Update from CDPH Occupational Health Branch

Kristin J. Cummings, MD, MPH
Acting Chief, Occupational Health Branch

California Industrial Hygiene Council
Professional Development Seminar
December 5, 2022

Center for Healthy Communities
CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

Happy Retirement to Barbara Materna!

https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/Pages/OHWSept2022.aspx

What's ahead

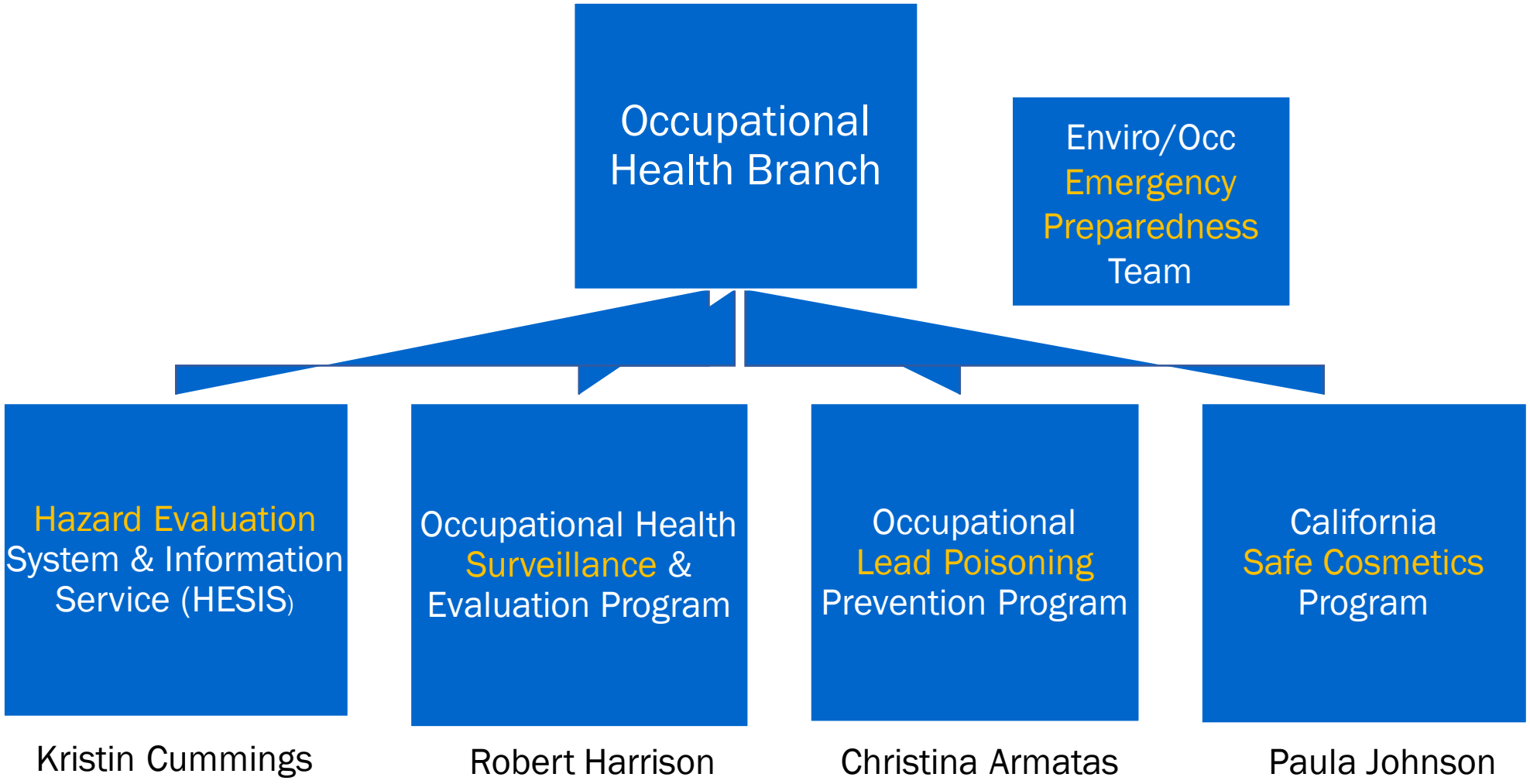
- Introduction to CDPH's Occupational Health Branch (OHB)
- Emergency Response
  - COVID-19
  - Avian influenza
- Program Highlights
  - Lead poisoning prevention
  - Silicosis related to engineered stone

OHB Health & Safety Code mandates

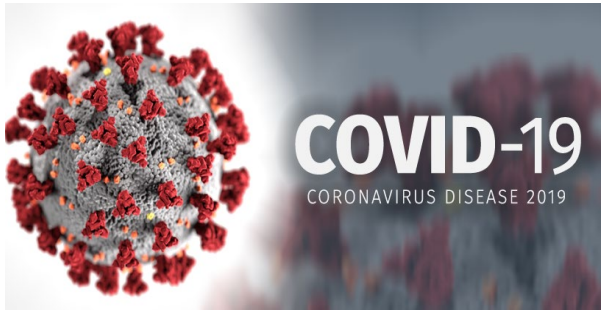
Sections 105175-105180

- Determine causes of work-related disease & injury and develop prevention recommendations
- Collect/summarize/analyze data (“surveillance”)
- Know how hazards and work processes impact health
- Provide practical “early warning” on emerging hazards & technical assistance
- Recommend new or revised occupational standards

OHB mission: Promoting safe and healthy workplaces across California



OHB mission: Promoting safe and healthy workplaces across California



Occupational Health Branch

Enviro/Occ Emergency Preparedness Team

Hazard Evaluation System & Information Service (HESIS)

Occupational Health Surveillance & Evaluation Program

Occupational Lead Poisoning Prevention Program

California Safe Cosmetics Program

Kristin Cummings

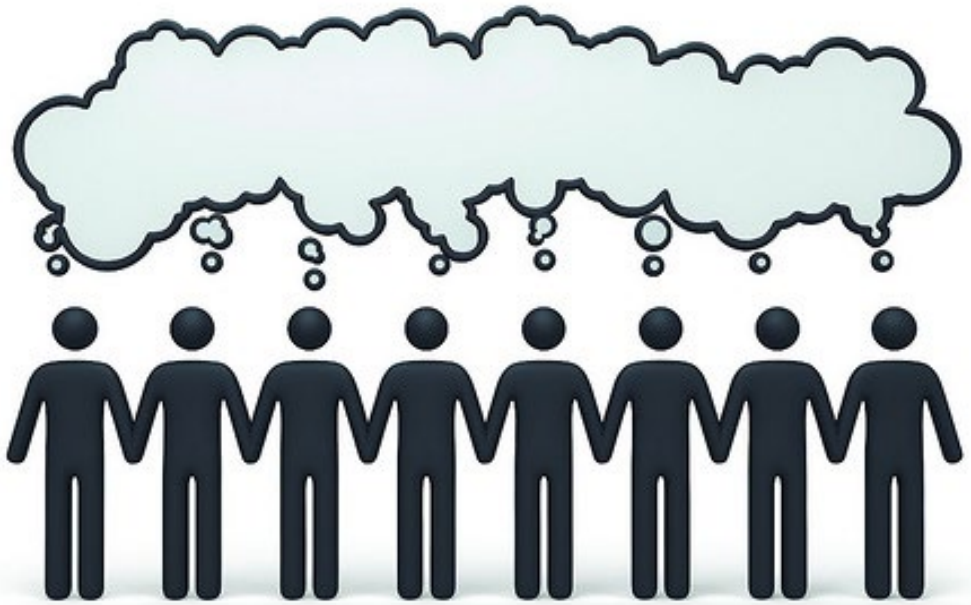
Robert Harrison

Christina Armatas

Paula Johnson

OHB values

- Utilize & contribute to the science
- Collaborate across disciplines
- Mentor future occupational health workforce
- Partner with others
- Focus on promoting health equity



COVID-19 response

- Epidemiology team
  - Tracking occupational burden
- Industrial Hygiene team
  - Technical assistance
- Communications team
  - Worker education campaign

OHB COVID-19 Epidemiology Team

Check for updates

VIEWPOINT

COVID-19 in the Workplace: The View from California

Kristin J. Cummings[1], Barbara L. Materna[1], Ximena Vergara[1,2], John Beckman[1,3], Carolina Espineli[1,3], and Robert Harrison[1]

[1]Occupational Health Branch, California Department of Public Health, Richmond, California; [2]Heluna Health, City of Industry, California; and [3]Public Health Institute, Oakland, California

ORCID ID: 0000-0002-5422-9199 (K.J.C.).

Check for updates

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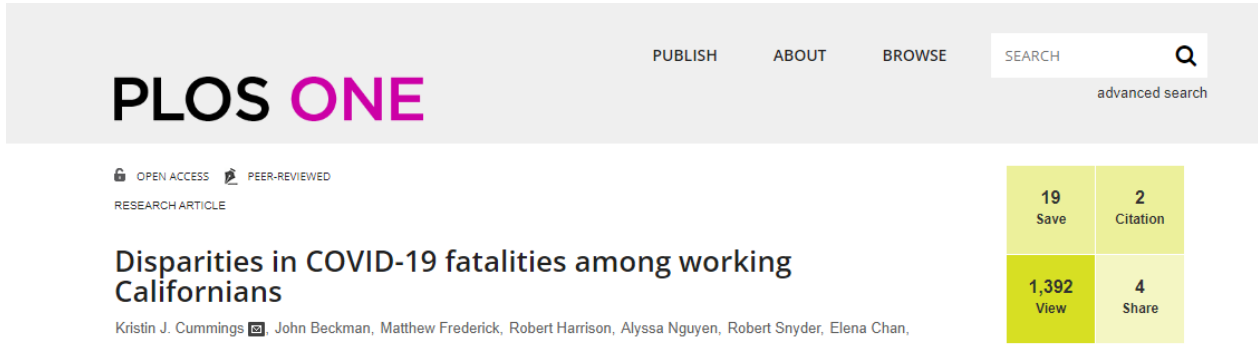
DOI: 10.1002/ajim.23396

RESEARCH ARTICLE

AMERICAN JOURNAL OF INDUSTRIAL MEDICINE WILEY

Close physical proximity on the job—An exposure matrix

Ximena P. Vergara PhD, MPH[1,2] | Kathryn Gibb MPH[2,3]



PLOS ONE

PUBLISH ABOUT BROWSE SEARCH advanced search

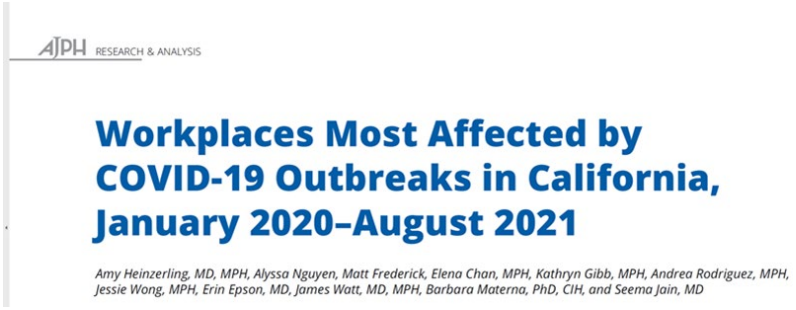
OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Disparities in COVID-19 fatalities among working Californians

Kristin J. Cummings, John Beckman, Matthew Frederick, Robert Harrison, Alyssa Nguyen, Robert Snyder, Elena Chan, Kathryn Gibb, Andrea Rodriguez, Jessie Wong, Erin L. Murray, Seema Jain, Ximena Vergara

19 Save | 2 Citation | 1,392 View | 4 Share



AJPH RESEARCH & ANALYSIS

Workplaces Most Affected by COVID-19 Outbreaks in California, January 2020–August 2021

Amy Heinzerling, MD, MPH, Alyssa Nguyen, Matt Frederick, Elena Chan, MPH, Kathryn Gibb, MPH, Andrea Rodriguez, MPH, Jessie Wong, MPH, Erin Epson, MD, James Watt, MD, MPH, Barbara Materna, PhD, CIH, and Seema Jain, MD

CDC Centers for Disease Control and Prevention

CDC 24/7: Saving Lives, Protecting People™

Morbidity and Mortality Weekly Report (*MMWR*)

CDC

COVID-19 Outbreaks and Mortality Among Public Transportation Workers — California, January 2020–May 2022

Weekly / August 19, 2022 / 71(33);1052–1056

Amy Heinzerling, MD[1]; Ximena P. Vergara, PhD[1,2]; Elisabeth Gebreegziabher, MPH[1,3]; John Beckman[1,3]; Jessie Wong, MPH[1]; Alyssa Nguyen[1]; Sana Khan, MPH[1]; Matt Frederick[1,3]; David Bui, PhD[1,2]; Elena Chan, MPH[1,3]; Kathryn Gibb, MPH[1,3]; Andrea Rodriguez, MPH[1,3]; Seema Jain, MD[1]; Kristin J. Cummings, MD[1] (VIEW AUTHOR AFFILIATIONS)

COVID-19 in California Workplaces

- **California case registry**
  - 73% of cases and 29% of deaths in working-age adults
- **Workers' Compensation claims**
  - >299K claims as of October 2022
- **Deaths reported to Cal/OSHA**
  - 862 deaths as of January 2022
- **Workplace outbreaks reported by employers**
  - >36K outbreaks, >446K cases as of October 2022

Cummings et al. *Annals ATS* 2022

COVID-19 Workers' Compensation claims

Statewide Summary	Claims with injuries through October 2022:	299,006	Claims reported through 11/14/2022:	299,103	Deaths reported through 11/14/2022:	1,549

COVID Claims Per 10K Employees (Insured & Self-Insured)

Select County on map or drop-down menu to filter exhibits

Select County: All

COVID Claims per 10,000 EEs

16 — 1,231

Note: The Insured/Self-Insured Filter does not apply to this map.

COVID Claims by Industry

Counts & Proportions Exclude Unknown Values

Health Care	74,520	(27.0%)
Public (Safety/Govt)	68,615	(24.9%)
Retail	28,354	(10.3%)
Manufacturing	17,519	(6.4%)
Transportation	16,739	(6.1%)
Food Services	11,200	(4.1%)
Admin & Waste	9,508	(3.4%)
Education	6,653	(2.4%)
Finance	6,424	(2.3%)
Other Services	4,908	(1.8%)
Construction	4,804	(1.7%)

Select Month Range

From: Mar 2020

Through: Oct 2022

Select Dimension

- (•) Industry
- ( ) Insured/Self-Insured
- ( ) Age Group
- ( ) Gender
- ( ) Region
- ( ) Denial Status
- ( ) Body Part

Insured/Self-Insured: (All)

Include Denials: Yes

Data Source: DWC - WCIS

Run Date: 11/14/2022

CA Workers' Compensation Institute. https://cwci.org/CV19claims.html

COVID-19 deaths reported to Cal/OSHA by industry, 1/2020-1/2022

Industry (Census Code)	No. (%)
Health care, except hospitals (7970-8180, 8270-8290)	109 (12.6)
Public administration (9370-9590)	108 (12.5)
Manufacturing, except food (1370-3990)	92 (10.7)
Retail trade (4670-5790)	81 (9.4)
Hospitals (8190)	75 (8.7)
Transportation and warehousing (6070-6390)	57 (6.6)
Accommodation and food services (8660-8690)	46 (5.3)
Management, administrative, and waste services (7570-7790)	37 (4.3)
Educational services (7860-7890)	36 (4.2)
Wholesale trade (4070-4590)	35 (4.1)
Food manufacturing (1070-1290)	35 (4.1)
Agriculture, forestry, fishing, and hunting (0170-0290)	32 (3.7)
Construction (0770)	20 (2.3)
Social assistance (8370-8470)	12 (1.4)
Other†	60 (7.0)
Unknown or uncoded industry	27 (3.0)
Total	862 (100)

Assembly Bill (AB) 685

What is AB 685?

AB 685 (Chapter 84, Statutes of 2020) is a California law signed by Governor Gavin Newsom on September 17, 2020. This law:

- **Requires employers to notify employees** who may have been exposed to COVID-19 and to **report workplace outbreaks** to the local health department.
- **Requires the California Department of Public Health (CDPH) to publicly report information** on workplace outbreaks.
- Authorizes Cal/OSHA to enforce COVID-19 hazards as an imminent hazard to provide immediate protection for workers.

- Employers are required to report to LHDs when there is an outbreak, defined as **3 or more COVID-19 cases** among workers at the same worksite within a **14-day period**.

- **Information that must be reported to the LHDs includes:**
  1) Worksite details (company name, address, NAICS, industry)
  2) Names and occupations of workers with COVID-19

- CDPH is required to share public information about COVID-19 workplace outbreaks by industry on a website

Why outbreak data collection and reporting?

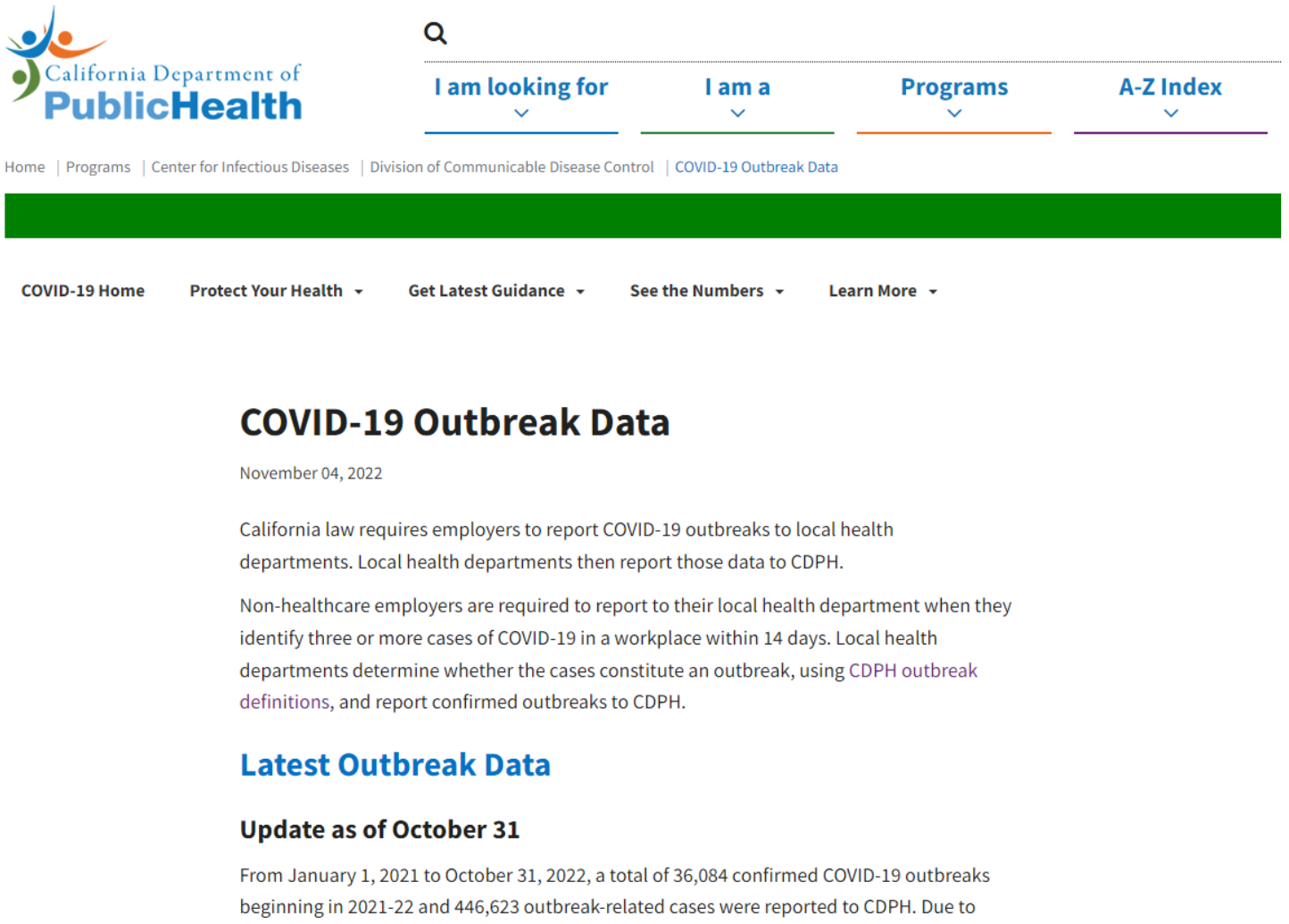
1. Track outbreaks and monitor shifts over time

2. Capture the distribution of outbreaks by industries and settings

3. Gain insight to the workplaces & worker populations impacted

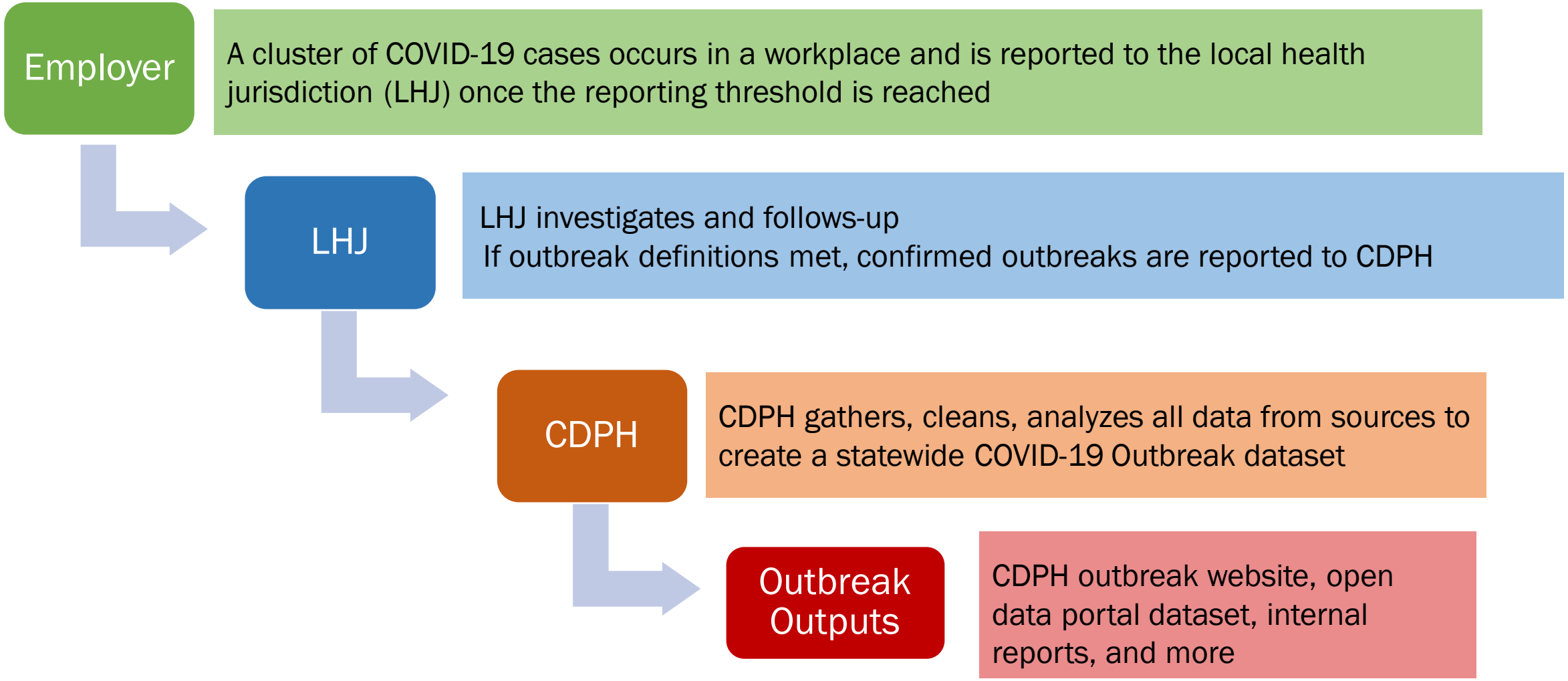
4. Inform prevention measures, guidelines, and intervention

CDPH web page for outbreak data

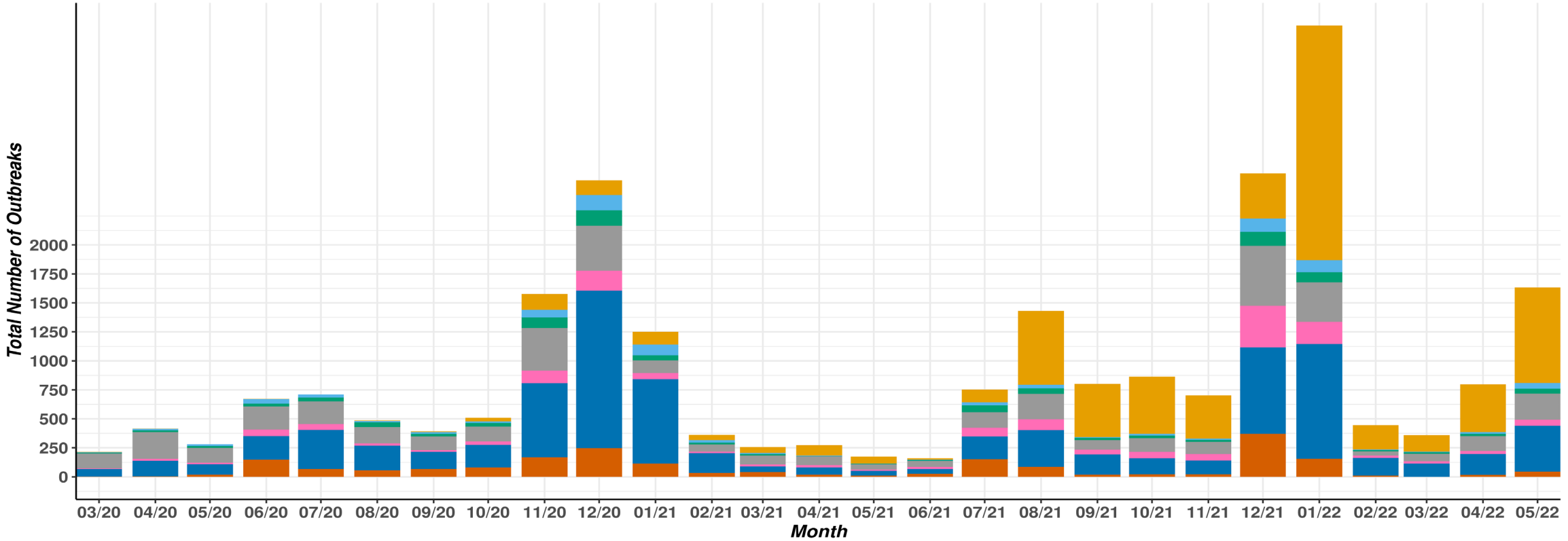


https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/COVID-19-Outbreak-Data.aspx

Outbreak data flow into CDPH

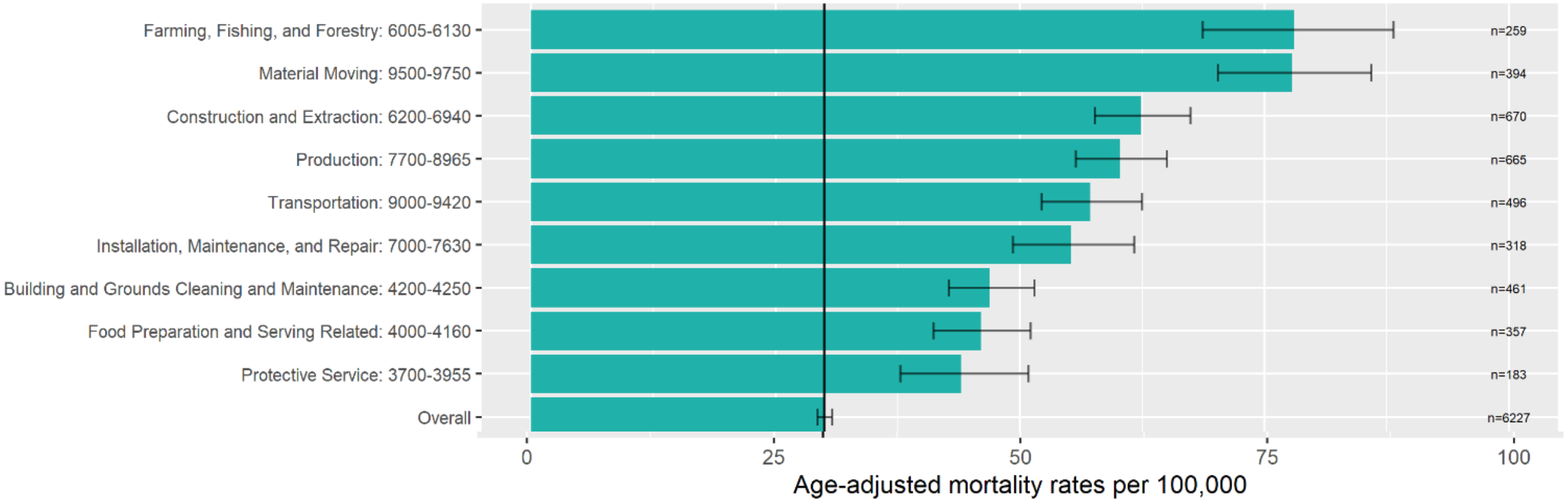


COVID-19 confirmed outbreaks by selected individual settings as of June 30, 2022



Data source: CalREDIE and CalCONNECT confirmed outbreaks, includes outbreaks from Los Angeles and San Diego

COVID-19 mortality by occupation, 2020

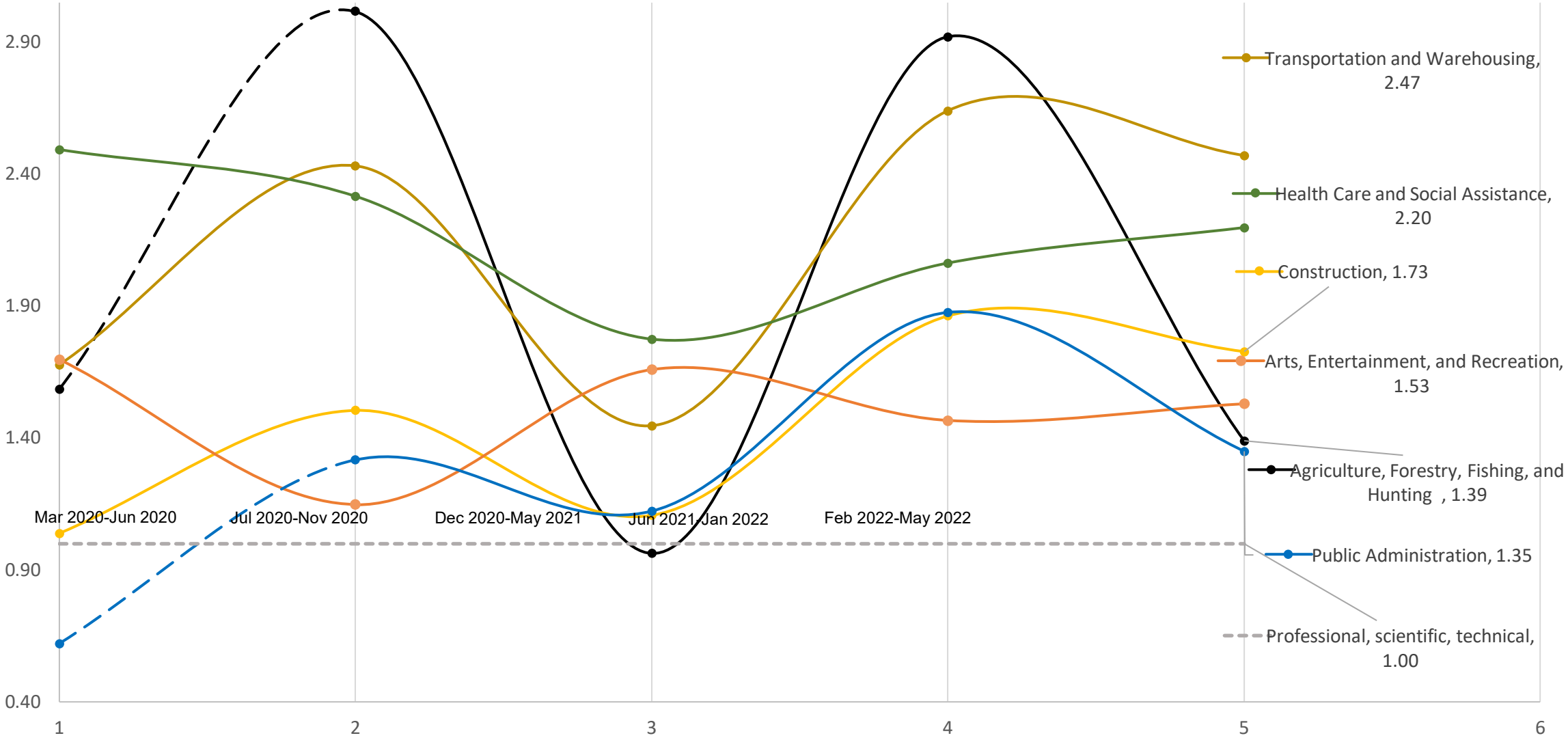


Cummings et al. *PLOS ONE* 2022

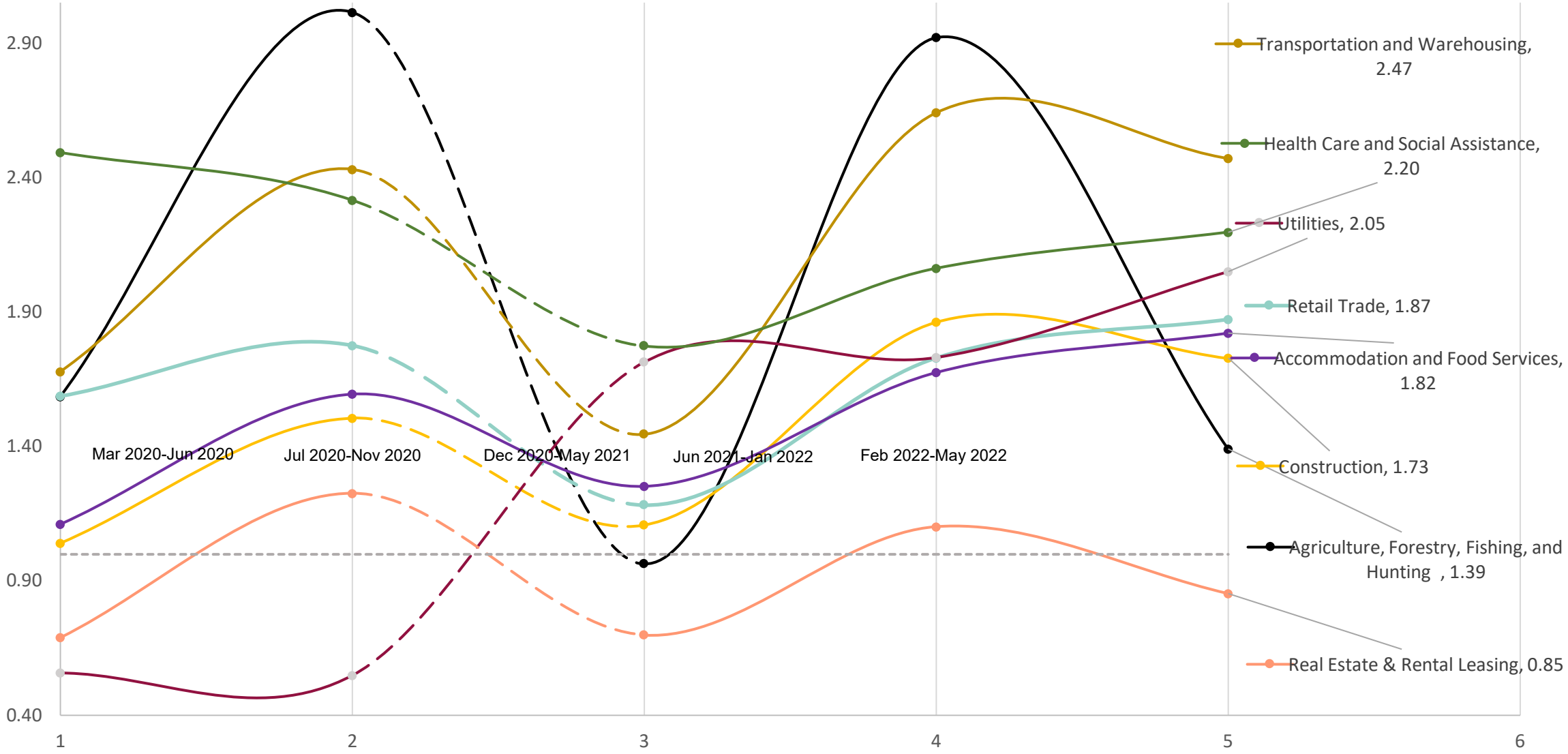
COVID-19 mortality by industry, 2020-2022

- Wave 1: March-June 2020
- Wave 2: July-November 2020
- Wave 3: December 2020-May 2021
- Wave 4: June 2021-January 2022 (Delta)
- Wave 5: February-May 2022 (Omicron)

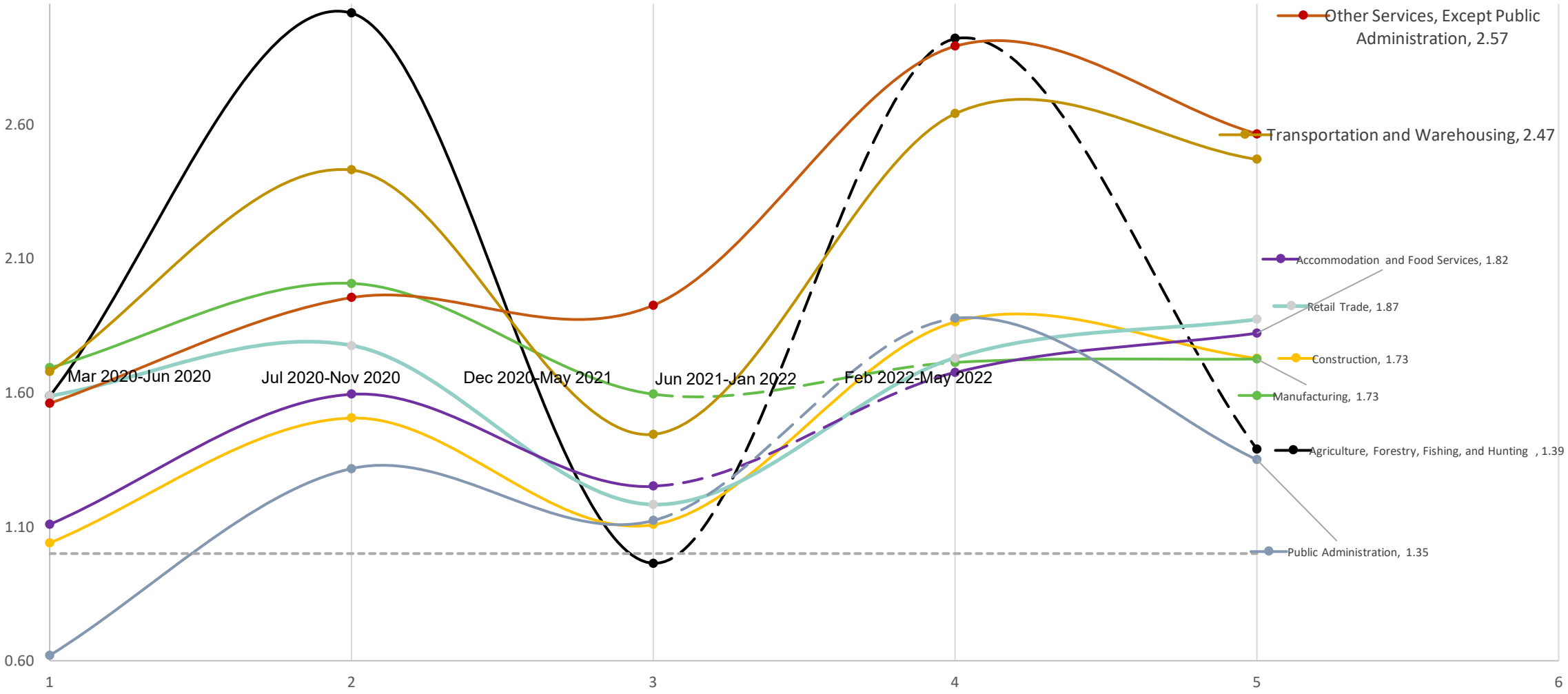
Wave 1 to 2: Adjusted Mortality Rate Ratio for each Industry compared to Professionals



Wave 2 to 3: Adjusted Mortality Rate Ratio for each Industry compared to Professionals



Wave 3 to 4 and 5: Adjusted Mortality Rate Ratio for each Industry compared to Professionals



Meet OHB's industrial hygienists

Justine Weinberg

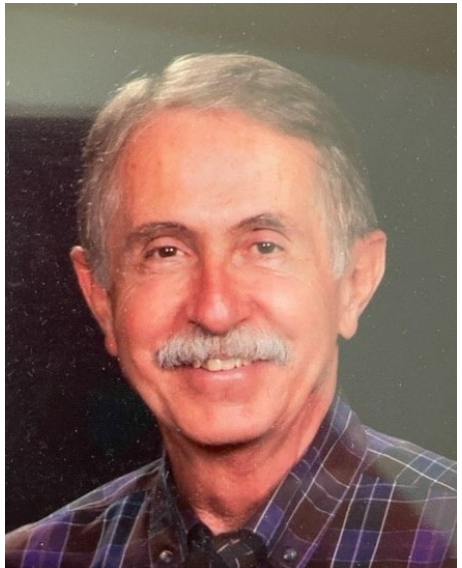
Jennifer McNary

Jackie Chan

Kyle Peerless

Elon Ullman

Robert Stepp

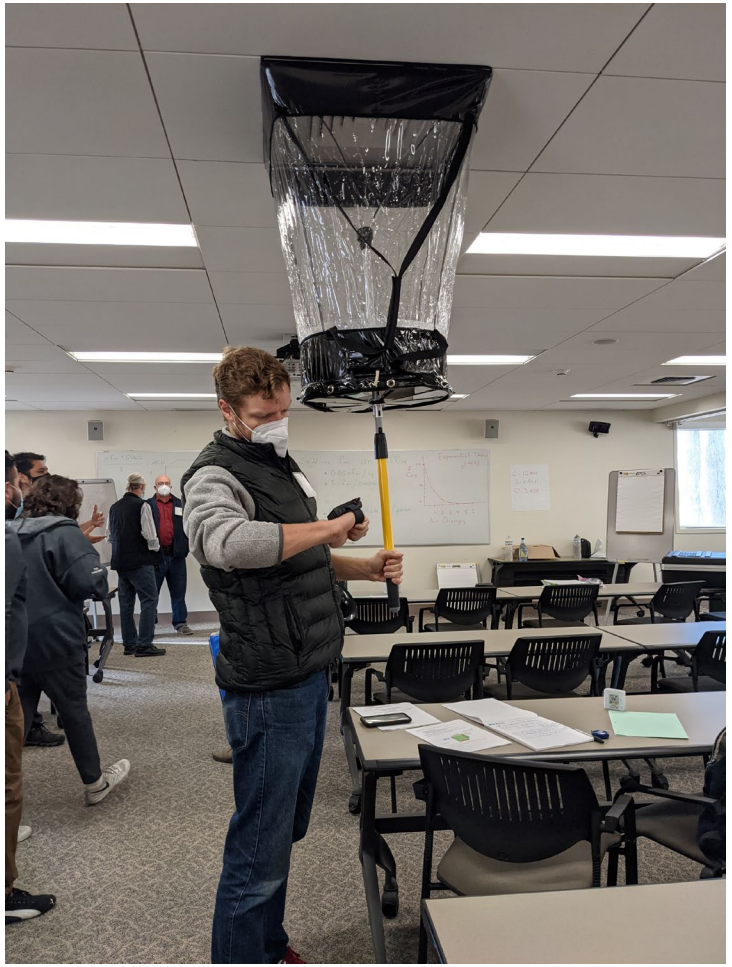


Janelle Nystrom

IH skills & knowledge in demand during COVID-19

Respiratory protection programs

Ventilation & indoor air quality

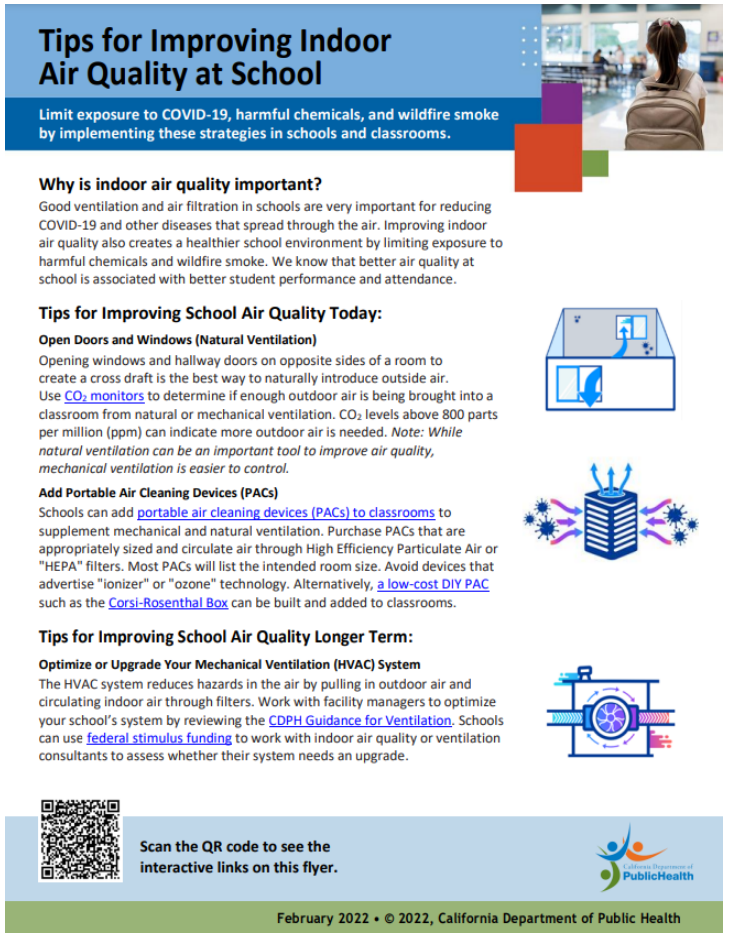


OHB's major IAQ accomplishments

- Authored range of guidance documents and other educational content on ventilation/IAQ for a range of stakeholders
- Led Safe Schools for All Health & Safety Team technical assistance requests on ventilation/IAQ
- Supported new Outbreak Consultation Team (OCT) by conducting IAQ site visit consultations
- Carried out targeted IAQ site visits and technical assistance to skilled nursing industry

Guidance documents and webinars

- CDPH Interim Guidance for Ventilation, Filtration, and Air Quality in Indoor Environments
- CDPH School IAQ Guidance Document
- CDPH “Ventilation Toolkit” guidance documents, collaborated with CDPH Comms team on social media campaign
- CDPH DIY Air Cleaner guidance document
- Webinars on general ventilation principles for schools and local health departments (LHDs), patient isolation ventilation practices in healthcare settings



Tips for Improving Indoor Air Quality at School

Limit exposure to COVID-19, harmful chemicals, and wildfire smoke by implementing these strategies in schools and classrooms.

Why is indoor air quality important?

Good ventilation and air filtration in schools are very important for reducing COVID-19 and other diseases that spread through the air. Improving indoor air quality also creates a healthier school environment by limiting exposure to harmful chemicals and wildfire smoke. We know that better air quality at school is associated with better student performance and attendance.

Tips for Improving School Air Quality Today:

Open Doors and Windows (Natural Ventilation)

Opening windows and hallway doors on opposite sides of a room to create a cross draft is the best way to naturally introduce outside air. Use CO_2 monitors to determine if enough outdoor air is being brought into a classroom from natural or mechanical ventilation. CO_2 levels above 800 parts per million (ppm) can indicate more outdoor air is needed. *Note: While natural ventilation can be an important tool to improve air quality, mechanical ventilation is easier to control.*

Add Portable Air Cleaning Devices (PACs)

Schools can add portable air cleaning devices (PACs) to classrooms to supplement mechanical and natural ventilation. Purchase PACs that are appropriately sized and circulate air through High Efficiency Particulate Air or "HEPA" filters. Most PACs will list the intended room size. Avoid devices that advertise "ionizer" or "ozone" technology. Alternatively, a low-cost DIY PAC such as the Corsi-Rosenthal Box can be built and added to classrooms.

Tips for Improving School Air Quality Longer Term:

Optimize or Upgrade Your Mechanical Ventilation (HVAC) System

The HVAC system reduces hazards in the air by pulling in outdoor air and circulating indoor air through filters. Work with facility managers to optimize your school’s system by reviewing the CDPH Guidance for Ventilation. Schools can use federal stimulus funding to work with indoor air quality or ventilation consultants to assess whether their system needs an upgrade.

Scan the QR code to see the interactive links on this flyer.

California Department of PublicHealth

February 2022 • © 2022, California Department of Public Health

Interim Guidance for Ventilation, Filtration, and Air Quality in Indoor Environments

- Intended for non-healthcare workplaces
- Required reading for employers under the Cal/OSHA COVID-19 Emergency Temporary Standard
- Key concepts
  - Introduce fresh air
  - Use HVACs effectively
  - Supplement with portable air cleaners

https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/COVID-19/Interim-Guidance-for-Ventilation-Filtration-and-Air-Quality-in-Indoor-Environments.aspx

Options to reduce inhalation risks

- **Isolate/separate** the source from others
- **Exhaust/remove** contaminant from the indoor space
- **Dilute** contaminant with clean outdoor air
- **Filter** out particles in the air with HVAC filters or portable air cleaners

Safe Schools for All technical assistance

- State portal created to receive inquiries from school staff
- Health & safety inquiries routed to OHB & Cal/OSHA for response

School Administrators & LHDs/Jurisdiction

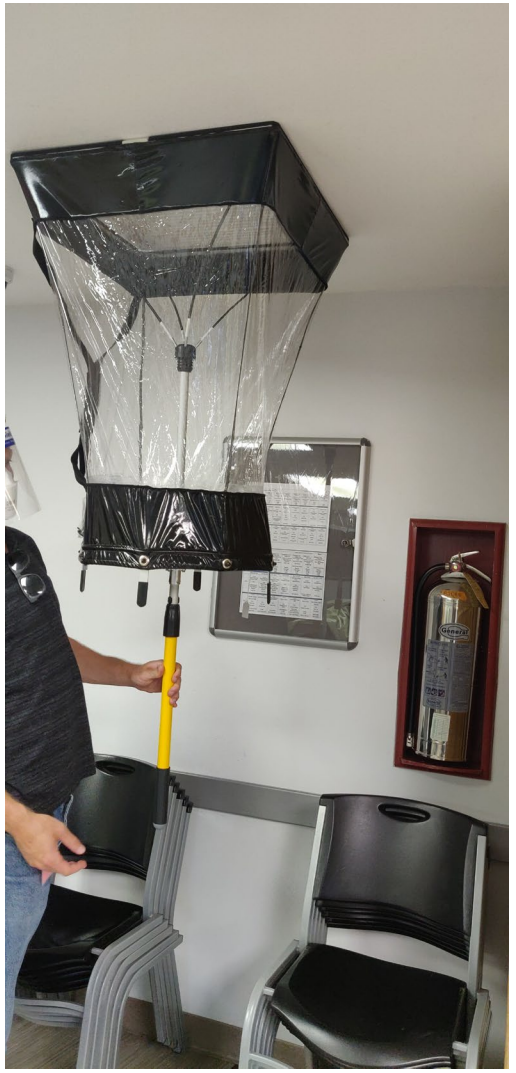
Portal for School Leaders and LHD/LHJs to Request Technical Assistance from the State Safe Schools For All Team.

Start Your Request →

https://schools.covid19.ca.gov/

Field ventilation consultations

- OHB industrial hygienists conducted site visits accompanied by LHJ staff after outbreaks
- Visits focused on making recommendations to improved IAQ and capacity-building for LHJs
- Over 30 site visits carried out in congregate settings such as schools, homeless shelters, and correctional facilities

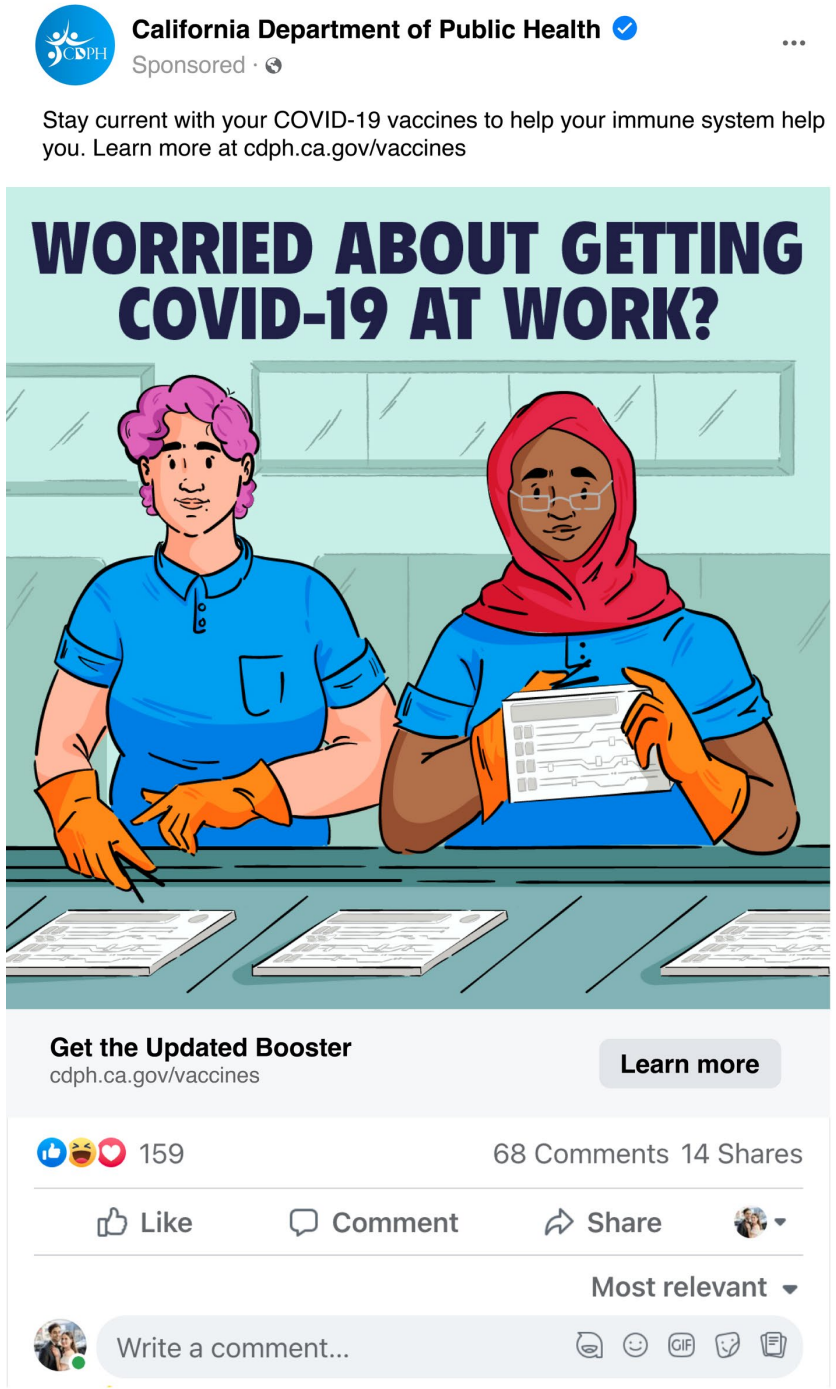


New worker communication toolkit on COVID-19

- Worked with media firm
- New suite of creative assets
- Paid ads on social media
- Long COVID, vaccines, boosters, testing, treatment
- Online worker survey & focus groups

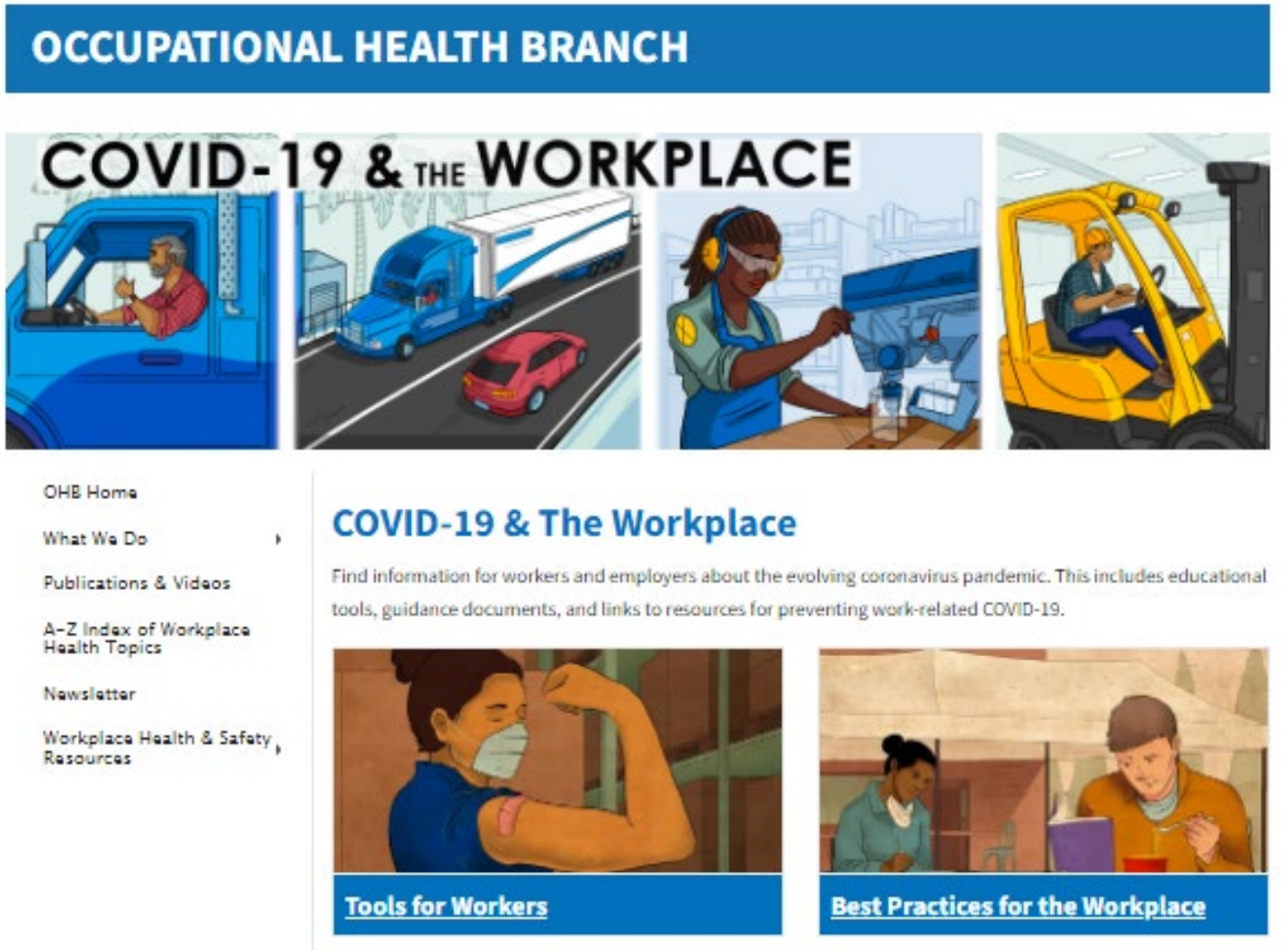
Creative assets

- Social media cards
- Posters
- Digital banners
- GIFs and videos



Most popular subject: Long COVID

OHB's COVID-19 website topic page

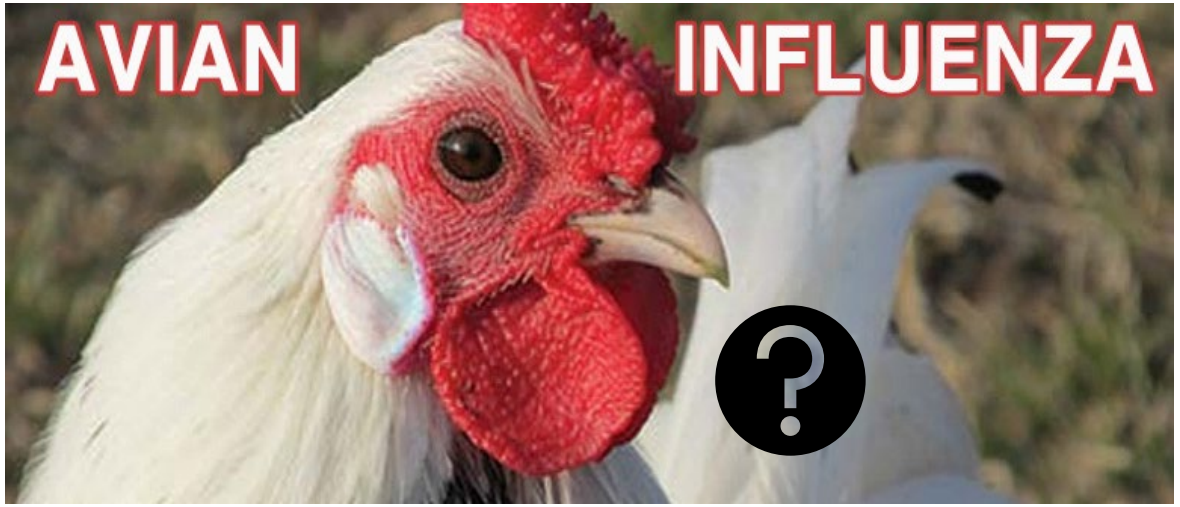


https://www.cdph.ca.gov/OHB

Some reflections on the COVID-19 experience

- COVID-19 information mistrust
- Continue to highlight health disparities related to low-wage, “essential” work
- Long COVID impact on workers

What is



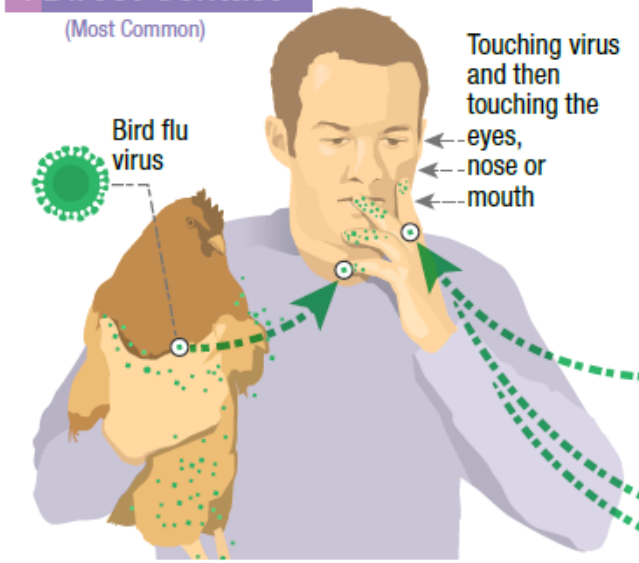
- Highly pathogenic avian influenza, (HPAI) “bird flu”, is a serious viral disease in birds.
- Circulates in wild birds and can infect commercial poultry.
- The current variant, H5N1, is circulating in wild birds and can infect commercial poultry and backyard flocks.
- Easily transmissible to other birds.
- Infected birds spread the virus through their mucous, saliva or feces.

How Infected Backyard Poultry Could Spread Bird Flu to People

Human Infections with Bird Flu Viruses Rare But Possible

1 Direct Contact

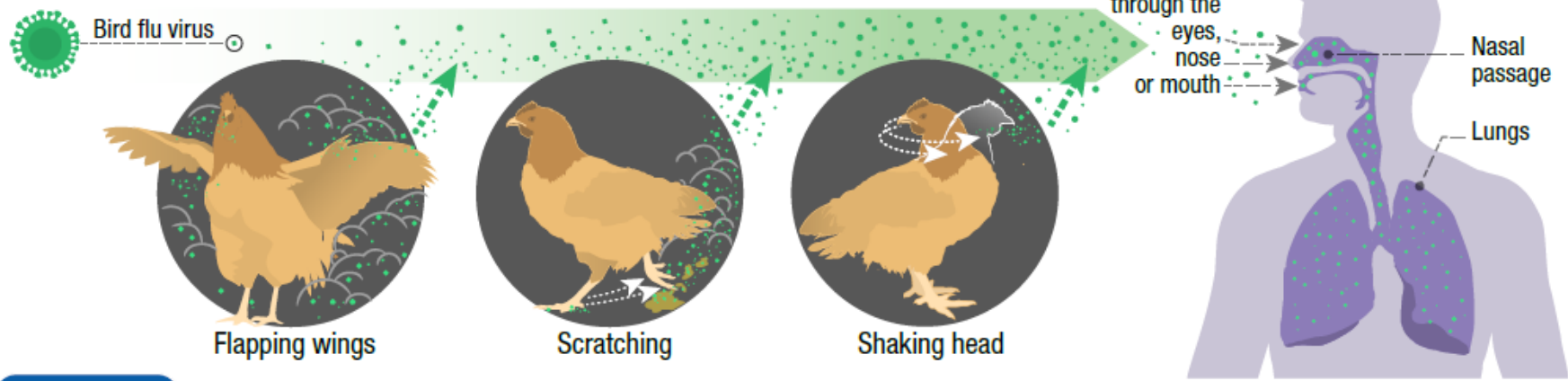
(Most Common)



Infection can occur without touching poultry.

2 Contaminated Surfaces

3 Bird Flu Virus in the Air (in Droplets or Dust)



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

www.cdc.gov/flu/avianflu/avian-in-humans.htm

CS330154

Human Exposure to Avian Influenza (AI) from Infected Birds

Poultry Producers, Farmers:

- Feeding, caring for infected birds
- Handling birds/eggs
- Touching surfaces contaminated with feces
- In contaminated hen-house or barn.

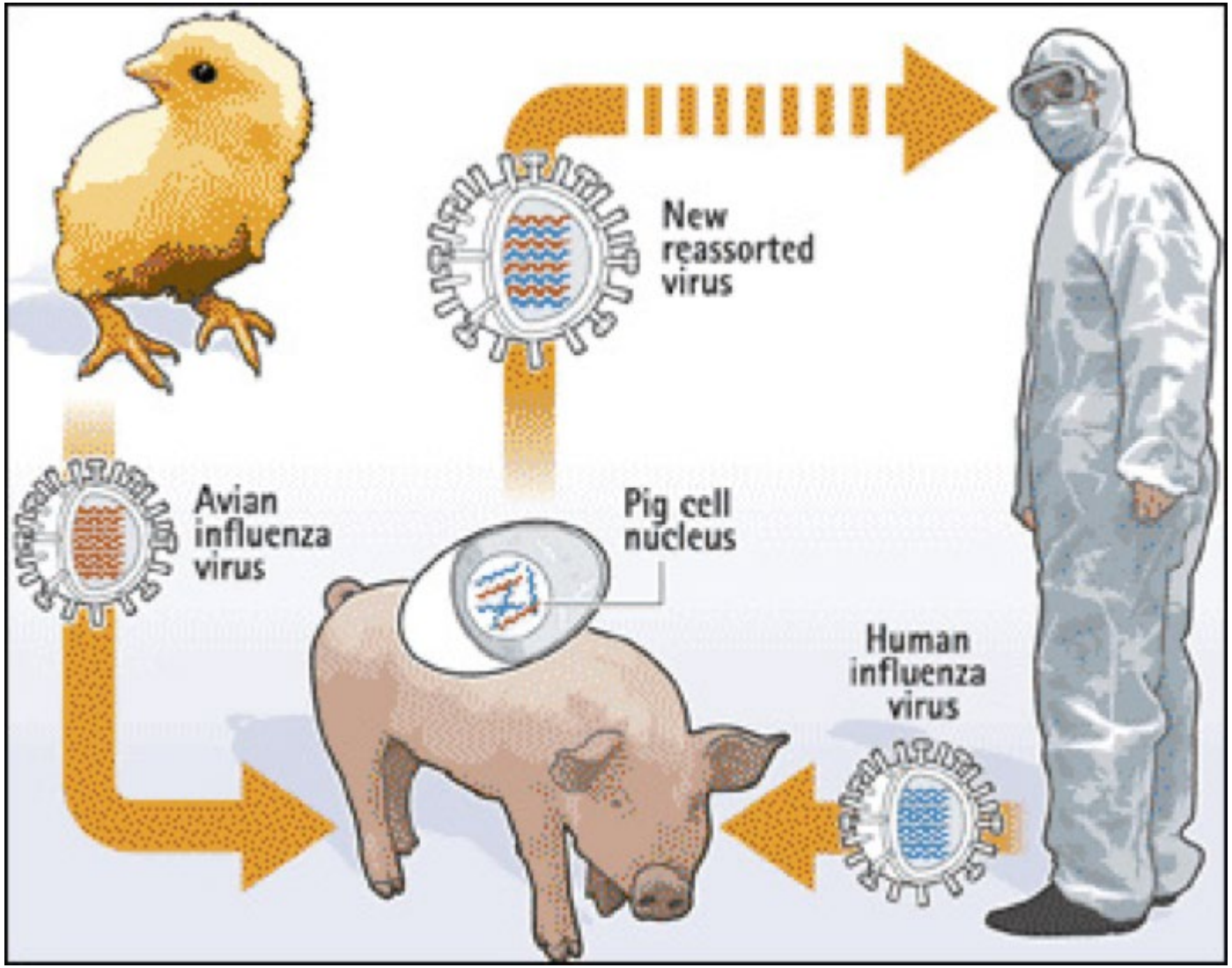
Human Exposure from Infected Birds

Emergency Responders / Cullers

- Handling or disposal of carcasses
- Cleaning contaminated surfaces, bedding
- Produces aerosols or contacts the eyes:
  - Fecal droppings
  - Respiratory secretions

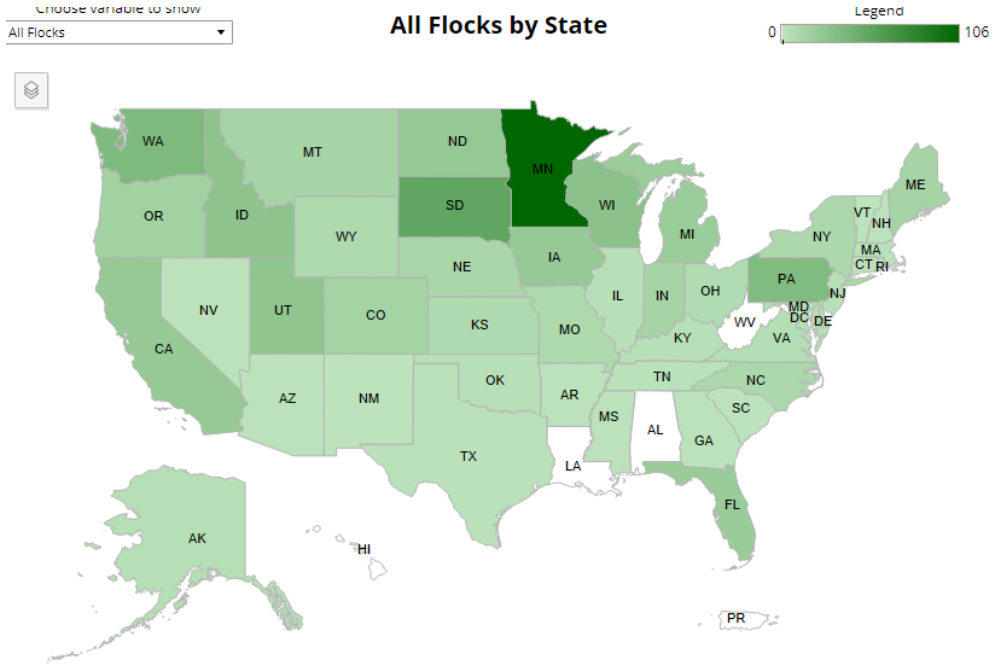
Photo Credit: North Carolina Department of Agriculture

Creating a pandemic

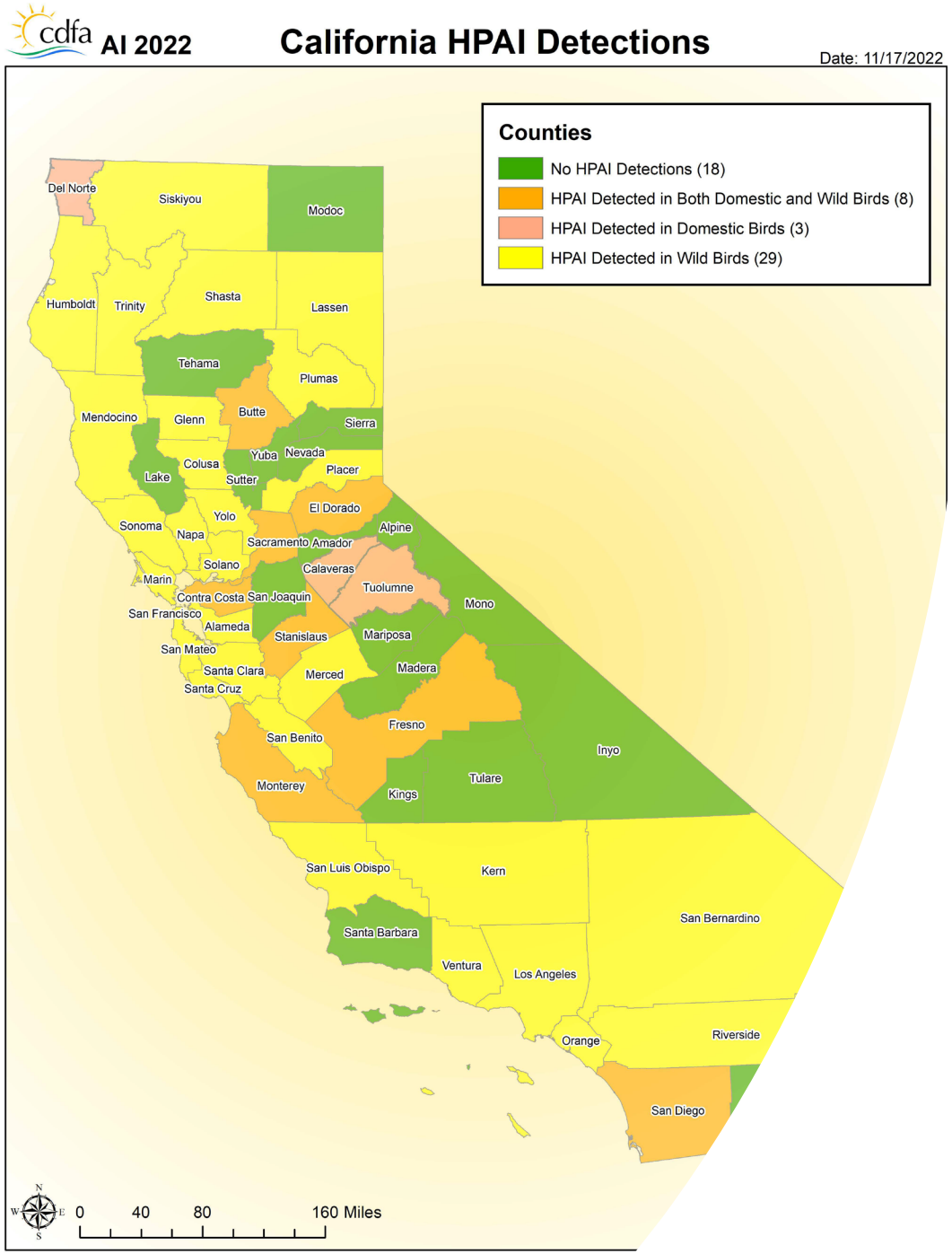


Emergency Response Activities in U.S. Avian Influenza in Poultry in 2022:

- 46 States
- 268 commercial flocks
- 365 Backyard flocks
- 50 million birds



https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/avian/avian-influenza/hpai-2022/2022-hpai-commercial-backyard-flocks



California Highly Pathogenic Avian Influenza Events in Birds

Objectives of CDPH Avian Influenza (AI) Monitoring Plan

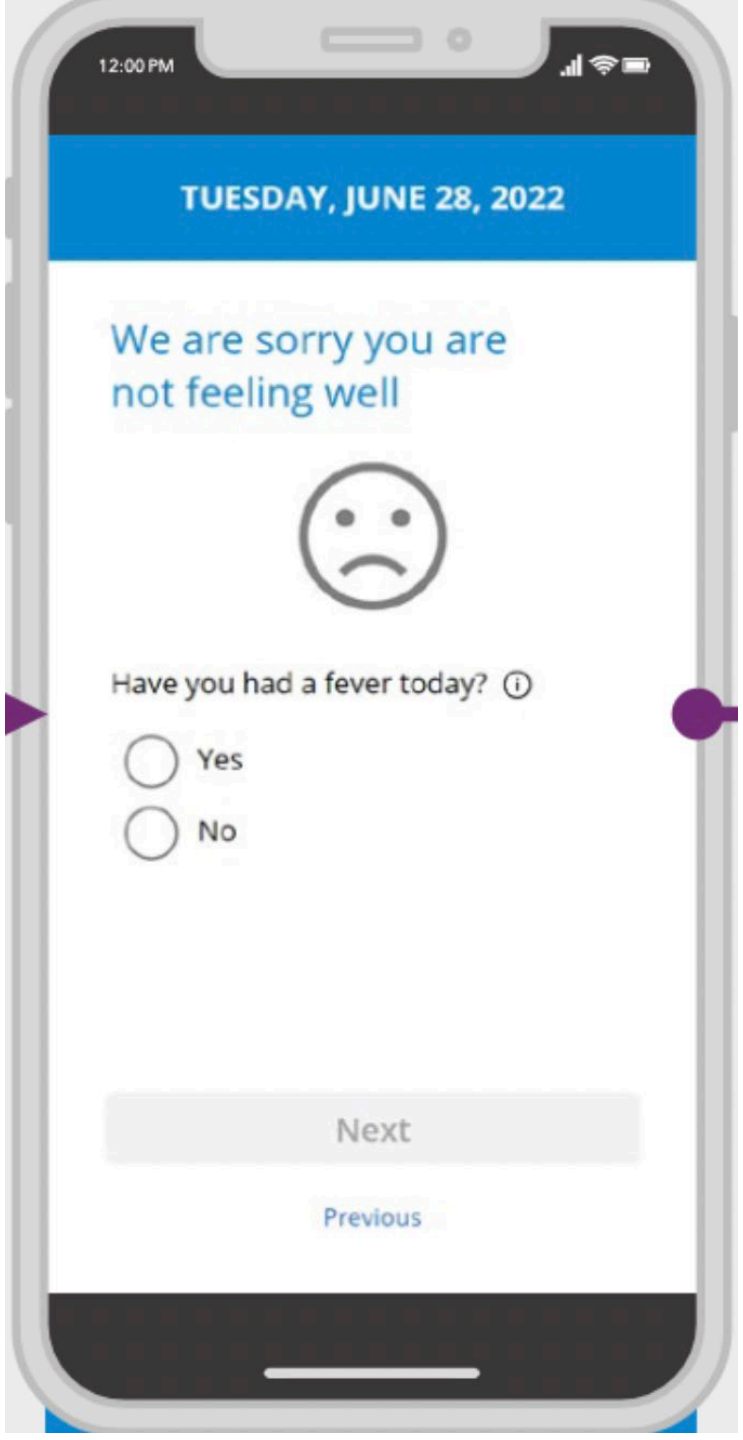
Identify	AI illness in poultry workers and in responders
Ensure	prompt medical evaluation and treatment (if appropriate)
Facilitate	rapid RT-PCR testing of ill persons
Ensure	infection prevention precautions appropriate for novel influenza viruses are implemented

CDPH Role when AI detected in Commercial Poultry

- Coordinate with CDC and animal health agencies, local public health, and industry
- Notify LHJ
- Provide AI lab testing for human contacts who develop illness during the 10-day monitoring period
- Assist LHJ as needed

Public Health Monitoring Activities Since March 2022

- LHJs have monitored 130 California residents
  - 63 Emergency responders to poultry outbreaks in California or in other states
  - 34 Producer Responders
  - 13 Farm owners, workers
  - 20 People who had contact with wild birds that tested positive for H5N1.
- Several individuals had symptoms consistent with AI and were tested. (All were negative.)



Avian Influenza – Daily Temperature and Symptom Monitoring App

Developed By: Tiffany Tsukuda & Rui Zhao

- **Purpose**: Collect self-reported symptom status from persons under monitoring (PUM) by LHJ into electronic daily active monitoring
- PUM who opt to enroll in electronic daily symptom monitoring will automatically receive a daily text message or email reminder to complete their daily symptom check-in via an app link ($\leq$ 2 mins)
- LHJs who opt to enroll PUM in electronic daily symptom monitoring will be able to:
  - Receive near real-time notifications regarding PUM symptom status (ie. experiencing new/worsening symptoms, not reported symptom status in $\geq$ 2 days)
  - Subscribe to daily or weekly email digests summarizing symptom monitoring activity among PUM in jurisdiction

Occupational lead update

- The Occupational Lead Poisoning Prevention Program (OLPPP) has notified Cal/OSHA of all blood lead test results ≥ 20 µg/dL since January 2020 due to new legislation.

- OLPPP recently published a review of the industries with the highest blood levels in the *American Journal of Public Health* based on the notifications to Cal/OSHA.

Top 3 Industries with the Highest Blood Lead Levels Reported by CDPH to Cal/OSHA from 1/1/20 to 12/31/21

Industry	Number of Employers Reported	Number of Workers Reported
Storage Battery Manufacturing	5	47
Painting and Wall Covering Contractors	8	26
Firing Ranges	13	21

Armatas et al. *AJPH* 2022

Occupational Lead Next Steps

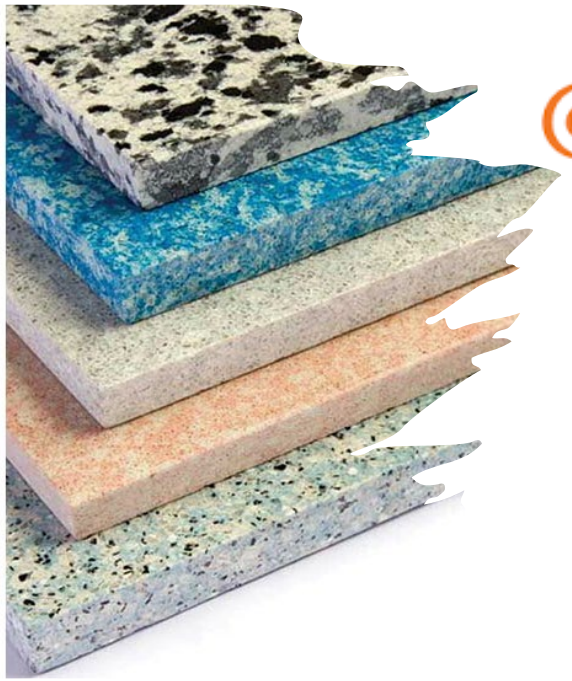
OLPPP plans offer some voluntary site visits to employers in the highest risk industries to:

- Assess the barriers to achieving consistently low blood lead levels
- Offer technical assistance to employers
- Provide educational materials to workers

The anticipated updated lead standards in 2023 will allow Cal/OSHA inspectors to cite employers of lead workplaces on more health-protective measures.

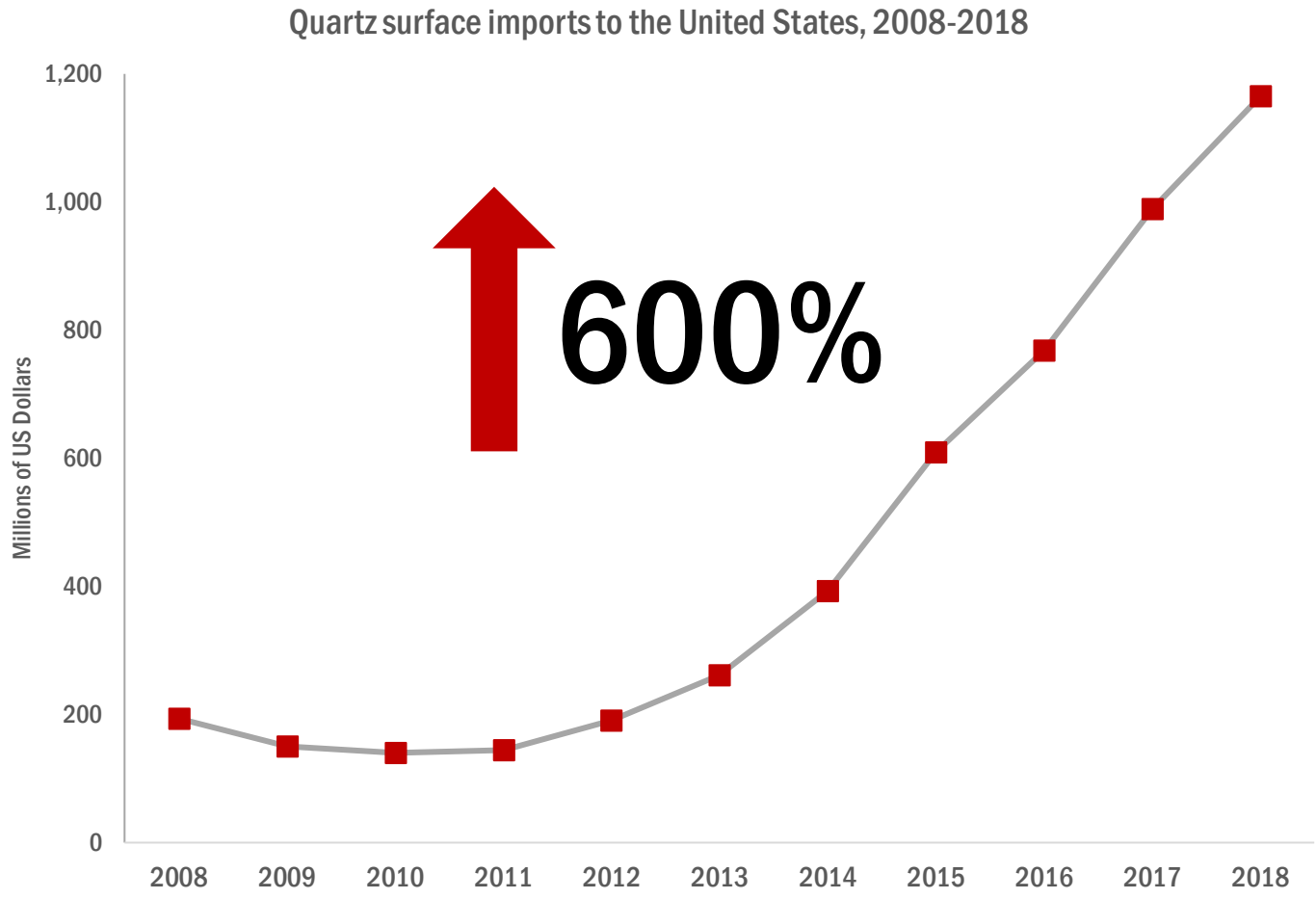
Engineered Stone

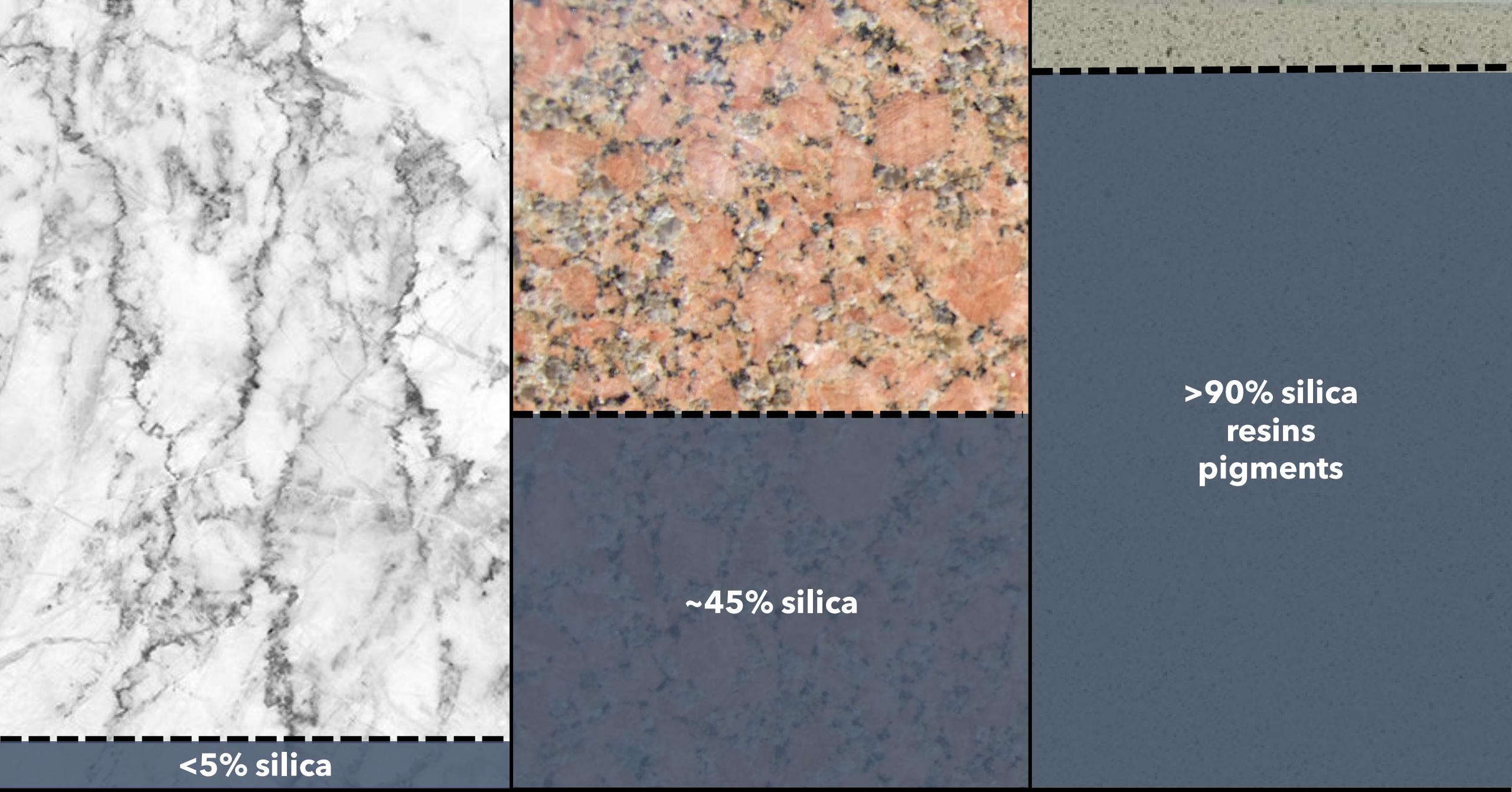
SILESTONE® by COSENTINO

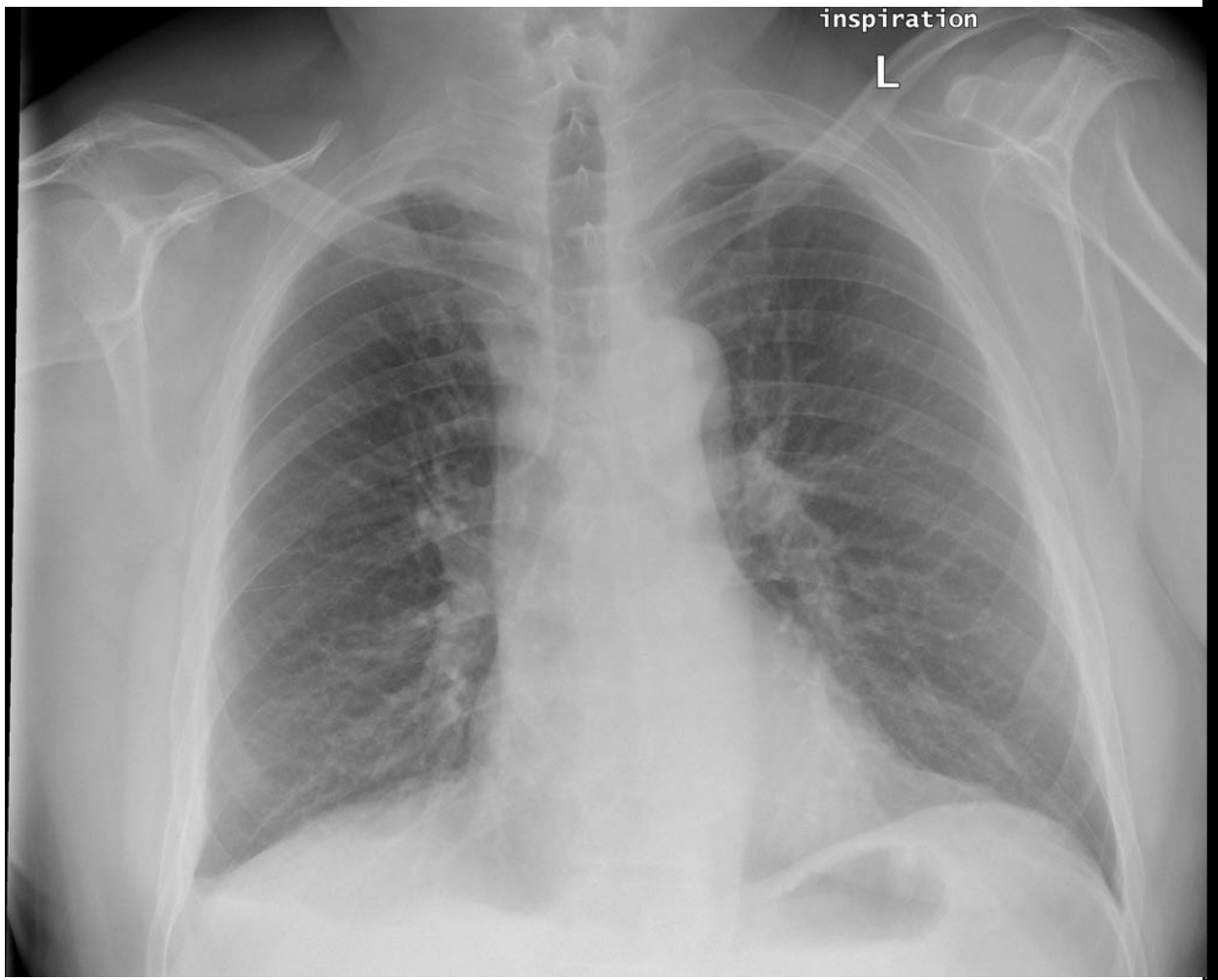


caesarstone®

CAMBRIA®




<5% silica
~45% silica
>90% silica
resins
pigments
Marble
Granite
Engineered Stone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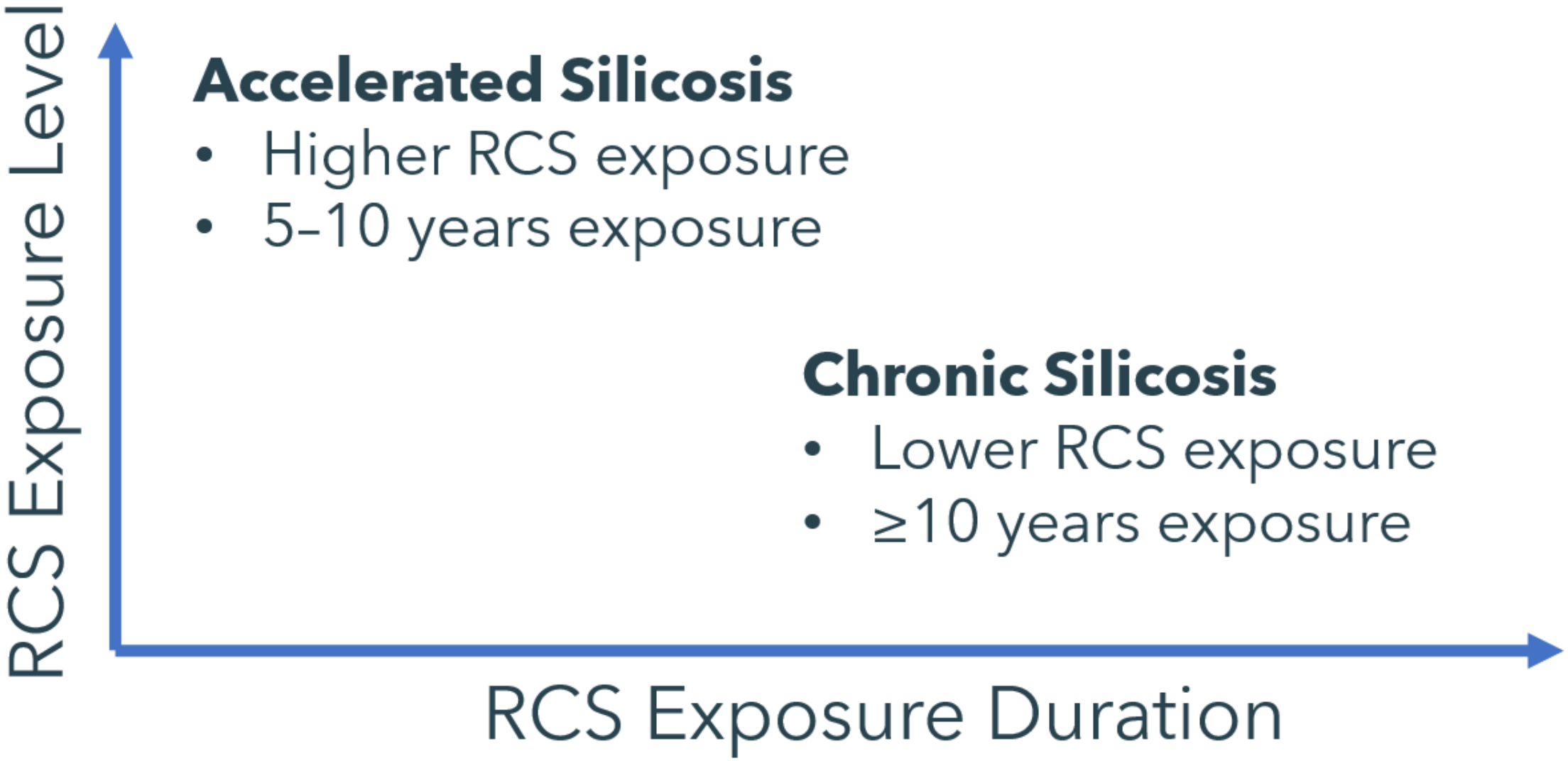
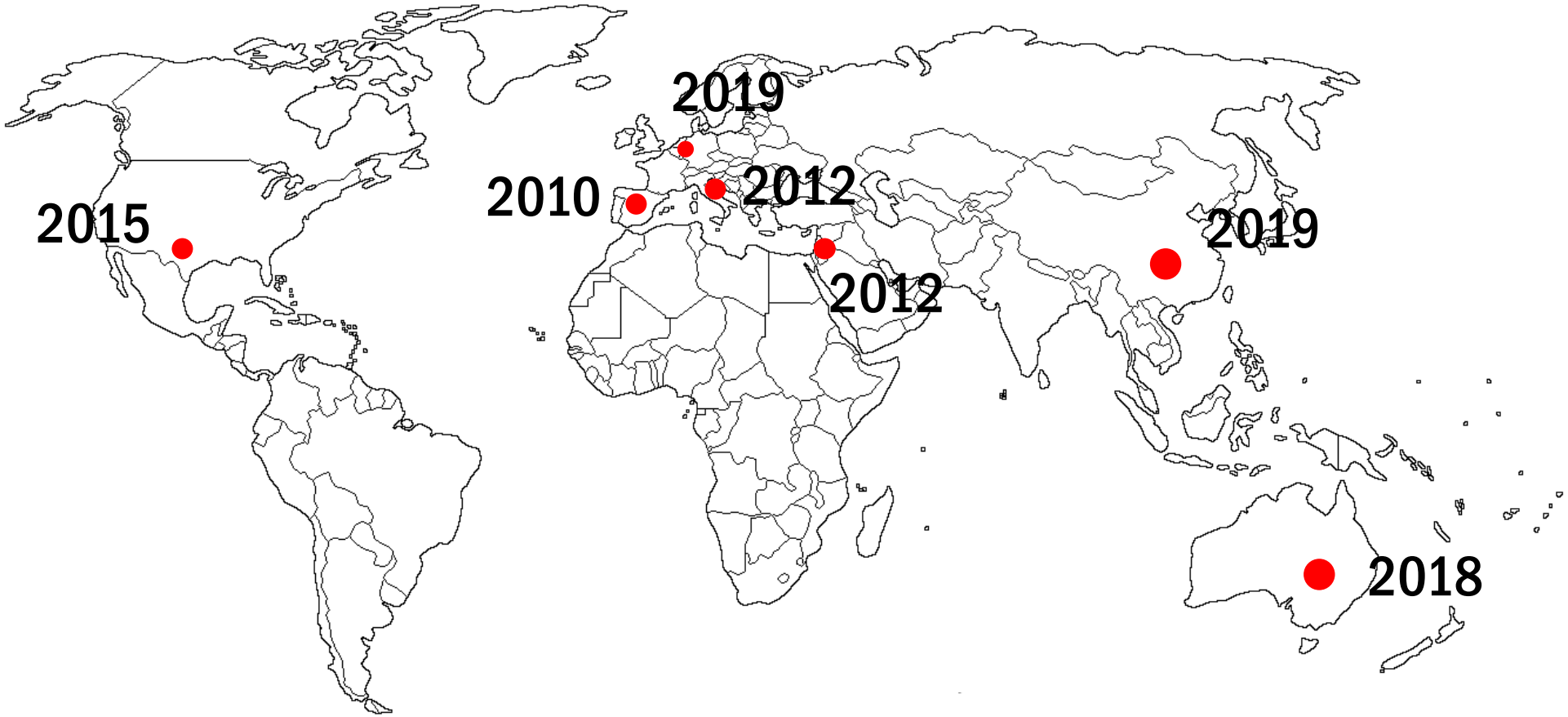
Silicosis Classification



Global Epidemic, n>700



California Cases: Index

Hospital discharge records

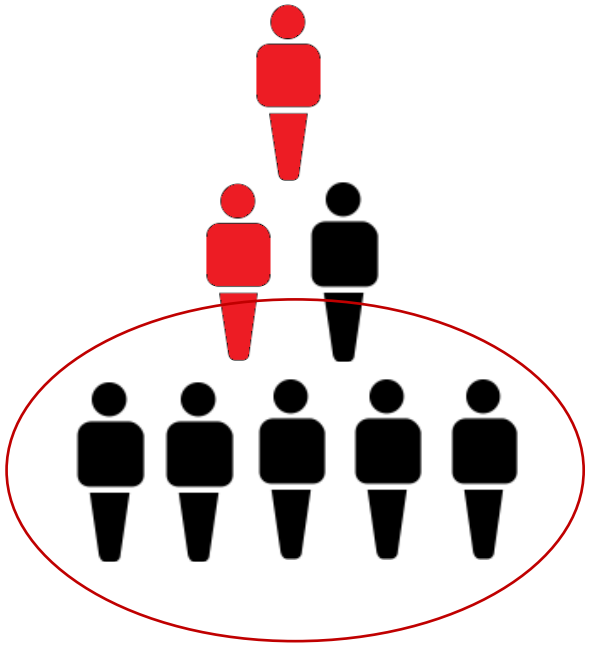
Investigation with Cal/OSHA

All were Hispanic men in their 30s at diagnosis.

Rose, Heinzerling, et al. *MMWR.* 2019;68(38);813–8.

California Cases: Screening

Employer screening

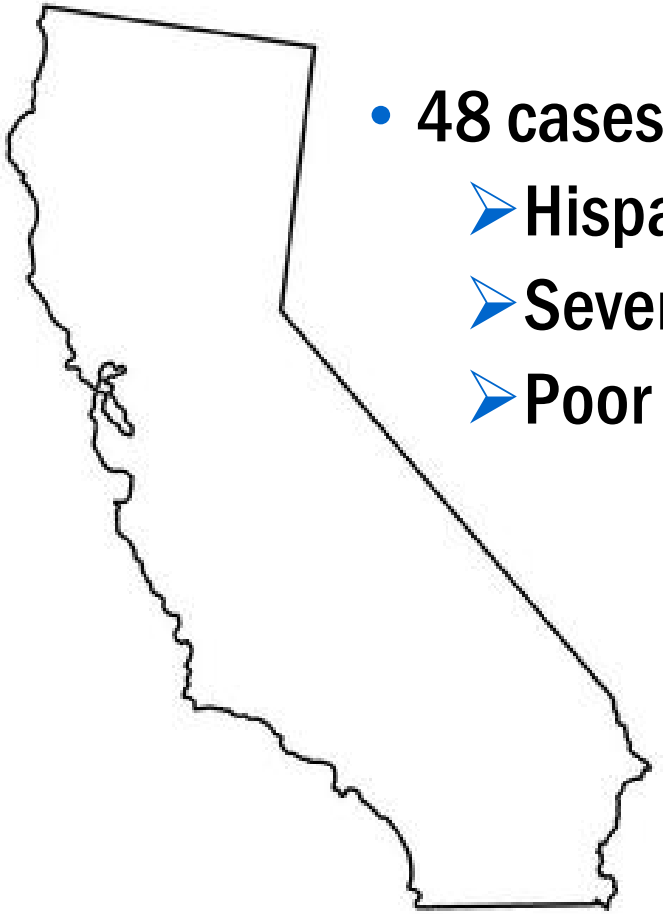


12%

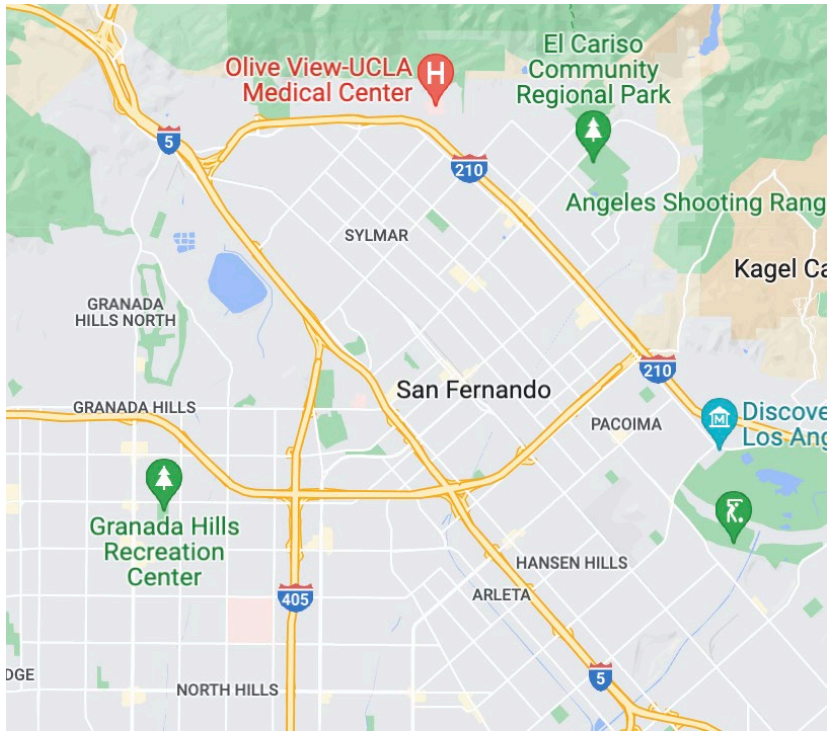
Median age of cases detected by screening was 37.

Heinzerling, et al. *AJRCCM.* 2021;203(6):764-6.

California Cases: Surveillance



- 48 cases identified
  - Hispanic immigrants
  - Severe disease
  - Poor outcomes



Cal/OSHA Special Emphasis Program (2019-2020)

Inspections opened: 106

Air sampling performed: 47

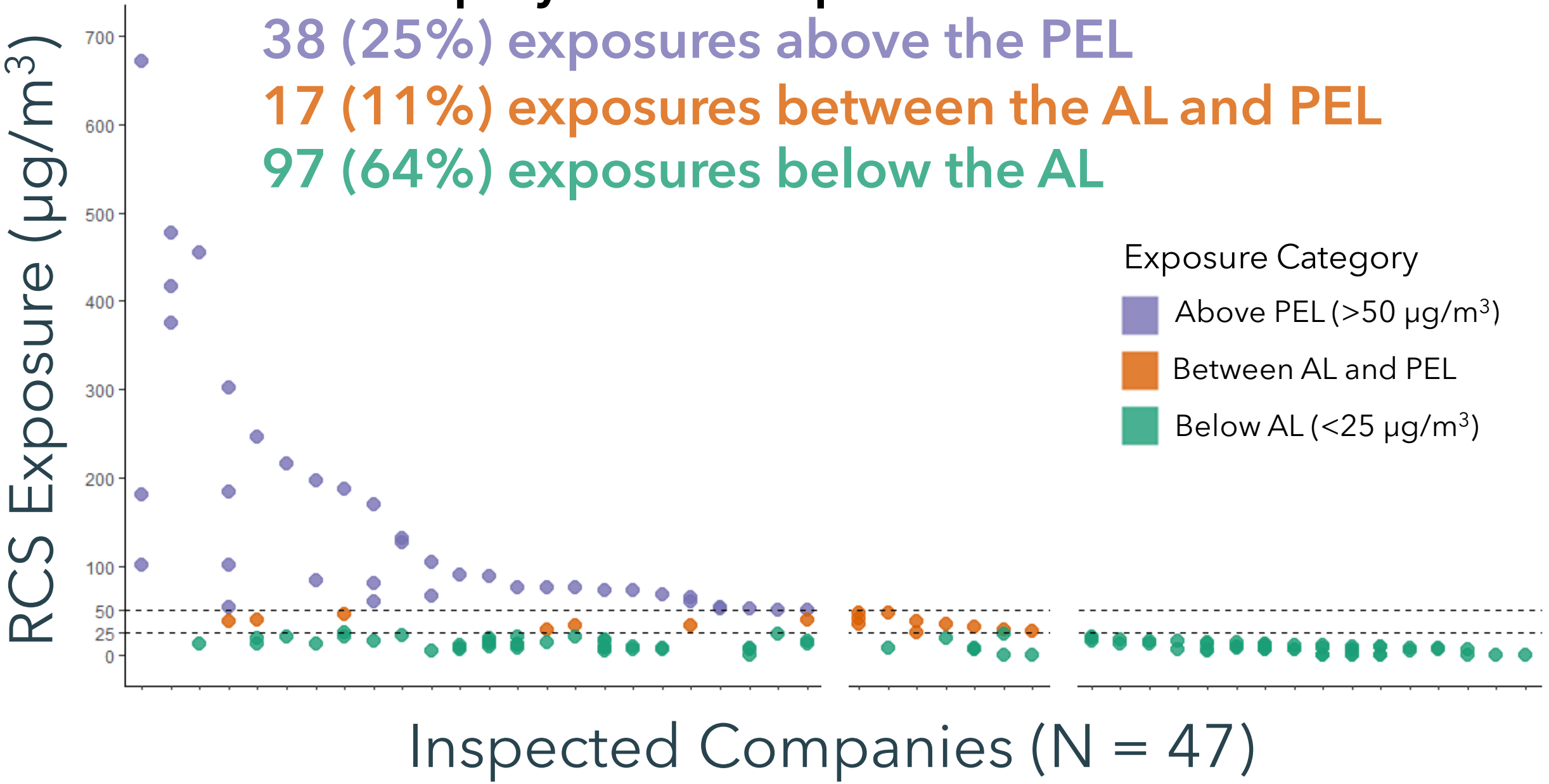
Surasi et al. *AJIM.* 2022;65(9):701-7.

152 employee RCS exposure measurements total

38 (25%) exposures above the PEL

17 (11%) exposures between the AL and PEL

97 (64%) exposures below the AL

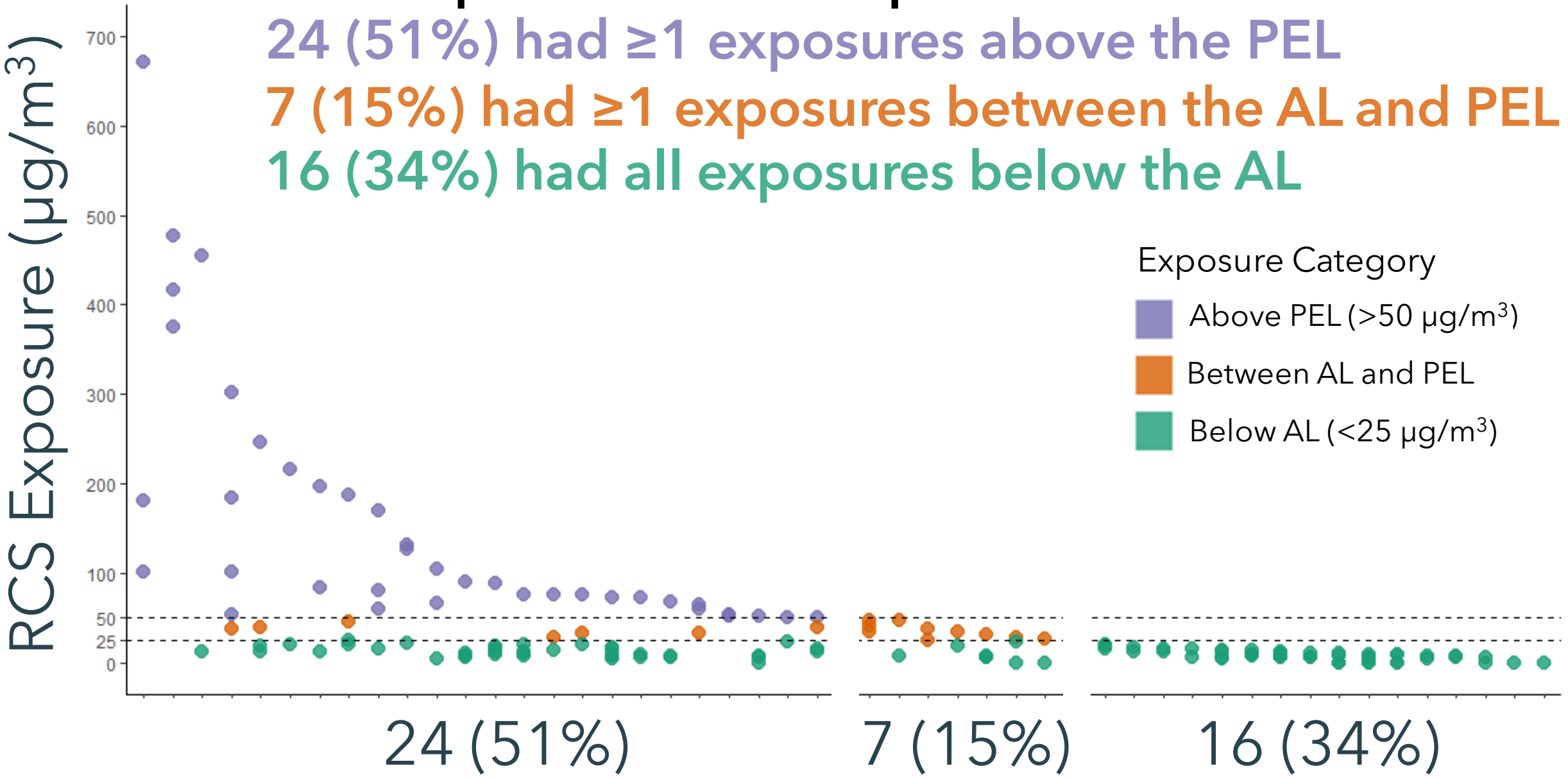


47 companies with ≥1exposure measurements

24 (51%) had ≥1 exposures above the PEL

7 (15%) had ≥1 exposures between the AL and PEL

16 (34%) had all exposures below the AL



Worker Interviews (n=92)

- Young (median age 39)
- Short tenure (median 3.8 years)
- Many Spanish-speaking (39%)
- Performed dust-generating tasks (91%), using dry methods (26%)
- Most not informed of air sampling (68%)
- Few fit tested (20%) or offered medical examinations (5%)

Spiegel et al. *AJIM.* 2022; doi: 10.1002/ajim.23432.

CA Artificial Stone and Silicosis (CASS) Project

Funded through the **California Labor Laboratory**,
a NIOSH Center of Excellence for Total Worker Health®

CASS Project: 2021-2026

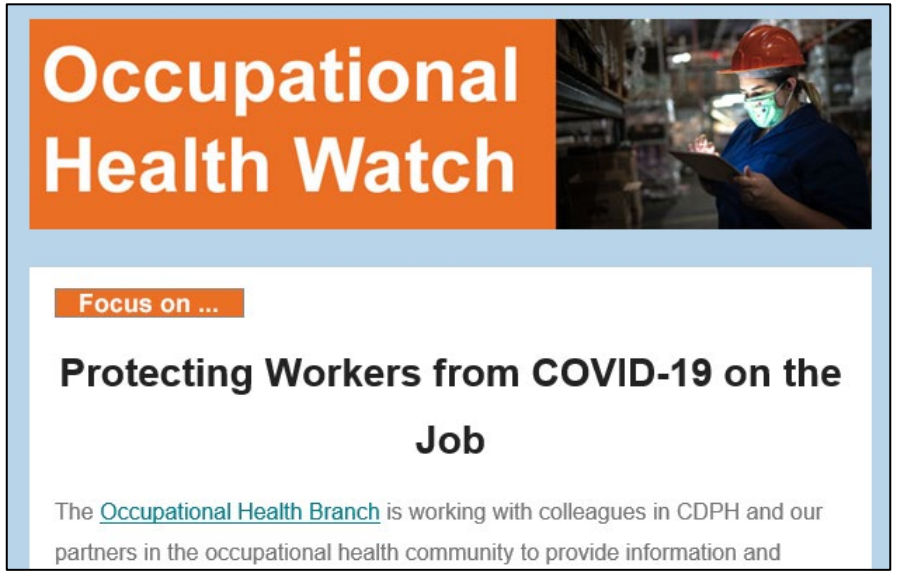
Workplace: Education

Medical system: Diagnosis

CDPH: Surveillance

Check out OHB resources & stay in touch

- Email occhealth@cdph.ca.gov to subscribe to OHB's monthly electronic newsletter



- OHB website with A to Z topic list www.cdph.ca.gov/OHB

Kristin Cummings, Acting Chief, Occupational Health Branch
kristin.cummings@cdph.ca.gov; 510-620-5731

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