California Department of Public Health Occupational Health Branch Update: Addressing Both Old and New Workplace Hazards

Barbara Materna, PhD, CIH
Chief, Occupational Health Branch
CIHC Professional Development Seminar
December 4, 2019; San Francisco

CDPH

Center for Healthy Communities
CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

Objectives

- Intro to the Occupational Health Branch
- Focus on old/new hazards
  - **Heat-related illness**
  - **Silicosis**
  - Vaping related lung injury
  - Lead
  - Valley fever
- New resources from OHB
- How to stay in touch

Promoting safe and healthy workplaces across California

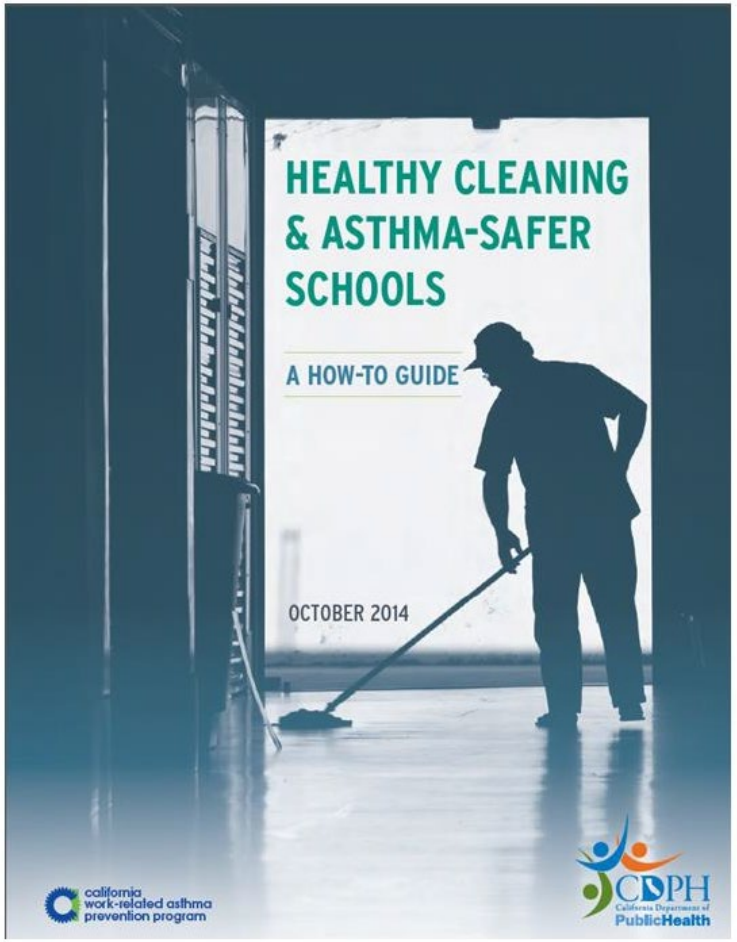
New HESIS Chief:
Dr. Kristin Cummings

- Occupational Health Branch
  - Env/Occ Emergency Preparedness Team
  - Hazard Evaluation System & Information Service (HESIS)
  - Occupational Health Surveillance & Evaluation Program
  - Occupational Lead Poisoning Prevention Program
  - California Safe Cosmetics Program

How OHB promotes safe & healthy workplaces

Health topics with specific funding

- Lead poisoning
- Asthma
- Acute pesticide-related illness
- Fatal/nonfatal injury
- Chemical emergencies & natural disasters
- Cosmetics safety



Mentoring the future OH workforce

Occupational Health Internship Program

CDC Epidemic Intelligence Service

Meet OHB's industrial hygienists

Justine Weinberg

Jennifer McNary

Jackie Chan

This could be you!

This could be you!

Risk Factors for Heat-Related Illness Among Workers — California, 2000–2017

Amy Heinzerling, MD, MPH
Epidemic Intelligence Service Officer
California Department of Public Health
Occupational & Environmental Health

What are the risk factors for heat-related illness?

Let's test your knowledge…
Can you name 13?

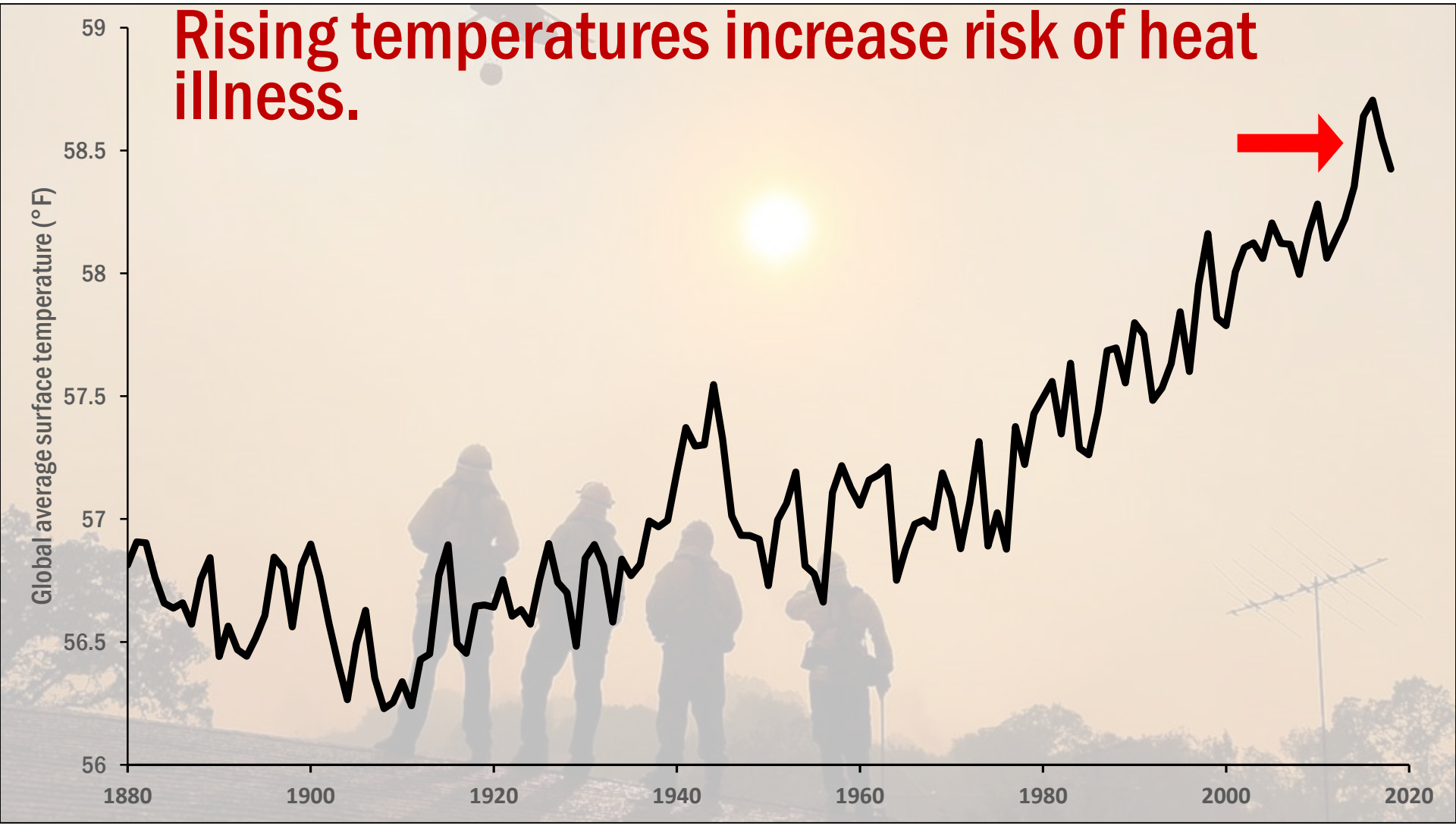
What are the risk factors for heat-related illness?

NIOSH Criteria for a Recommended Standard: Occupational Exposure to Heat and Hot Environments, Fig. 4-1


Justicia
para
Maria Isabel

Workers are particularly vulnerable to heat illness.

Rising temperatures increase risk of heat illness.



California's occupational heat regulation is designed to protect outdoor workers.

How many workers are affected?

480

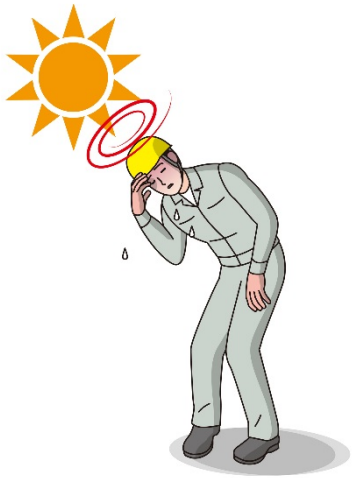
California workers experienced heat illness in 2017.

=

4 cases

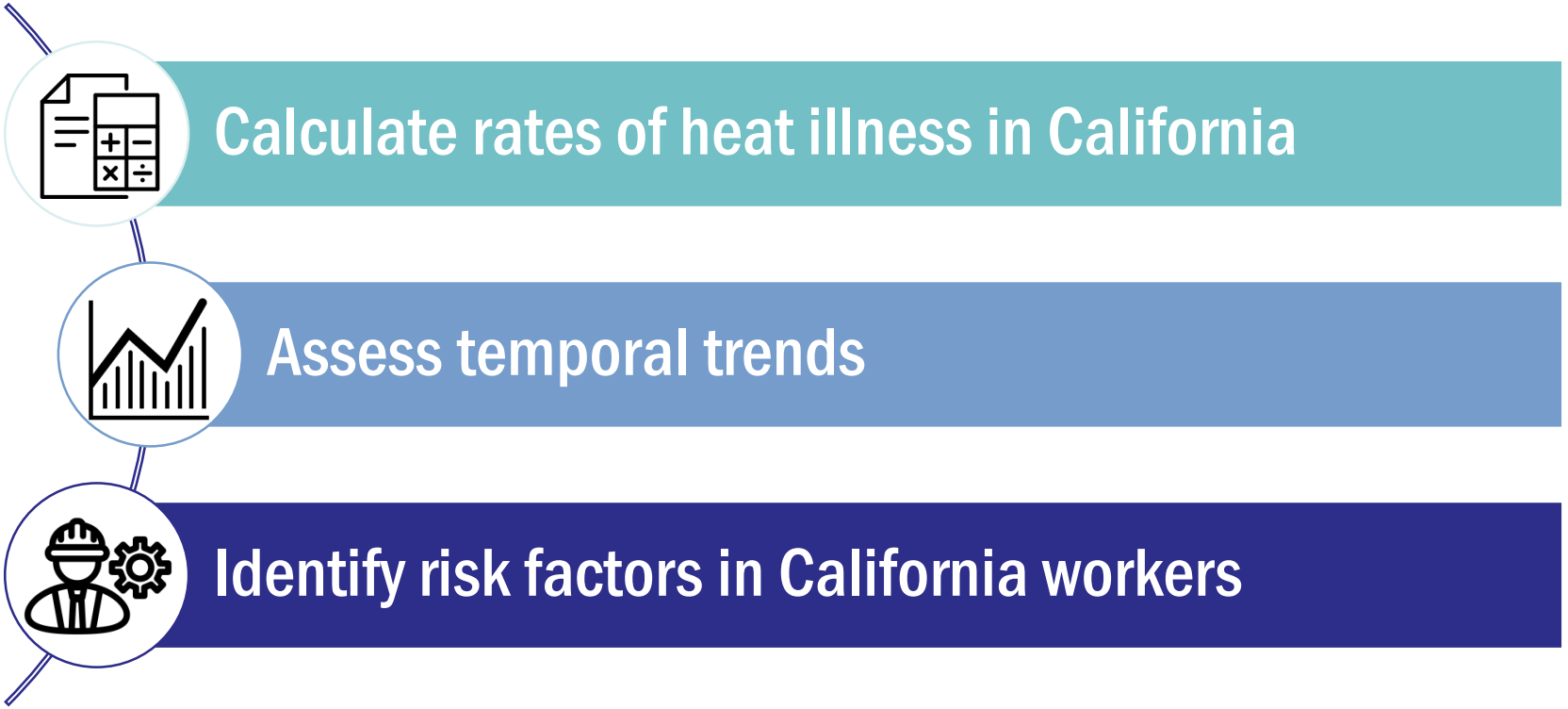
per 100,000 workers per year.

Workers' compensation data may provide an alternative.



California
Workers' Compensation
Information System
(WCIS)

Study objectives



Case identification

All California Workers' Compensation Information System (WCIS) claims, 2000–2017

→

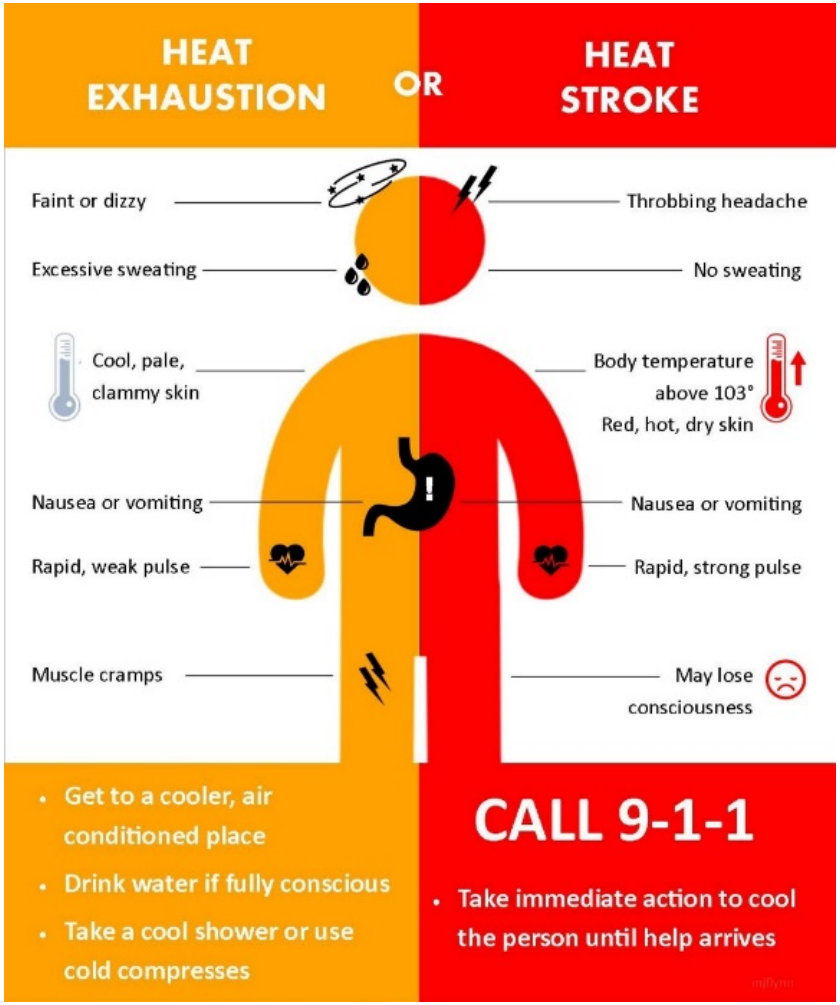
Includes ≥1 heat-related:

- Nature or cause of injury code
- Injury description keyword
- ICD-9 or 10 code

→

Heat-related illness

Spectrum of heat-related illness



Heat rash

Heat cramps

Heat syncope

Heat exhaustion

Heat stroke

Death

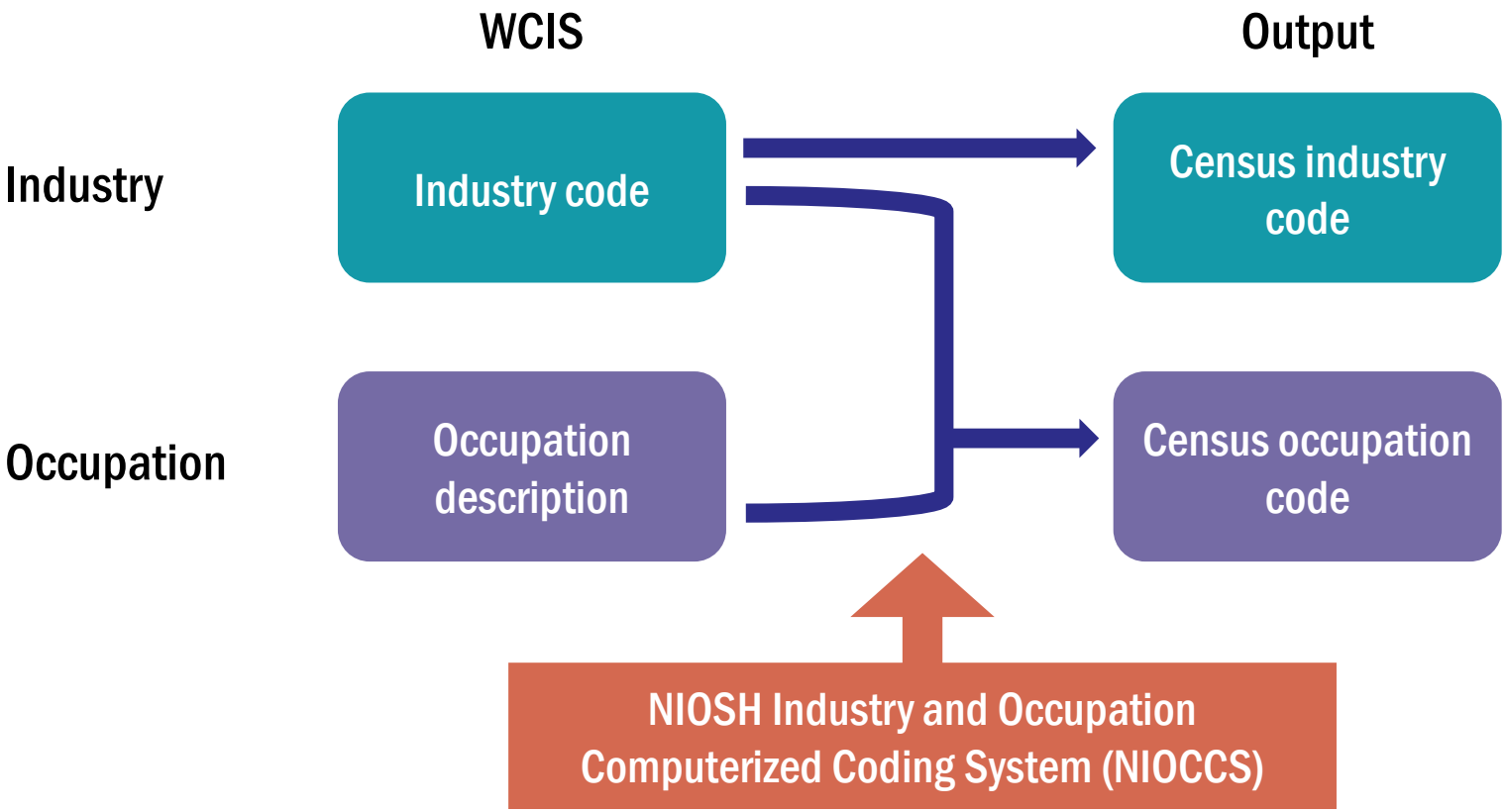
Calculating rates of heat illness

WCIS

$$\frac{\text{Number of workers with heat illness}}{\text{Total number of worker-years}} \times 100{,}000 = \text{Rate of heat illness per 100,000 workers per year}$$

NIOSH Employed Labor Force

Industry and occupation coding



15,996

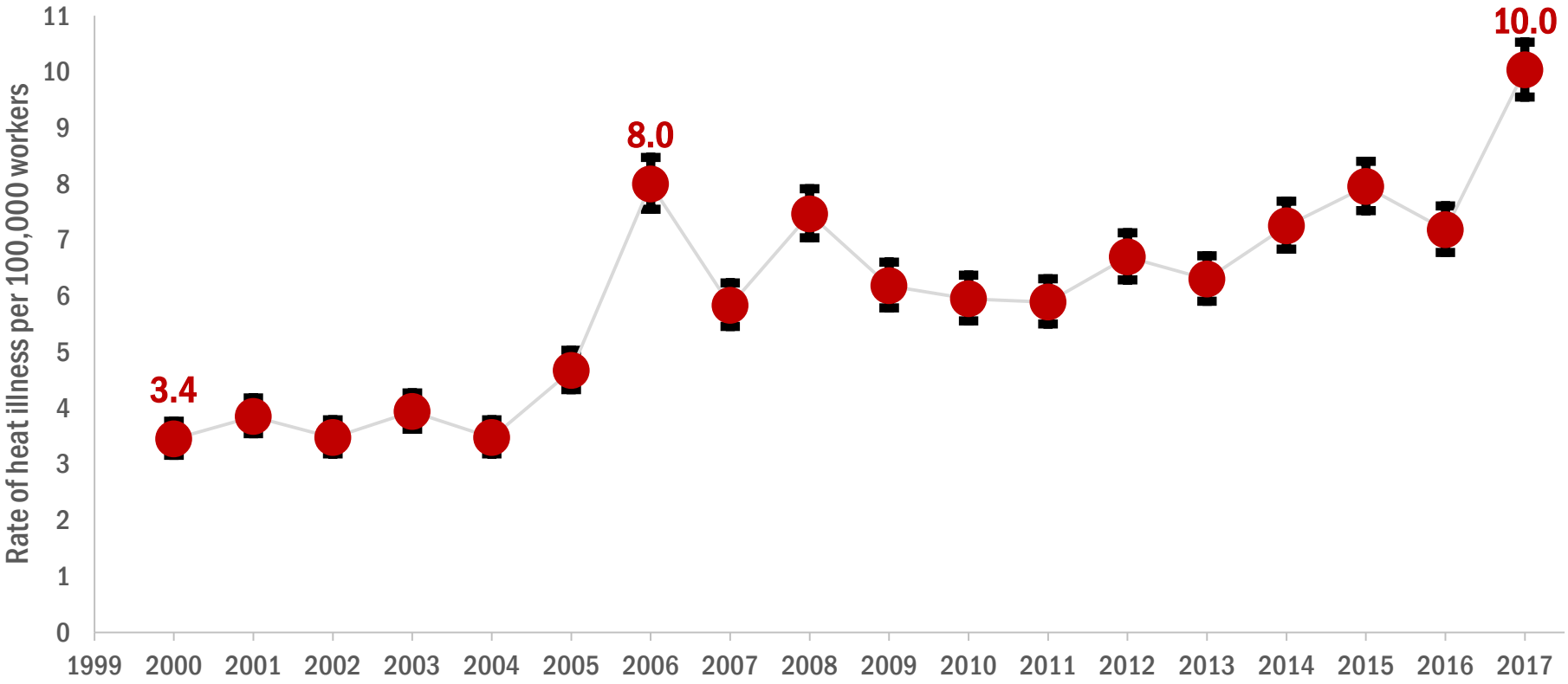
California workers experienced heat illness from 2000–2017.

=

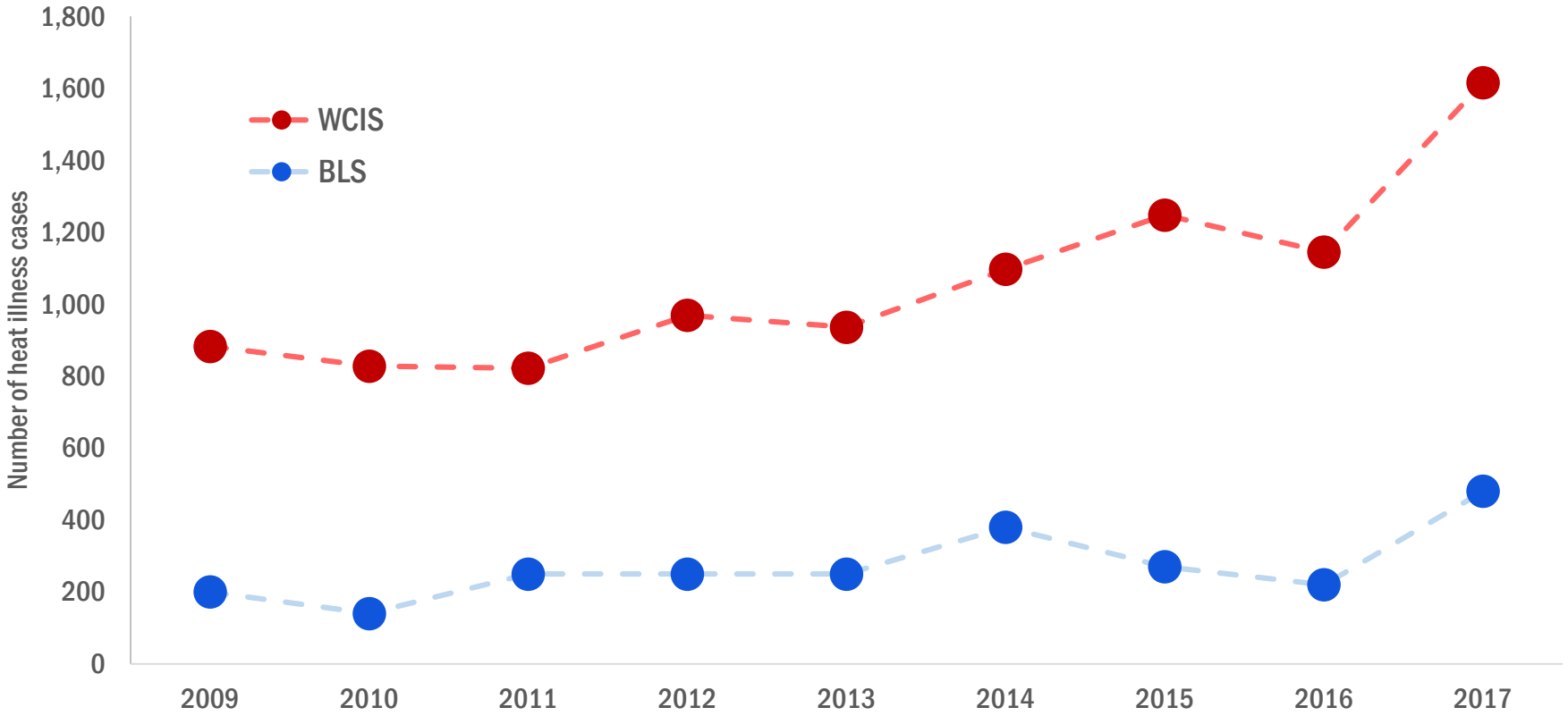
6 cases

per 100,000 workers per year.

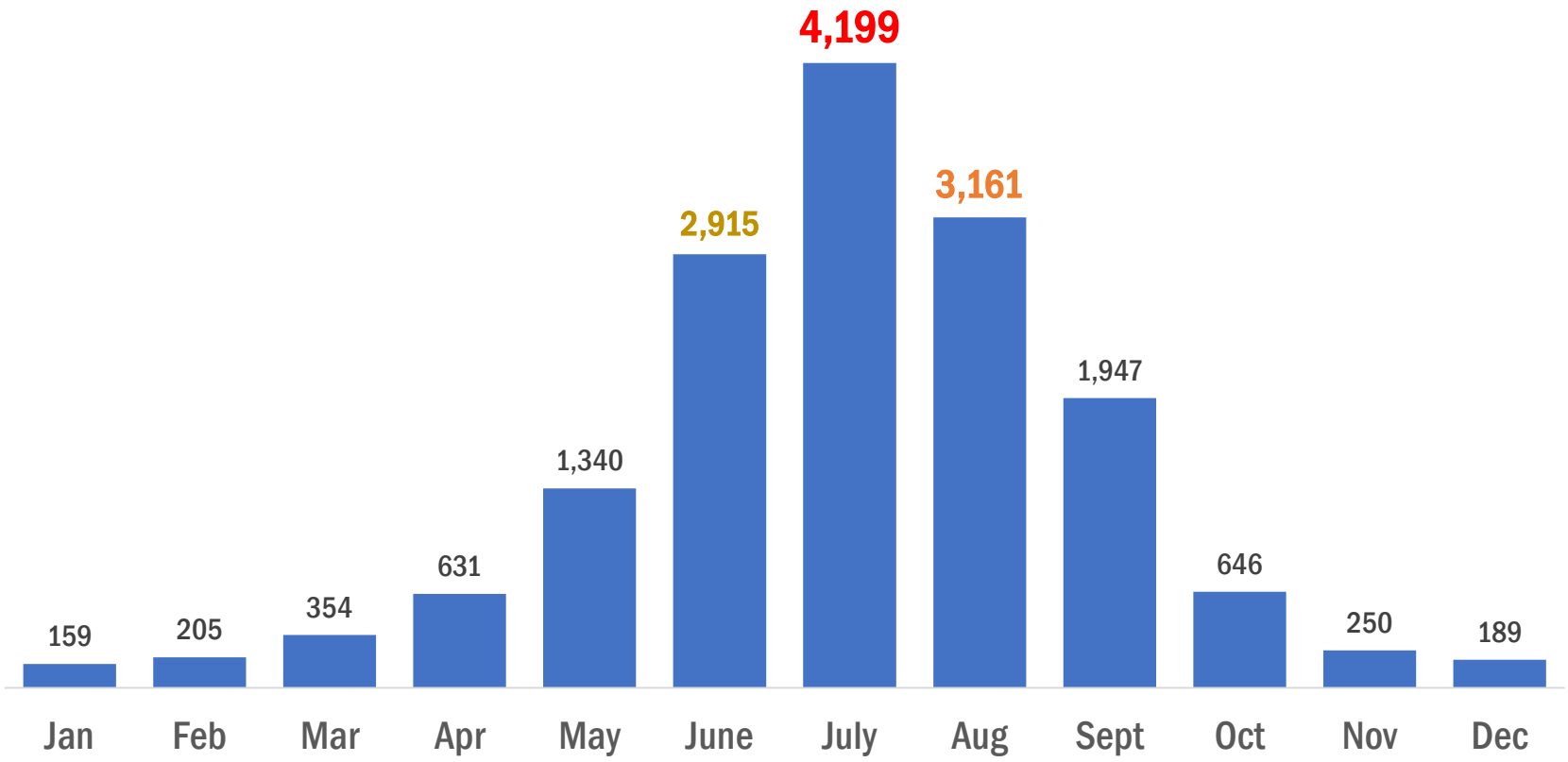
Heat illness rates increased over time.



Numbers of heat illness cases were higher than BLS estimates.



The highest number of cases occurred during summer months.



Rates of heat illness were 2.3 times higher in men than women.

Men

8.1

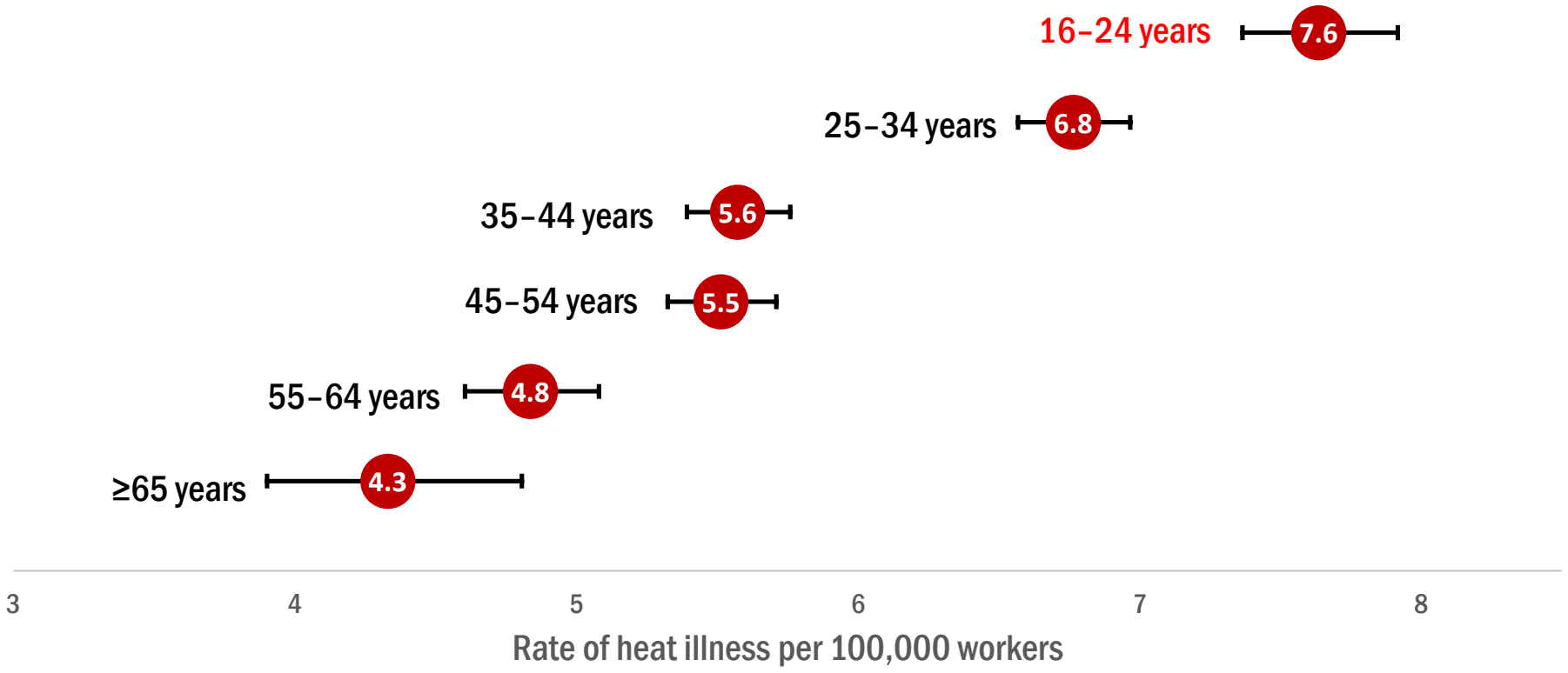
cases per 100,000 workers per year

Women

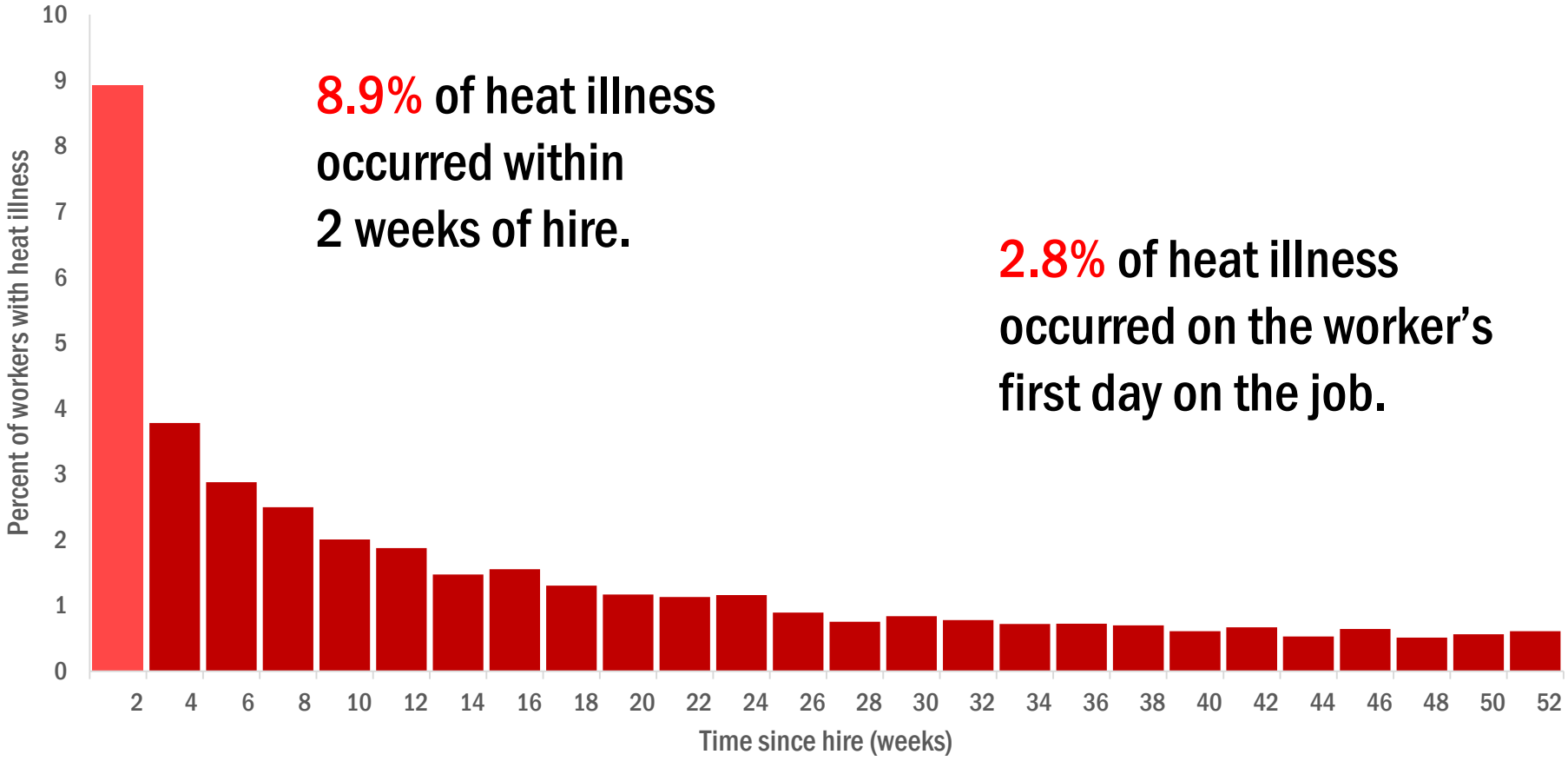
3.5

cases per 100,000 workers per year

Rates of heat illness were highest among younger workers.



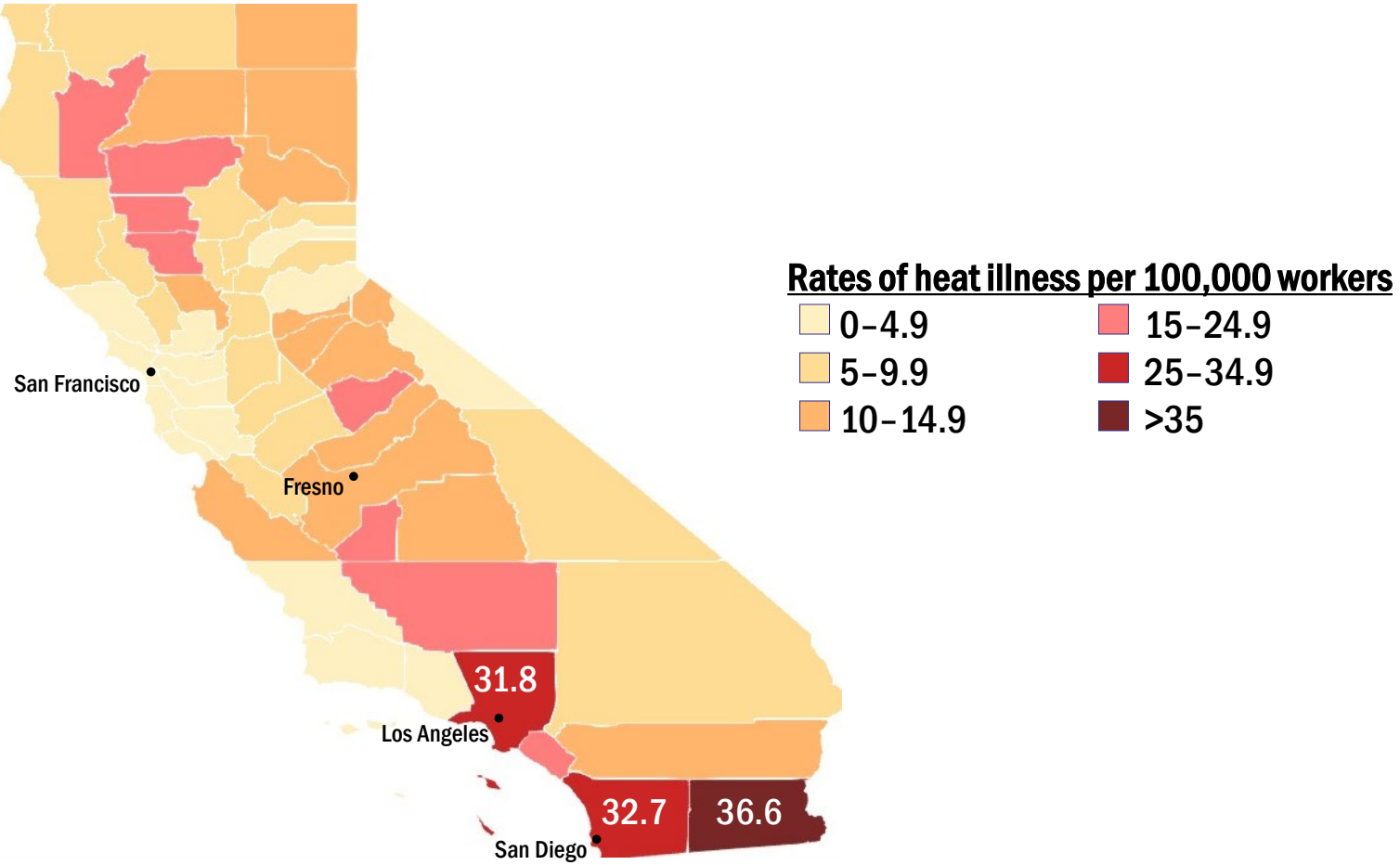
More heat illness occurred in workers who were new to the job.



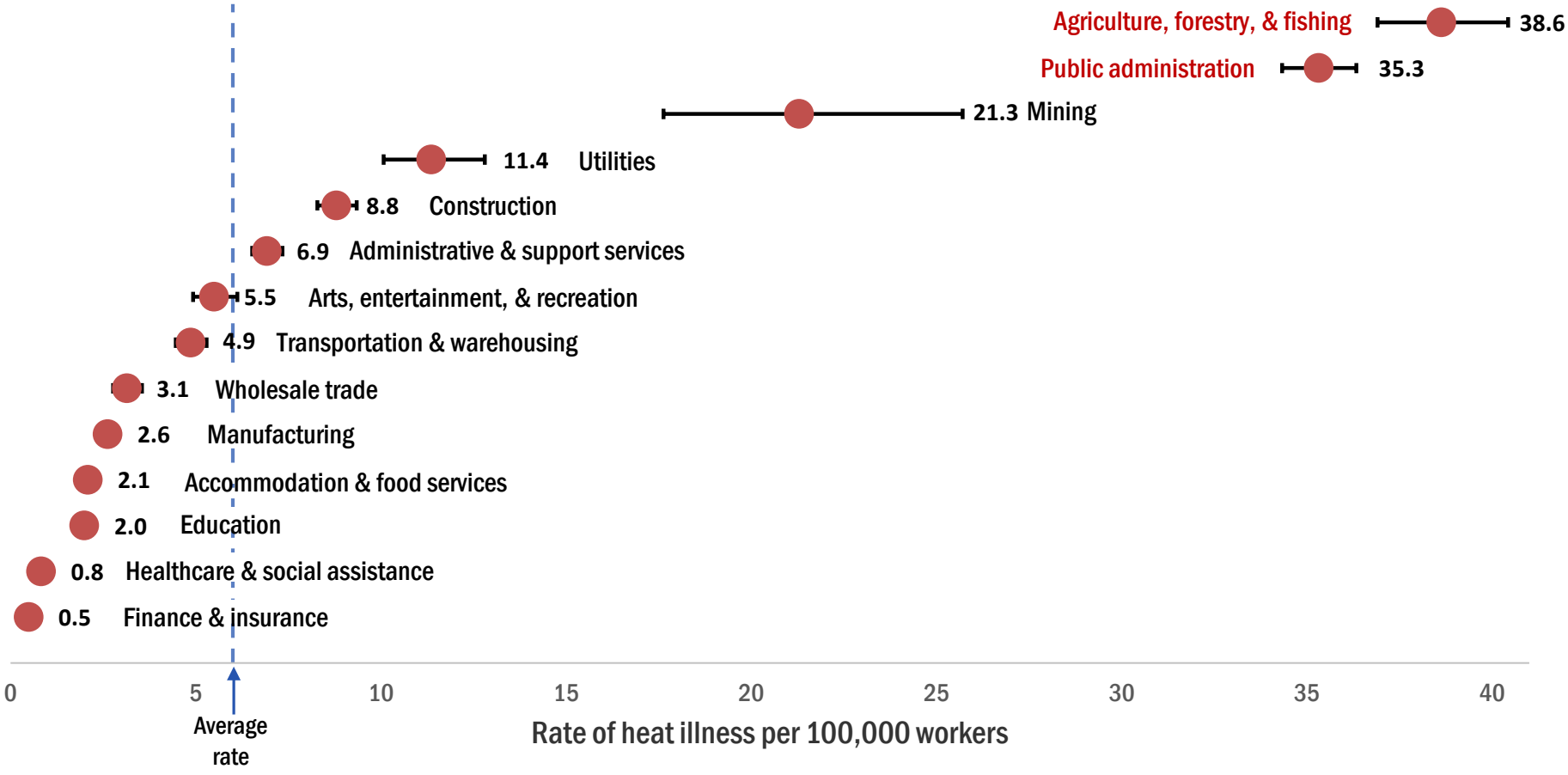
8.9% of heat illness occurred within 2 weeks of hire.

2.8% of heat illness occurred on the worker's first day on the job.

Southern counties had the highest rates of heat illness.

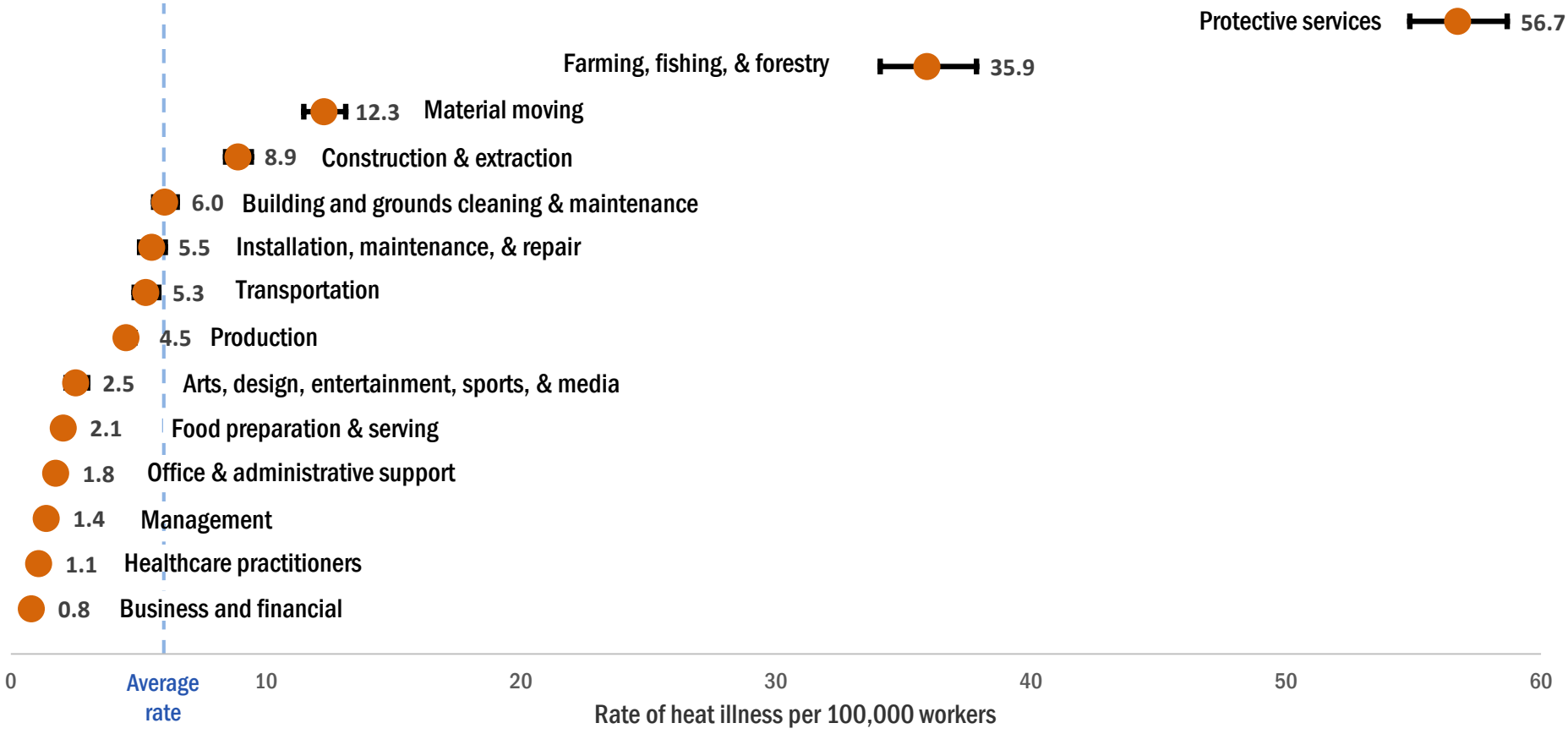


Agriculture and public administration had the highest industry rates.



Almost all workers with heat illness in the agriculture, forestry, & fishing sector worked in the crop production industry.

Protective services and farming, fishing, & forestry occupations had the highest heat illness rates.



Among protective service occupations, firefighters and police officers had the highest heat illness rates.

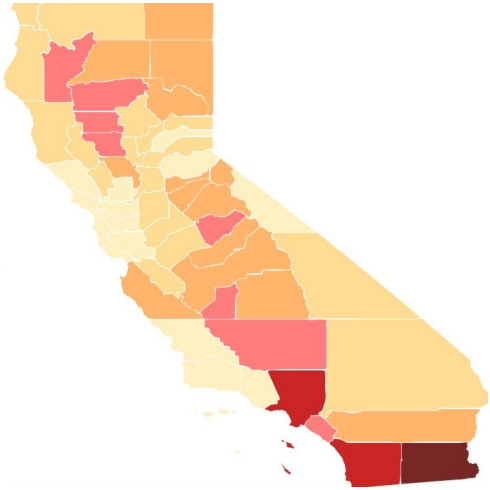
390
per 100,000 workers

65 x
the average rate

51
per 100,000 workers

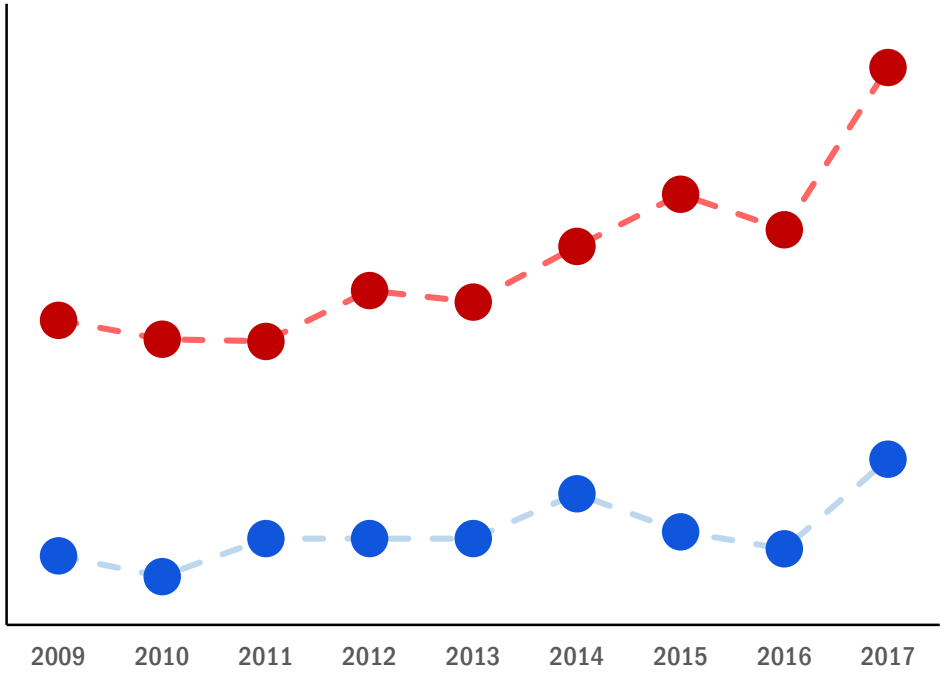
8.5 x
the average rate

Conclusions



Conclusions

BUREAU OF LABOR STATISTICS
U.S. DEPARTMENT OF LABOR



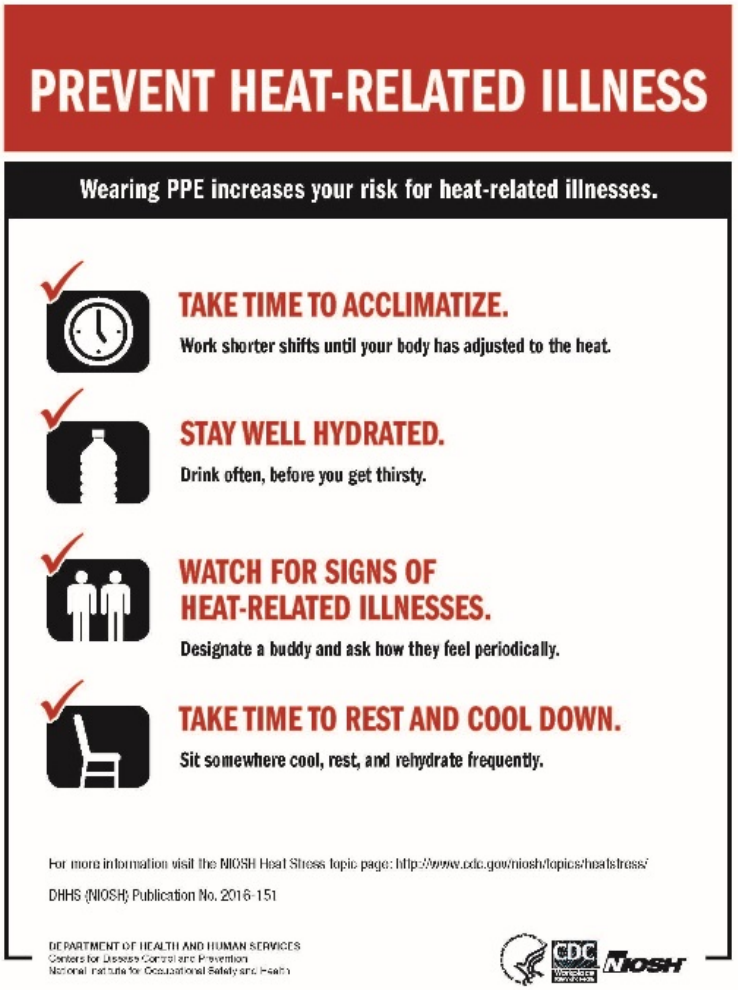
Limitations

Underreporting to workers' compensation leads to underestimation of heat illness

Industry and occupation misclassification and missing data

Unable to account for confounding

Recommendations



PREVENT HEAT-RELATED ILLNESS

Wearing PPE increases your risk for heat-related illnesses.

TAKE TIME TO ACCLIMATIZE.
Work shorter shifts until your body has adjusted to the heat.

STAY WELL HYDRATED.
Drink often, before you get thirsty.

WATCH FOR SIGNS OF HEAT-RELATED ILLNESSES.
Designate a buddy and ask how they feel periodically.

TAKE TIME TO REST AND COOL DOWN.
Sit somewhere cool, rest, and rehydrate frequently.

For more information visit the NIOSH Heat Stress topic page: http://www.cdc.gov/niosh/topics/heatstress/

DHHS (NIOSH) Publication No. 2016-151

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health

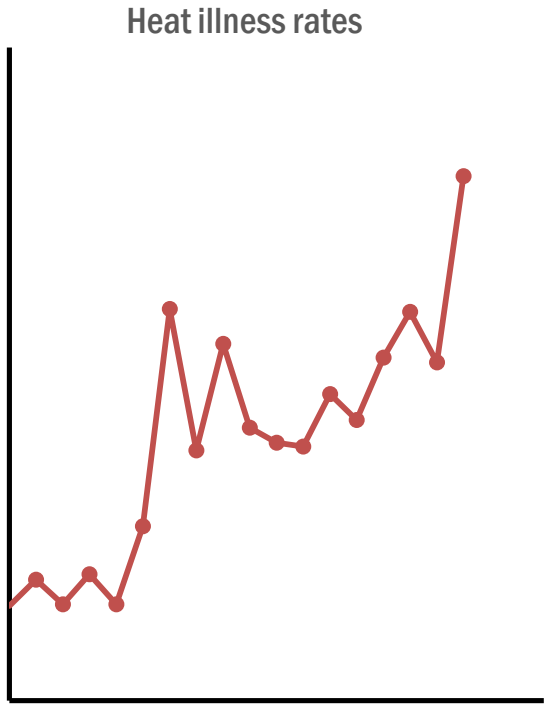
CDC NIOSH

Outreach to employers & workers

Recommendations

Partnering to ensure heat regulation compliance

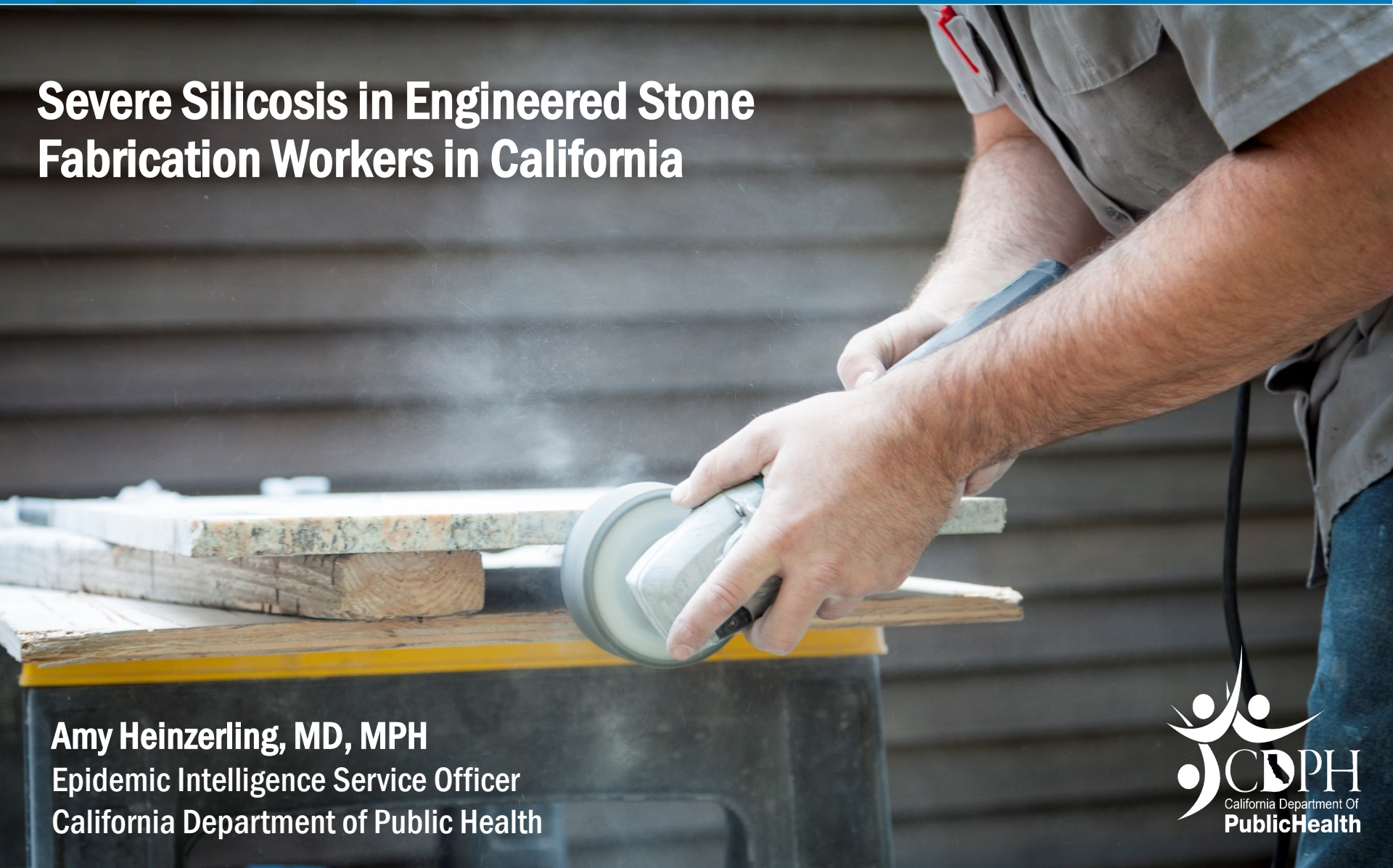
Recommendations



Establish systematic heat illness surveillance

Center for Surveillance, Epidemiology, and Laboratory Services

Severe Silicosis in Engineered Stone Fabrication Workers in California



Amy Heinzerling, MD, MPH
Epidemic Intelligence Service Officer
California Department of Public Health

CDPH California Department Of PublicHealth

The index case

CDPH identifies case

2004 — 2013

Employed at stone countertop fabrication shop

January 2019

The index case

CDPH identifies case

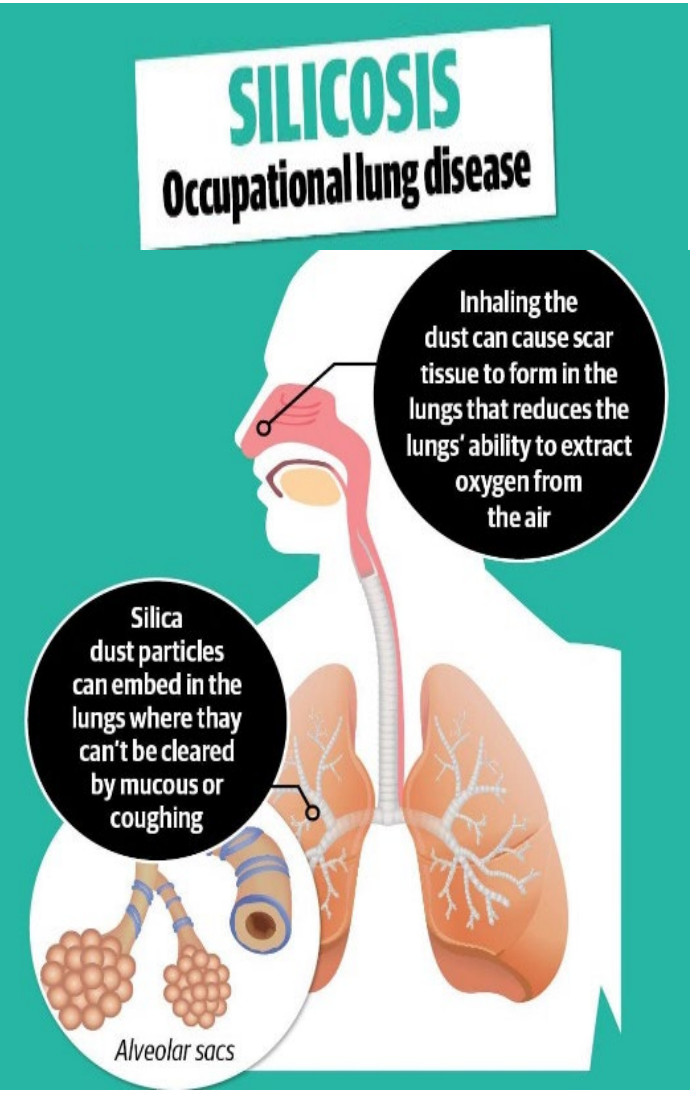
2004 ⟷ 2013 — Employed at stone countertop fabrication shop

2013 — Diagnosed with silicosis

2014 ⟷ 2017 — Worsening symptoms and lung function

2018
- January: Ineligible for lung transplant
- September: Dies of accelerated silicosis

January 2019



The silicosis spectrum

- Chronic silicosis
- Accelerated silicosis
- Acute silicosis

Coal mining

Hydraulic fracturing

Quarrying

Construction

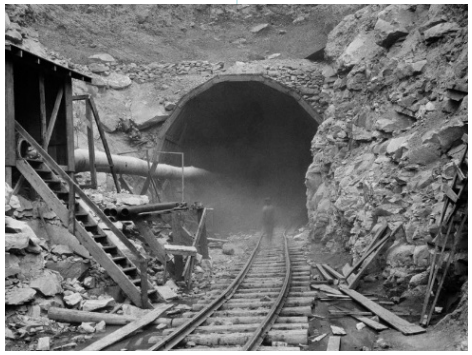
The hazards of silica dust have been known for centuries.

1700: Ramazzini identifies silicosis in stone cutters

The hazards of silica dust have been known for centuries.

1700:
Ramazzini identifies silicosis in stone cutters

1930s:
Hawks Nest Tunnel disaster leads to “Stop Silicosis” campaign



Stone fabrication workers are at risk.

Stone fabrication workers are at risk.

Engineered stone: an emerging threat

CAMBRIA

caesarstone

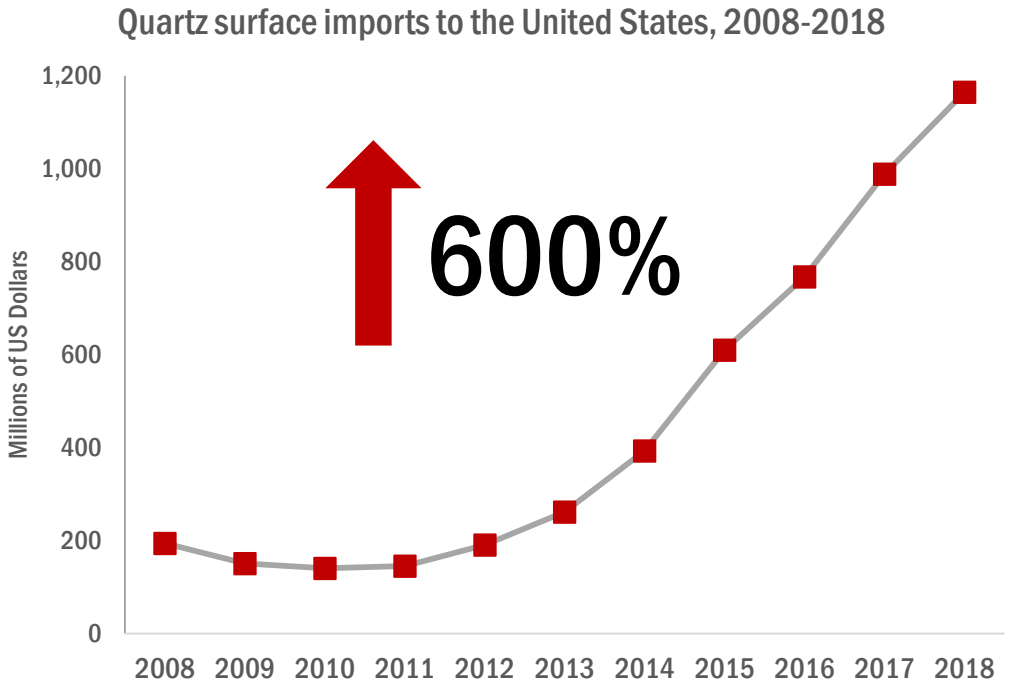
SILESTONE by COSENTINO

Engineered stone: an emerging threat

CAMBRIA

caesarstone

SILESTONE by COSENTINO



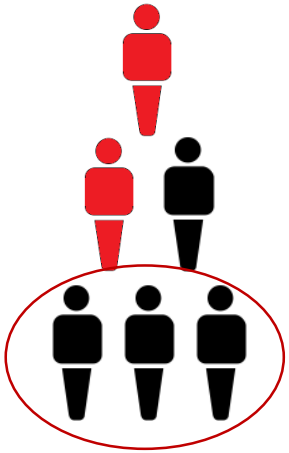
Silicosis in stone fabrication workers in California

Index case

Investigation with Cal/OSHA

Silicosis in stone fabrication workers in California

Employer screening

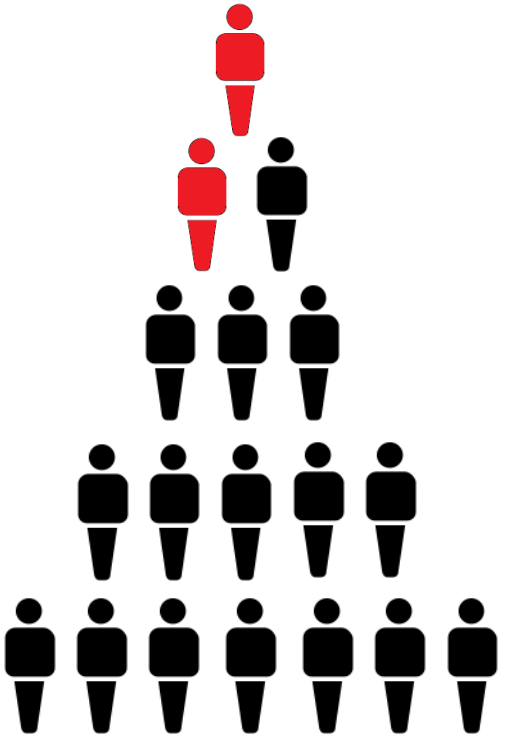


12.5%

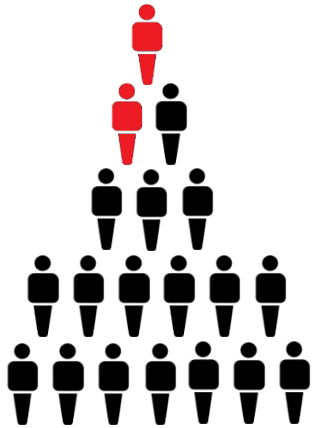
All were Hispanic men.

5 of 6 were ≤40 at diagnosis.

Silicosis in stone fabrication workers in the U.S.



How many cases are there?



Stone fabrication:

8,694 establishments

96,366 workers

Silicosis is preventable.

Silicosis is preventable.

Standard requirements:

- Lower PEL
- Exposure control and monitoring
- Medical surveillance

Challenges remain

Employer compliance

Challenges remain

Employer compliance

Vulnerable workers

Challenges remain

Employer compliance

Vulnerable workers

Gaps in screening

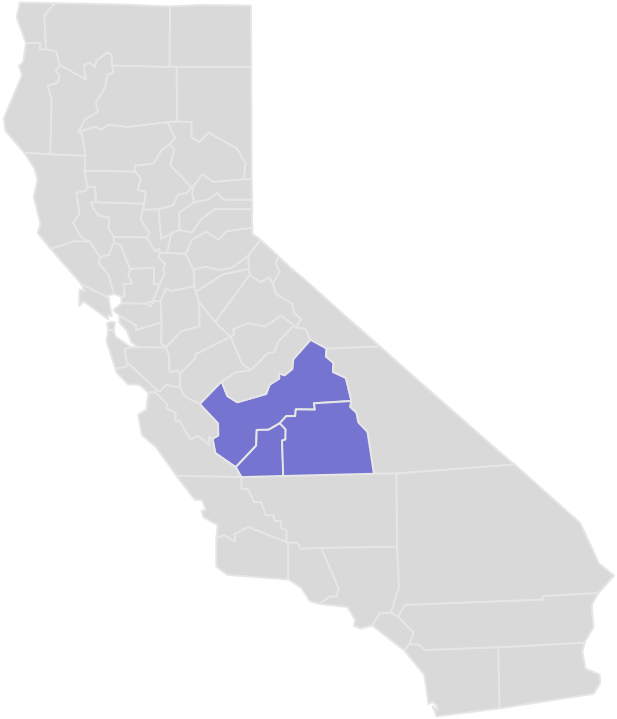
“We know the methods of control – let us put them in practice.”

E-cigarette, or Vaping, Product Use-associated Lung Injury (EVALI):

Investigating a chemically related outbreak

An unusual cluster…

- Pulmonologist in Kings County identified 7 unusual cases of severe respiratory illness
- Kings County reported cases to CDPH Aug 7
- Cases also reported in WI (July 25 health alert)



Patient demographics*

California (170 cases, 4 deaths)	National (2,290 cases, 47 deaths)
64% male	68% male
Median age 27 (14-70)	Median age 24 (13-78)

*Published data available as of 11/27/2019

Severity of disease

ICU Admission	Mechanical Ventilation
	
43%	28%

Published data available as of 11/27/2019

Substance vaped: CA vs. National

	California	National
THC	81%	83%
Nicotine	45%	61%
CBD	39%	Not reported
Exclusively nicotine	11%	13%

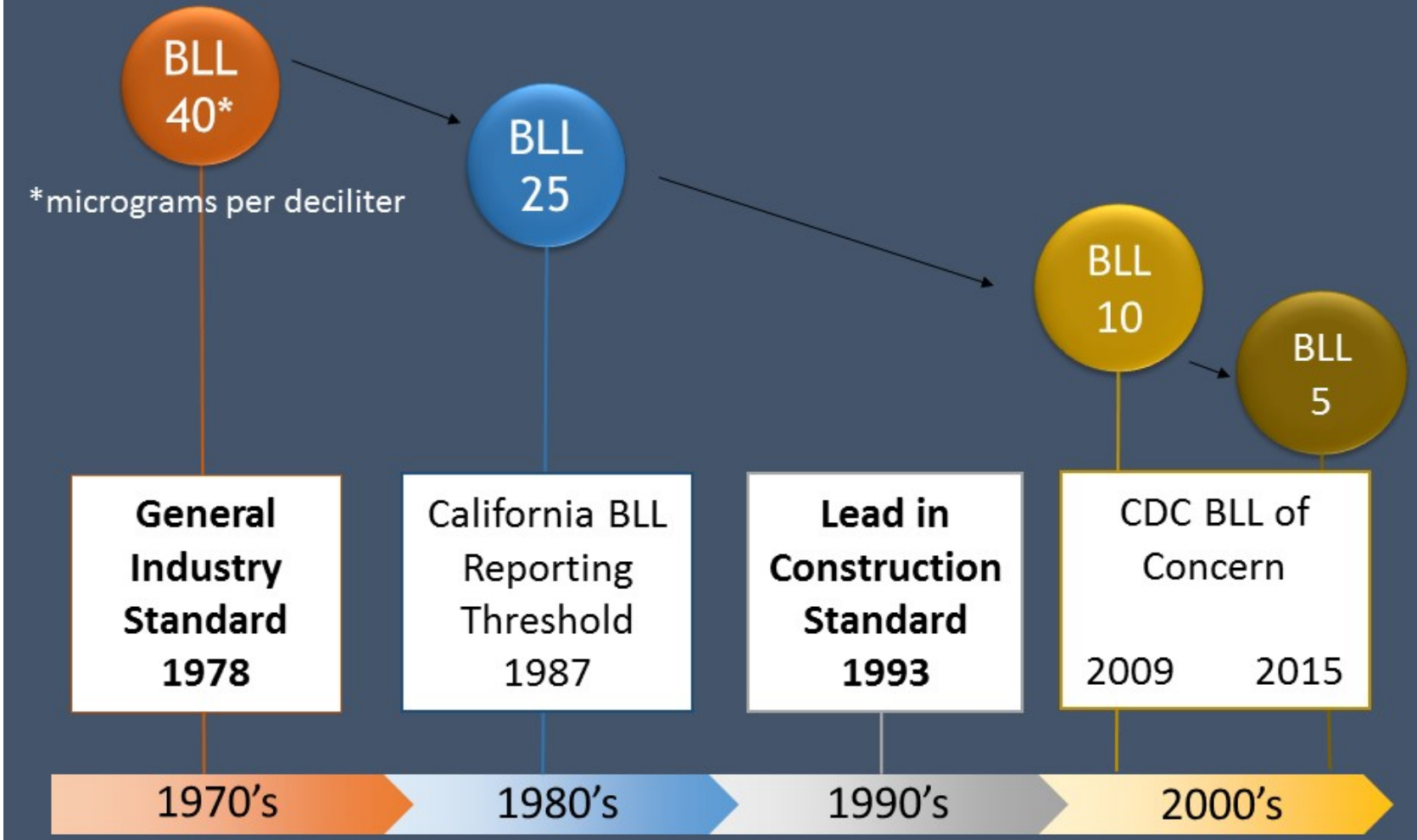
Chemical substance most often identified in analyzed THC products & in *all* lung fluid samples:

Vitamin E acetate

Published data available as of 11/27/2019

Lead: Old hazard, new updates

Changing blood lead level goals



Legislative deadline for new Cal/OSHA lead standards: September 30, 2020

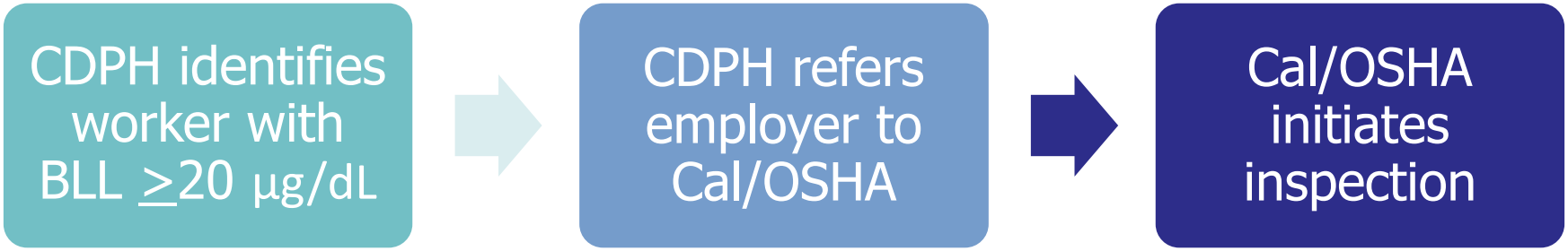
What you can do?

- Respond to the OSH Standards Board during public comment period
- Work with CDPH on tools for compliance

New legislation to increase lead enforcement

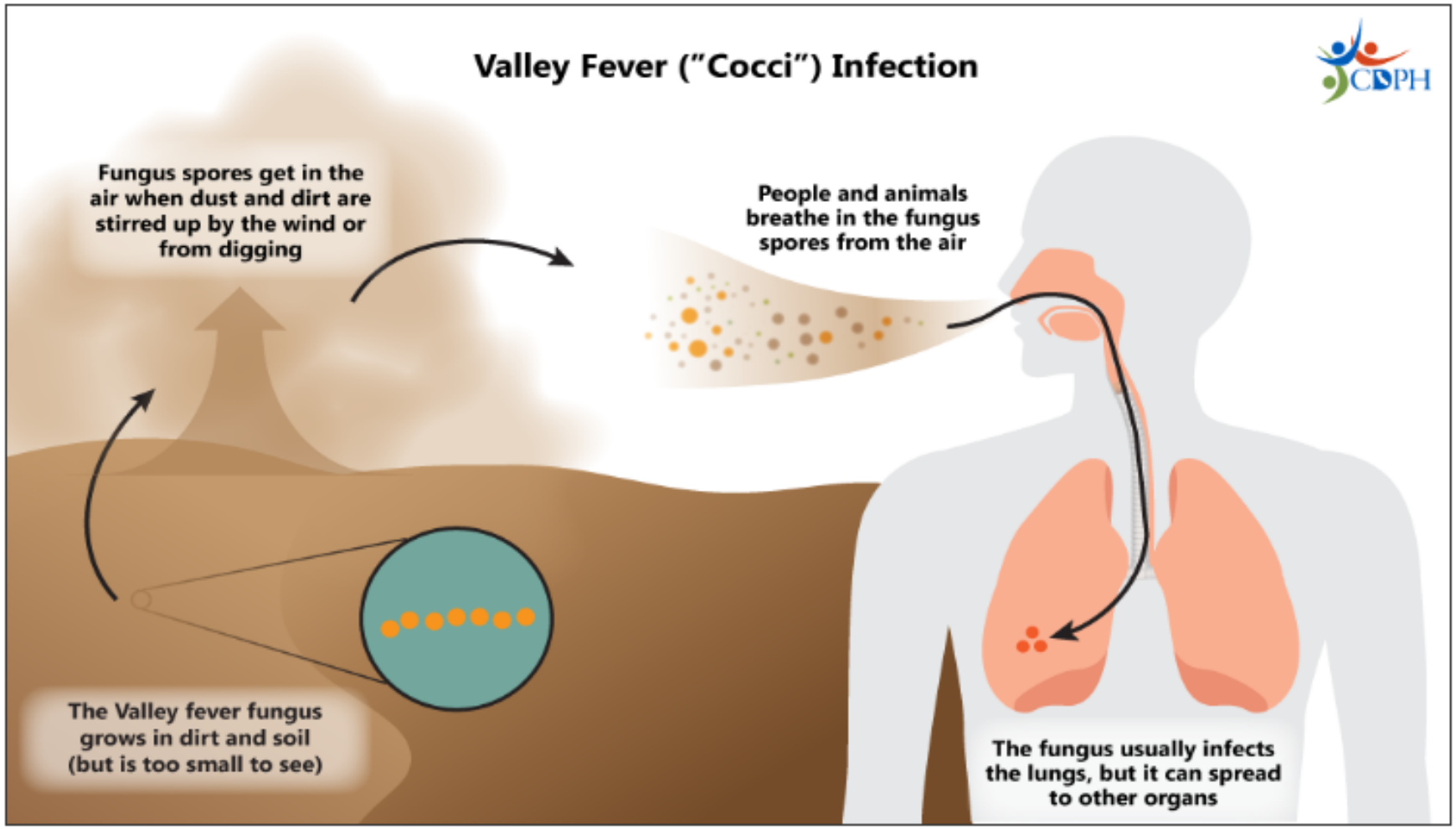
Chapter 710, Statutes of 2019 (AB 35 Kalra)

Effective January 1, 2019



Valley fever: New attention to old hazard

Statewide media campaign to launch, December to March

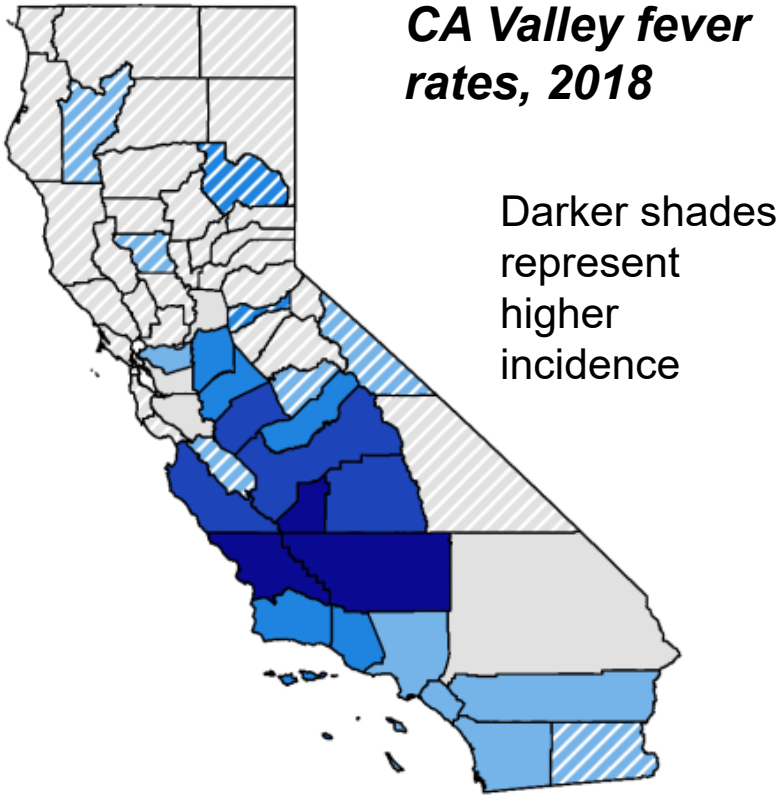


New Valley fever legislation:
Training required for construction workers

Chapter 712, Statutes of 2019 (AB 203 Salas)

Applies to work in these 11 counties:

- Fresno
- Kern
- Kings
- Madera
- Merced
- Monterey
- San Joaquin
- San Luis Obispo
- Santa Barbara
- Tulare
- Ventura



OHB resources: New in 2019

Isoflurane: Anesthetic gas

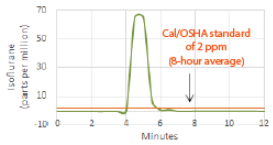
Workplace Hazard UPDATE

Isoflurane May Harm Veterinary Worker Health

There is increasing evidence that exposure to isoflurane, the anesthetic gas commonly used in veterinary practice, may pose health risks if not adequately controlled. ***Workers may be unaware of the ways isoflurane is getting into the air they breathe.*** *Veterinary staff and facility owners should take steps to protect workers from this hazard.*

Workers can be overexposed

A California Department of Public Health investigation found high levels of isoflurane in workers' breathing zones during common veterinary procedures.



This graph shows isoflurane levels while technicians roll a dog over. The peak on the graph occurred when the endotracheal tube was disconnected to reposition the animal while gas was still flowing. If high exposures like this occurred multiple times during a shift, workers could be exposed over the legal limit.

Nervous and reproductive system harm

While more study on human exposure is needed, scientists are concerned that evidence from laboratory animal studies points to potential nervous and reproductive system harm in people.

Reported effects of isoflurane

In workers:

- Dizziness and headaches

In laboratory animals:

- Nerve cell damage
- Learning and memory impairment, behavior changes
- Reduced sperm production and impaired sperm health
- Abnormalities in offspring exposed during pregnancy

It's the law!
Cal/OSHA limits isoflurane in workplace air -
See pages 3 & 4

HESIS

HAZARD EVALUATION SYSTEM & INFORMATION SERVICE
California Department of Public Health • Occupational Health Branch
850 Marina Bay Parkway, Building P, 3rd Floor, Richmond, CA 94804
510-620-5757 • www.cdph.ca.gov/hesis

Silica in countertop fabrication

CDPH California Department of PublicHealth

INFORMATION FOR WORKERS

HAZARD WARNING: SILICA DUST FROM COUNTERTOP WORK

DO YOU WORK WITH ENGINEERED STONE, QUARTZ, GRANITE, OR OTHER STONE PRODUCTS?

Cutting, grinding, chipping, sanding, drilling, and polishing these products can harm you. These tasks put dangerous levels of silica dust into the air. You can then breathe in the dust. Engineered stone is the most dangerous. It has much more silica than other kinds of stone.

Silica dust can get far into your lungs. This can cause a disease called silicosis. Silicosis makes scars in the lungs and leads to trouble breathing.

WORKER DEATHS IN CALIFORNIA

In 2018, two men from the same countertop fabrication shop died of silicosis. They worked polishing, cutting, and grinding stone countertops. They worked mostly with engineered stone for a few years. The men were 36 and 38 years old when they died.

Water and dust-capture systems can decrease dust levels.

There is no cure for silicosis, and many workers have died from it. It may start as trouble breathing, coughing, and feeling very tired. Silica dust can also cause lung cancer, kidney problems, and other diseases.

HOW YOUR WORKPLACE MUST KEEP YOU SAFE

Cal/OSHA makes health and safety rules for workplaces and enforces them. Under these rules your employer must measure or assess how much silica dust is in the air.

If dust levels may be at or above 25 micrograms of silica per cubic meter of air (this is called the Action Level) your employer must:

- Train you about silica, how it affects your health, and how to work safely
- Assess the airborne silica exposures in your workplace

Cal/OSHA also sets a limit on how much silica can be in the air you breathe. This is the Permissible Exposure Limit, or PEL. The PEL for silica is 50 micrograms of silica per cubic meter of air averaged over an 8-hour work shift. If the silica dust is above this limit, your employer must lower the amount of dust in the air. Wet methods are one way to keep dust from getting into the air. "Wet methods" means using tools that spray or pour water on the stone you are working on. Using dust-catching (capture) systems along with wet methods is even safer.

If wet methods and dust-capture methods are used and the airborne dust is still above the PEL, your employer must also:

- Have a health care provider assess if wearing a respirator is safe for you
- Give you a respirator and train you how to use it

Stay in touch with OHB

E-newsletter:

Occupational Health Watch

Subscribe:
OHW@cdph.ca.gov

Use OHB's resources & services

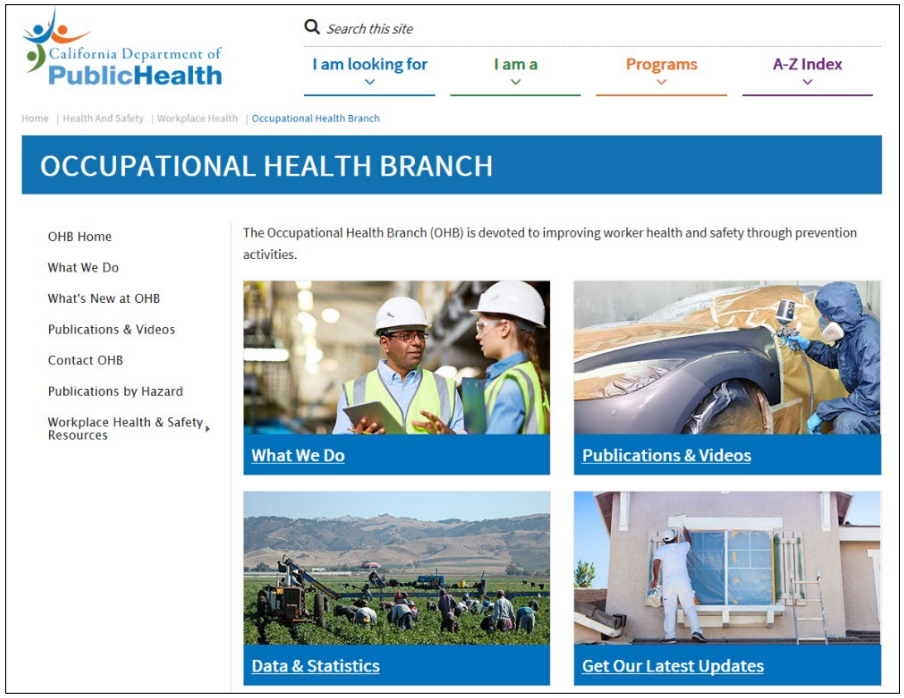
OHB website

www.cdph.ca.gov/OHB

A to Z listing of content

Workplace hazard helpline

1-866-282-5516 (toll-free in CA)



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