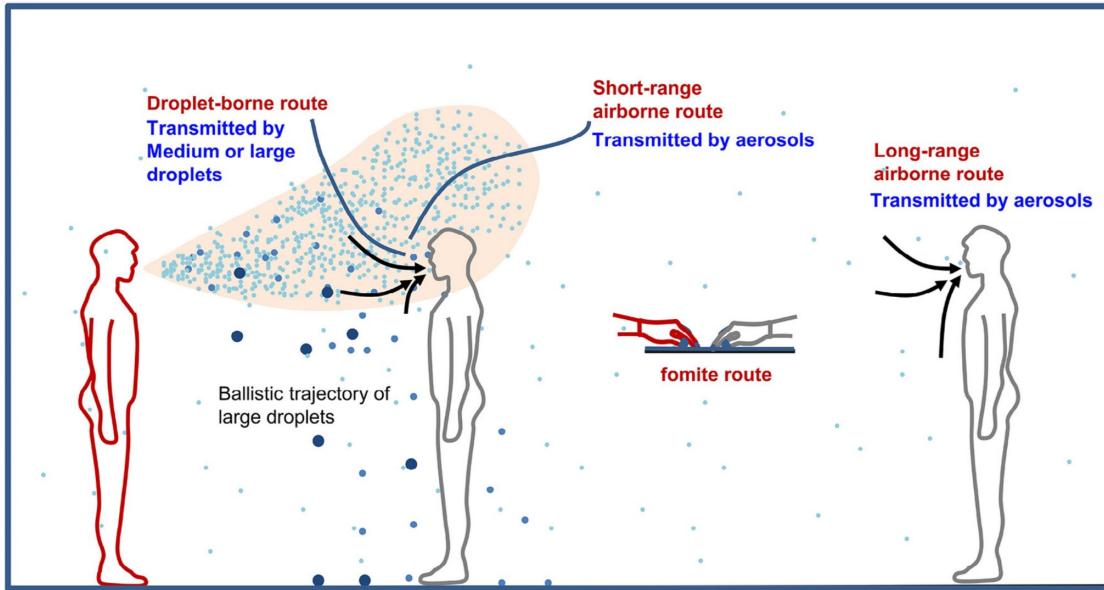
- **Reinforce culture of learning**, including from mistakes
 - Reassure staff that you know they faced impossible decisions under extreme uncertainty, and they had no choice but to find a(n imperfect) solution

"Prisons aren't build to handle pandemics"

- Staff member at CIM

4A. Environmental Assessment: Background

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



- Large droplets ($>100 \mu\text{m}$): Fast deposition due to the domination of gravitational force
- Medium droplets between 5 and $100 \mu\text{m}$
- Small droplets or droplet nuclei, or aerosols ($< 5 \mu\text{m}$): 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.

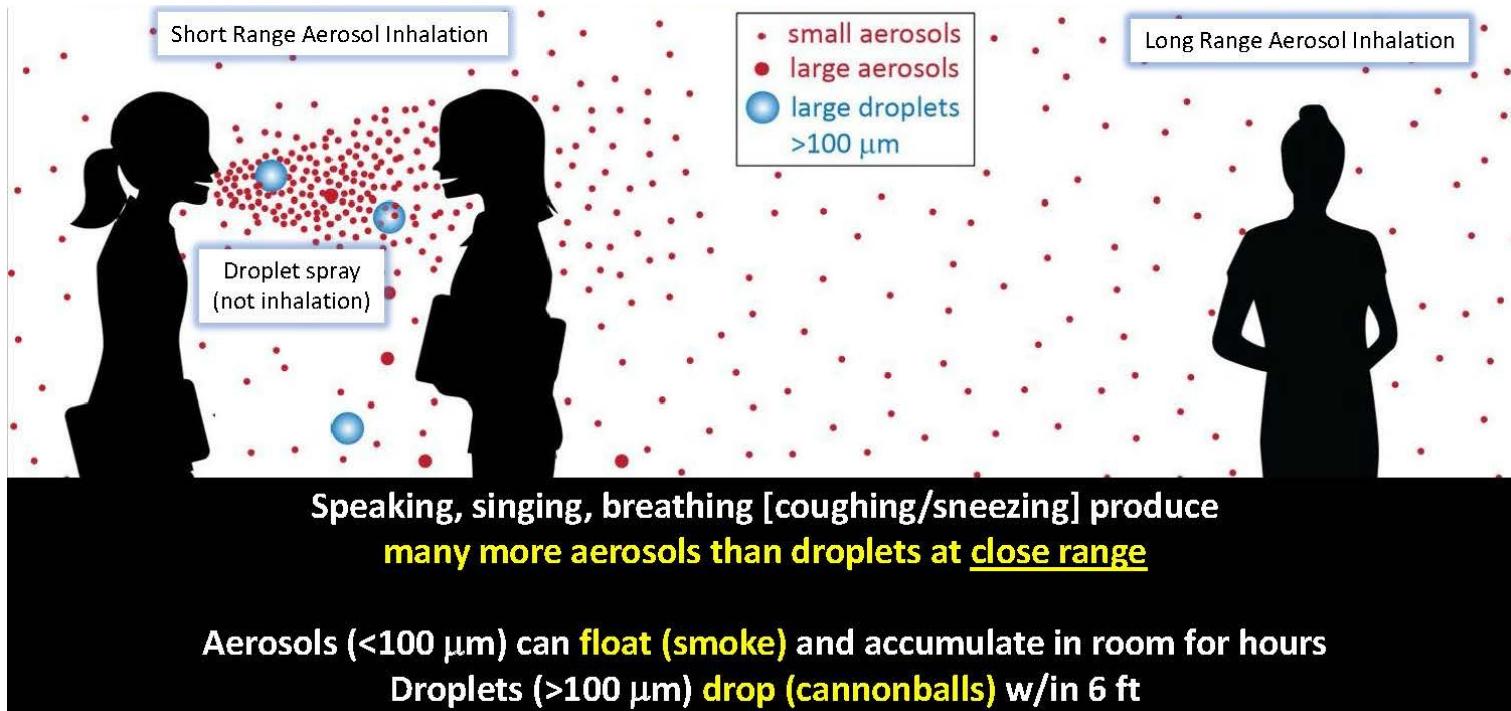
Morawska, L. and Cao, J. (2020). Airborne transmission of SARS-CoV-2: The world should face the reality. *Environment International*, 139:105730.

Morawska, L. and Milton, D. K. (2020). It is time to address airborne transmission of COVID-19. *Clinical Infectious Diseases*, 71:2311–2313.

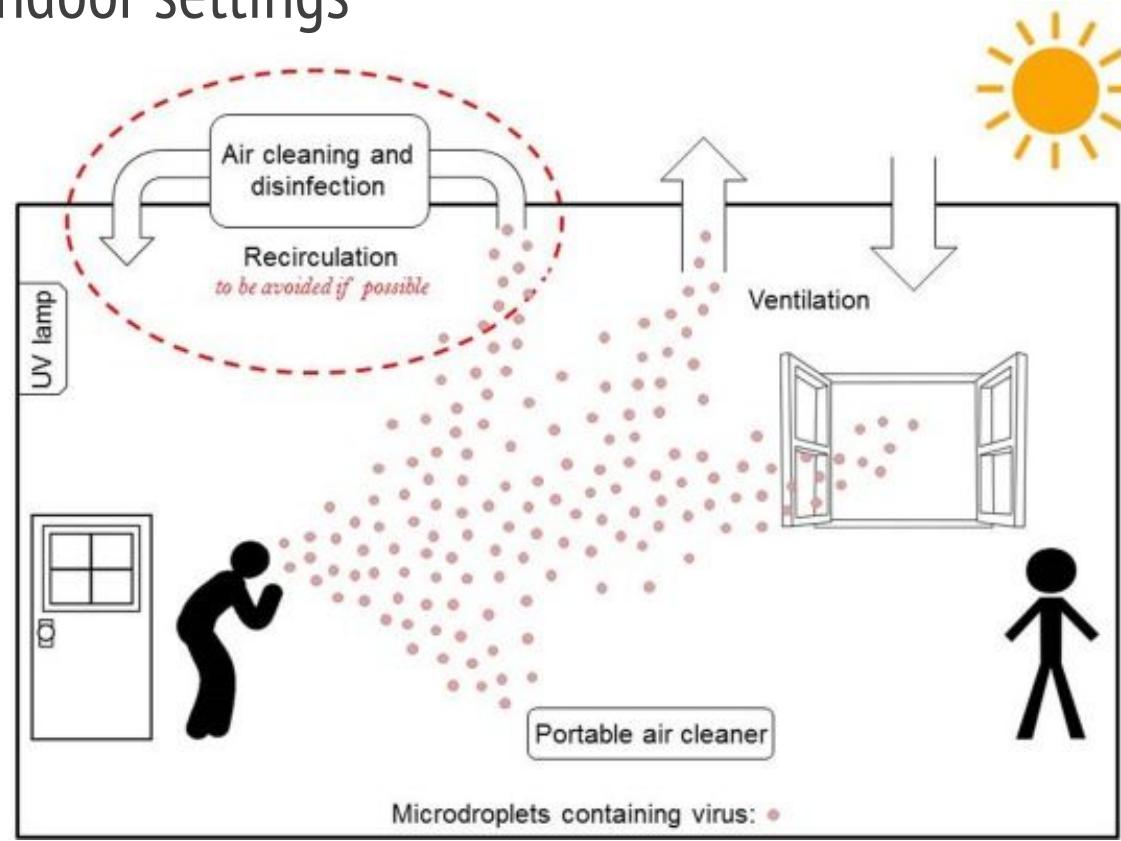
Jayaweera, M., Perera, H., Gunawardana, B., and Manatunge, J. (2020). Transmission of COVID-19 virus by droplets and aerosols. *Environ Res.*, 188(109819).

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:

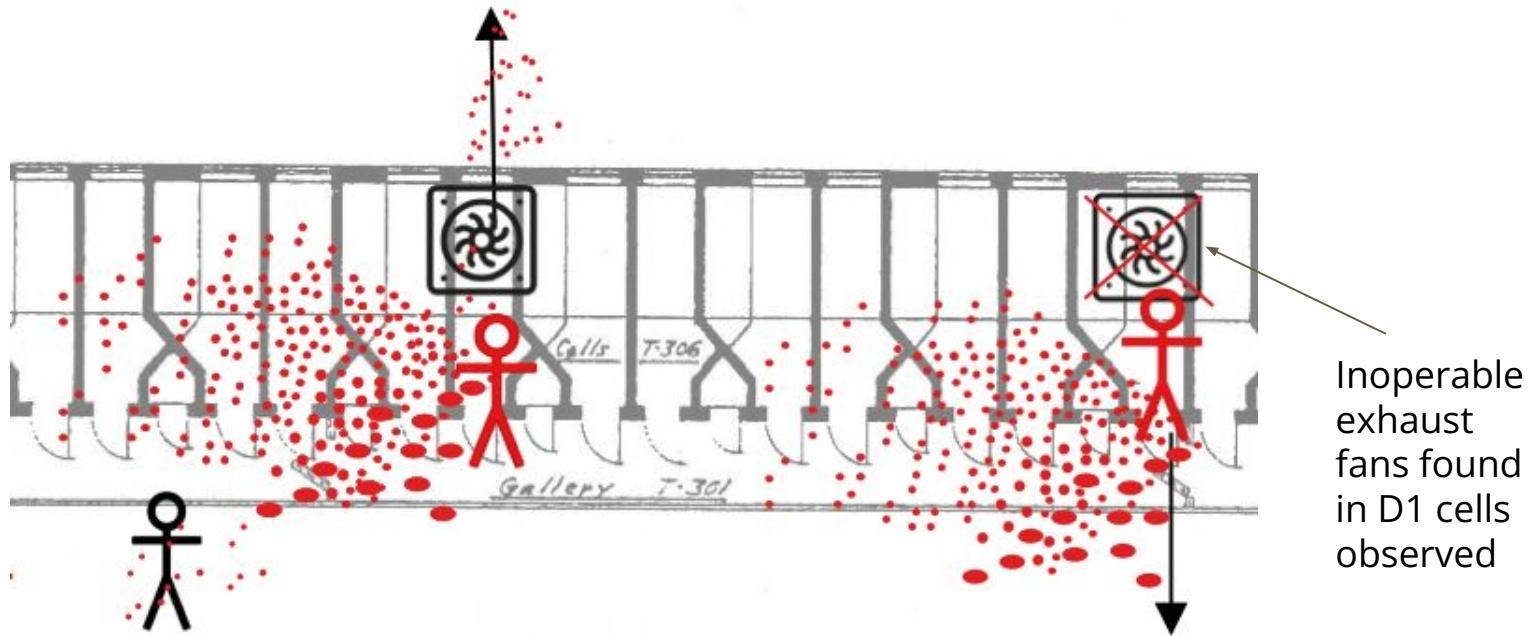
What are we finding at CIM?

Point of Vulnerability:

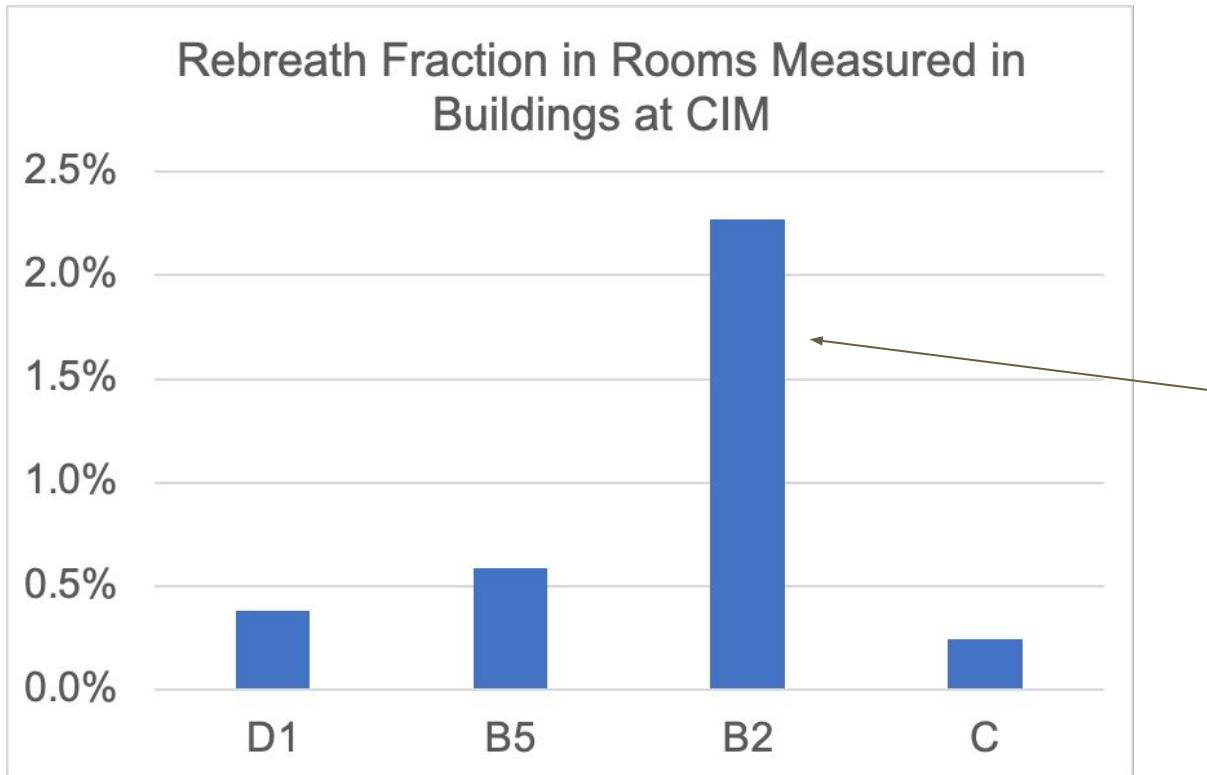
Cells with open grate doors
allow for free and rapid
diffusion of air between cells
and common areas



If someone is infected inside/outside a cell, they are likely to transmit to anyone in the building



Rebreathed air, which measures the fraction of air containing air exhaled by potential infectors, was high in some buildings



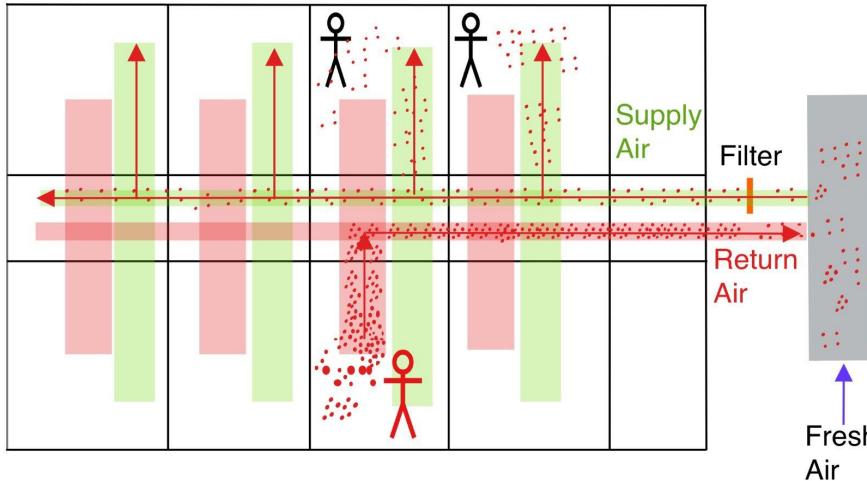
Every breath one takes contains 2% of the collective breath of others (including infectors) in the space

Other Observations

- Flooding in the tunnel areas may prevent proper diagnosis of issues re ventilation system and access to key areas for maintenance
- Status of intake dampers was unknown in several buildings
- Facilities team was knowledgeable and hardworking but short staffed

Recirculation (Heat or AC) combined with improper filtration may 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

Critical opportunity to empower and educate your facilities staff to “own” their ventilation system’s performance

These quotes suggest opportunities for intervention

“I clean the filters every quarter. The metal mesh filters.”

“I never thought about it like that. The difference in how Covid builds up inside versus outside”

“Using a filter with a virus is like expecting a chain linked fence to block a stone thrown.”

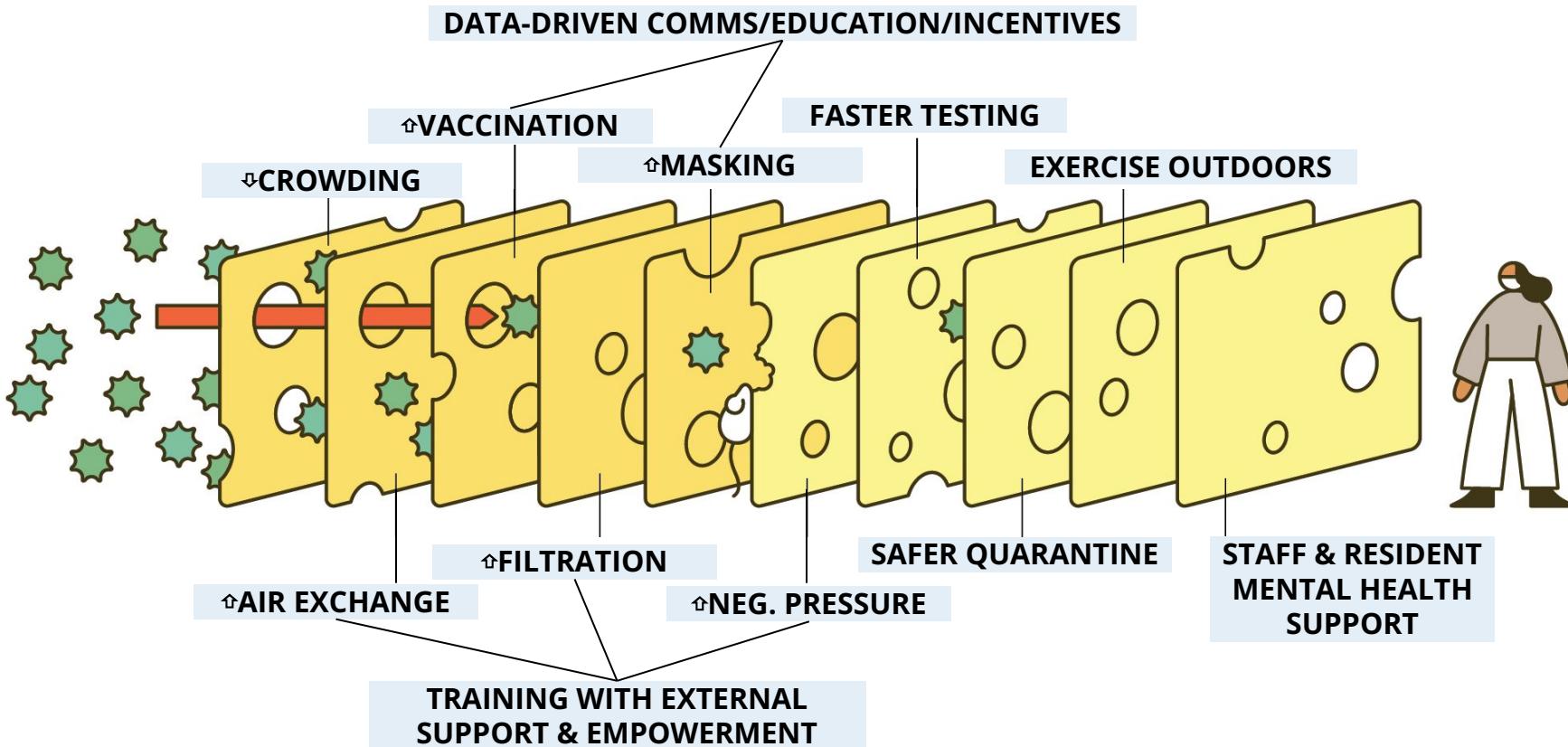
There exists a tremendous need for (and interest in) continuing education and for being part of the emergency response teams at each facility

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



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 CIM and allowing us to learn from your experiences.

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 CIM, we thank:

Warden James Hill, Chief Deputy Warden Pennington, AW Brian Lemaster, CEO Louie Escobell, CME Dr. Muhammad Farooq, CNE Alex Serrano, Joel Aispuro, Leo Quiroz, Chief of Plant Ops Larry Cain, Chief Engineer Leon Kazandjian, Gary Gilman, Jason Bishop, members of the IAC Executive Cabinet and individual facility IACs,

and all others involved in coordinating the visit, welcoming us, and providing information for the report.

You are the frontline
for our population



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