# San Quentin State Prison (SQ) 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: Stefano Bertozzi, Rachel Sklar*, Elizabeth Noth*,
*on behalf of the CalPROTECT team*

* attended visits to the institution

*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
- Environmental overview of SQ-specific and CDCR-wide observations and recommendations
- 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.**

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

# 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

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# CalPROTECT: Output

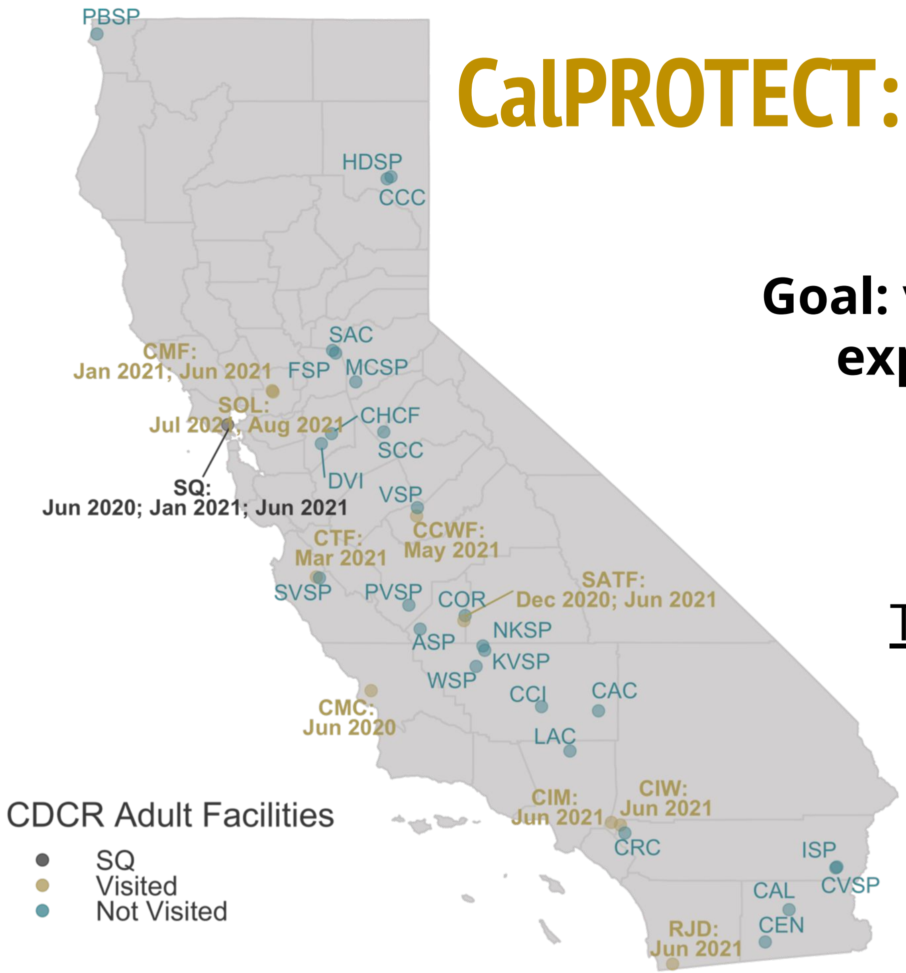
**Our work will culminate in an end-of-year report that will:**

- 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:** Multidisciplinary Methodology

- **Collection and analysis of qualitative data and environmental assessments** from site visits completed at 10 CDCR institutions
- **Collection and analysis of survey instruments and of behavioral data**
- **Analysis of CDCR-wide administrative data** and other relevant public data sources (e.g., CDCR population reports, Ca.gov county and statewide COVID-19 tracker)
- **Analysis of policies and practices** over time in response to the changing nature of, and knowledge about, COVID-19

# CalPROTECT: Selection of Site Visits



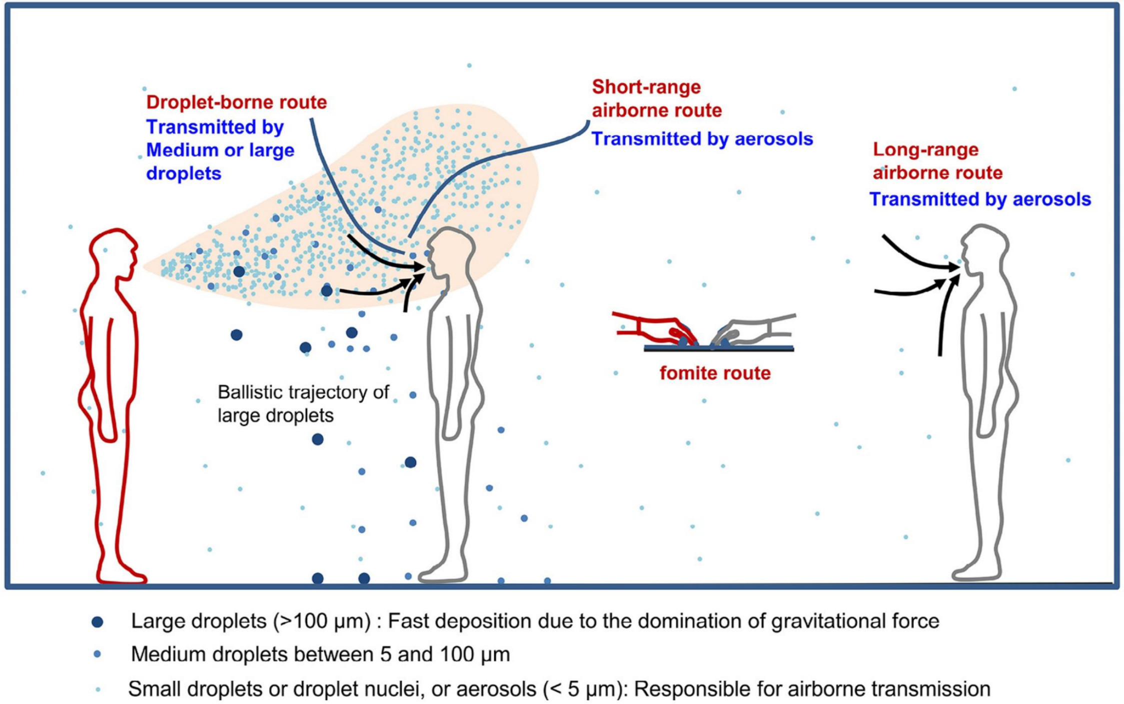

**Goal: visit sites reflecting a variety of experiences across institutions**

<u>Original plan</u>: **to visit 4 sites …**

<u>To date</u>, we have conducted visits to **10 sites** based on emerging needs identified by Receiver

# 2a. Environmental Assessment: Background

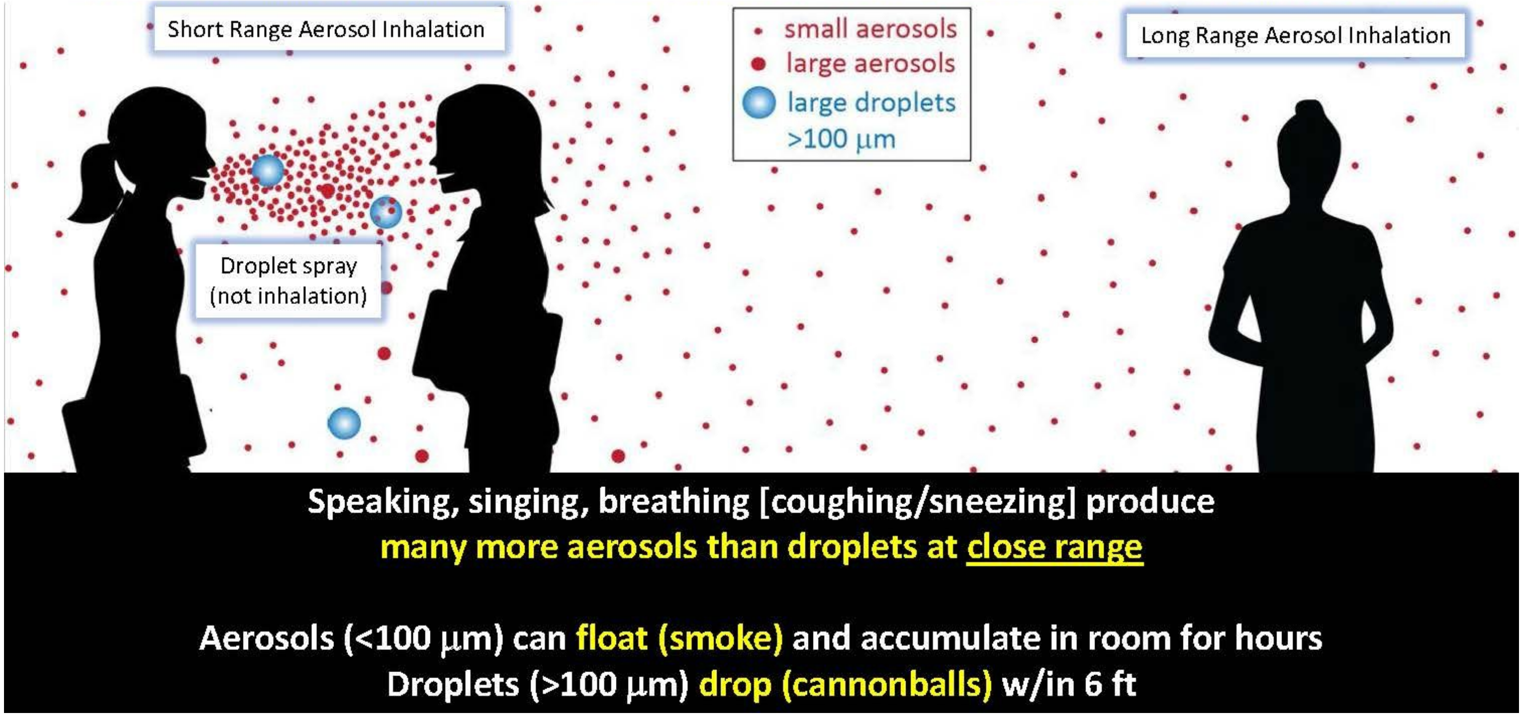
# There is overwhelming evidence that SARS-CoV-2 is transmitted primarily through exhaled aerosol suspended in indoor air



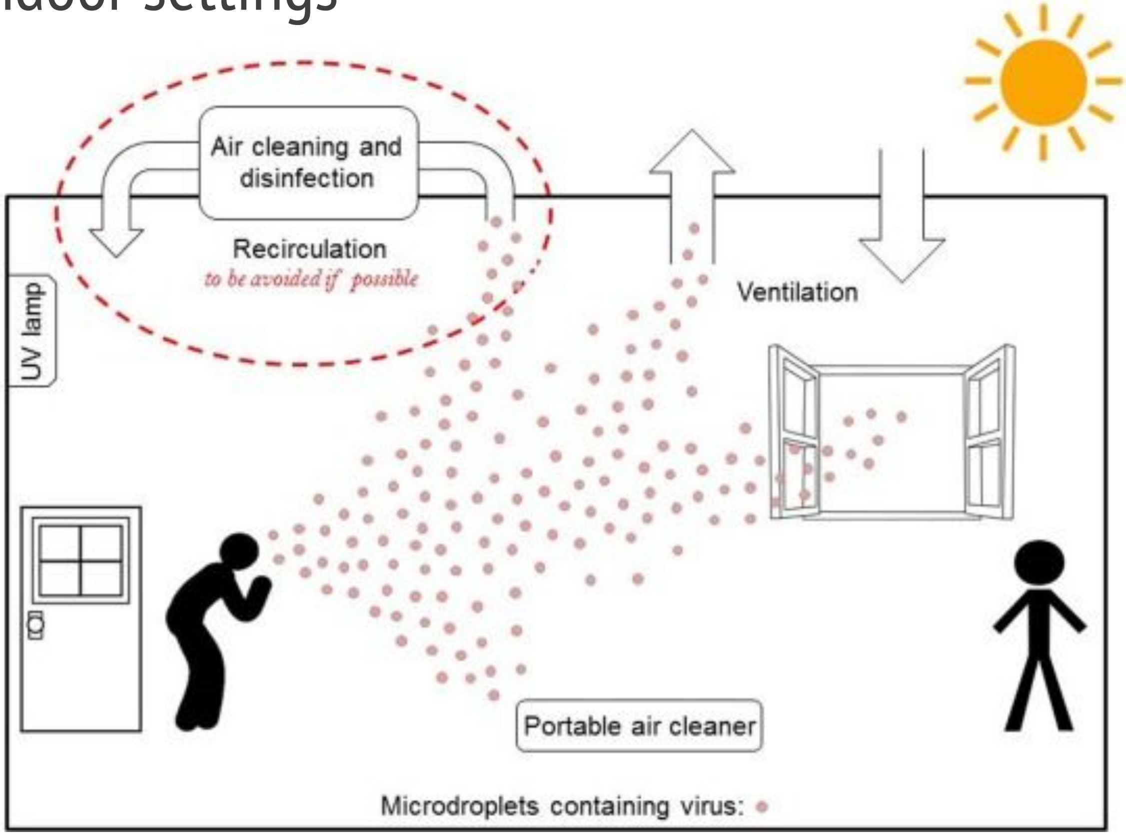


Sources:
Prather, K. A., Marr, L. C., Schooley, R. T., McDiarmid, M. A., Wilson, M. E., and Milton, D. K. (2020). Airborne transmission of sars-cov-2. Science, 370(6514):303–304.
Morawska, L. and Cao, J. (2020). Airborne transmission of SARS-CoV-2: The world should face the reality. Environment International, 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



# 2b. What did we find at San Quentin facilities?

## Point of Vulnerability:

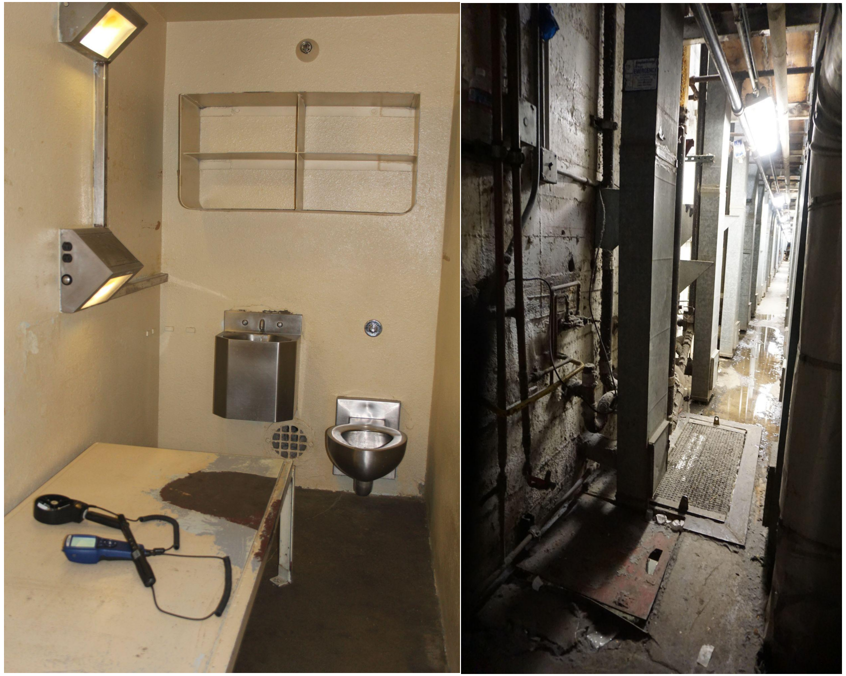
San Quentin’s cells with open grate doors allow for free and rapid diffusion of air between cells and common areas

# Points of Vulnerability:

Windows designed for air exchange / contaminant removal have been welded shut

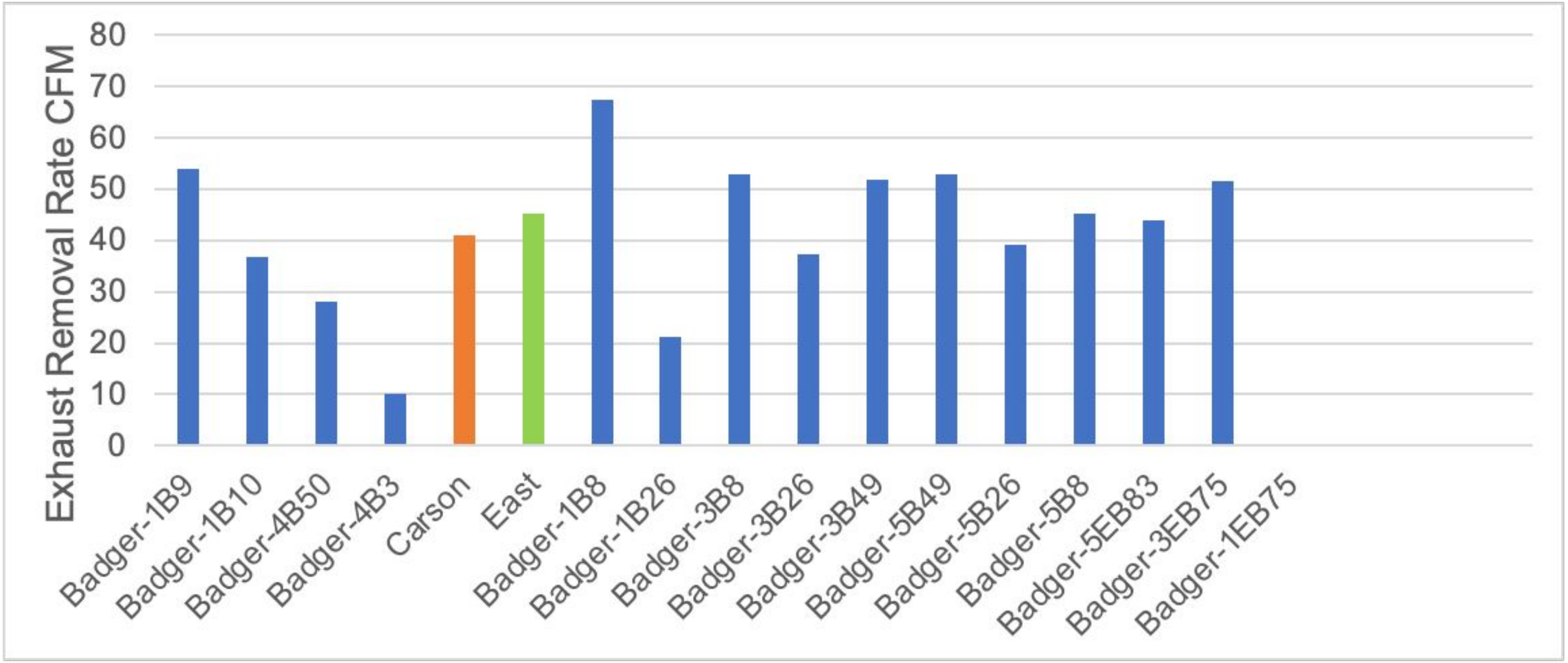
# **Point of Vulnerability:** Airflow is limited to window units and toilet exhaust fans that are in mixed working order

Air In



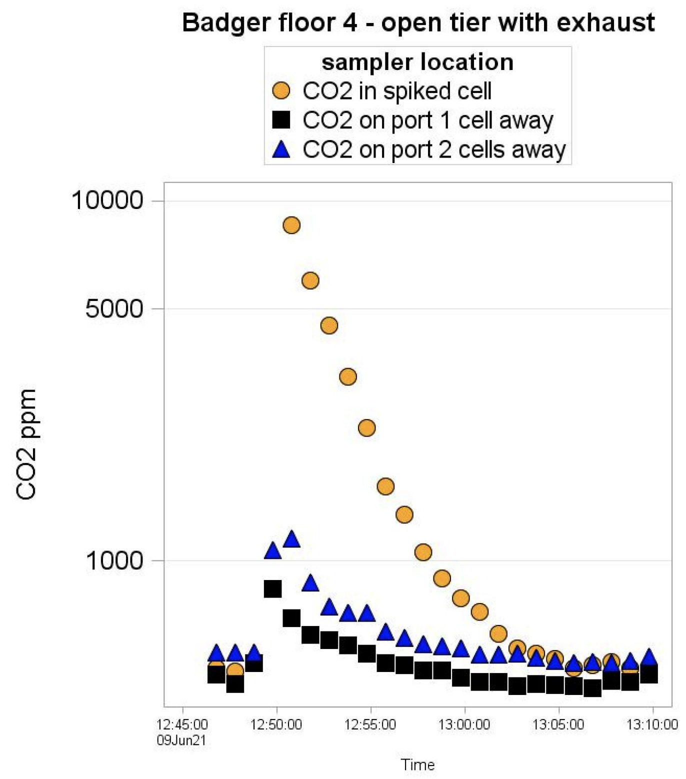
Air Out

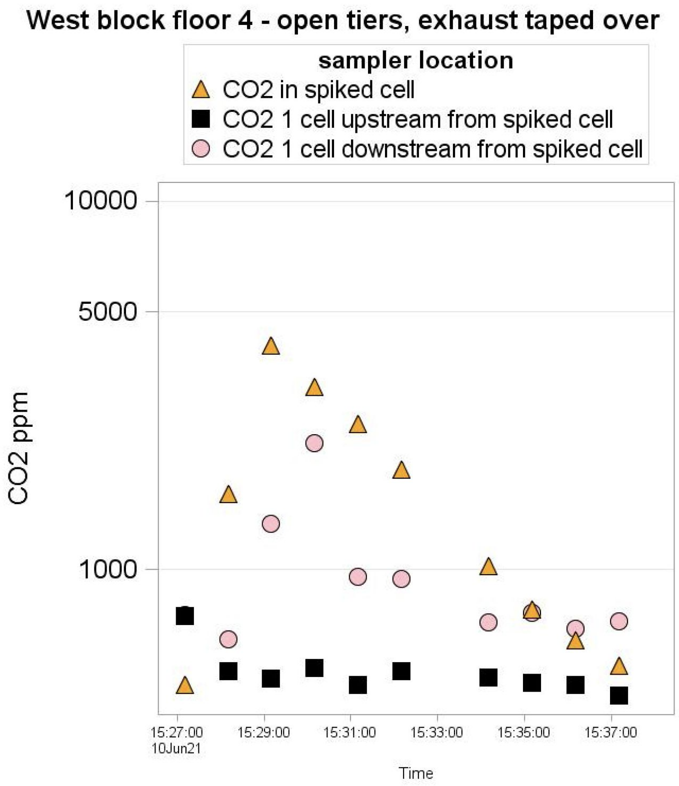
# Inconsistent exhaust fan performance points to variable removal rate of viral emissions



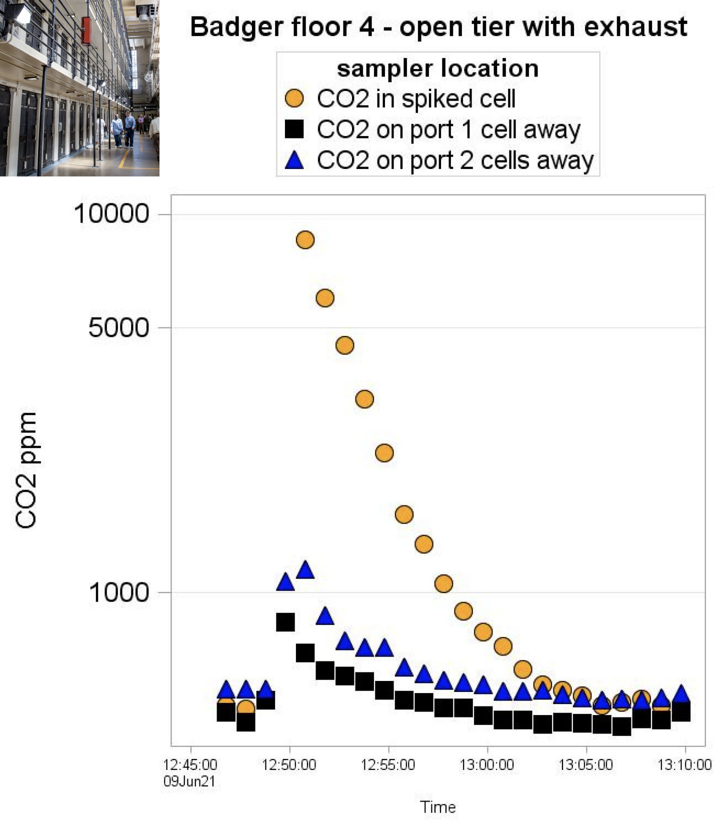
# If someone is infected inside/outside a cell, they are likely to transmit to anyone in the building

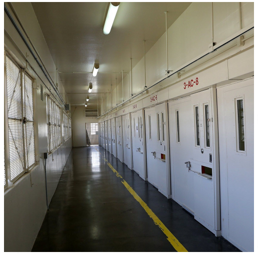
# Emissions generated in one cell diffuse rapidly to nearby cells

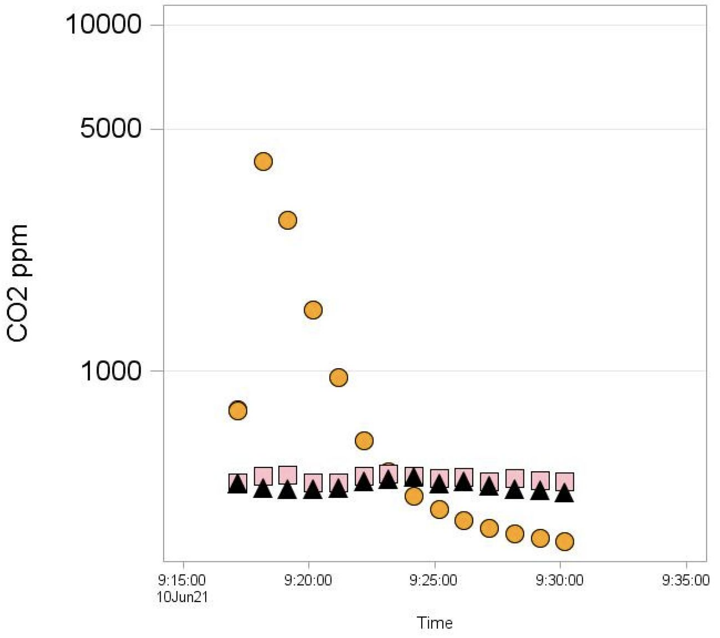


# Closed door cells limit the spread of emissions from one cell to adjacent cells





# 2c. 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** at yard 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

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

MERV-13

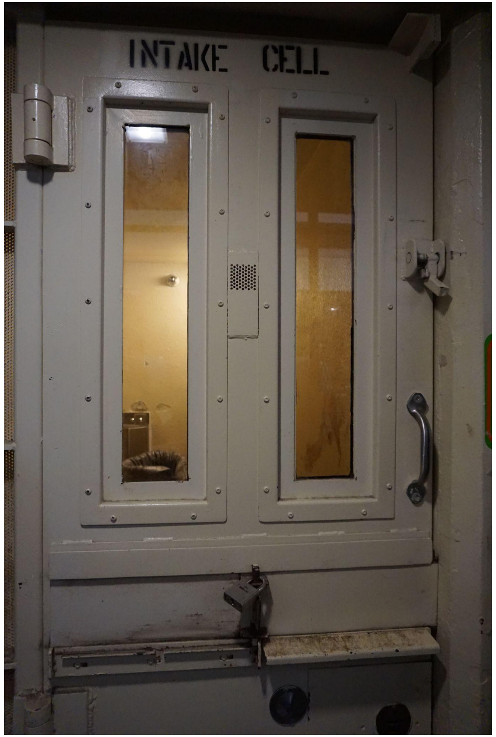
Corsi-Rosenthal Box - box fan + MERV-13 filters

# 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

# Ensure transfers and quarantine patients are housed in the least vulnerable housing units

- Residents with unknown infection status (transfers, quarantine patients) should be housed in the least vulnerable housing units
  - ➔ Solid doors on cells (Carson, IAC)
  - ➔ Increased building ventilation through open outside doors and windows
  - ➔ Working exhaust fans
  - ➔ Adequate time outdoors



# **Critical opportunity to <u>empower</u> and <u>educate</u> 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 (<u>and interest in</u>) 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

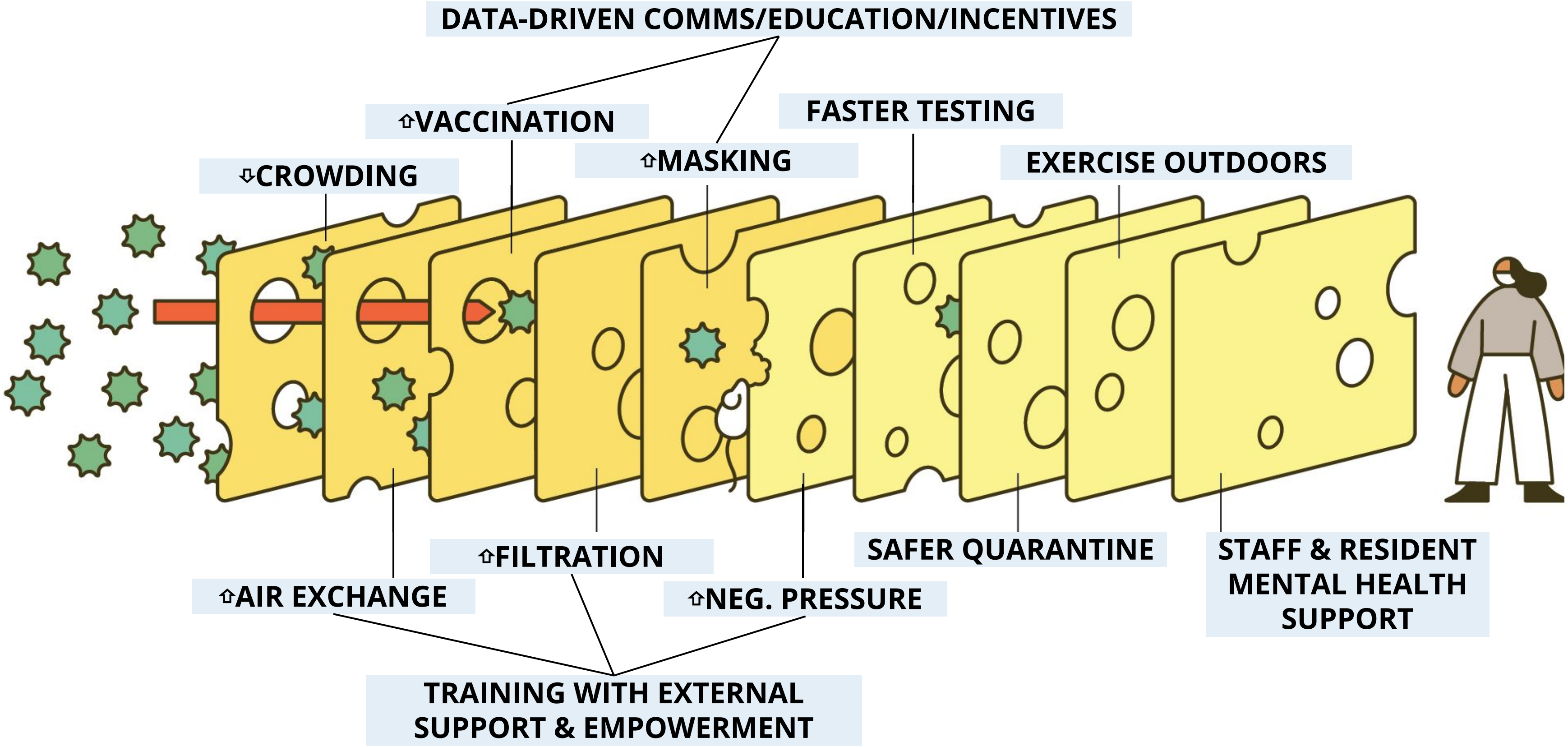
2. **Contract with a licensed Test and Balance Engineer (TBE)** to ensure the proper functioning and balance of your ventilation systems

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)

# 3. 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 SQ 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 SQ, we thank:**

CEO, Warden Ron Broomfield, CME Alison Pachynski, AW Rosalinda Rosalez, Captain Daryl Dorsey, Captain Orlando Ponce, Plant Manager Kyle Cox, staff engineers, *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