



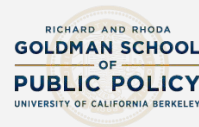
Substance Abuse Treatment Facility and State Prison (SATF) Site Visit Report

15 November 2021



University of California
San Francisco

Berkeley Public
Health



Presented by:
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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. 15, 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 SATF-specific and CDCR-wide observations and recommendations
 - Epidemiology 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

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 SATF Visit

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

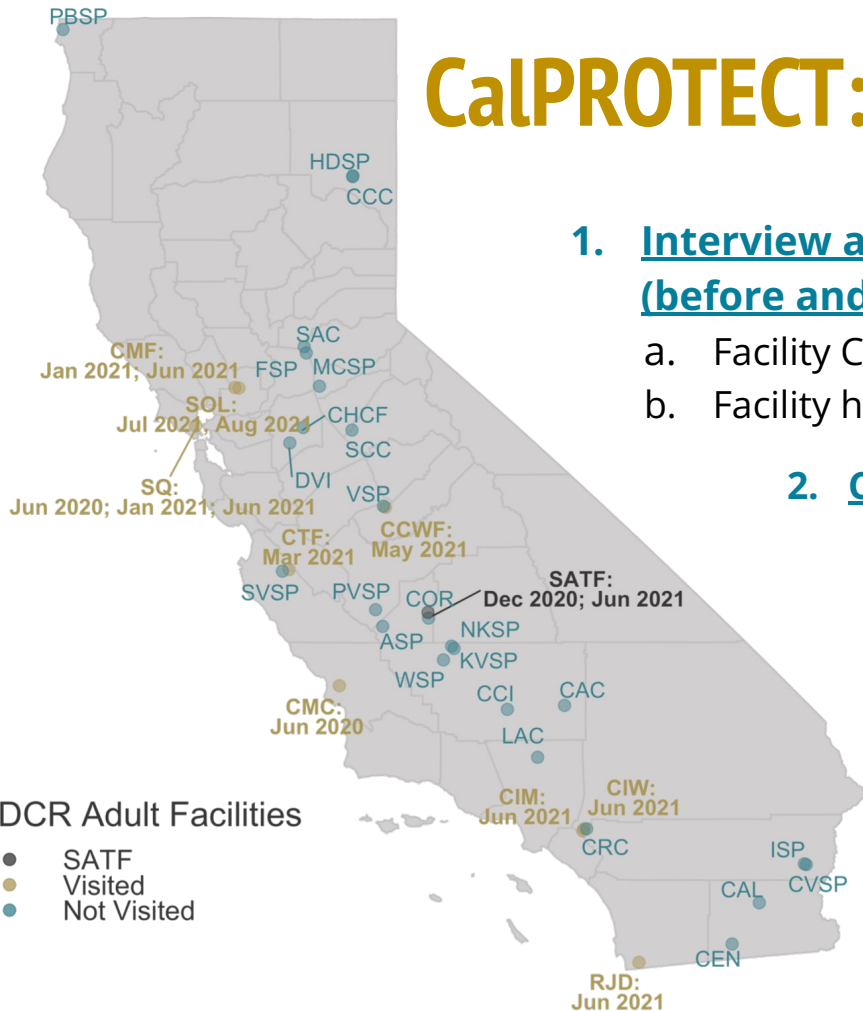
- Facility CDCR/CCHCS leadership
- Facility healthcare, custody, plant/engineering staff

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

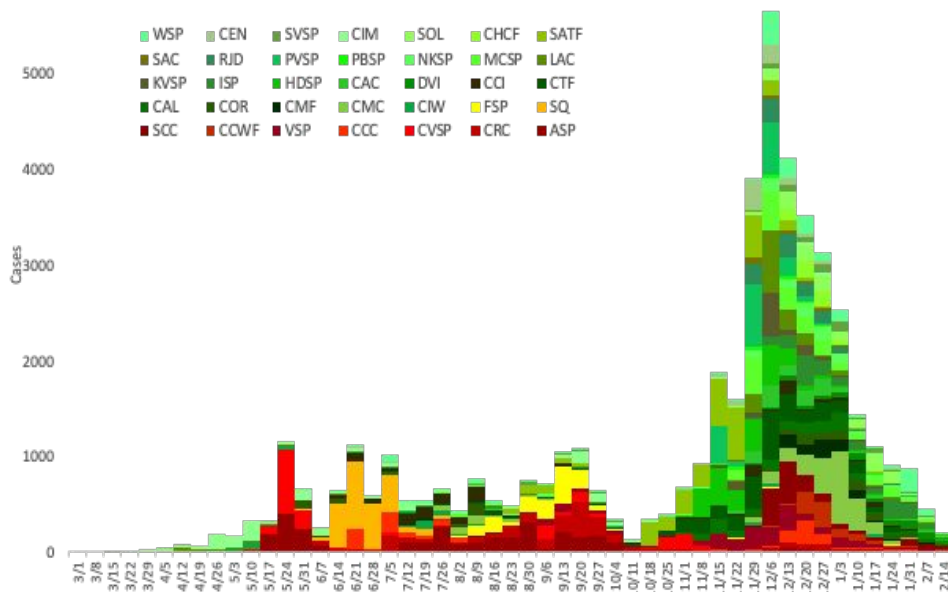


2. Epidemiology and Transmission Dynamics, Testing Turnaround Time and Recommendations

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**.



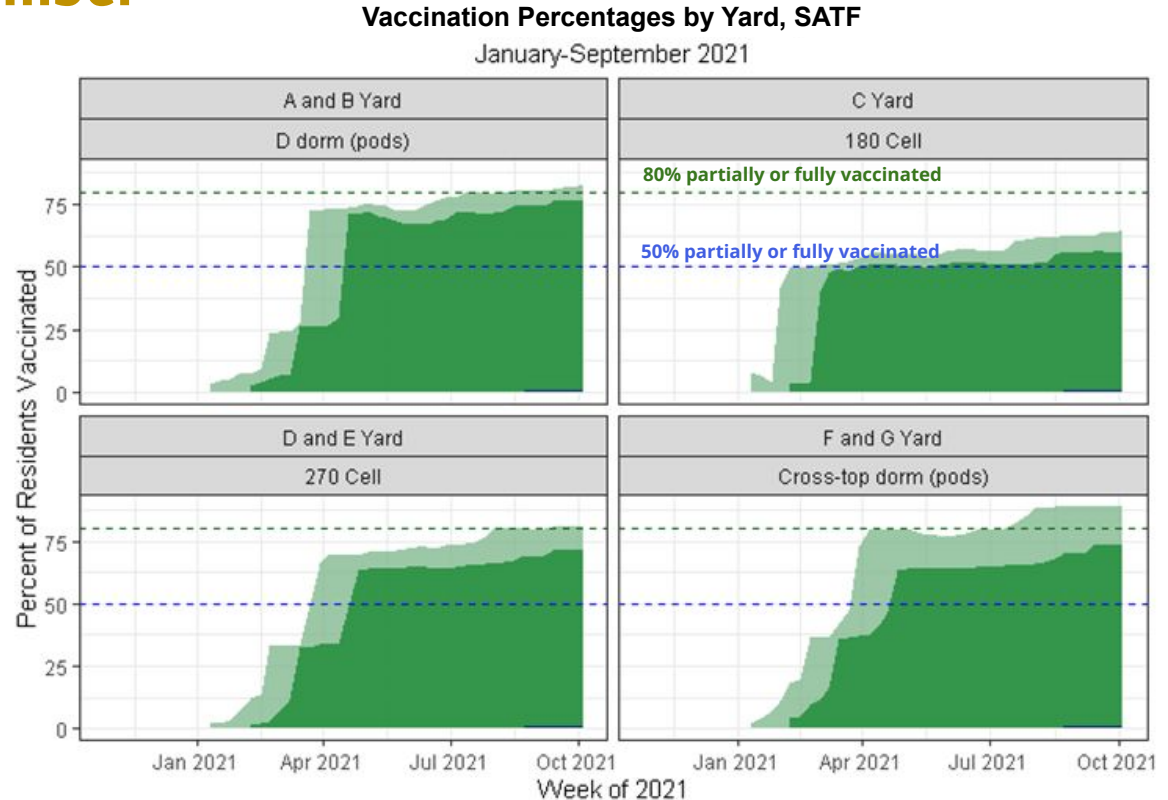
Note: Figure by Dr. Heidi Bauer and Dr. Justine Hutchinson from CCHCS (February 2021)

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

As of Nov 13, 2021, 82% of 5,076 residents and 58% of 1,993 staff have been fully vaccinated at SATF, per CDCR definitions

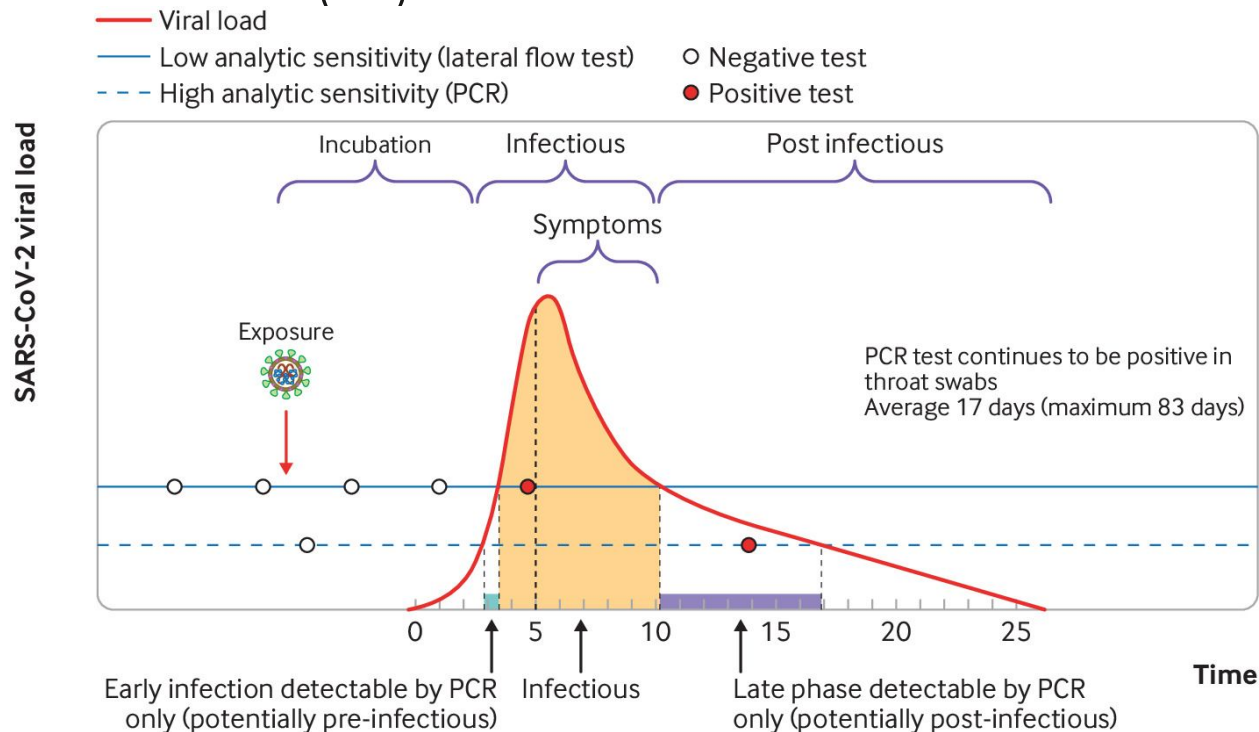
Vaccination Percentages

- Percent with at least 1 dose
- Percent with 2 doses
- Percent with 3 or more doses



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)

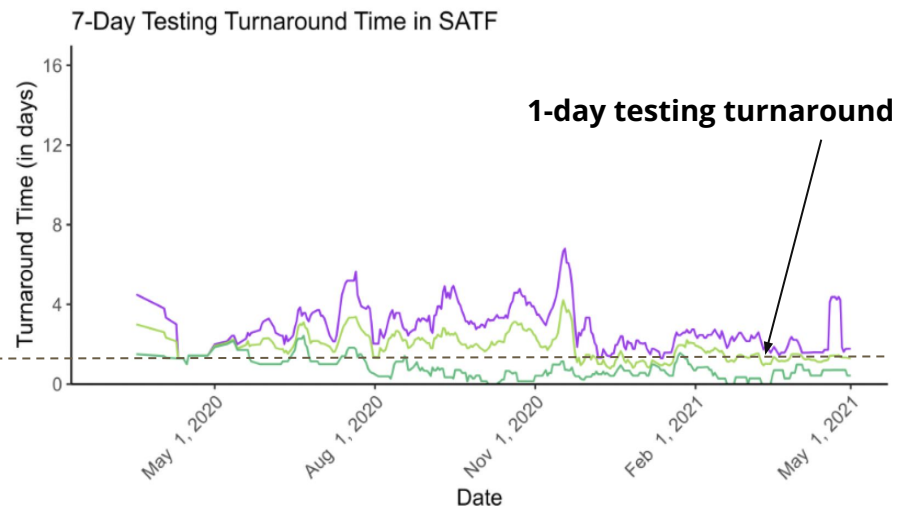
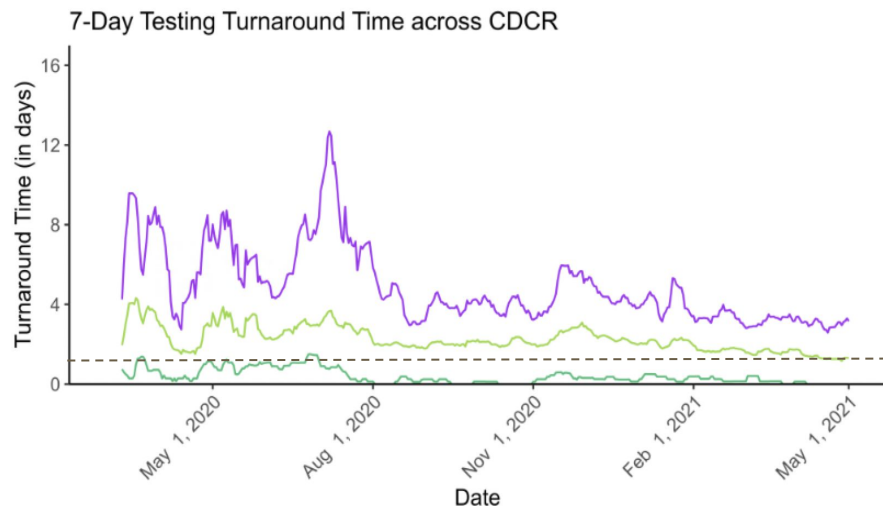


Conclusion

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

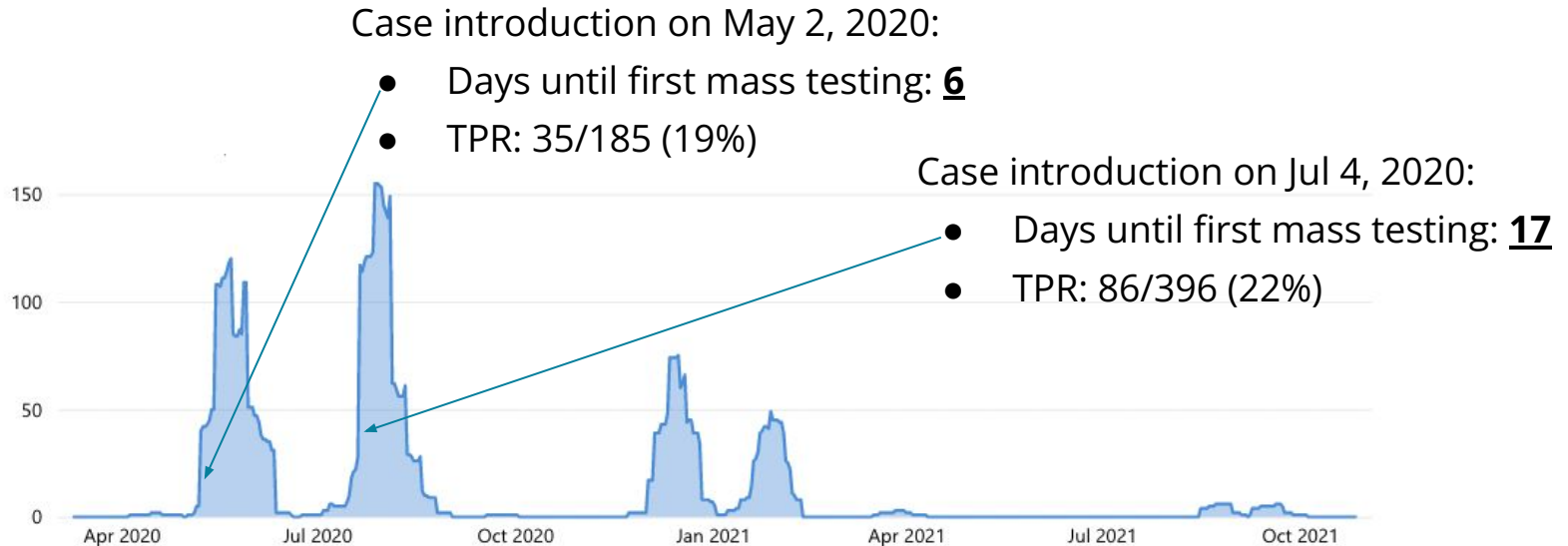
SOURCE:
<https://thepressfree.com/put-to-the-test-use-of-rapid-testing-technologies-for-covid-19/>

CDCR & SATF testing turnaround



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

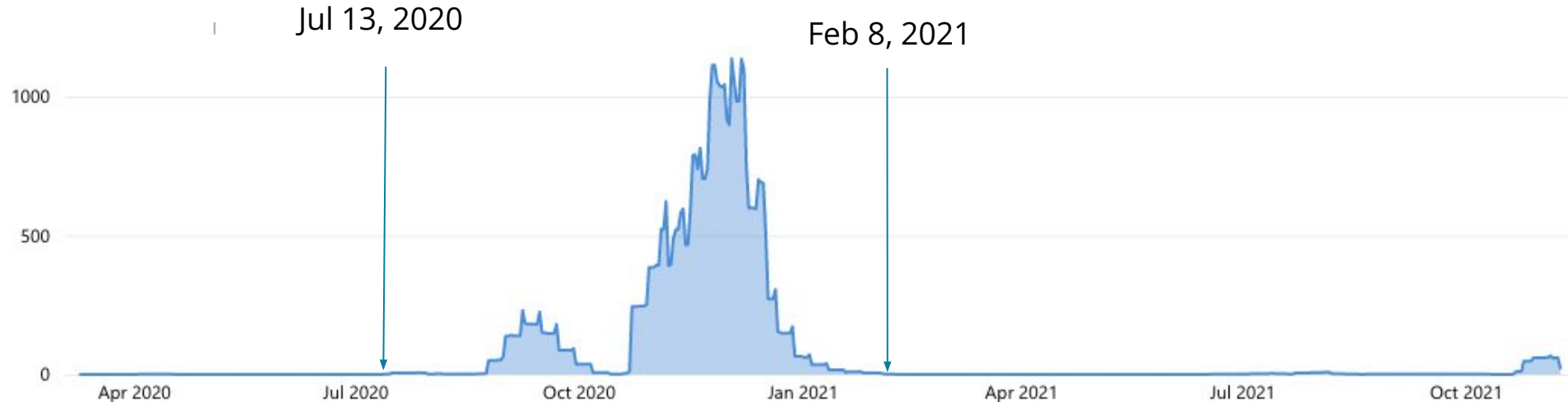
At many institutions, controlling outbreaks became increasingly difficult when there was a delay between case introduction and mass testing



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

- Case introduction on Sep 18, 2020:
- Days until first mass testing: 2
 - TPR: 1/162 (0.6%)

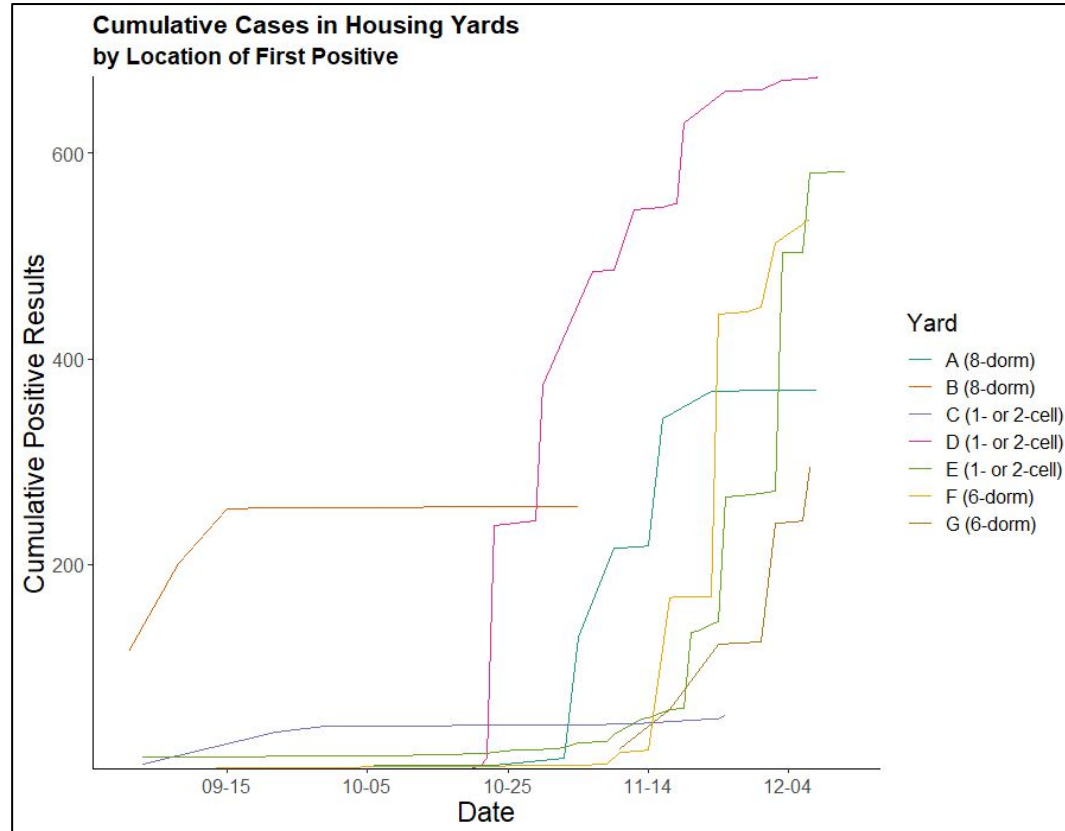
At SATF, lack of available space for safe quarantine and isolation combined with ongoing cases for ~7 months created movement challenges



Source: CDCR Population Tracking, SATF

At a minimum, mass testing defined as >100 tests done in 1 day at the institution
TPR = test positivity rate

At SATF, rapid rises in case counts in the yards may have been in part due to a delay in the deployment of mass testing



Findings and Recommendations

1. **Outbreaks in solid-walled cells last fall/winter highlight concern for the risk of aerosol spread**
2. **Differential vaccination rates across buildings** can help identify buildings that would benefit most from additional efforts to decrease the risk of transmission.
3. **Rapid antigen testing performs better than PCR at preventing secondary cases in an active outbreak** when you cannot safely quarantine all potentially exposed patients.
4. **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.
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

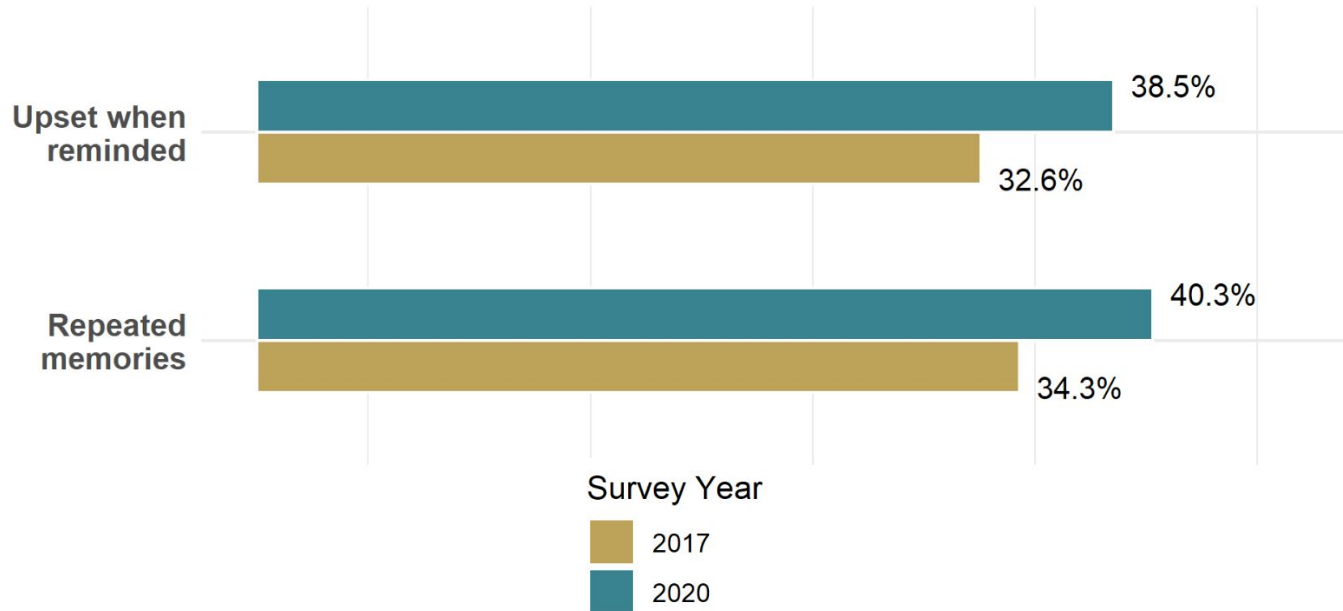
- **What we did:** We conducted conversations with residents, staff and leadership across the system on medical, nursing, mental health and correctional teams.
 - **Custody staff** (N=26)
 - **Medical/Mental health staff** (N = 60)
 - **Incarcerated people** (N=92)
- **Why we did it:** To understand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

Have experienced symptoms of PTSD

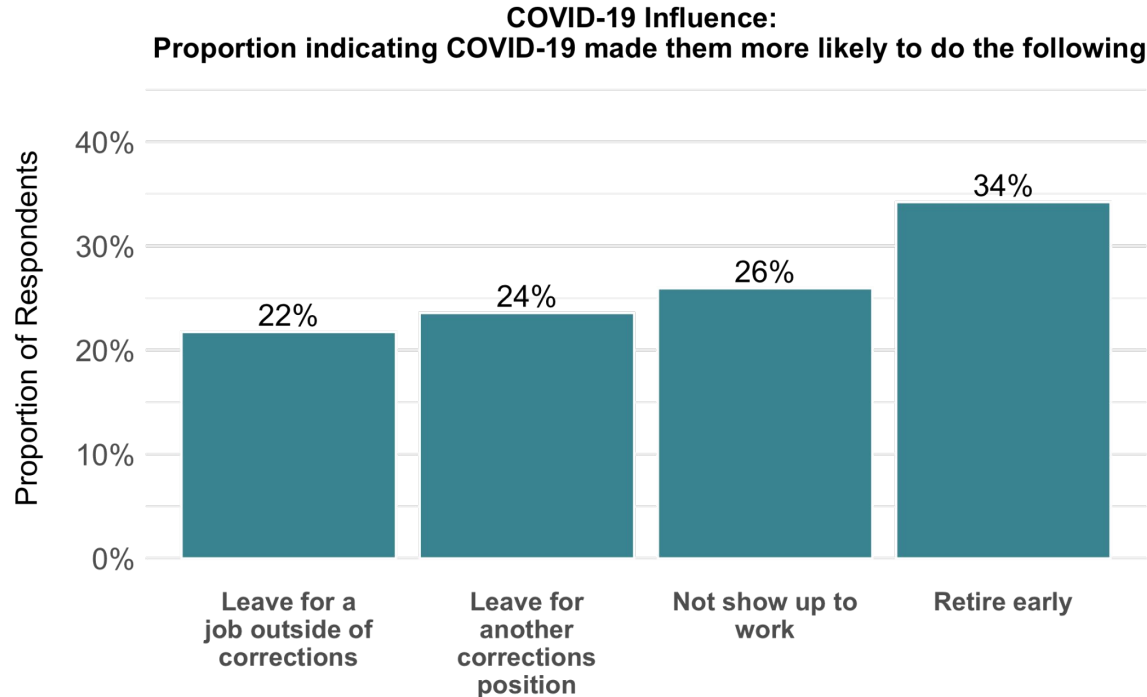


2017 Data are from the CCOS (n=8,334)

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

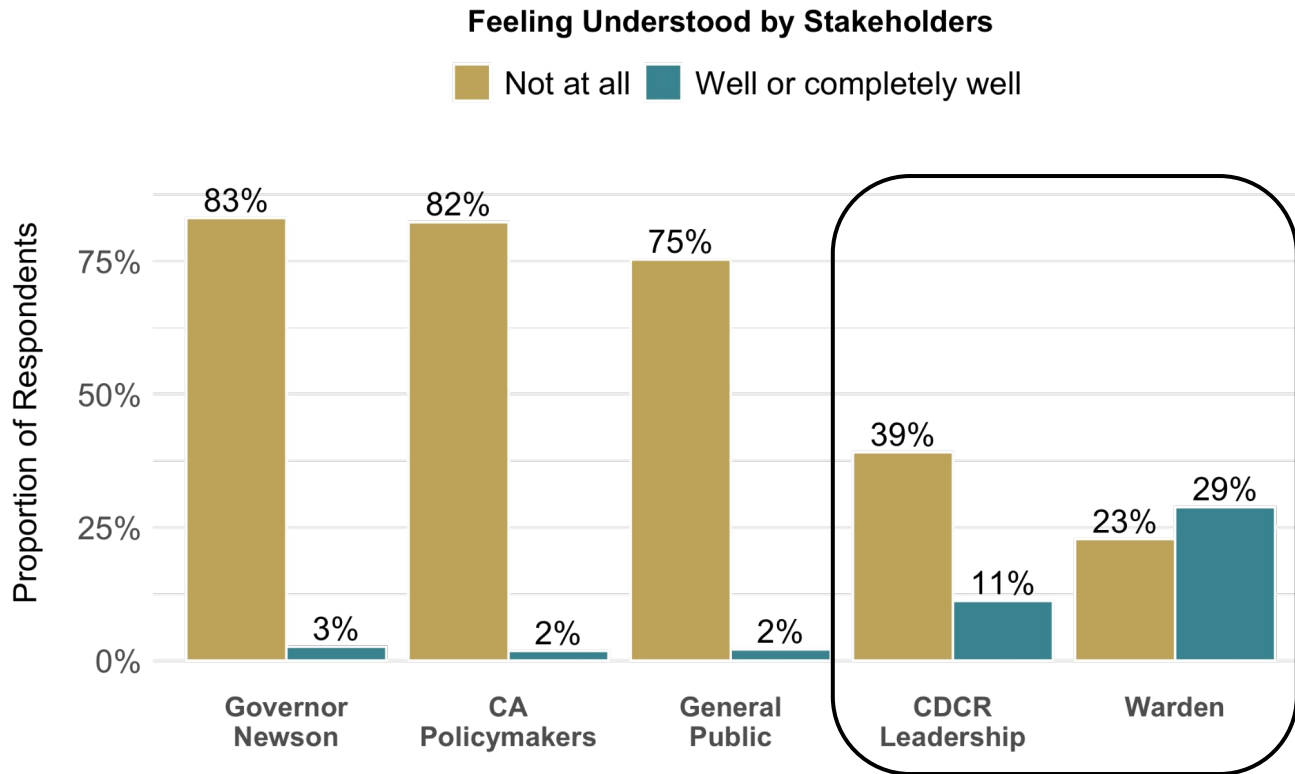
Survey Data: Threat of burnout and staff turnover due to COVID-19 is significant



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

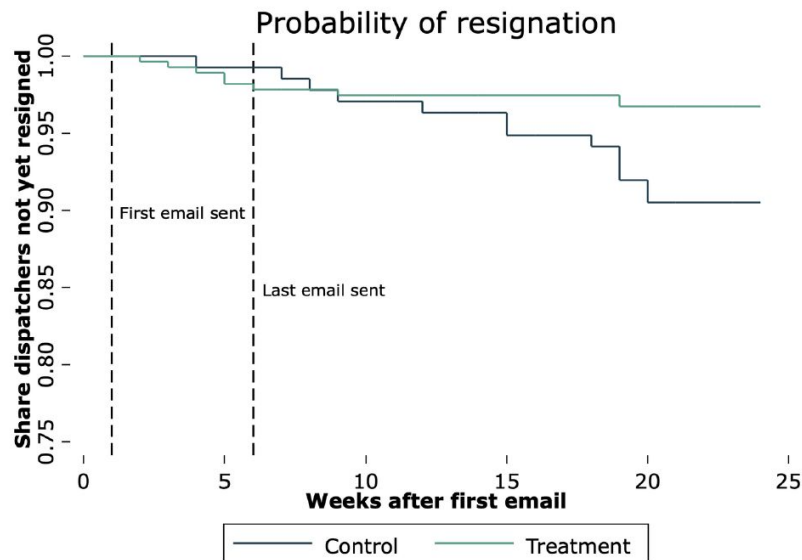
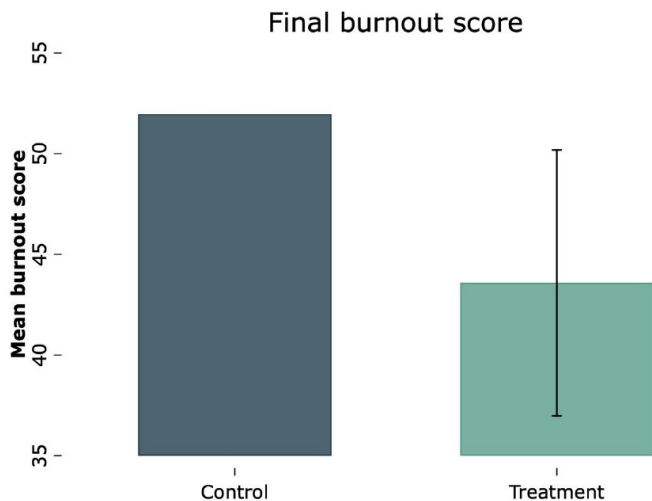
This presents a unique opportunity for wardens and other prison leadership to leverage feelings of being understood in order to improve wellbeing among staff



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

“They (the IAC) write proposals and get feedback from the COs on this yard, get their perspective on what higher ups will feel about it.” - Staff member at SATF

Opportunities for Building Strength

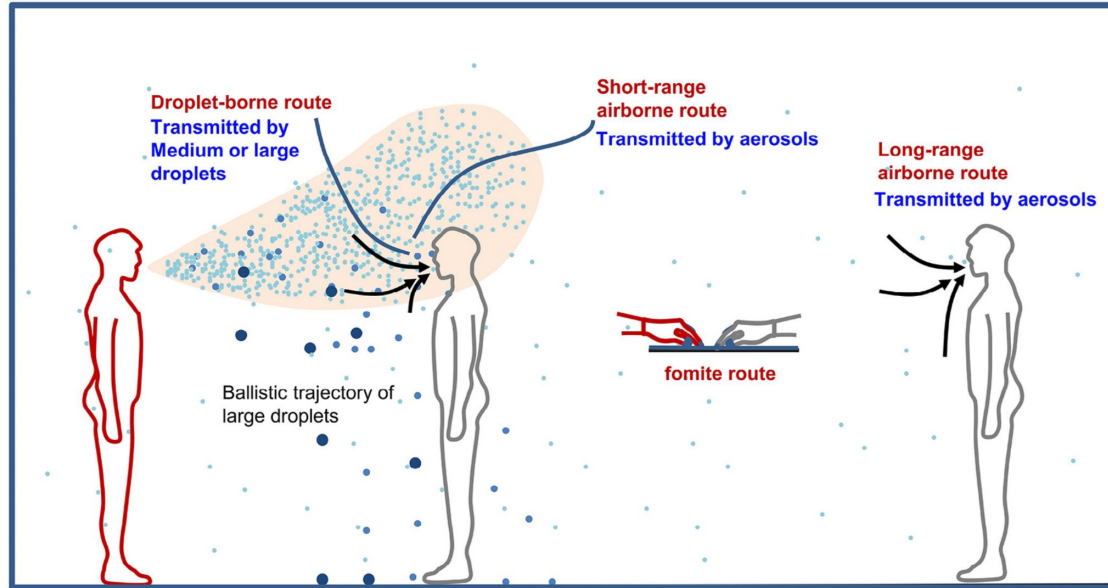
A critical moment to:

- **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

“[It] will be hard to rebuild trust. We trusted them the first time. They had a huge opportunity but IAC had to sell promises that they didn't follow through on. Everyone will remember that. Residents won't want to cooperate again.” - Resident at SATF

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.

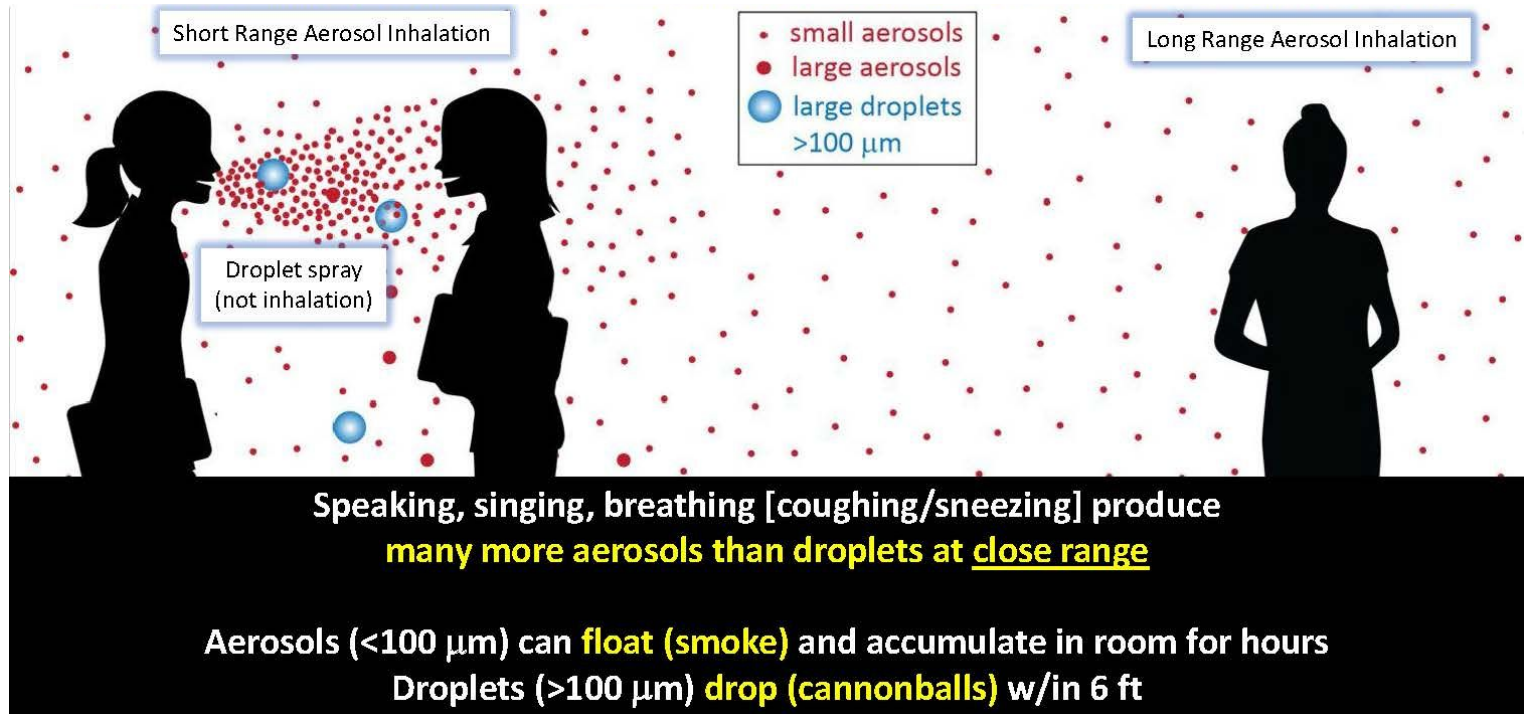
Morawska, L. and Cao, J. (2020). Airborne transmission of SARS-CoV-2: The world should face the reality. *Environment International*, 139:105730.

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

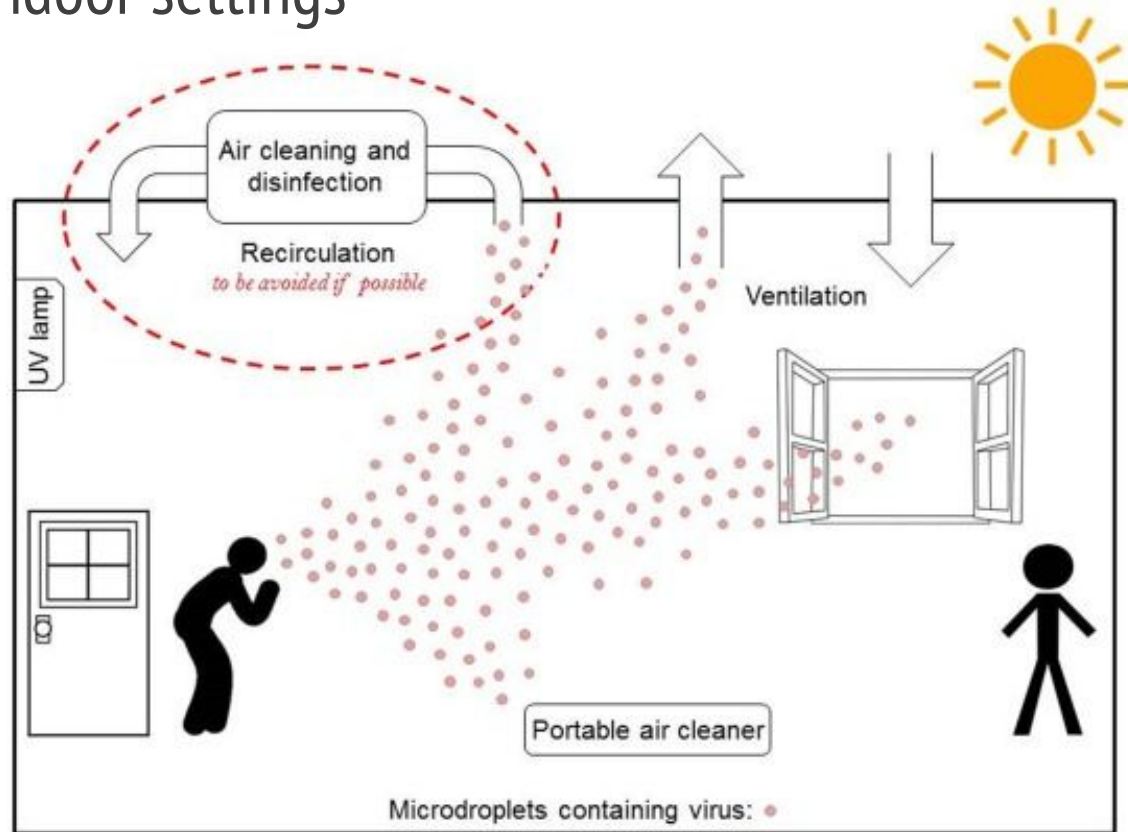
Jayaweera, M., Perera, H., Gunawardana, B., and Manatunge, J. (2020). Transmission of COVID-19 virus by droplets and aerosols. *Environ Res.*, 188(109819).

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



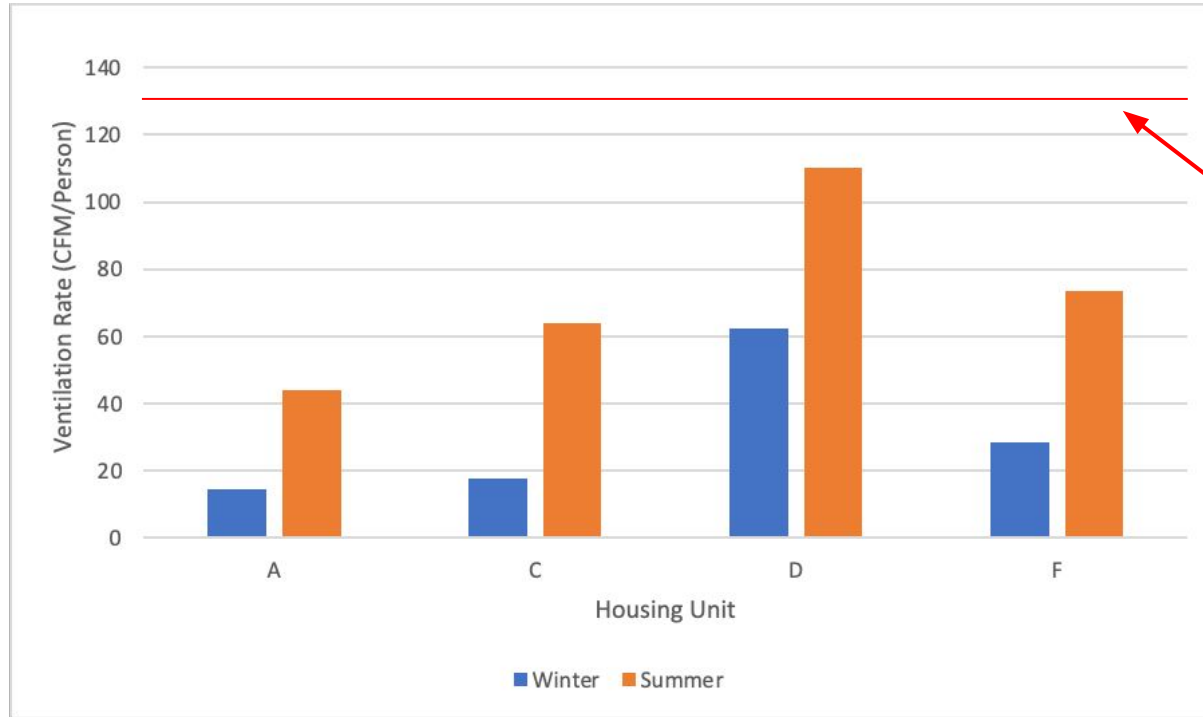
Why is ventilation important? It controls the concentration of infected aerosols in indoor settings



4B. Environmental Assessment:

What are we finding at SATF?

Per personal ventilation rates were significantly higher in summer than winter



127 CFM/person (60 L/s per person) for the prevention of airborne infections in health-care settings

Other Environmental Observations

- **Movement of infected patients to rooms with poorly functioning ventilation systems**
 - 20% of the exhaust vents measured were non functional
 - ~40% of supply vents measured were physically obstructed
- **Use of filters below minimum efficiency ratings**
 - MERV 13 (or higher) recommended by CDC and ASHRAE for viral capture
 - MERV 8,10 used at SATF
- **Lack of routine maintenance compromising overall indoor air quality**
 - Need for filter replacements indicated by:
 - Accumulation of dirt/debris around vents
 - Residents use hair nets to block black smoke and dust from coming from supply
 - Uncomfortable/uncontrolled flows suggest need for rebalancing

How inadvertent **positive** pressure may cause movement of infected air to clean spaces



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

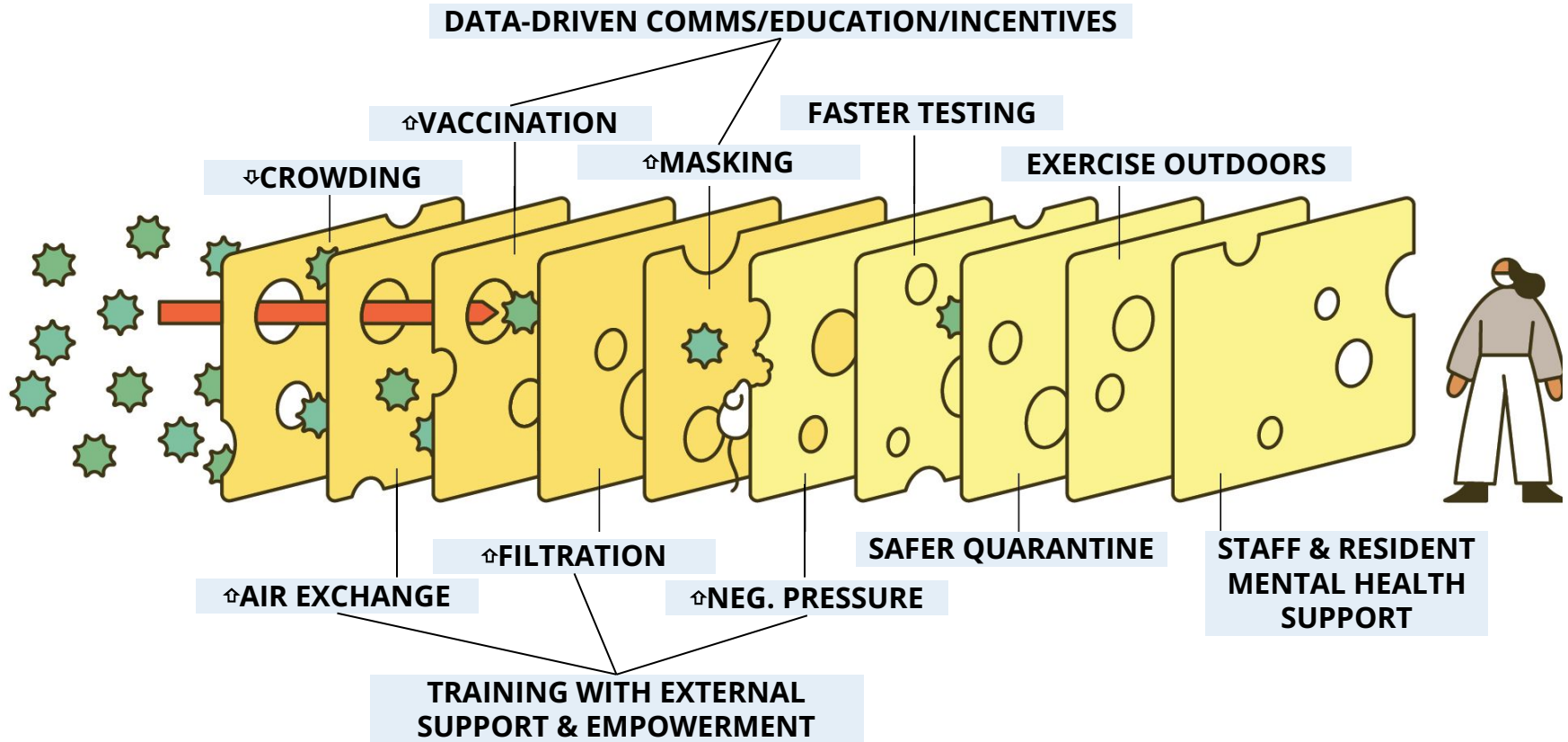
1. **Reducing occupancy** to reduce the density of infectious emissions in an indoor space
2. **Masking indoors** to reduce the emissions from individual sources
3. **Moving all high respiration activities** (e.g. exercising) **to outdoors** reduces the rate of emissions from individual sources.
 - Yard 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



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 SATF 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 SATF, we thank:

CEO Mr. Bob Edwards, Warden Theresa Cisneros, AW Jason Collins, Wayne Motl, members of the Executive IAC, *and all others involved in coordinating the visit, welcoming us, and providing information for the report.*



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