



The New Lead Standards

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Occupational Lead Poisoning Prevention Program

California Department of
Public Health



Learning objectives

- Discuss the health effects of lead
- Identify best practices for preventing exposure

- Recognize the challenges in occupational blood lead surveillance

- Describe Cal/OSHA lead standards proposed updates

Occupational Lead Poisoning Prevention Program (OLPPP)

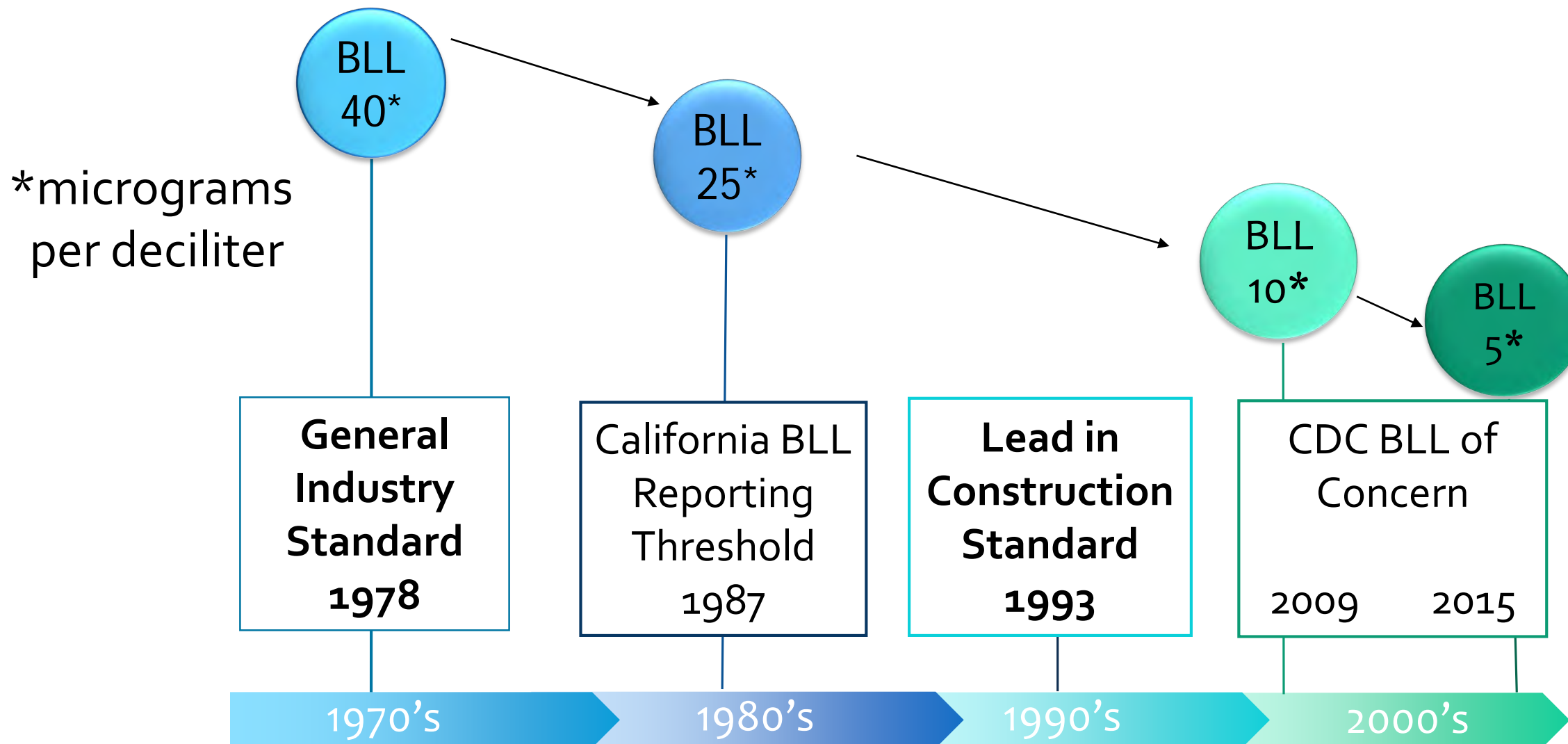


- Established in 1991
- Manage the California Occupational Blood Lead Registry
- Investigate work-related lead poisoning cases
- Provide information and technical assistance
- Conduct projects and training
- Not enforcement, refer some cases to Cal/OSHA



- Health effects
- Routes of exposure
- Take-home lead

Changing Blood Lead Level Goals





Lead poisoning symptoms

Symptoms are often not felt

- Cardiovascular - high blood pressure
- Neurological - headache, dizziness, mood changes, difficulty concentrating, coordination problems
- GI - stomachache, nausea, constipation
- Reproductive - decreased sex drive, infertility. Miscarriage in women.
- Muscular - muscle or joint aches.

Chronic exposure at low levels: 5-10 µg/dL

Type of effect	Description
Neurological	Increased incidence of essential tremor
	Psychiatric effects, decrease in hearing, and cognitive function (limited evidence)
Cardiovascular	Increased blood pressure, and risk of hypertension
	Increased cardiovascular related mortality and ECG abnormalities (limited evidence)
Renal	Decreased kidney function
Reproductive & Developmental	Decreased fetal growth in pregnant women
	Increase of spontaneous abortion & preterm birth
	Decreased fertility (limited evidence)

Routes of exposure

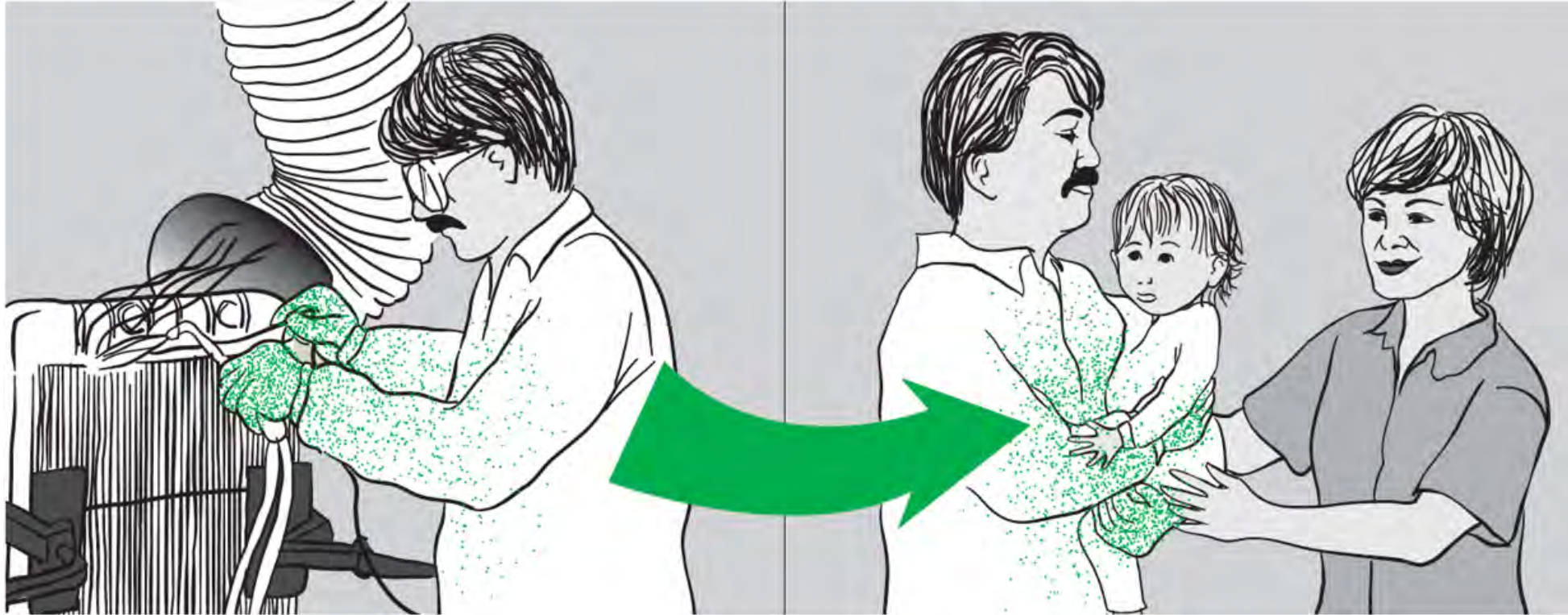
Inhalation



Ingestion



Take-home lead exposure



Children, pregnant and breast feeding women
are most vulnerable

Polling question

What is the best way to avoid take-home lead exposure?

- A. Wash hands and face before leaving work
- B. Leave your work shoes at the jobsite
- C. Take a shower at the end of your shift and leave your work clothes and shoes at the jobsite
- D. Take your clothes off as soon as get home and take a shower

Who is exposed?

Exposure in general industry and construction.



In pairs: Who is exposed to lead on the job?

Discuss with your neighbor and write down

- Three industries with lead exposure
- Three construction jobs or tasks with lead exposure



Lead exposure in general industry

- Battery manufacturing and recycling
- Lead recovery from scrap metal or electronics
- Manufacturing of
 - plumbing fixtures
 - metal valves
 - aircraft & aircraft parts
- Ship building or repair
- Shooting ranges & other ammunition-related industries
- Radiator repair
- Foundries (brass, bronze, lead)

Lead in construction

- Residential renovation, remodeling or demolition (built before 1978)
- Sanding, scraping, burning, or disturbing lead paint
- Welding or torch cutting lead-painted metal
- Welding on metal structures
- Abrasive blasting
- Construction or repair of bridges, water towers, tanks, roofing
- Lead abatement

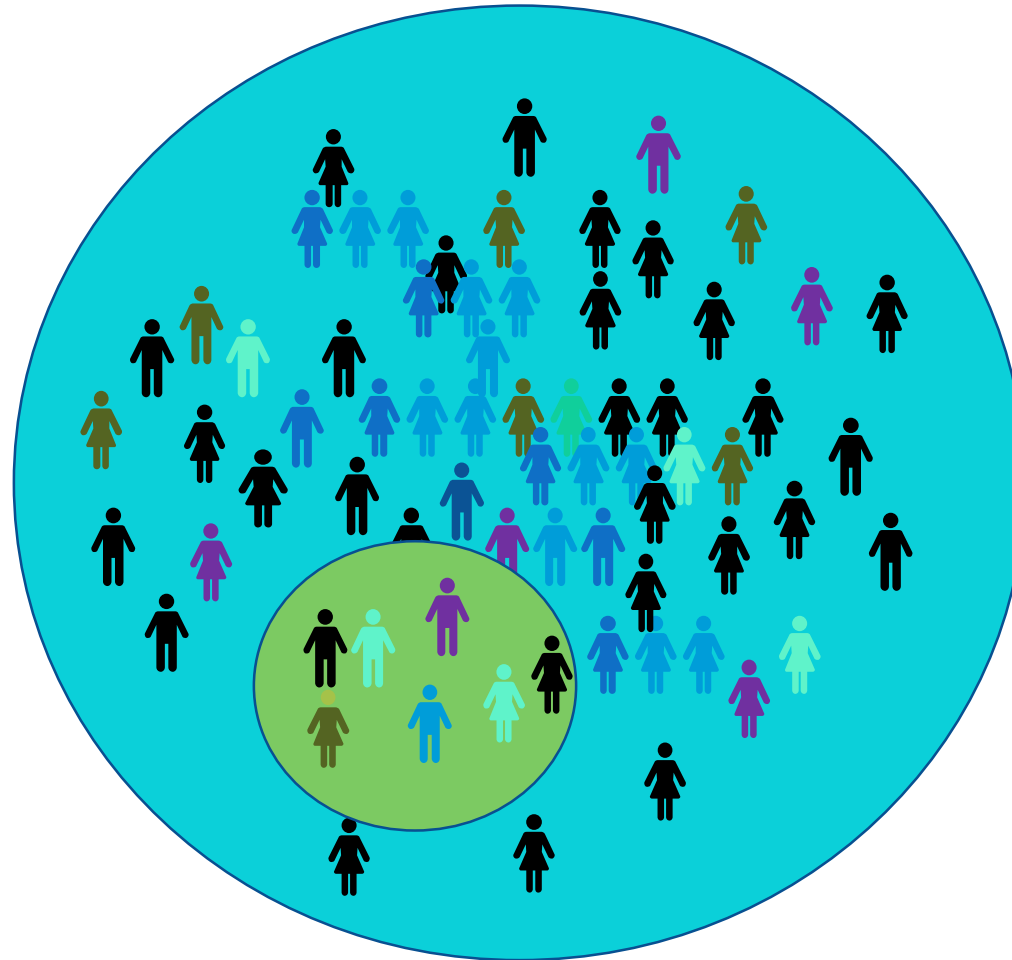
Surveillance

Current surveillance data and challenges



Occupational Lead Poisoning Statistics

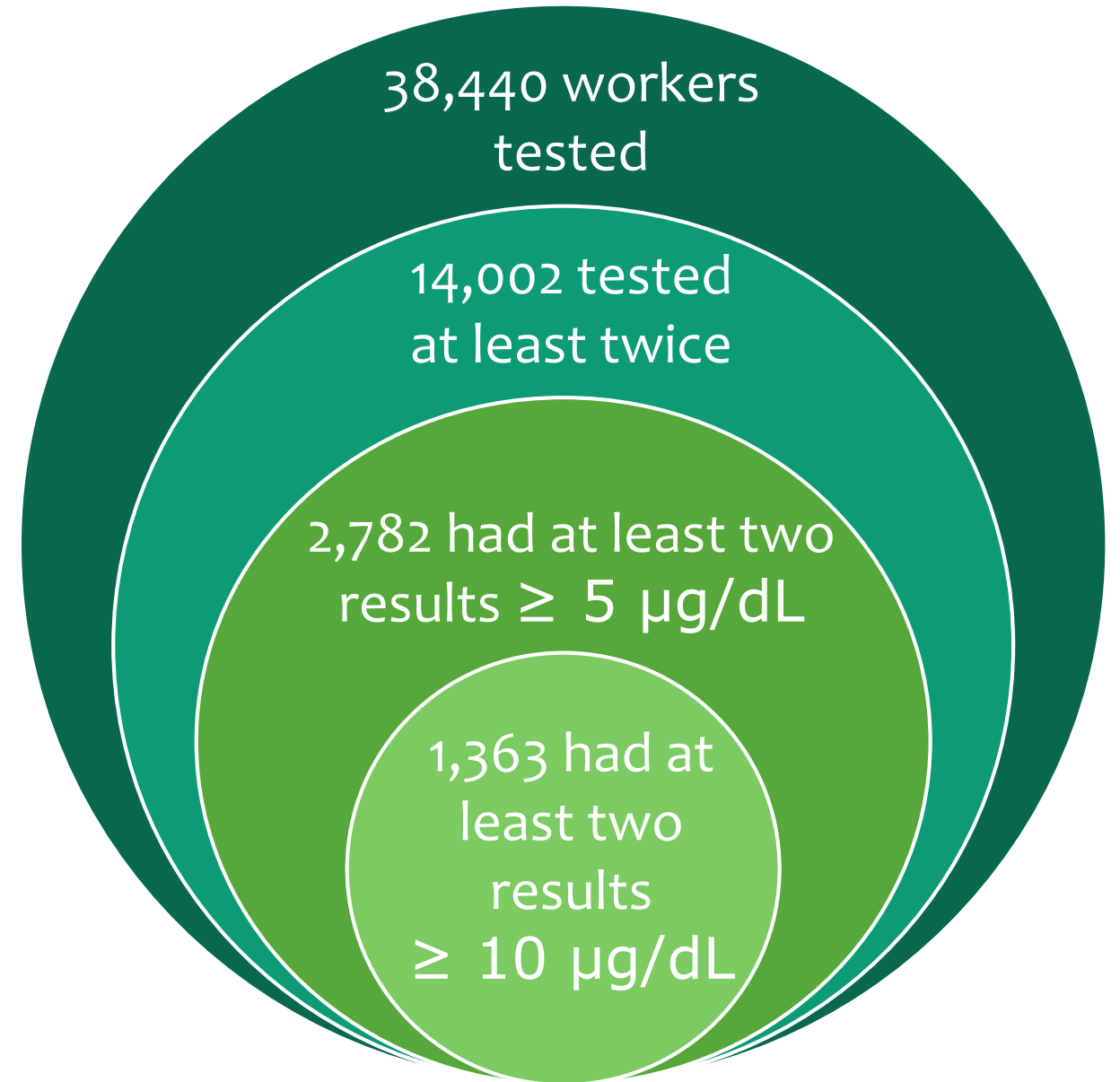
More than 6,000
California workers
were poisoned by
lead on the job
between 2012 and
2014

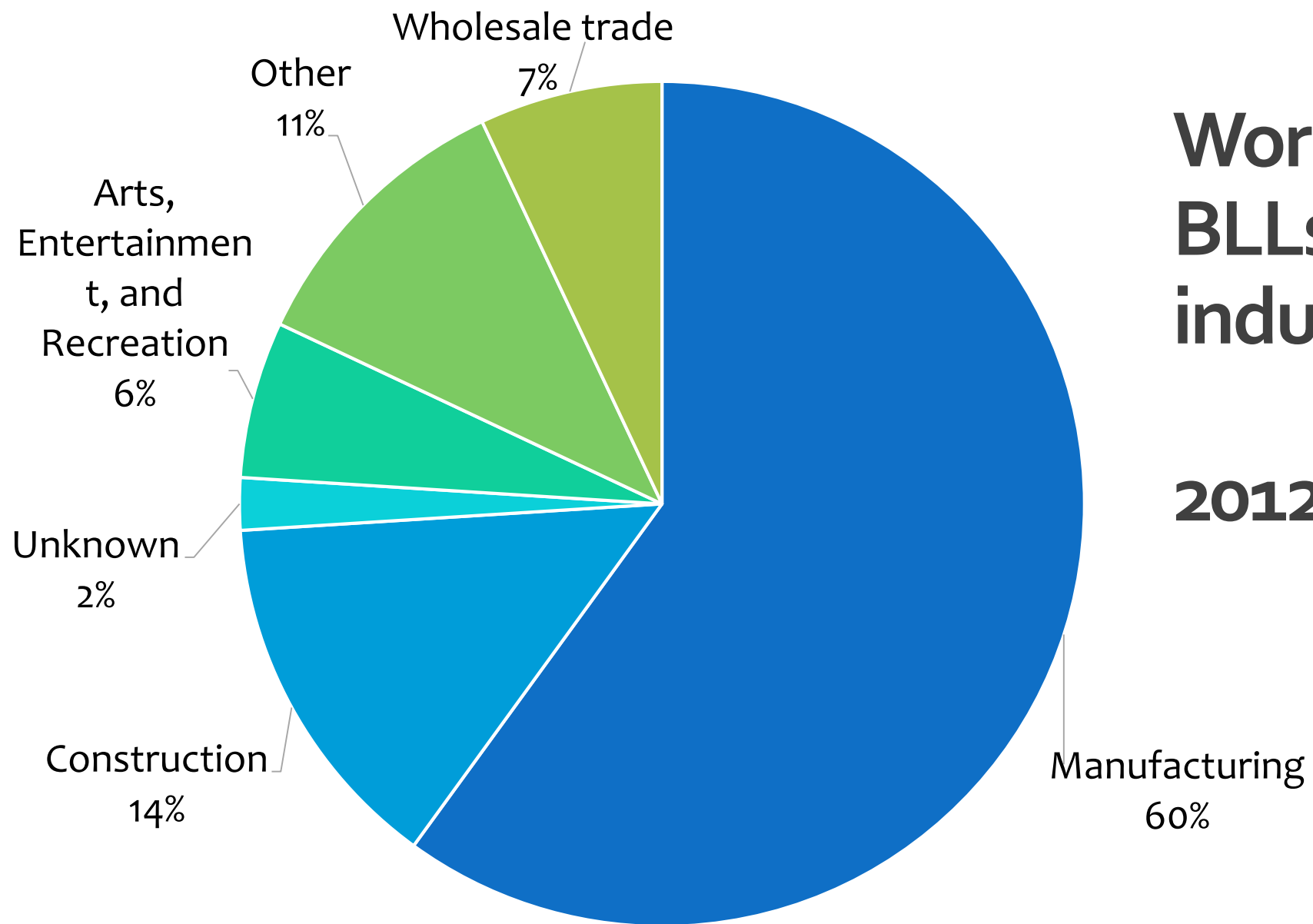


Many workers
exposed to
lead at work
are never
tested

Source: California Department of Public Health, Occupational Lead Poisoning Prevention Program, 2017

California Workers Tested, 2012-2014





Workers with BLLs $\geq 10 \mu\text{g/dL}$ by industry sector

2012-2014

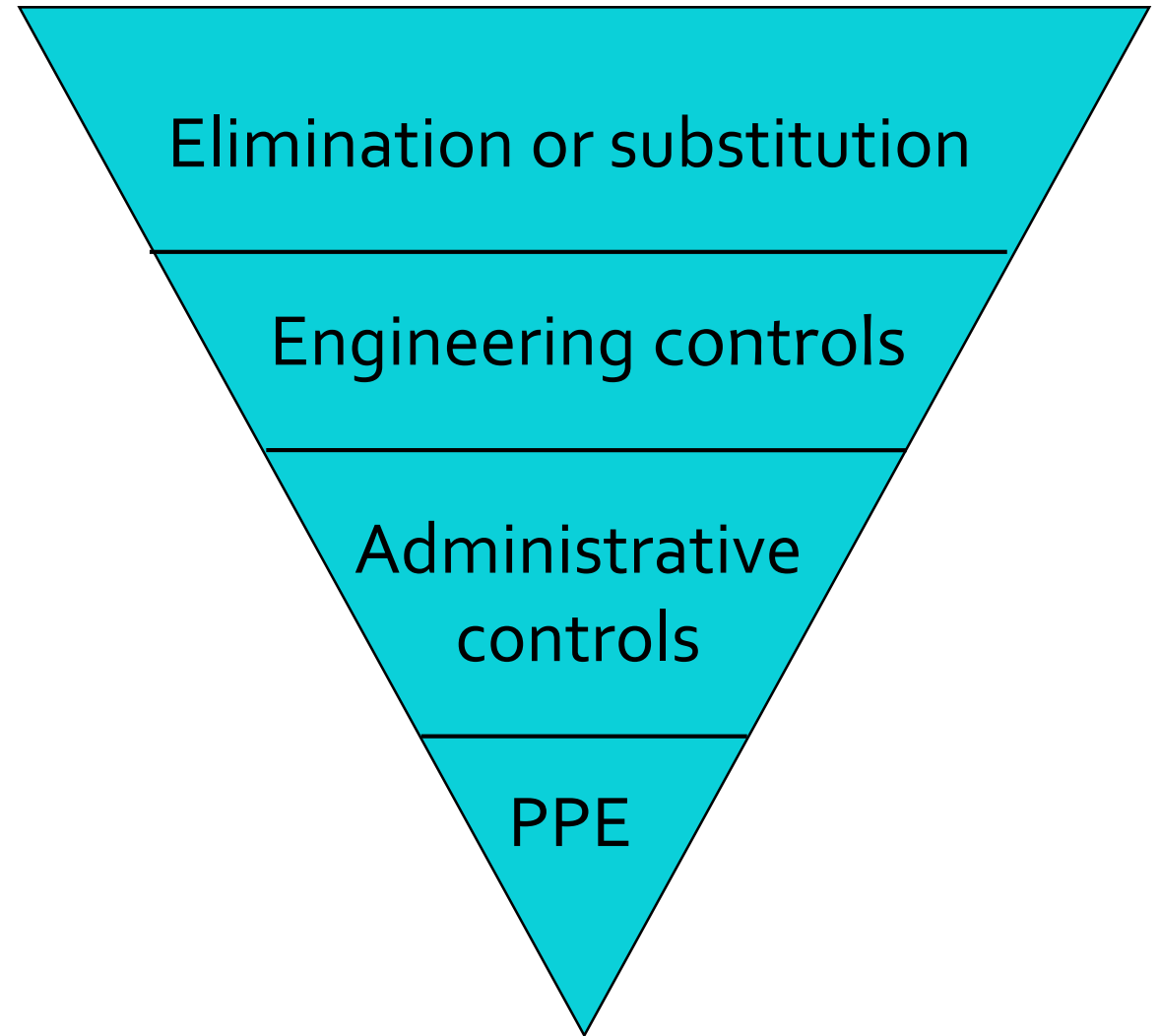


Cal/OSHA Standards

CDPH health-based
recommendations

Controls – what would you do?

- Read the scenario
- Two minutes to write your suggested controls on post-its and post on your pyramid
- One writer per group
- One person to report back
- Pens down when we call time



Scenario



What controls can you put in place to protect Carlos from lead exposure?

Carlos is starting his first day on the jobsite. He will be removing paint from an old Victorian home in San Francisco.

The foreman is on a coffee-run, but Carlos is eager to get started. In the clothes he wore to work, he climbs the ladder to meet his coworkers on the scaffolding and begin his shift.

Cal/OSHA lead standards

Scope

- **General Industry:** all except construction and agricultural operations
- **Construction:** including alteration and/or repair, painting and decorating
- Elemental lead, all inorganic lead compounds, lead soaps.

Out of scope

- Other organic lead compounds

CDPH recommendations

2010-2011: CDPH recommendations to Cal/OSHA for revising both the General Industry and Construction Lead Standards

- Require BL testing for all lead-exposed workers regardless of air monitoring results because
 - Hazardous exposures can occur even where air lead levels are low (through ingestion)
 - Many employers never do air monitoring

CDPH health-based PEL recommendation, 2013

- Prevent BLLs 5 – 10 $\mu\text{g/dL}$ over 40 years worked
- PEL = 8-hr TWA of 0.5 – 2.1 $\mu\text{g/m}^3$
- At 0.5 $\mu\text{g/m}^3$
 - 95% of workers' BLLs stay under 5 $\mu\text{g/dL}$
- At 2.1 $\mu\text{g/m}^3$
 - 95% of workers' BLLs stay under 10 $\mu\text{g/dL}$
 - 57% stay under 5 $\mu\text{g/dL}$

Discussion draft highlights

- Trigger for BLL testing not solely dependent on air monitoring
- More frequent BLL testing
- Lower medical removal protection level
 - 2 BLL $\geq 20 \mu\text{g/dL}$ or 1 BLL $\geq 30 \mu\text{g/dL}$
 - currently 50-60

- CAL/OSHA draft PEL = $10 \mu\text{g/m}^3$ TWA
 - currently 50
- CAL/OSHA draft action level = $2 \mu\text{g/m}^3$ TWA
 - currently 30

Cal/OSHA's 20 steps to develop an OH standard (simplified)



- ✓ 1. Research to prepare text for new or updated standard
- 2. Pre-rulemaking package to OSHA Standards Board
- 3. Administrative reviews
- 4. Notice of proposed rulemaking
- 5. Standards Board holds public hearing, 45 days for public comments, standard may be revised
- 6. Standards Board votes on the standard

From Gavin Newsom, Governor - January 10, 2019

Lead in Construction and General Industry. Cal/OSHA submitted a standardized regulatory impact analysis (SRIA) to the Department of Finance (DOF). After DOF approves the SRIA, Cal/OSHA and Director's Office staff will revise the Initial Statement of Reasons (ISOR) accordingly. Cal/OSHA anticipates submitting a draft rulemaking package to Standards Board staff in late 2019.

<http://www.dir.ca.gov/dosh/doshreg/5198Meetings.htm>.

Next steps

Collaborate with OLPPP



What you can do

- Respond to the OSH Standards Board during public comment period
 - At public meeting
 - In writing
- Work with OLPPP to develop & disseminate tools for compliance

Proposed Regulations

Occupational Safety & Health Standards Board

Pursuant to Government Code section 11346.4 and Labor Code sections 142.1, 142.3, 142.4, 144.5, the Occupational Safety and Health Standards Board will conduct a monthly board meeting at the following times and locations. During this meeting the board will hold an open public meeting, consider proposed revisions of the California Code of Regulations at its monthly public hearings, and conduct its business. As public hearing regulations, their supporting documents (an informative digest and initial statement of reasons), and agenda of the meeting become available they will be posted below as underlined links to the related documents.

Once adopted by the Board, the regulation is submitted to the Office of Administrative Law (OAL) for approval and submittal to the Secretary of State. OAL has 30 working days to approve or deny the regulation. If approved and submitted to the Secretary of State, the regulation becomes effective on a quarterly basis (January 1, April 1, July 1 or October 1) depending on the date OAL approves and submits to Secretary of State, unless it is a "Horchner," in which case the effective date is the same as the date the regulation is submitted to the Secretary of State.

Proposed Regulation	Status
Section 3389(a) Life Rings and Personal Flotation Devices (PFD) in Marine Terminal Operations Notice of Rulemaking: Aug. 31, 2018	Public Hearing: Oct. 18, 2018
Section 3999(b) Guarding of Conveyor Belt Support Rollers - Note	Public Hearing: Apr. 19, 2018

Cal/OSHA standards board, proposed regulations:
<https://www.dir.ca.gov/oshsb/proposedregulations.html>

Outreach & education

Develop or update training and education for employers, workers, & physicians

Partner with stakeholders to assess needs

WORKPLACE HAZARD ALERT

Health Dangers from Lead



What workers should know

If you work with lead you need to:

- ➔ Find out how much lead is in your blood.
- ➔ Talk to your doctor about lead and your health.
- ➔ Take steps to protect yourself at work.

What health damage can lead cause?

Studies show that lead in adults, even at low levels, can:

- ➔ **increase blood pressure**— may increase your chances of having a heart attack or stroke.
- ➔ **decrease brain function**— making it more difficult to think, learn, and remember.
- ➔ **decrease kidney function**— making it more difficult to get rid of toxic waste products through your urine.
- ➔ **harm the physical and mental development of your baby** before it's born.
- ➔ **increase chances of having a miscarriage.**

Health damage from lead:

- * **Can be permanent.**
- * **Can be occurring even if you have no symptoms.**
- * **May not show up until many years later.**

You may work with lead if you:

- Make or repair radiators
- Make or recycle batteries
- Recycle scrap metal or electronics
- Melt, cast, or grind lead, brass, or bronze
- Make or glaze ceramics
- Work at a shooting range
- Remove paint or coatings
- Remodel homes and buildings
- Tear down buildings, bridges, or tanks
- Cut, weld, or saw lead-containing metal
- Use solder

This is not a complete list. If you are unsure if you work with lead, ask your employer.



Interested in lead?

Come work with us!

Current CDPH-OLPPP Vacancies

- Industrial hygienist
- OLPPP Chief

Occupational Health Watch



- Monthly e-newsletter
- Latest news and resources that promote worker health safety

<http://bit.ly/SubscribeOHW>

- Lead Poisoning Prevention Week
- Manual materials handling - Preventing Injuries from Moving Heavy Materials
- Preventing Valley Fever in Construction Workers
- Workplace Emergency Plans
- Cannabis: Workplace Health and Safety



Thank You

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