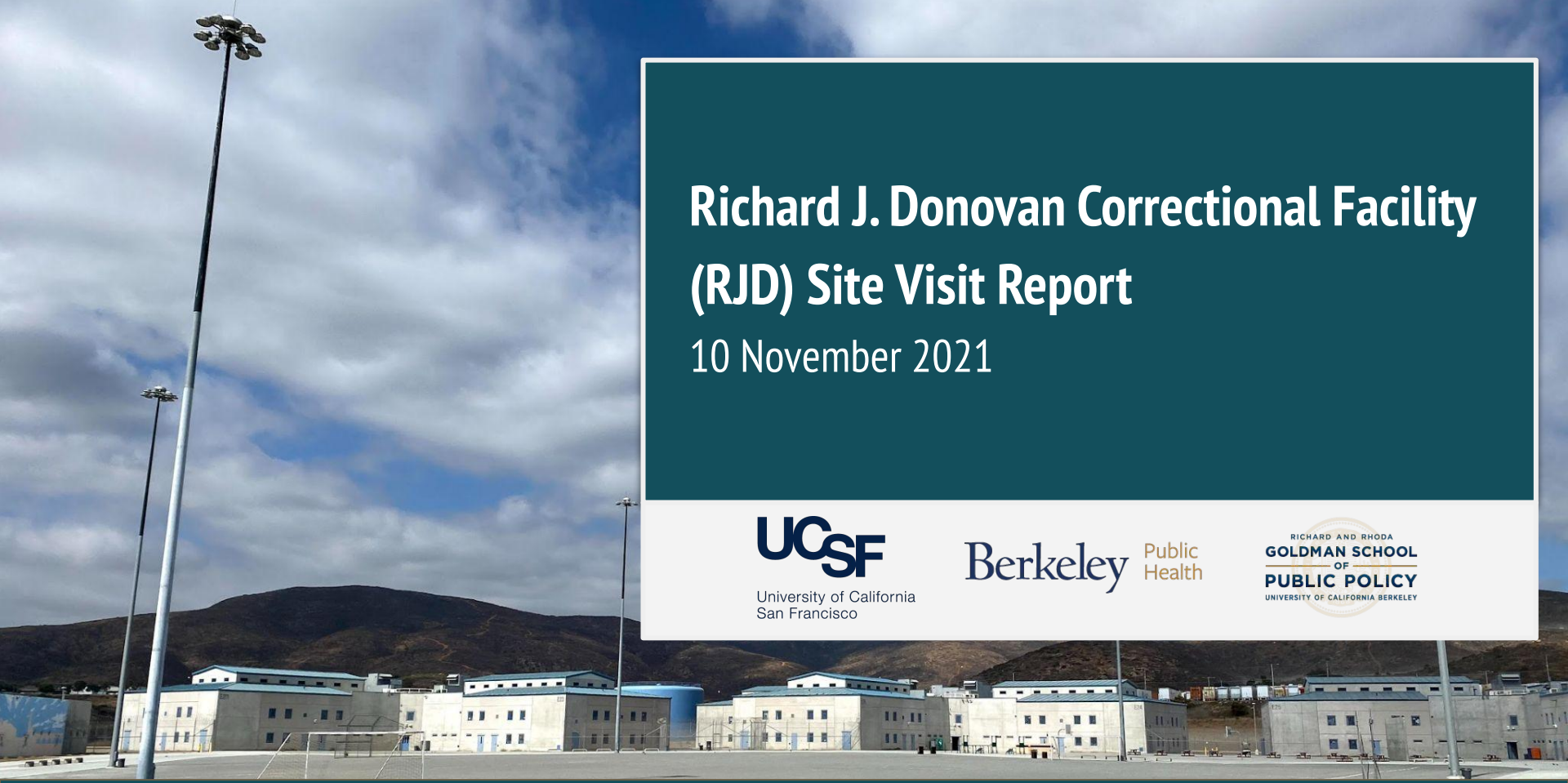


Richard J. Donovan Correctional Facility (RJD) Site Visit Report

10 November 2021

UCSF University of California San Francisco

Berkeley Public Health

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

Presented by: Ada Kwan*, Karalyn Lacey*, Stefano Bertozzi*

Work done with: M. Adee, H. Archer, J. Harney, A. Lerman, E. Linos, S. McCoy, E. Noth, R. Schell, D. Sears, R. Sklar, 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 Nov. 10, 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 RJD-specific and CDCR-wide observations and recommendations
  - Epidemiology and testing
  - Behavioral science
  - Environmental (CDCR-wide only)
- 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, 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

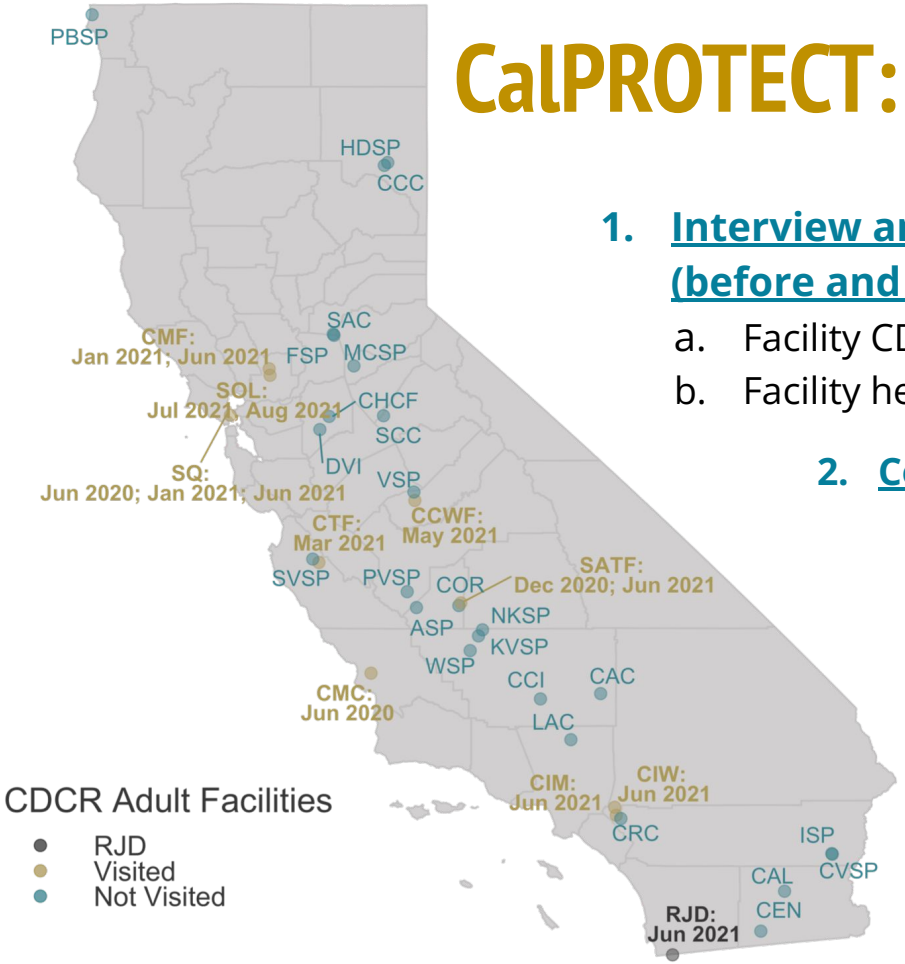
AMEND Changing Correctional Culture

Berkeley Public Health

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

The People Lab

CalPROTECT: Methodology RJD Visit



1. **Interview and have conversation 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. Spatial observation of facilities
   c. Indoor air quality assessments
   d. Collect site-specific announcements and policies

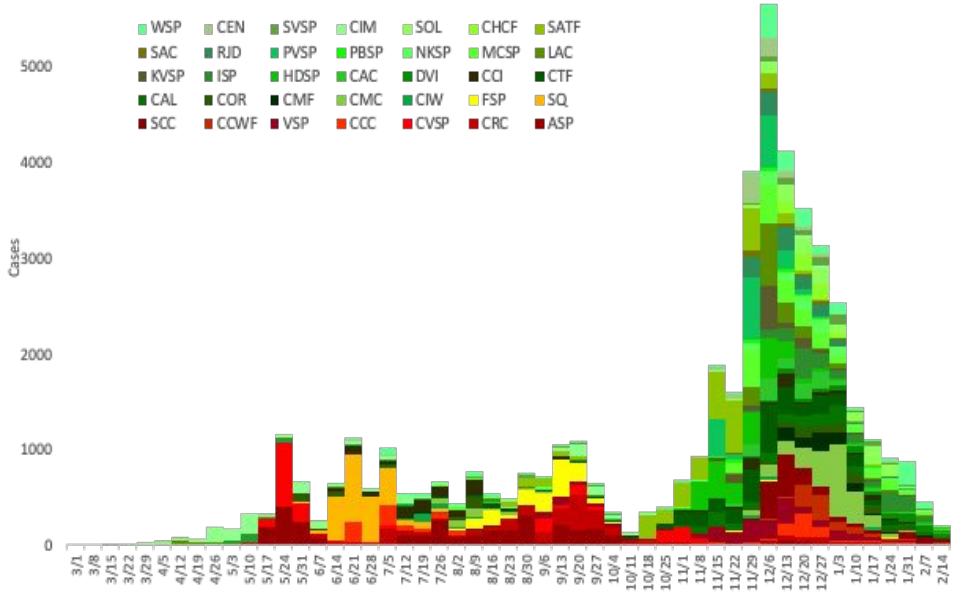
3. **Share information**
   a. Arrival and departure debriefs with leadership

2. Epidemiology and Transmission Dynamics, Testing Turnaround Time and Recommendations Related to COVID-19

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

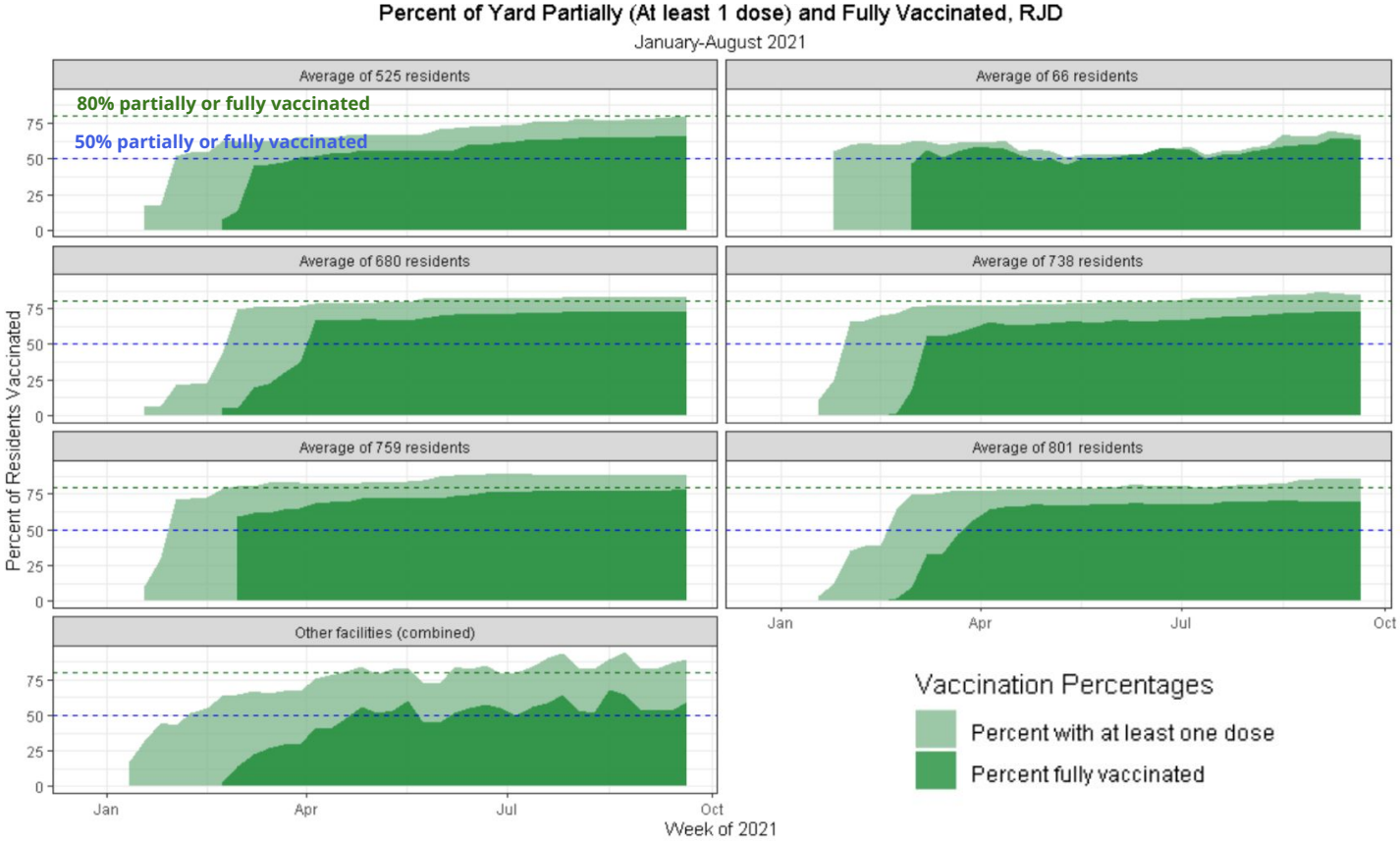
This graph displays the frequency of COVID-19 cases (N = 48,984) by institution and housing type

- 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)

Differential risk in RJD yards based on vaccination rates: as of 9/2021, few RJD yards / other facilities at 80%

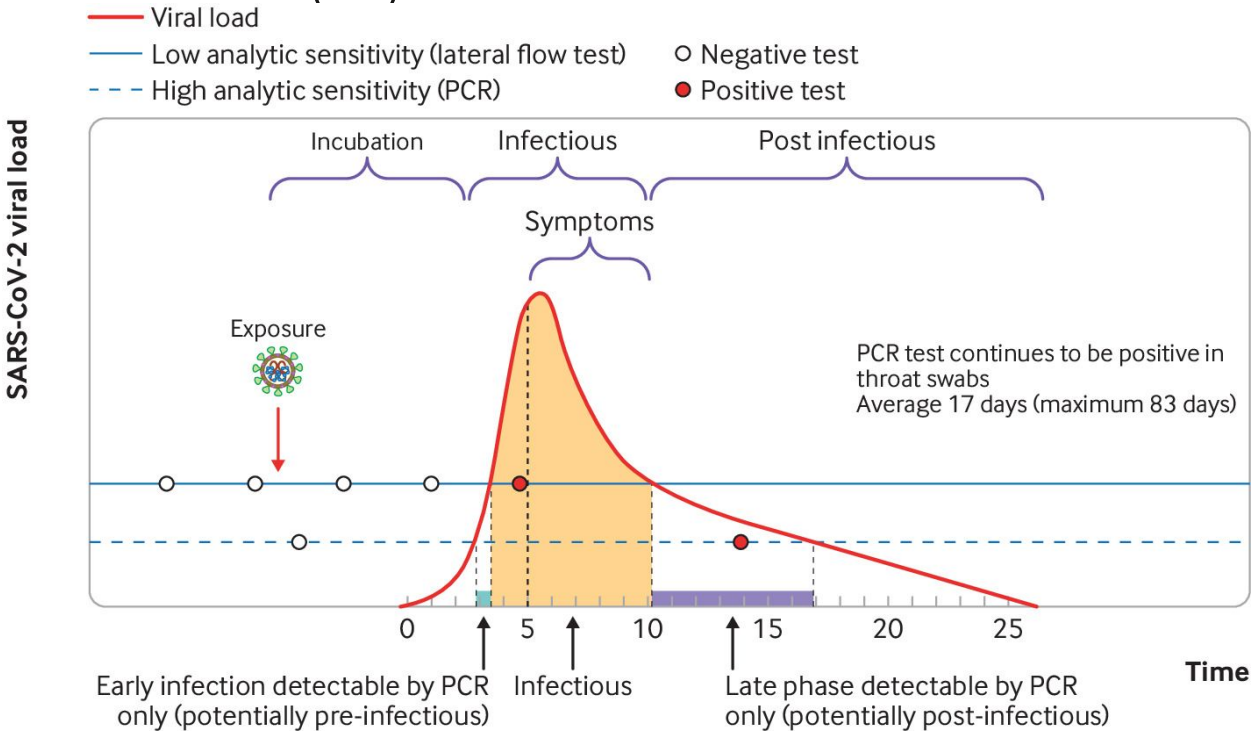


As of Nov 1, 2021, 84% of 3,325 residents and 66% of 2,299 staff have been fully vaccinated at RJD

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

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)

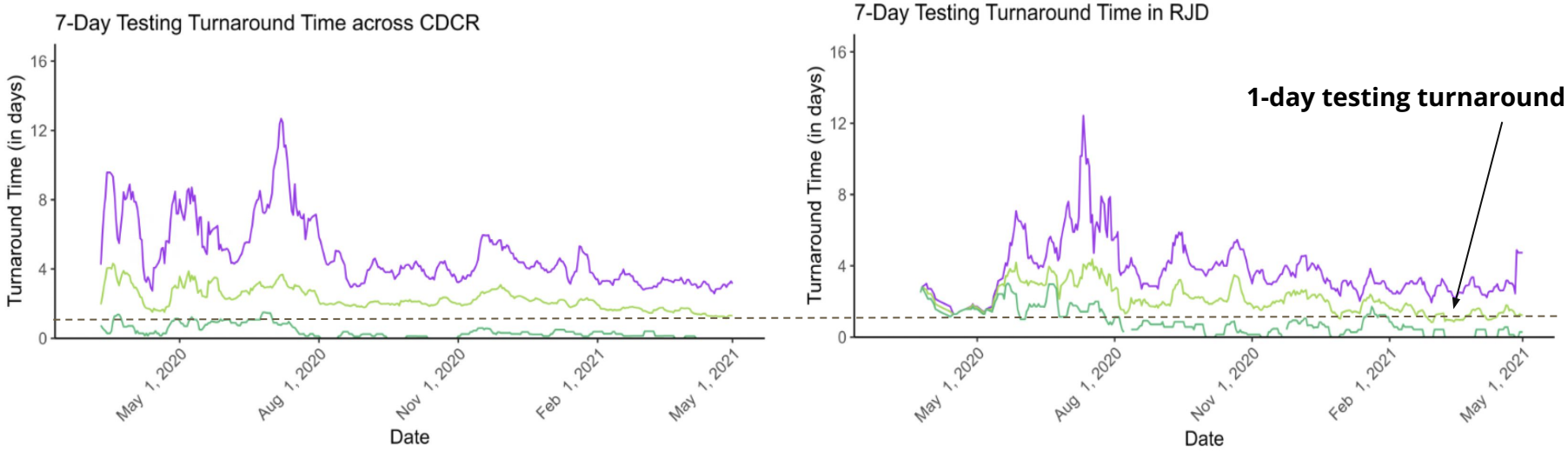


Conclusion

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/

CDCR (left) & RJD (right) testing turnaround

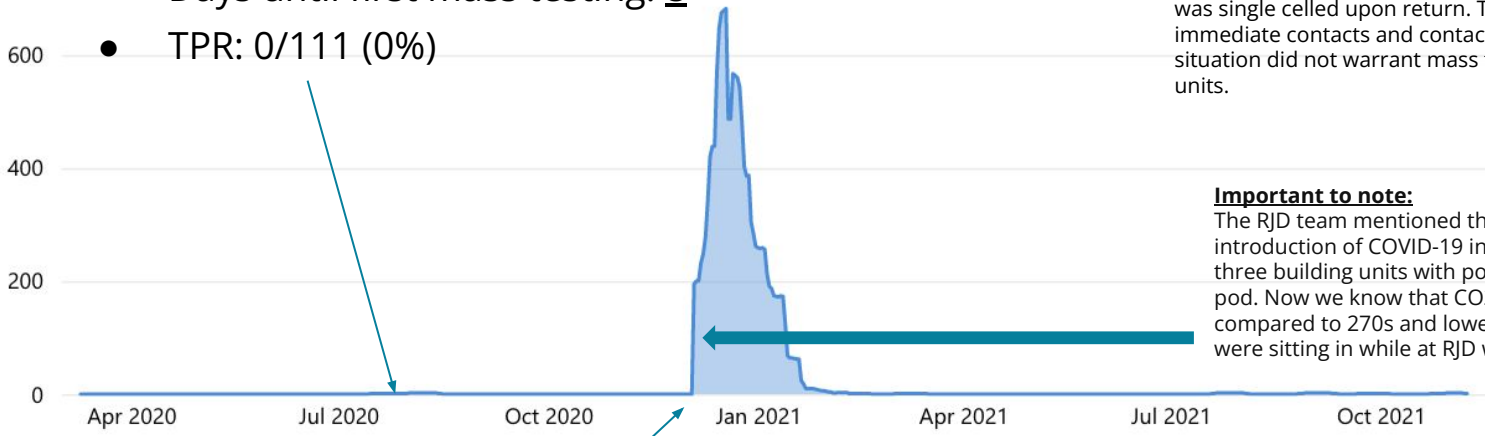


- Summer 2020 exposed the challenge of making quarantine and isolation decisions with extended testing turnaround times for most facilities at CDCR, but by the time RJD had their big outbreak, average testing turnaround had stabilized < 2 days
- We found that the number of tests per day did not impact test turnaround time

Controlling outbreaks becomes increasingly difficult when there is a delay between case introduction and mass testing, but sometimes the situation is more complex

Date first case tested: Jul 15, 2020

- Days until first mass testing: **8**
- TPR: 0/111 (0%)



Important to note:
This case on July 15th was at the hospital and tested positive at the hospital. The individual returned to RJD and was single celled upon return. The RJD team tested immediate contacts and contacts of contacts, but the situation did not warrant mass testing of entire housing units.

Important to note:
The RJD team mentioned their focus on preventing introduction of COVID-19 in their infill in Yard E (which are three building units with pods containing 6 or 8 inmates per pod. Now we know that CO2 concentrations are low there compared to 270s and lower than the conference room we were sitting in while at RJD with 3 people.

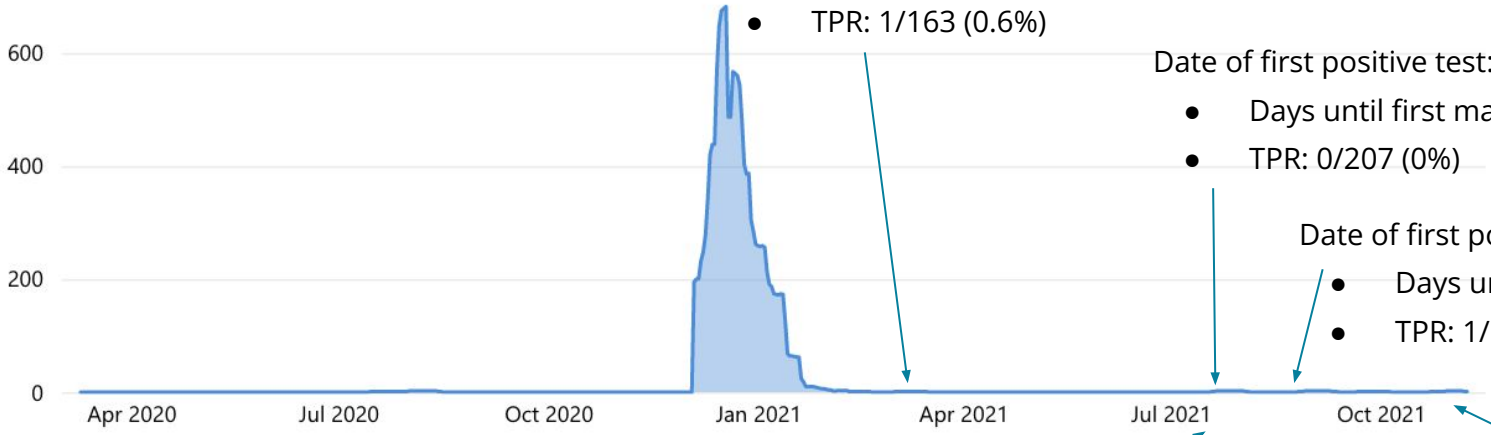
Had they known that Yard E with the newer structures had strong ventilation, they maybe wouldn't have focused all of mass testing to be done in the infill and Yard E because that was their "dorm". During the large outbreak, the RJD team focused everything in Yard E, and could have focused more on the 270s, which make up the rest of their institution. The concept of "dorm" can be misleading across the institution given the variety of dorms that do exist.

Date first case tested: Dec 3, 2020

- Days until first mass testing: **same day**
- TPR on 12/4: 195/627 (31%)

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

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



Date of first positive test: Mar 2, 2021
- Days until first mass testing: **same day**
- TPR: 1/163 (0.6%)

Date of first positive test: Aug 26, 2021
- Days until first mass testing: **4**
- TPR: 0/207 (0%)

Date of first positive test: Sep 21, 2021
- Days until first mass testing: **0**
- TPR: 1/151 (0.6%)

Date of first positive test: Jul 19, 2021
- Days until first mass testing: **1**
- TPR: 0/192 (0%)

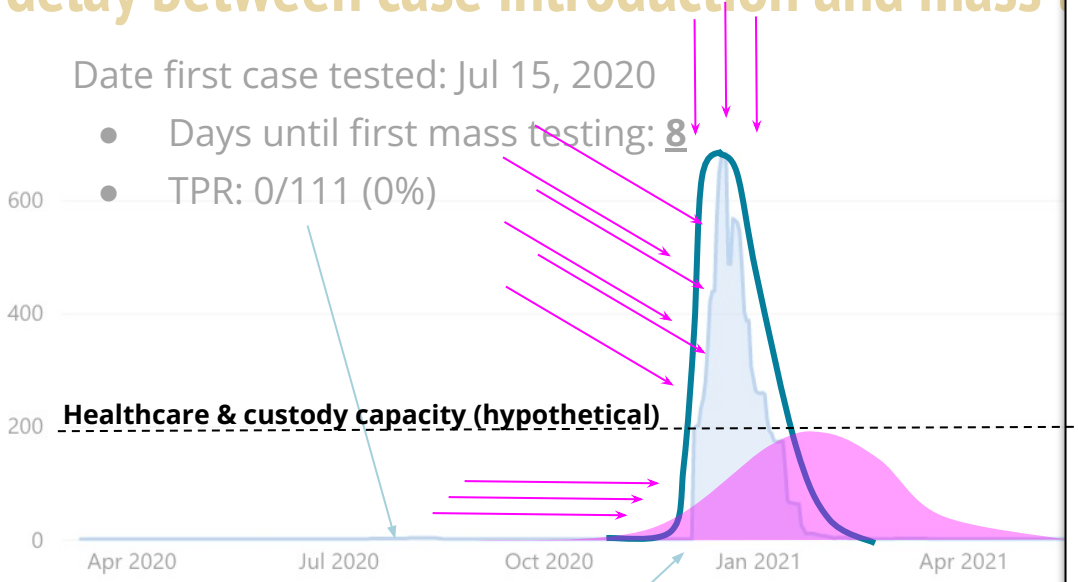
Date of first positive test: October 23, 2021
- Days until first mass testing: **3**
- TPR: 0/139 (0%)

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

Controlling outbreaks becomes increasingly
delay between case introduction and mass t

Date first case tested: Jul 15, 2020

- Days until first mass testing: **8**
- TPR: 0/111 (0%)



Date first case tested: Dec 3, 2020

- Days until first mass testing: **same day**
- TPR on 12/4: 195/627 (31%)

If multiple, simultaneously implemented mitigation efforts to "flatten the curve" (i.e., slowing the spread of transmission so that the peak number of people requiring care at a time is reduced ⇔ reducing the burden on health and custody human resources at a specific time) **are not in place, human resources take a very big hit.**

- ➔ **In Dec. 2020, RJD had documented 7592 hours of overtime + 1357 hours of COVID registry**
- ➔ **At the "height of crisis"on Dec. 21st, 47 nurses were needed to cover staff shortage. This was requested to nursing HQ, but being so geographically distant from Sacramento has its challenges.**
- ➔ **On top of being short on custody staff, RJD also needed more custody to cover hospitals, since it performs guarding for all of southern California CDCR institutions.**

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

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. **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.
    - Looking backwards, each case introduction and initiation of mass testing may have a different story; however, the key will be in how to think about this recommendation as a mitigation measure moving forward.
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

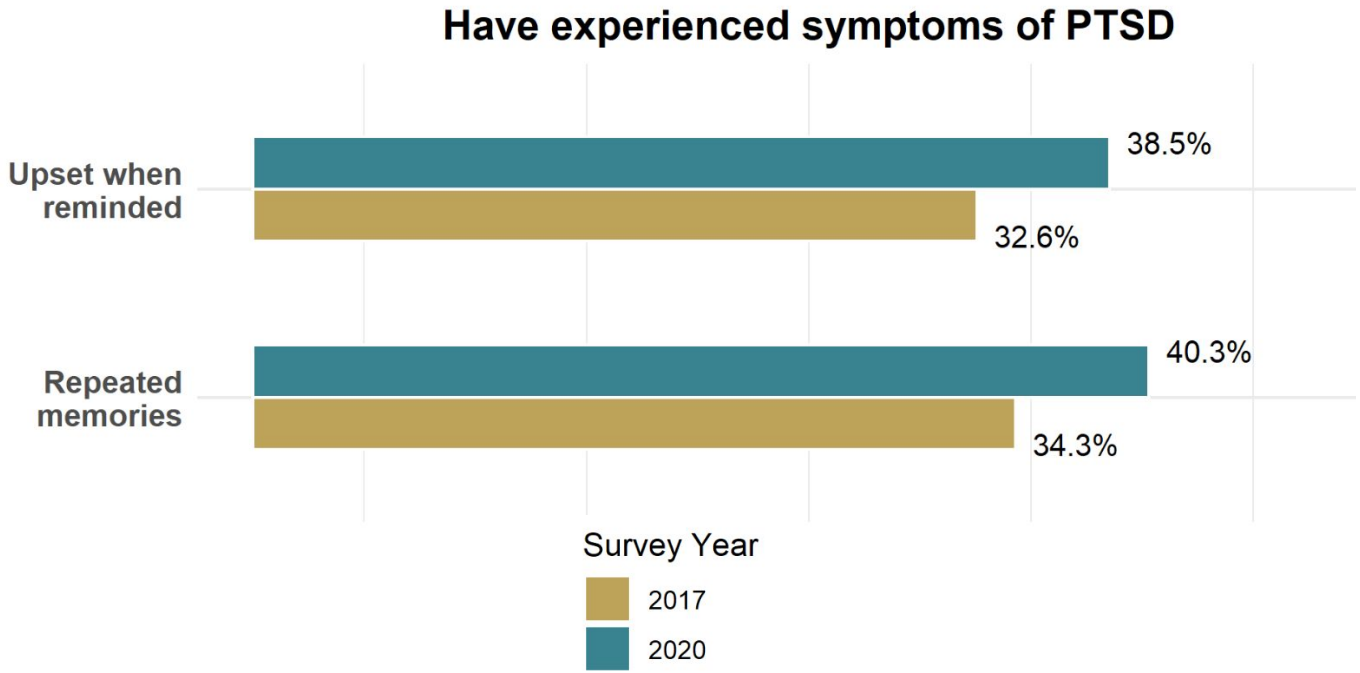
- **What we did:** We conducted conversations with residents, staff and leadership across the system on medical, nursing, mental health and correctional teams.
  - **Custody staff** (N=26)
  - **Medical/Mental health staff** (N = 60)
  - **Incarcerated people** (N=92)

- **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

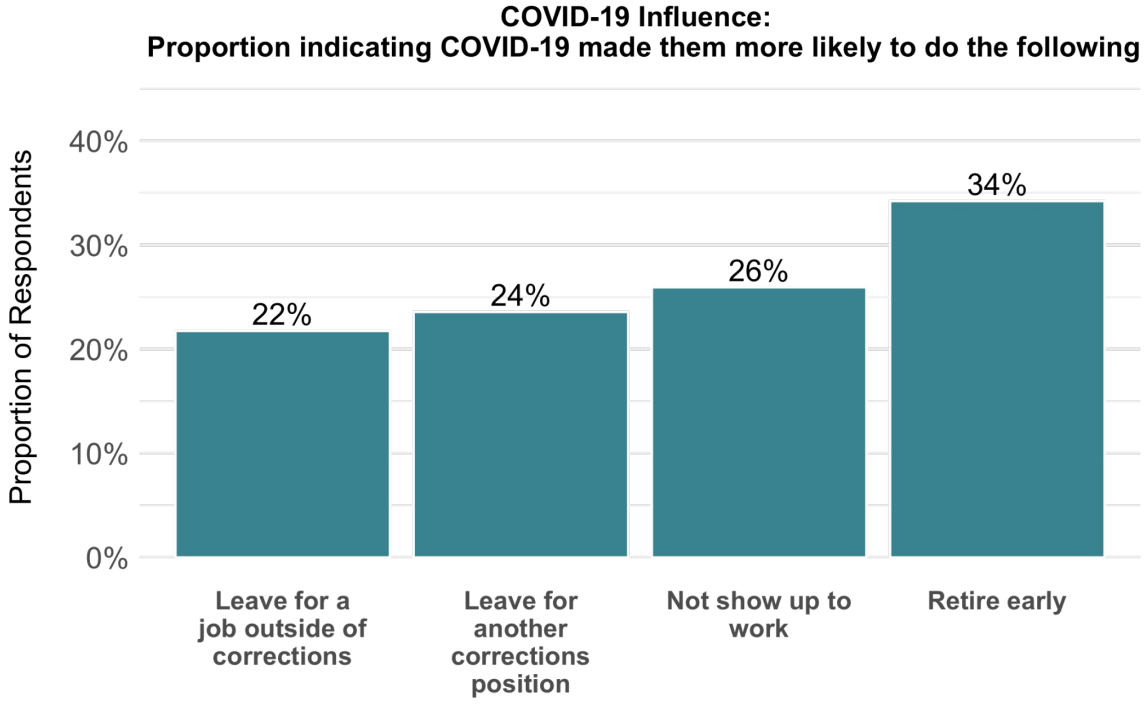


2017 Data are from the CCOS (n=8,334)

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

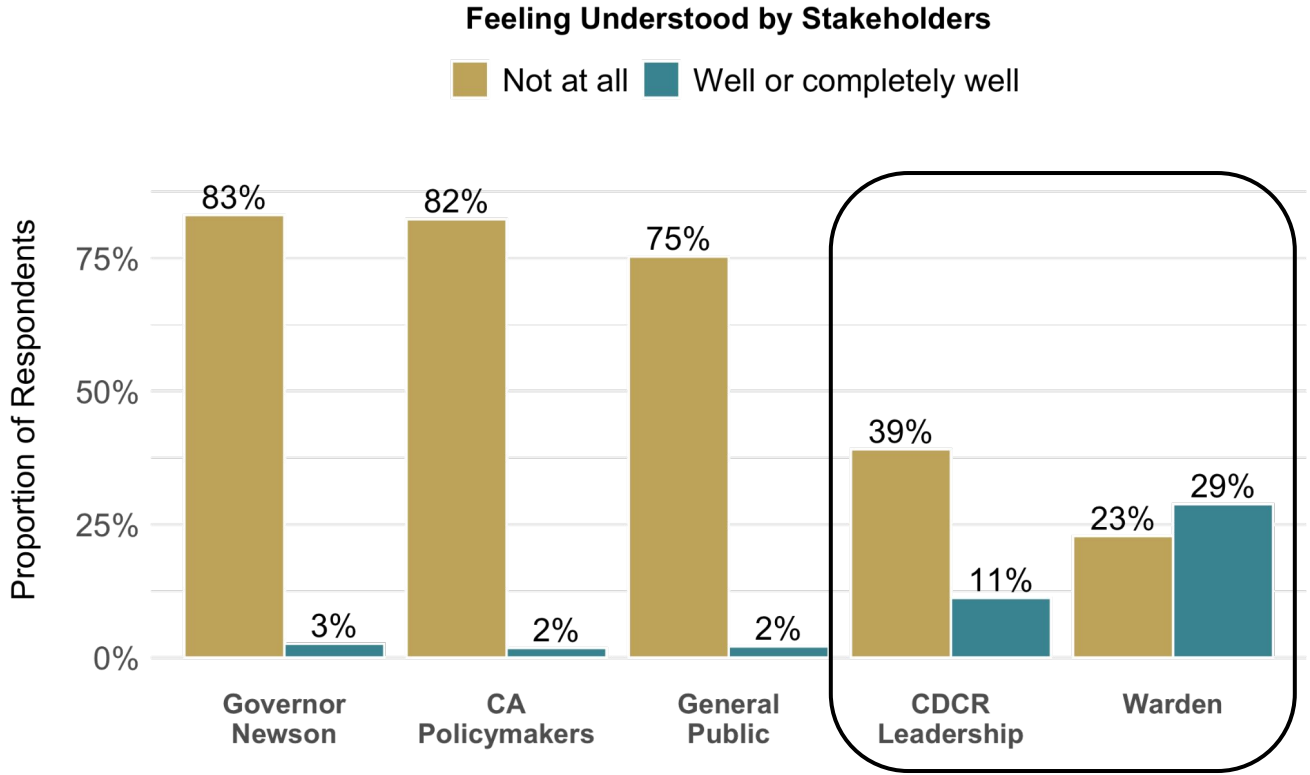
Survey Data: Threat of burnout and staff turnover due to COVID-19 is significant



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

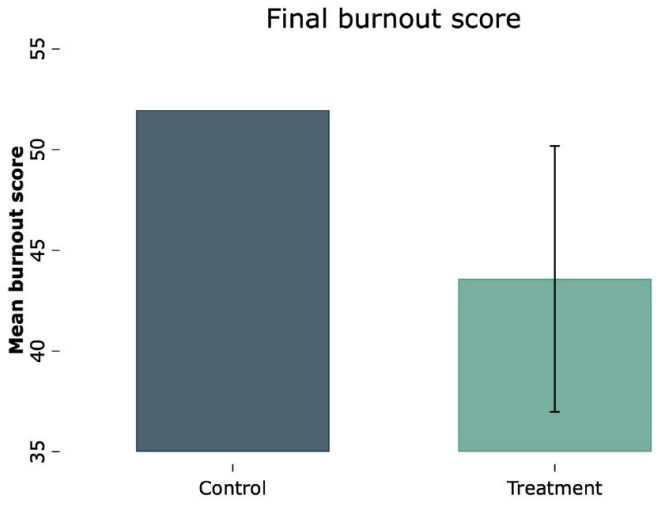
This presents a unique opportunity for wardens and other prison leadership to leverage feelings of being understood in order to improve wellbeing among staff

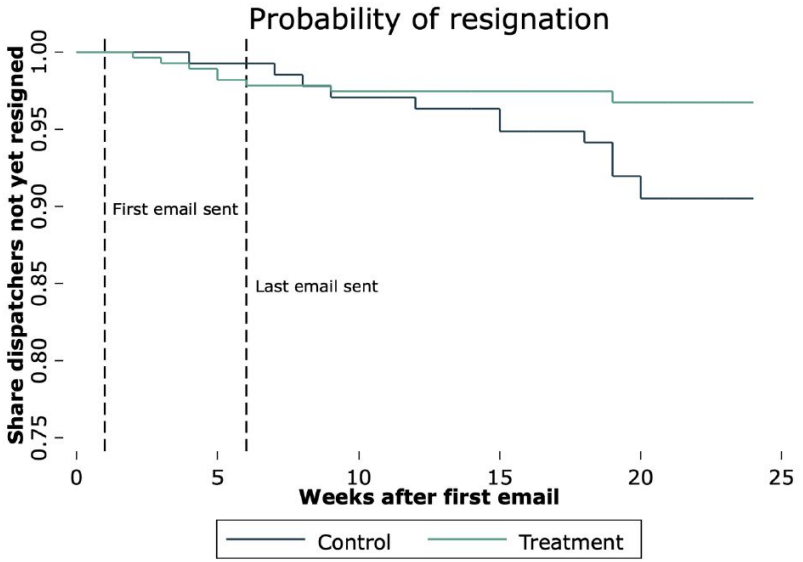


Opportunities for Building Strength

Staff voiced significant concerns about existing supports.

But low-cost interventions can help:





Opportunities for Building Strength

A critical moment to:

- **<u>Continue empowering people</u>** to understand "why" policies are being implemented and what is their intent

> ***"My life and the lives of the men I'm responsible for depend on me having access to more accurate information" -*** *IAC representative at RJD*

Opportunities for Building Strength

A critical moment to:

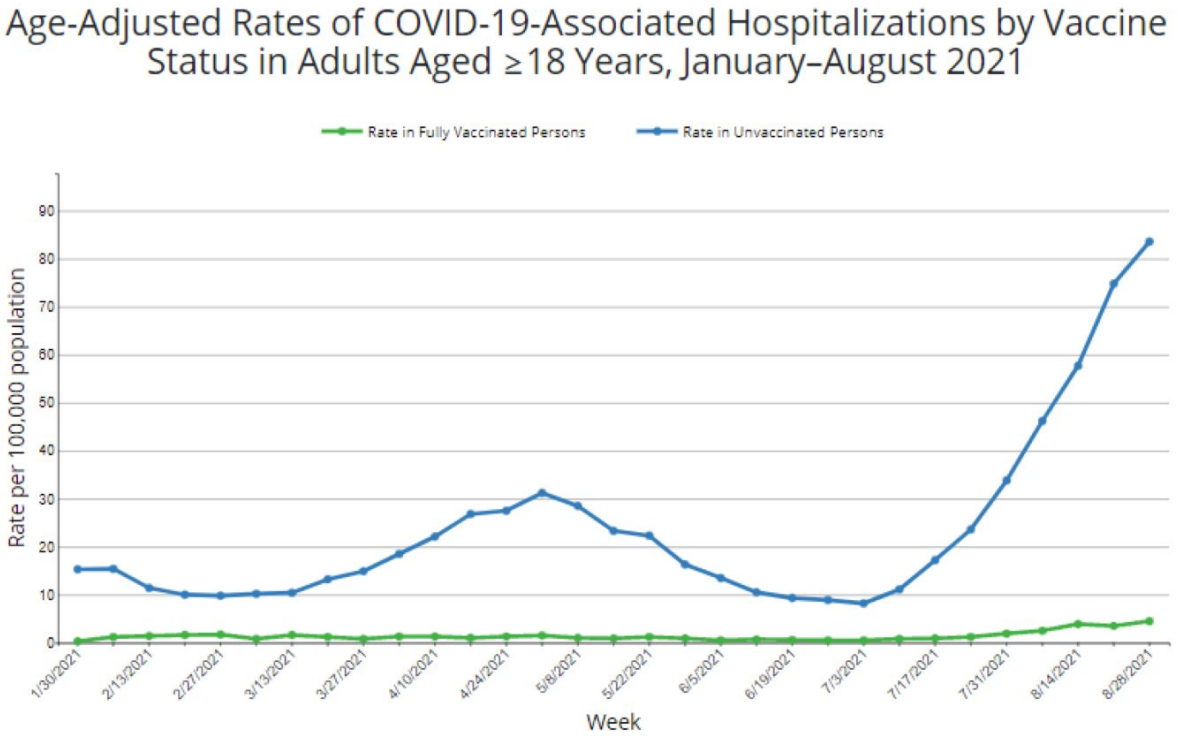
- ➢ **<u>Reinforce culture of learning</u>**, including from mistakes
  - Reassure staff that you know they faced impossible decisions under extreme uncertainty, and they had no choice but to find a(n imperfect) solution

> ***"The feeling was if you don't like HQ policy, leave. Making us feel like we had an outlet to openly discuss the difficult decisions we were making and coming out to say thank you would have gone a long way" -*** *person working at RJD*

An even better way to “protect the lives of the men you are responsible for”:

For more information about COVID-NET, please see
https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covid-net/purpose-methods.html .

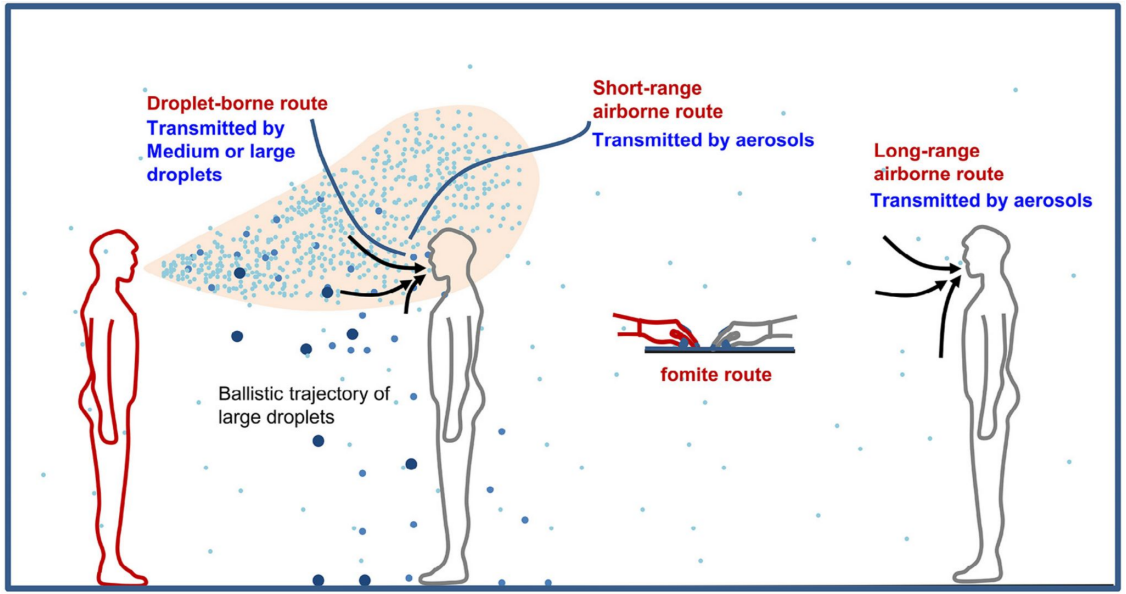
COVID Data Tracker: Hospitalization Rates by Vaccination Status



https://covid.cdc.gov/covid-data-tracker/#covidnet-hospitalizations-vaccination

4a. Environmental Assessment: Background

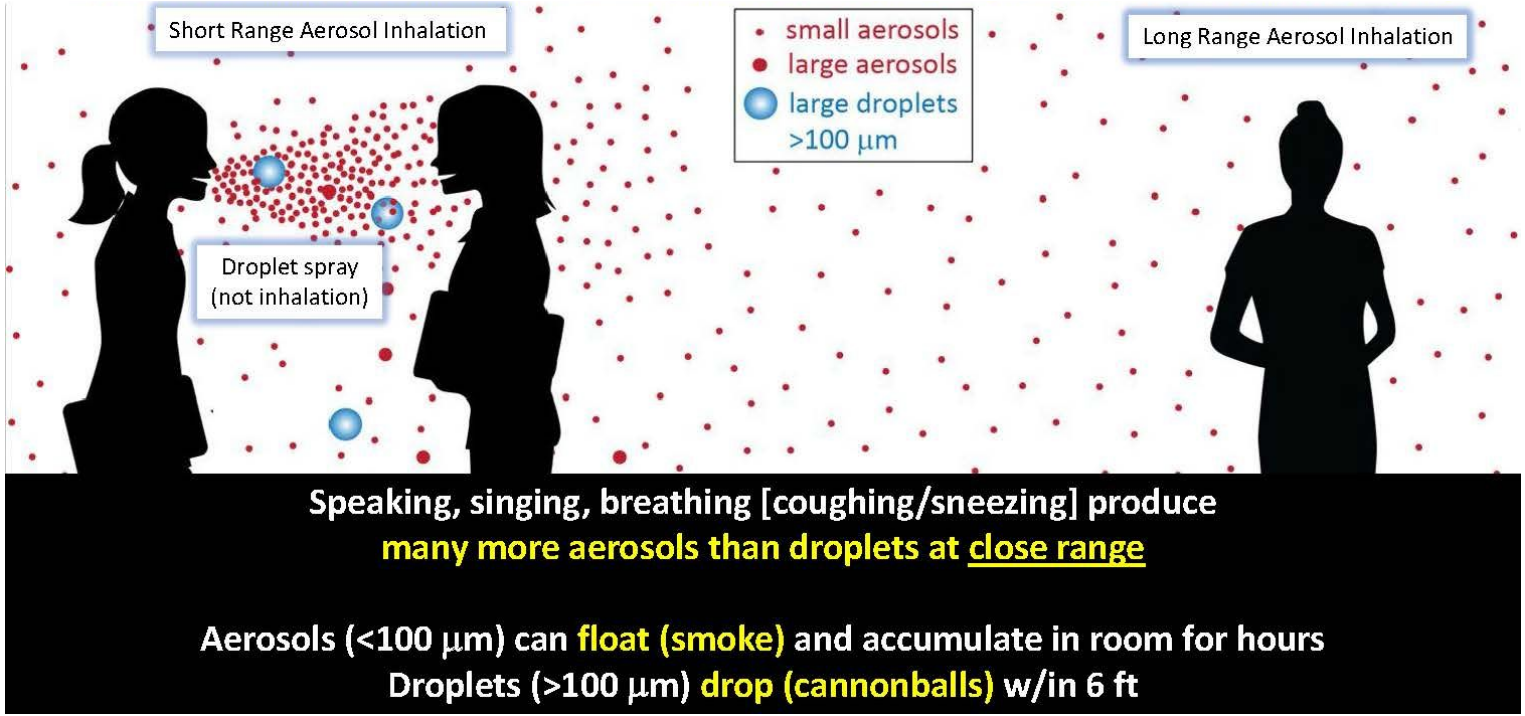
There is overwhelming evidence that SARS-CoV-2 is transmitted primarily through exhaled aerosol suspended in indoor air



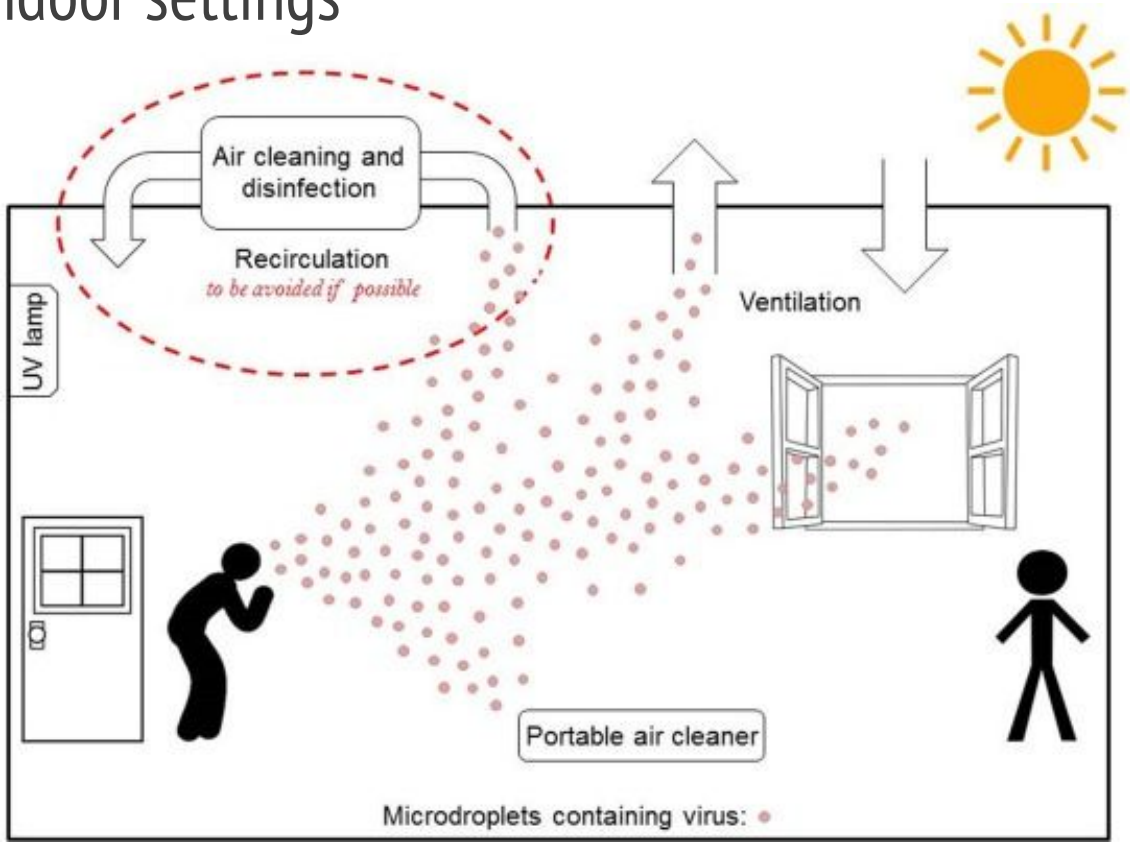
- Large droplets (>100 μm) : Fast deposition due to the domination of gravitational force
- Medium droplets between 5 and 100 μm
- Small droplets or droplet nuclei, or aerosols (< 5 μm): Responsible for airborne transmission

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, singing, shouting, exercising…



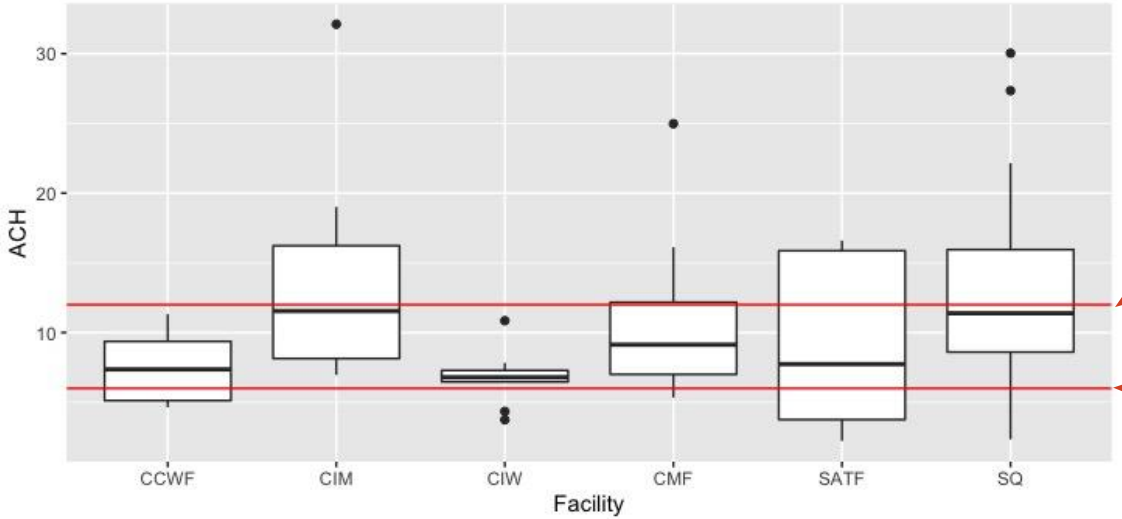
Why is ventilation important? It controls the concentration of infected aerosols in indoor settings



4b. Environmental Assessment:

What did we find across CDCR and at RJD?

Even in our small sample across CDCR, there are some cells and rooms where air exchange rates fall below basic infection control standards. Like hospitals, CDCR facilities need to control infection.



Recommendations for medical centers:

ACH 12 + Negative Pressure: recommended by *WHO, ASHRAE, OSHA*

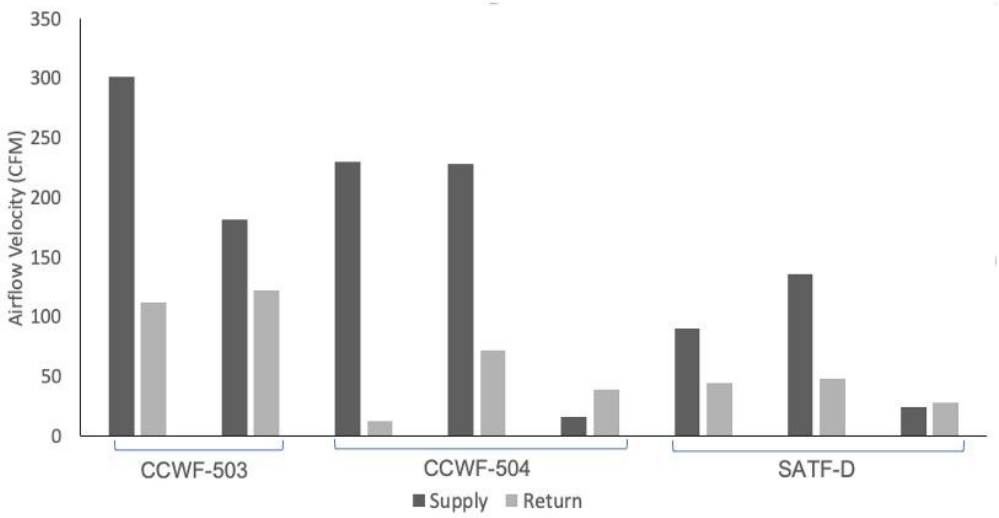
ACH 6: recommended for General Hospital wards and classrooms by *WHO, ASHRAE*

Note: These measures were not collected at RJD.

Across CDCR, we found heterogeneity in the HVAC systems' performance.

This improper functioning can result in unintended or unpredictable negative/positive air pressure and spread of infectious aerosols

Supply and return airflow velocities from vents in 270 cell buildings at CCWF and SATF



Note: These measures were not collected at RJD.

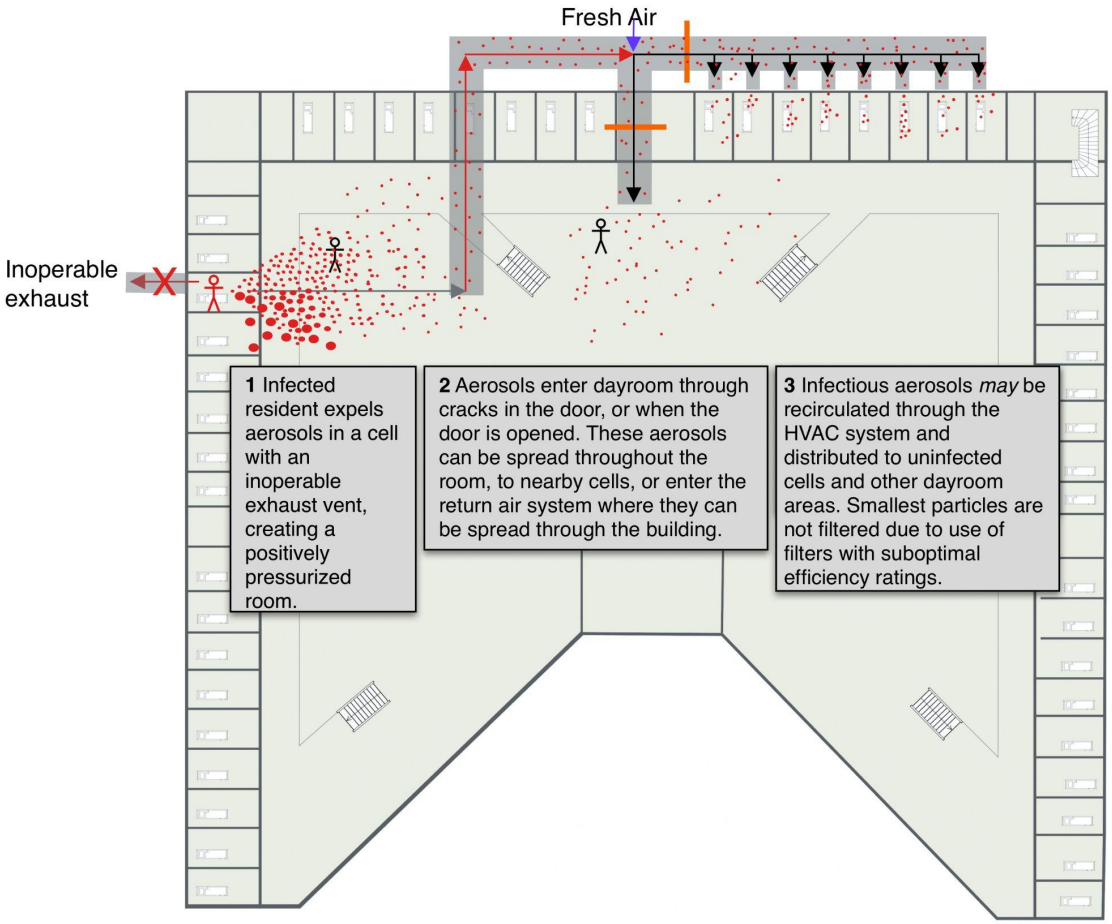
At RJD, we found some of the best maintained facilities for ventilation in Yard E (from 2017).

The best practice example for CDCR housing units are the crosstops in Yard E at RJD.

Opened in 2017, these are the safest housing units we've seen.

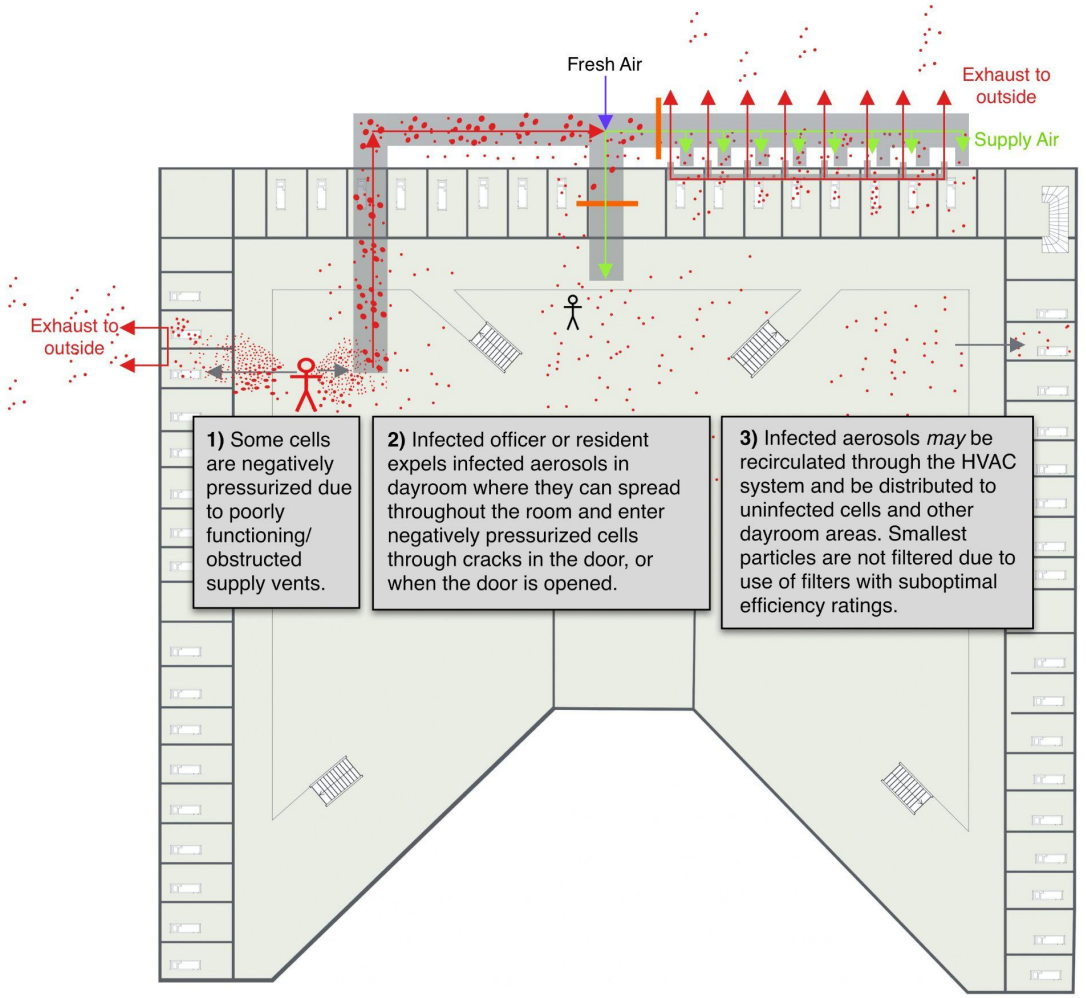
A pictorial example:

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

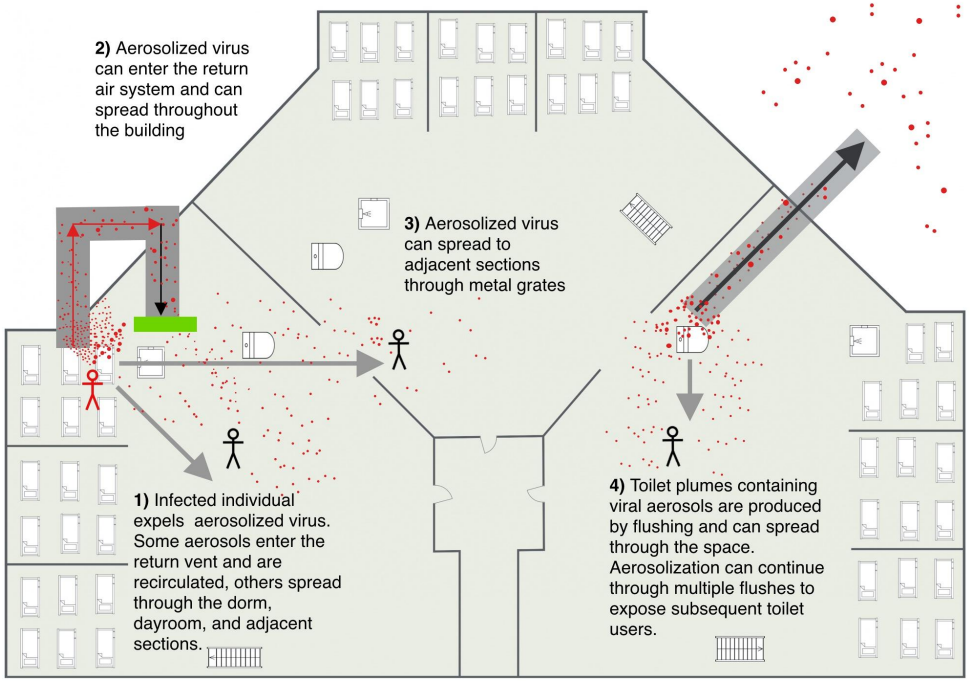


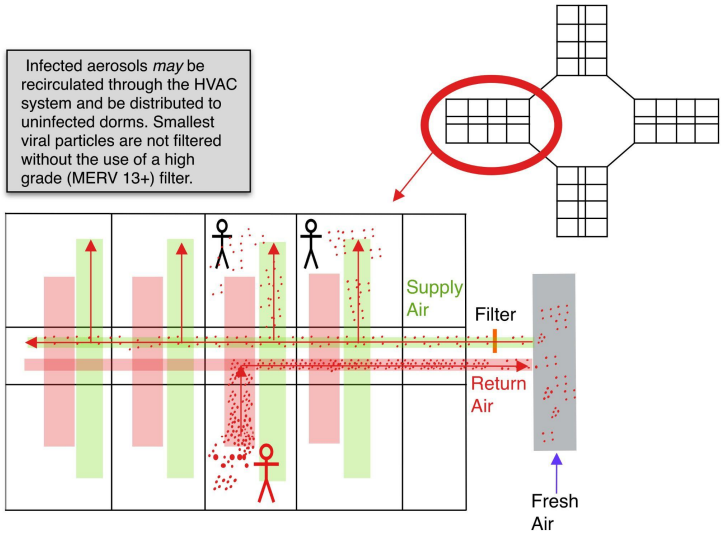
A pictorial example:

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





4b. 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** correctly
   - At a minimum, functioning exhausts throughout the system should be exhausting to the outdoors
   - Clean all vents
2. **Open windows and doors** when and wherever possible
   - Restore ventilation system to intended design by opening large windows in housing units
3. **Continue ventilating the space while occupants are outside** to clear additional Sars-CoV-2 aerosols from the rooms

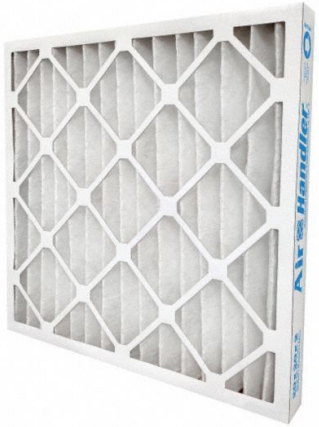
Reduce indoor concentrations of SARS-CoV-2 with Filtration

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; check leakage

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

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 even in cells during an outbreak
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

CDCR-wide -- Critical opportunity to empower and educate facilities staff to "own" their ventilation systems' ability to keep the institution safe -- they are an integral part of the epidemic response team!

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."

Additional time sensitive opportunities related to environmental assessments

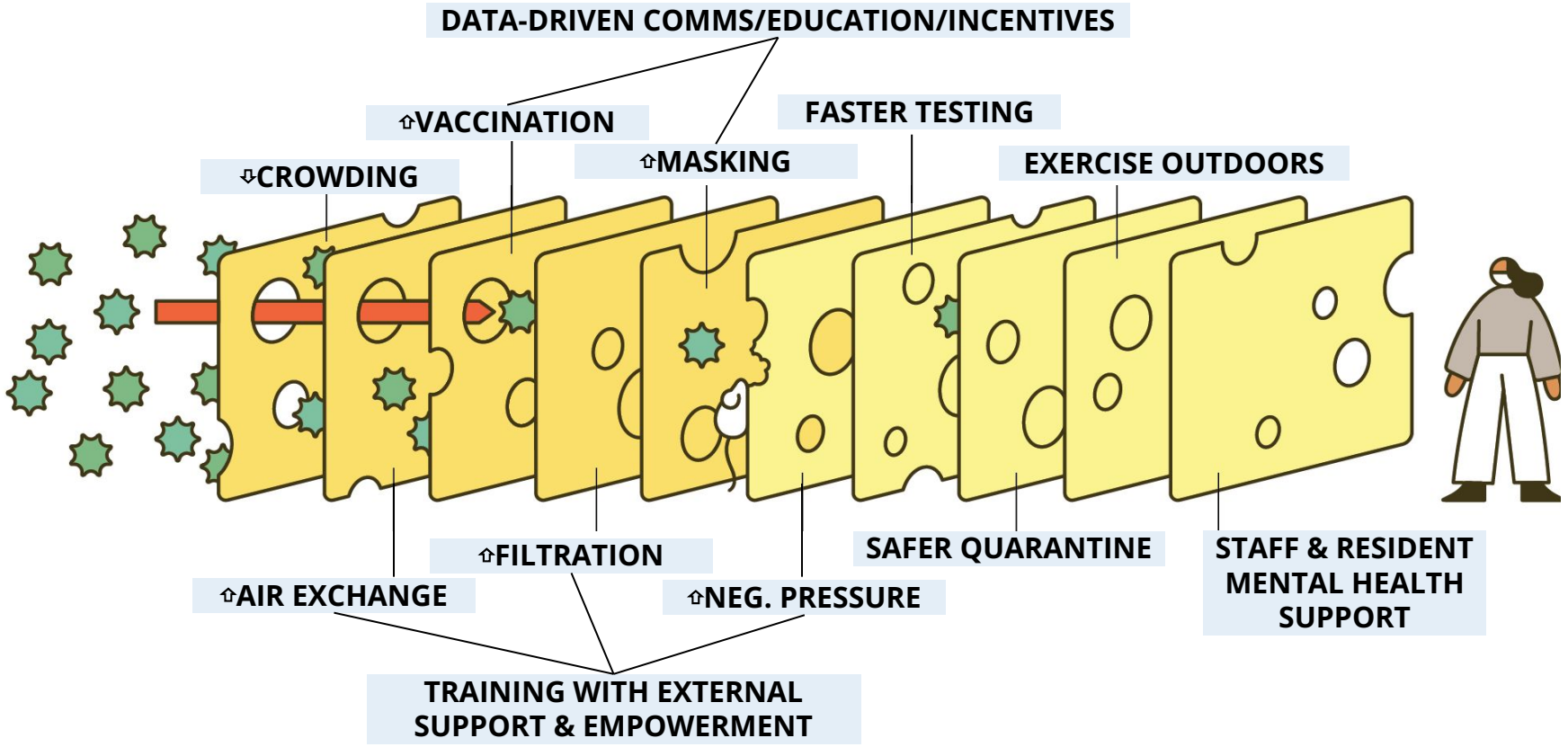
1. **Develop a strict protocol for buildings in quarantine and regular and frequent checks** as these units have the most immediate need for optimized and high functioning systems

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

3. **Determine next (after I&Q) 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 RJD 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 RJD, we thank:

CEO Dr. Steven Roberts, Warden Raymond Madden, (Former) Warden Marcus Pollard, AW Matt Palmer, Chief Engineer James Alonza, staff engineers, 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