

Welcome!

Our presentation will begin at 11 a.m. Pacific.

Preventing Valley Fever in Construction Workers

Occupational Health Branch

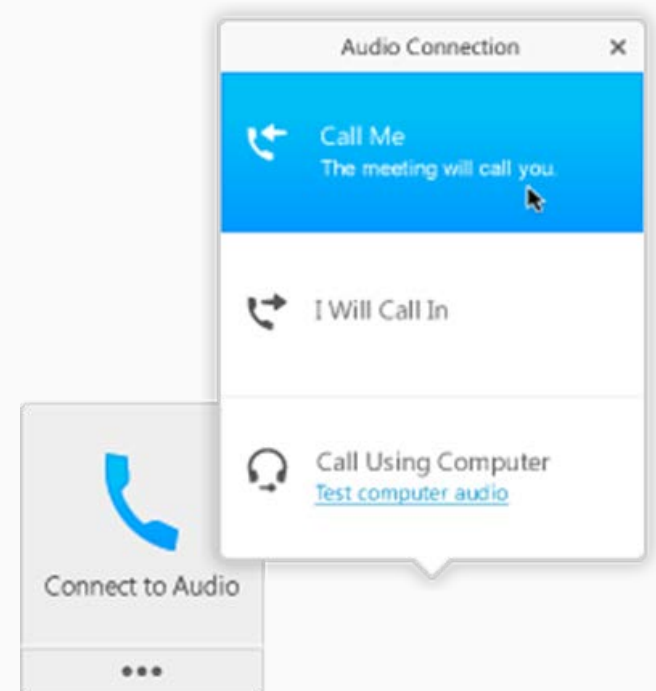
Audio Instructions

To join the audio:

1. Call: **+1-240-454-0887**
2. Enter the event number: **924 053 777#**
3. Mute your computer audio

- OR -

You can have WebEx call your phone by going to the phone icon, then clicking *Call Me*, and entering your phone number.





Preventing Valley Fever in Construction Workers



August 21, 2018

Jason Wilken, PhD
Occupational Health Branch
Center for Healthy Communities
California Department of Public Health



Overview

- Causes and symptoms of Valley fever
- How Valley fever can affect construction workers and businesses
- Ways to minimize exposure
- Valley fever information and training resources



Speaking from experience

Glenn Bugler, President, Bugler Construction



“I started running out of breath and feeling feverish so I went to my doctor...”

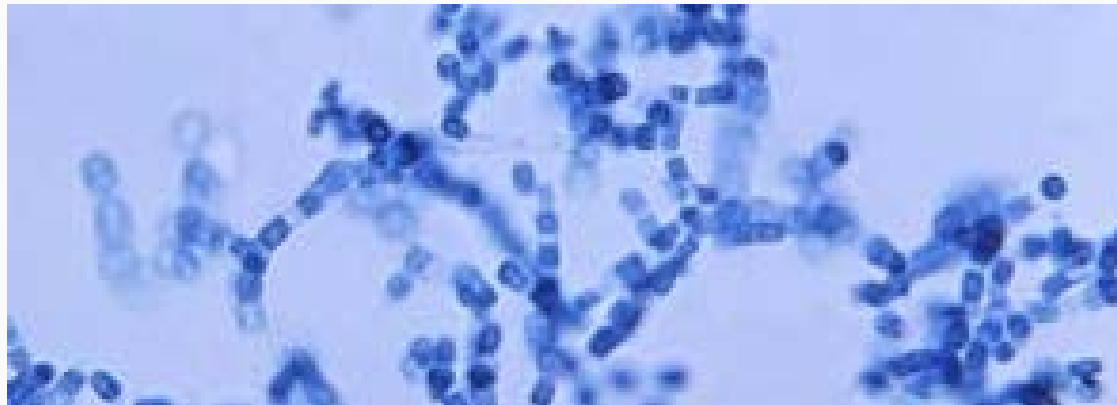


How much do you know about Valley fever?



What is Valley fever?

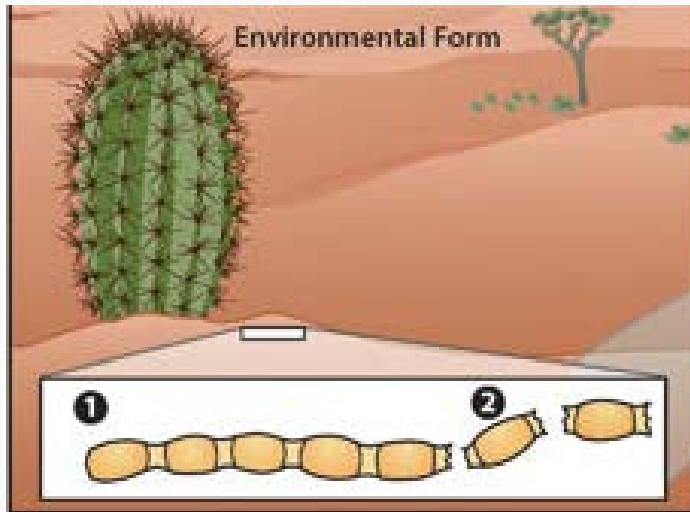
An infection caused by inhaling spores of a fungus in the soil



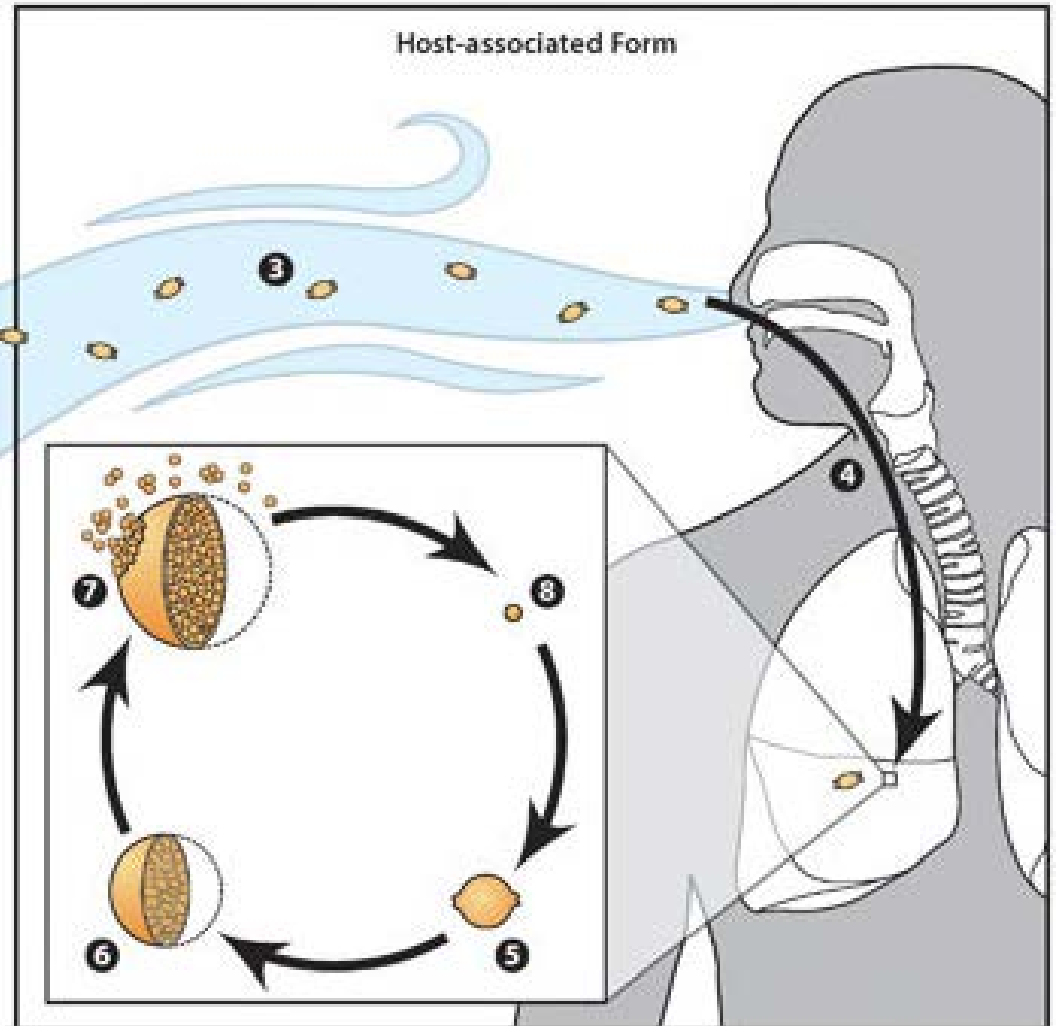
Scientific name of fungus: *Coccidioides*

Illness also known as “coccidioidomycosis” or “cocci”

How people get Valley fever



↑
2–12" below the
surface





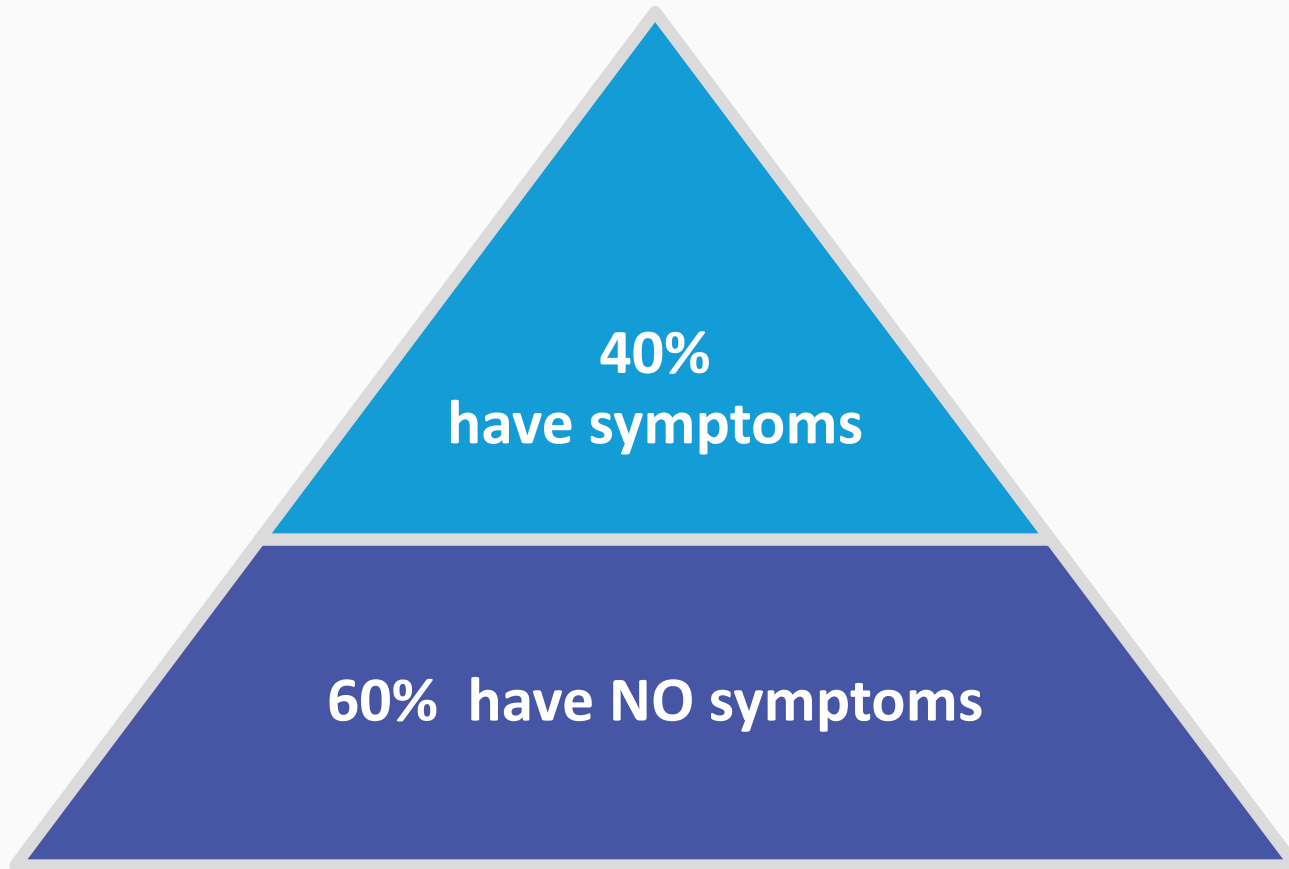
Valley fever symptoms

- Flu-like
 - Cough, fever, muscle aches, headache
- Fatigue
- Difficulty breathing
- Rash on upper trunk, arms, or legs
- Joint pain in knees or ankles

Symptoms can last **weeks or months**



Valley fever illness



Symptoms begin 1–3 weeks after exposure



Severe Valley fever illness

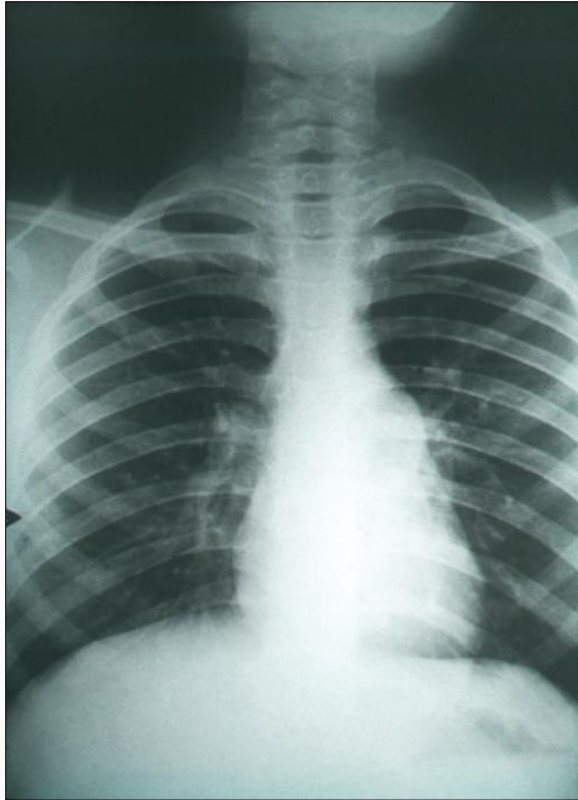
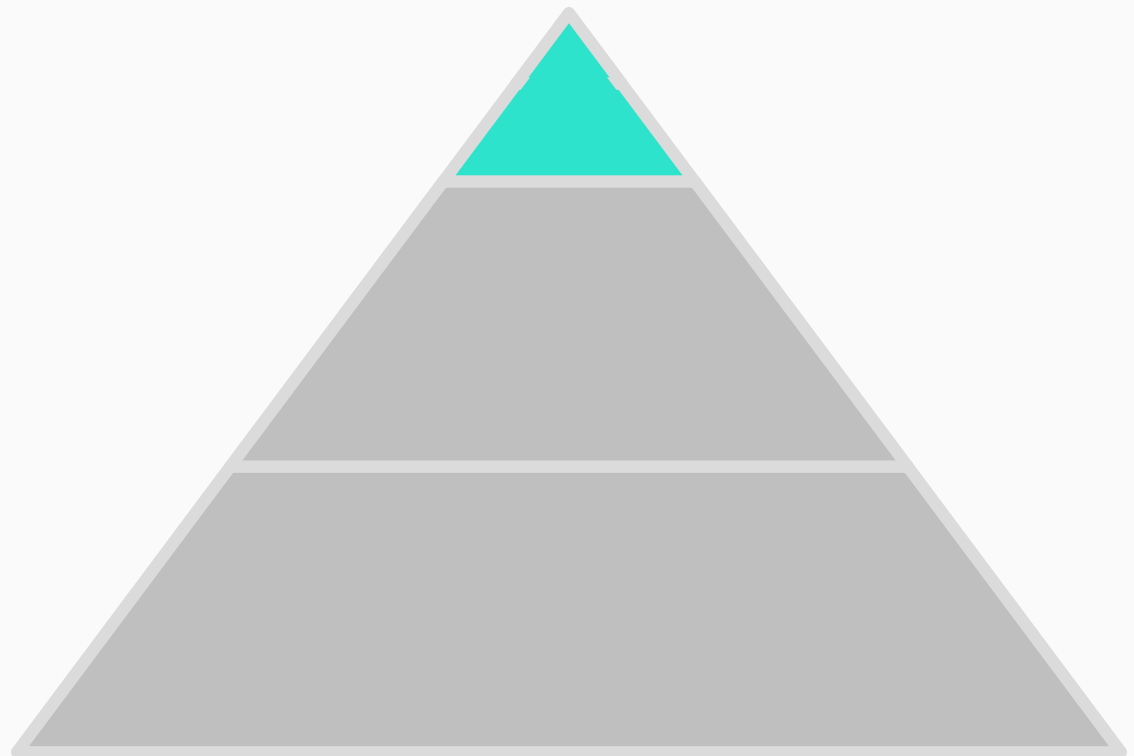


Photo: CDC/ Dr. Lucille K. Georg

5–10%:
Pneumonia, chronic lung infection



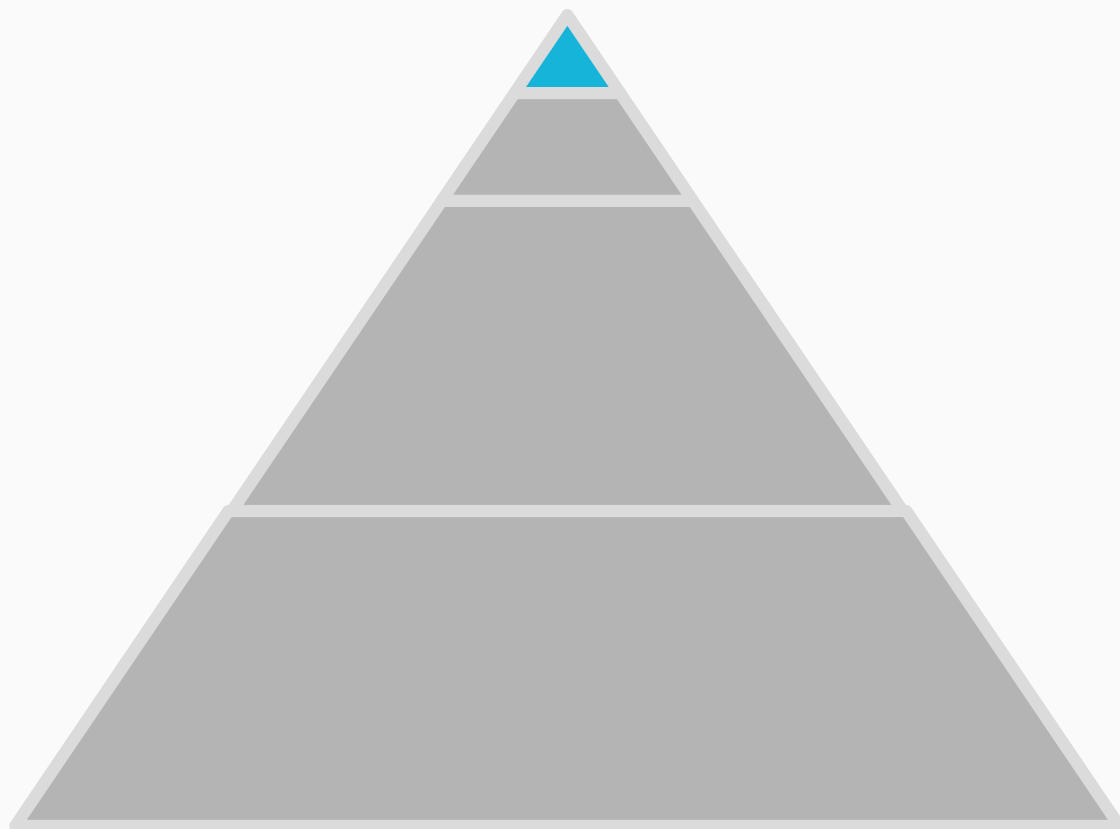


Very severe Valley fever illness



Photo: CDC/ Dr. Lucille K. Georg

1%: Spreads outside the lungs





Who is at greatest risk for severe illness?

- Age 60 years or older
- African Americans, Filipinos
- Pregnant women
- Diabetes
- Weakened immune systems

Anyone exposed can develop severe disease

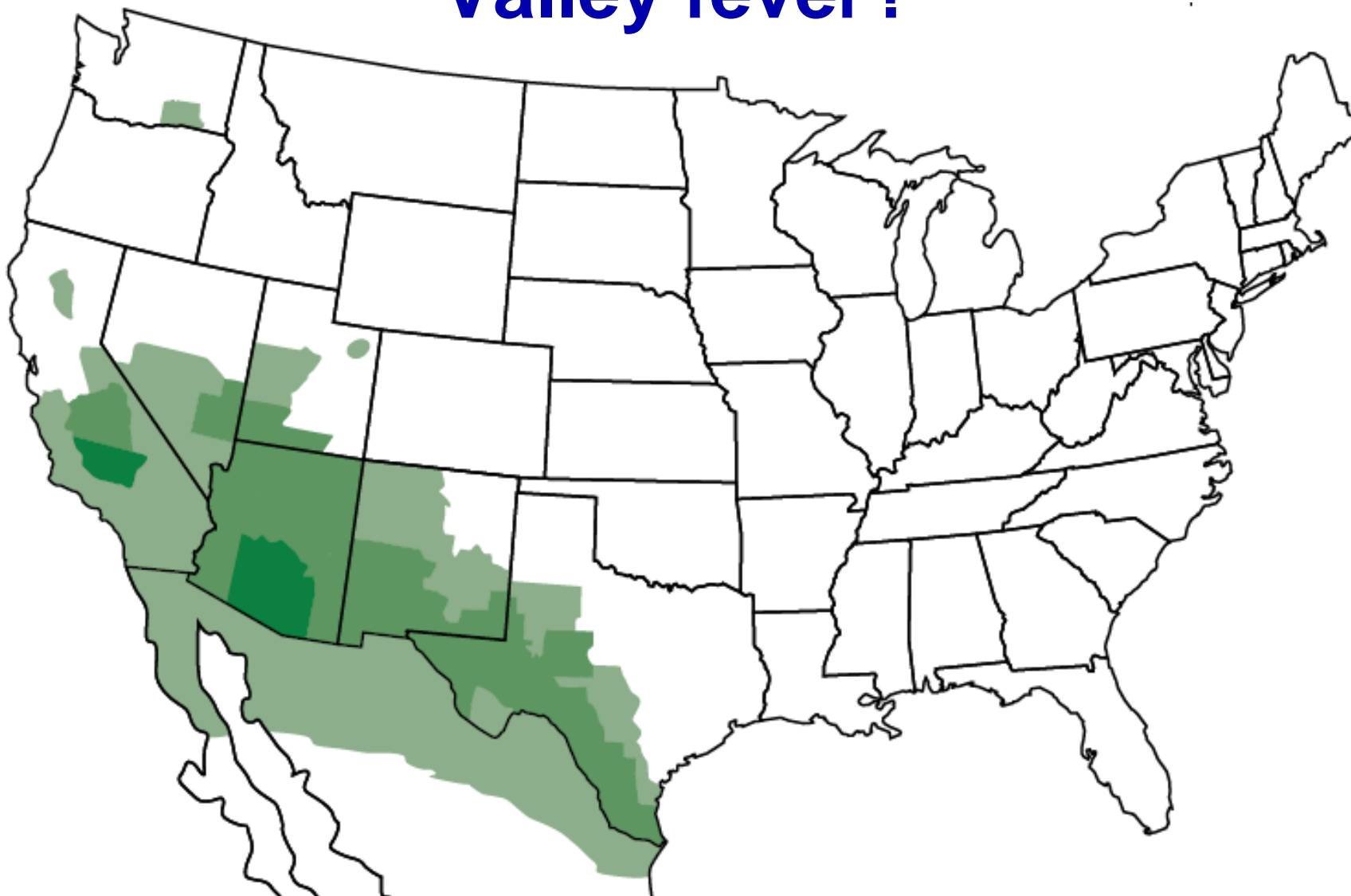


Diagnosing Valley fever



Can only be diagnosed by a clinician
Lab tests (usually blood) are needed

Where is the fungus that causes Valley fever?



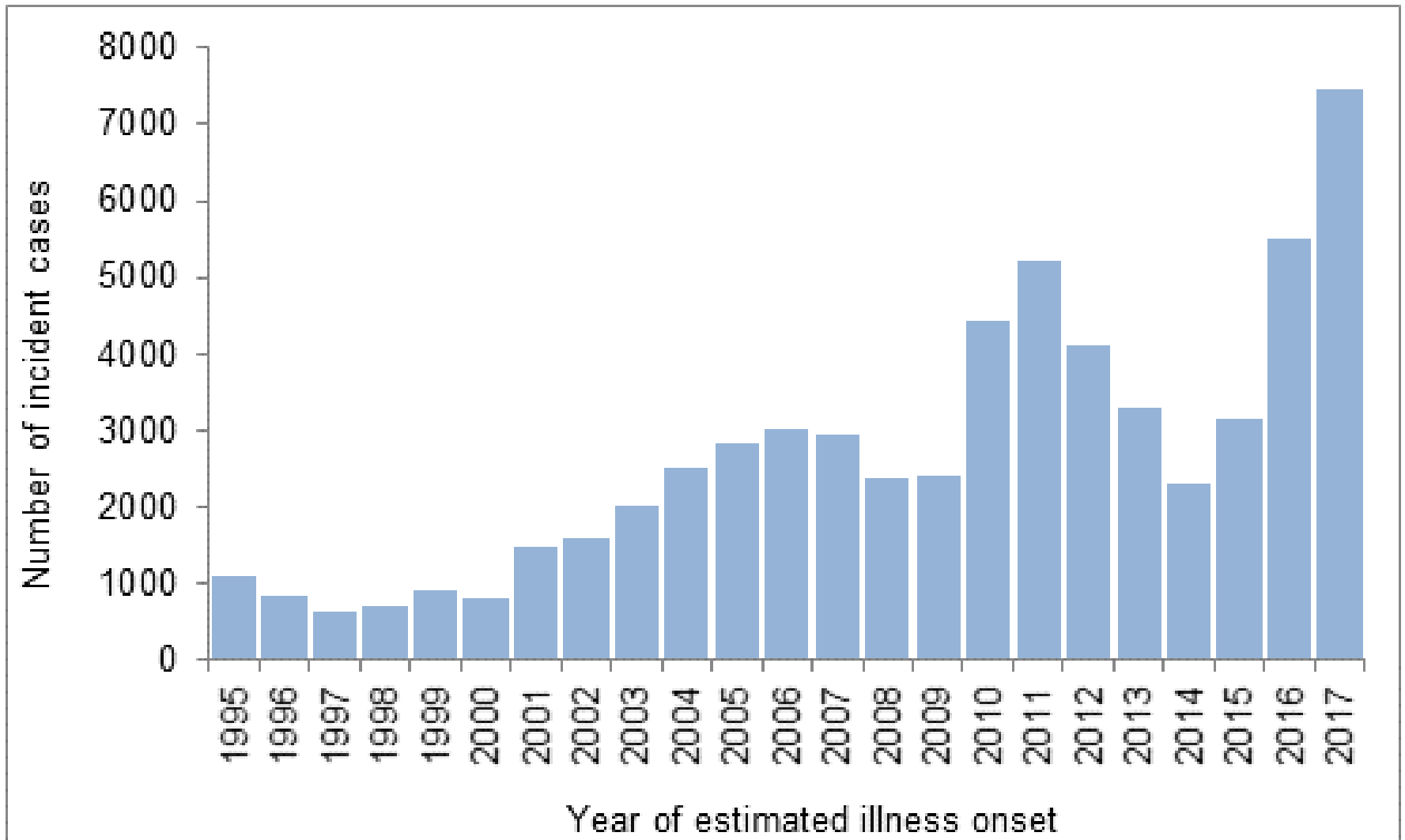


No effective way to test for the fungus ahead of time

- Fungus has spotty distribution in soil
- No reliable soil or air testing methods
- Just a few (<10) spores can cause disease



Valley fever is increasing in CA





Possible reasons for rise in Valley fever

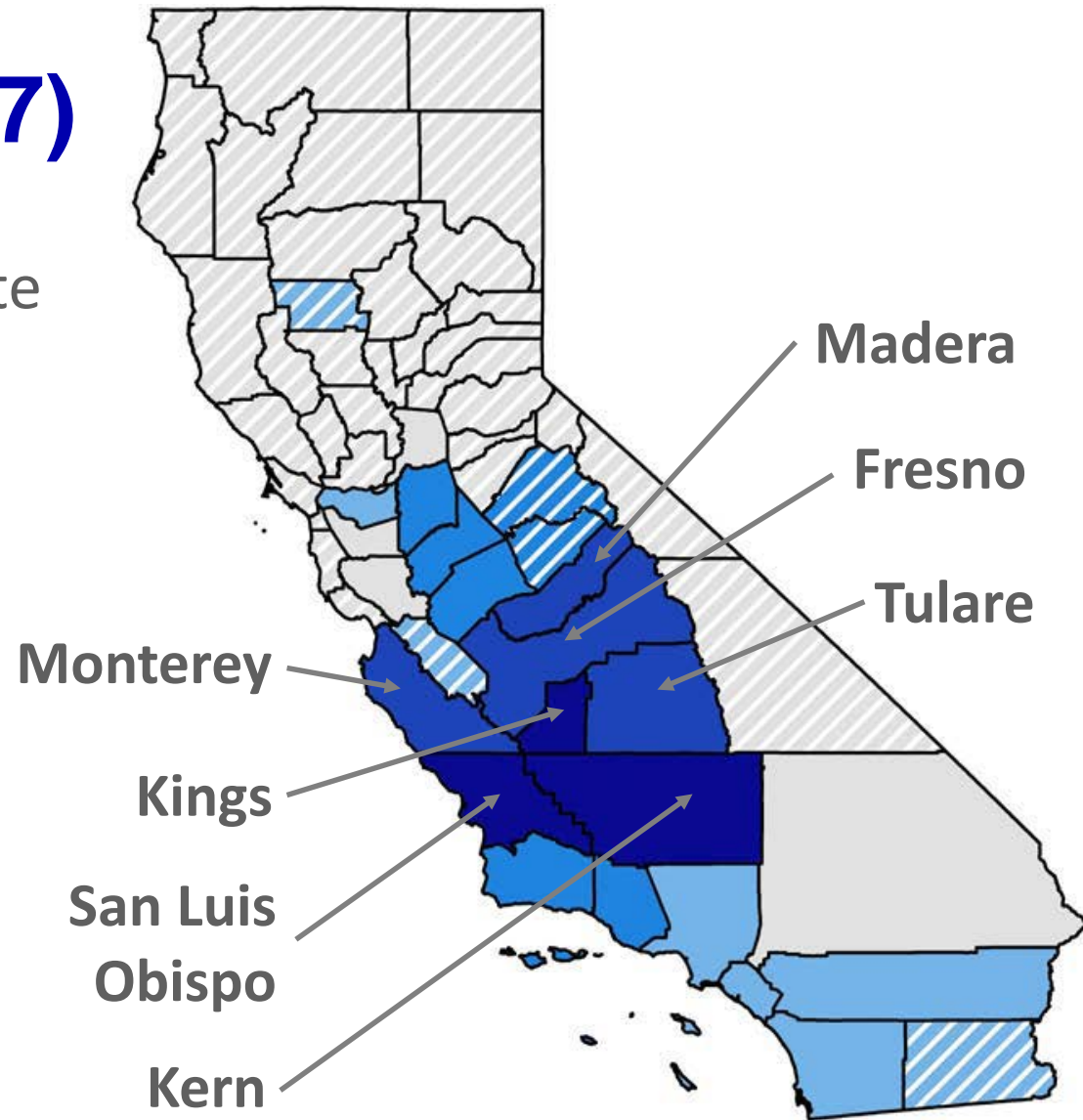
- Drought, climate, and environment
- Increase in population in areas where the fungus is common
- Construction and other dust-generating activities





County rates of Valley fever (2017)

- Darker color = higher rate
- Highest in the Central Valley and Central Coast





Valley fever is an occupational disease


Workers disturbing soil in areas where Valley fever is common are at highest risk

- **Construction workers**
- Archeologists
- Wildland firefighters
- Military personnel
- Mining, quarrying, oil & gas extraction jobs
- Agricultural workers





Identifying Valley fever cases among workers



Workers,
unions,
employers



Occupational
Health Branch



Local health
departments



Doctors'
reports



Investigations of Valley fever at construction sites



Photo: San Luis Obispo County Planning Department



San Luis Obispo County, 2007





10 of 12 (83%) workers ill

Ineffective dust suppression

Equipment windows open

No respiratory protection



High toll of illness on this crew

- 10 ill workers sought care from 21 physicians
- 7 had abnormal chest X-rays (cocci pneumonia)
- 1 had disease that spread from the lungs
- Over 200 lost work-days for 10-person crew
- 2 workers on disability at least 5 months

San Luis Obispo County, 2011–2014



44 workers ill

Most (27/44) did not live in areas
where Valley fever was common











Photo: San Luis Obispo County Planning Department



Severity of disease (44 ill workers)

Visited emergency room 17 (39%)

Hospitalized 9 (20%)

Spread outside the lungs 2 (5%)

Missed work 34 (77%)

Range 1 day to >1.5 years

Average 22 days



Job titles of ill workers*

Electrician/lineman/wireman	13 (31%)
Equipment operator	11 (26%)
Laborer	6 (14%)
Carpenter/ironworker/millwright/mechanic	5 (12%)
Manager/superintendent	4 (10%)
Other	3 (7%)

*42 of the 44 patients were interviewed



Photo: San Luis Obispo County Planning Department



Follow-up survey of solar workers

- Found 89 more workers with Valley fever symptoms
- Risk factors for illness
 - Being in a dust cloud or storm
 - Working in a trench
 - Operating heavy equipment without enclosed cab
 - Not wearing respirator frequently
- Protective factor
 - Using water frequently

Monterey County, 2016–2017



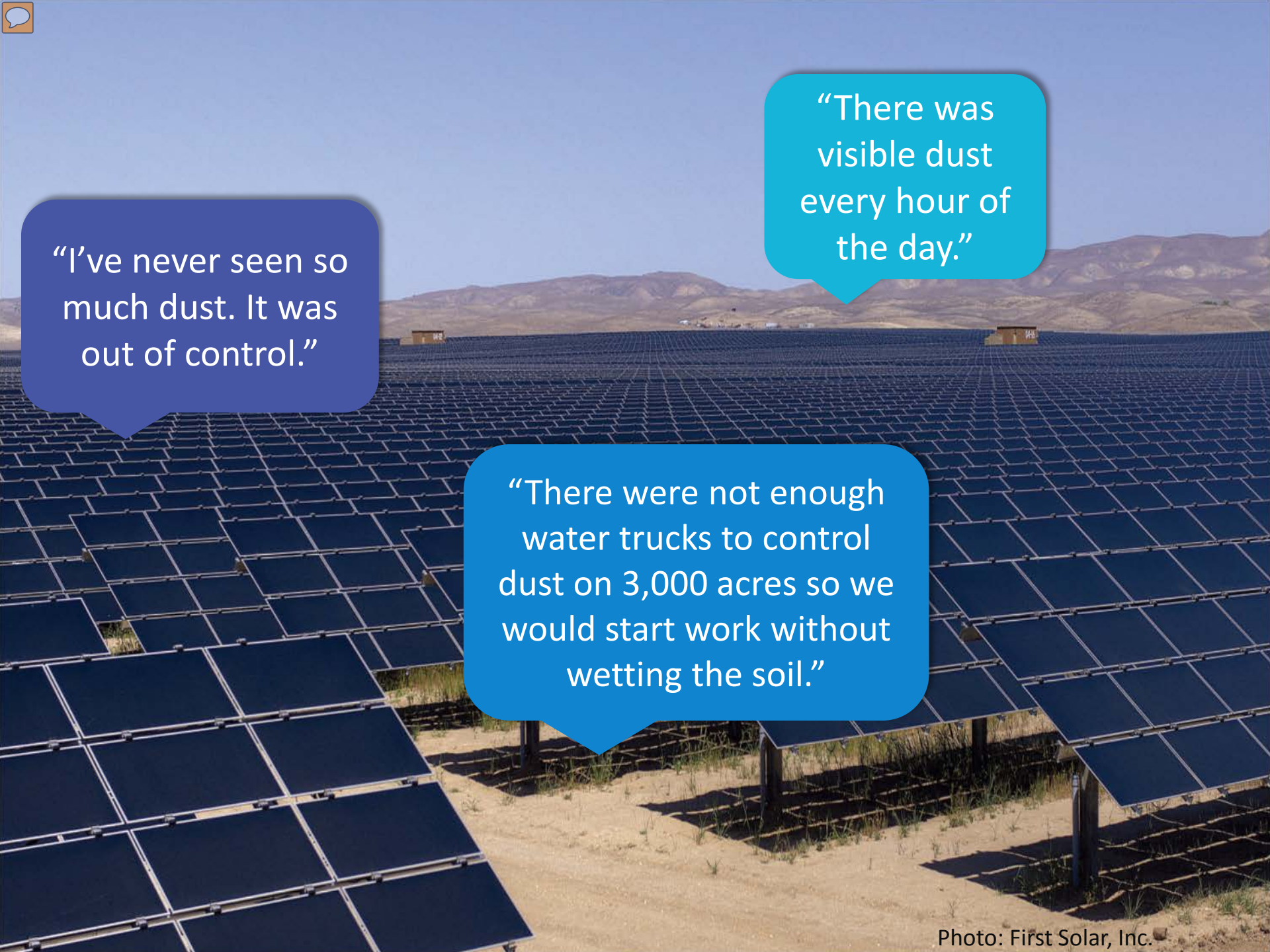
9 workers ill:

5 went to an ER

1 hospitalized

7 missed work—

3 missed >7 months



“I’ve never seen so much dust. It was out of control.”

“There was visible dust every hour of the day.”

“There were not enough water trucks to control dust on 3,000 acres so we would start work without wetting the soil.”

Cal/OSHA citations for not protecting workers at solar farms

Citations for failure to:

- Address Valley fever as a hazard in the IIPP
- Control dust exposure
- Provide & ensure use of respirators
- Report hospitalized cases



N E W S R E L E A S E

News Release No.: 2017-108

Date: November 20, 2017

Cal/OSHA Cites Six Employers over \$240,000 for Exposing Workers to Valley Fever

Bakersfield — Cal/OSHA has cited six employers \$241,950 for workplace safety and health violations after reports that workers contracted Valley Fever on a solar project construction site in Monterey County.



True burden on construction workers?

- Number of cases in workers is unknown
- Most people with milder disease do not see a doctor
- Some may not tell their employer
- Valley fever often misdiagnosed
- Difficult to identify in workers travelling in from other counties or states



Preventing Valley fever illness



Photo: Morgan Zavertnik and Hoar Construction/elcosh.org

Basis for prevention recommendations

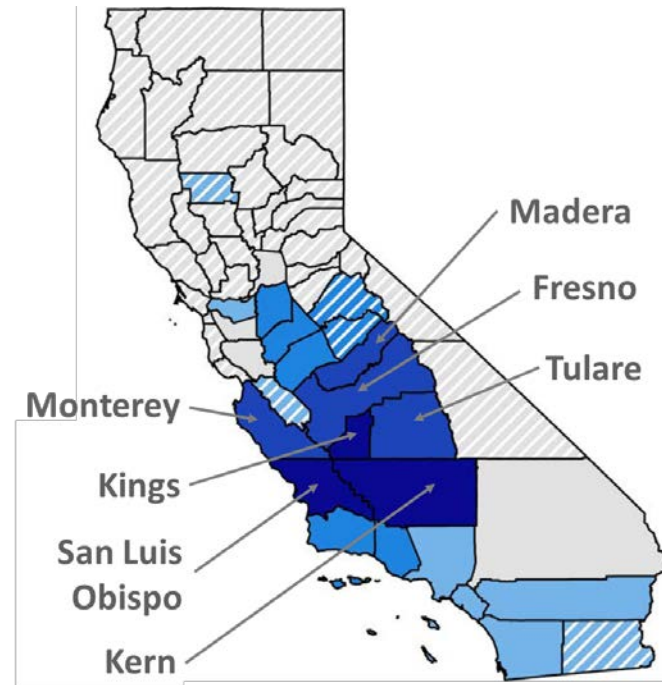
- Published studies from several decades
- Our worksite investigations
- Good industrial hygiene practice
 - Spores act like any airborne particles
 - Use proven methods to control dust



Plan ahead for Valley fever

Know if your job is in an area where the fungus is found.
Top 7 counties in 2017:

- Fresno
- Kern
- Kings
- Madera
- Monterey
- San Luis Obispo
- Tulare



Address Valley fever in your **Injury and Illness Prevention Program (IIPP)**



Multi-employer jobs

General contractors should use contract specs to:

- Highlight Valley fever risk
- Clarify roles & responsibilities for Valley fever prevention
- Ensure all employees are trained and prevention measures consistently used



Minimize soil disturbance through job design

- Avoid digging if possible
- Reduce grading
- Maintain vegetation

Wiring is installed in above-ground trays instead of below-ground trenches



Photo: First Solar, Inc.

Limit dust generation and exposure

- Wet the soil before & while digging



Uncovered spoils piles

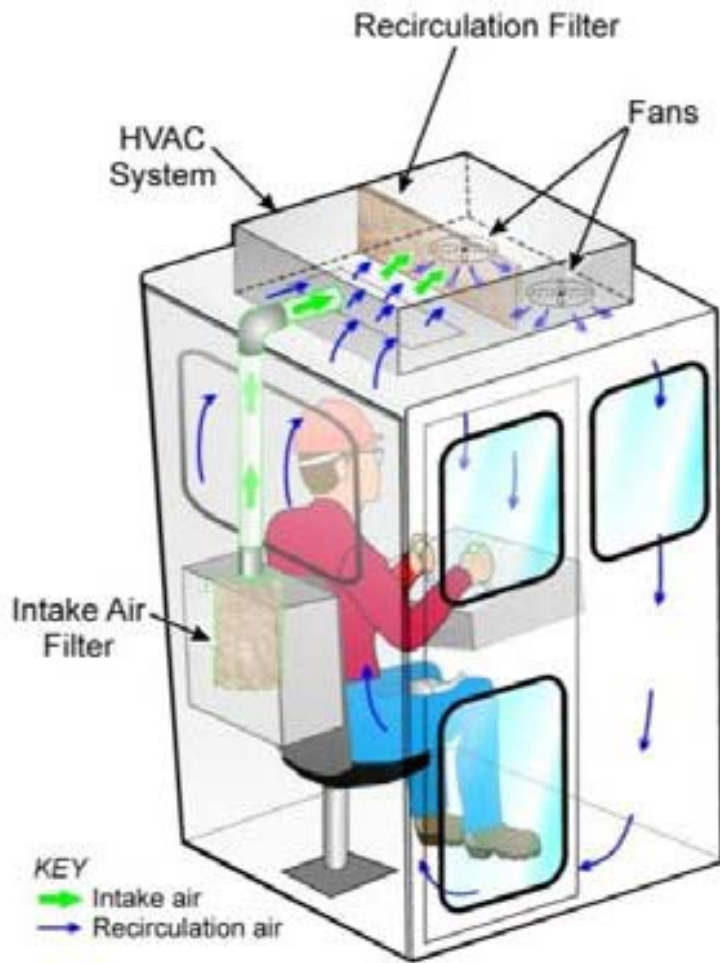
- Cover bare soil with vegetation, tarps, etc.
- Stay upwind of digging

Protect operators with enclosed cabs



- Air conditioned with HEPA air filtration
- Windows closed & 2-way radio for communication
- Wet-clean inside cabs

Maintain effective cab pressurization and filtration



- Positive pressure
 - 0.08 to 0.25 inches water gauge
- Cab integrity
 - Tight door seals, gaskets
 - Holes sealed up
- Replace clogged filters
- Provide cooling and heating

Get employees respirator-ready





Use respirators with N95 or P100 (HEPA) filters



Half-mask respirator with HEPA filters



Filtering facepiece respirator



Powered air purifying
respirator (PAPR)



Respiratory protection program

- Program coordinator
- Medical clearance
- Fit testing
- Training
- Written policy on when to use respirators
 - Disturbing soil
 - Near soil-disturbing work
 - When dust is uncontrolled



Respirator fit testing



Plan to take action when dust cannot be controlled

- Have rules for stopping work for excess dust or wind
- Monitor conditions
- Move indoors or into vehicles with HEPA-filtered A/C
- Don respirators quickly if conditions get worse





Valley fever prevention training

Train all

- supervisors
- employees
- subcontractors





Training content

- Valley fever awareness
- Symptoms
- Groups at greater risk of severe illness
- How to prevent exposure
- What to do if you have symptoms



Preventing "take-home" dust

Taking contamination offsite exposes workers & others



Wash-up station

- Provide clean area to wash up (showers if possible)
- Require change of clothing
- Provide boot cleaning stations
- Wet-clean tools and equipment

What should workers do if they're sick?

- Inform supervisors
- Get medical evaluation
 - Tell doctor about your work duties and if you think it might be Valley fever
- File workers' compensation claim





What should employers do if workers become ill?

Refer sick workers to physicians familiar with Valley fever

Track illnesses on

- Employers' Report of Occupational Injury or Illness (5020)
- OSHA 300 logs



Work-related Valley fever training and prevention resources

- Valley fever website
www.cdph.ca.gov/workrelatedvalleyfever
 - Fact sheet
 - Free online continuing education course for health care providers
- ...and more

Preventing Work-Related Coccidioidomycosis (Valley Fever)

Valley Fever is an illness that usually affects the lungs. It is caused by the fungus *Coccidioides immitis* that lives in soil in many parts of California. When soil containing the fungus is disturbed by digging, vehicles, or by the wind, the fungal spores get into the air. When people breathe the spores into their lungs, they may get Valley Fever.

Is Valley Fever a serious concern in California? YES!

Often people can be infected and not have any symptoms. In some cases, however, a serious illness can develop which can cause a previously healthy individual to miss work, have long-lasting and disabling health problems, or even result in death.

This fact sheet describes actions employers can take to prevent workers from getting Valley Fever and to respond appropriately if an employee does become ill.



➤ In October 2007, a construction crew excavated a trench for a new water pipe. Within three weeks, 10 of 12 crew members developed coccidioidomycosis (Valley Fever), an illness with pneumonia and flu-like symptoms. Seven of the 10 had abnormal chest x-rays, four had rashes, and one had an infection that had spread beyond his lungs and affected his skin. Over the next few months, the 10 ill crew members missed at least 1650 hours of work and two workers were on disability for at least five months.

FACT SHEET
HESIS

HAZARD EVALUATION SYSTEM & INFORMATION SERVICE
California Department of Public Health, Occupational Health Branch
850 Marina Bay Parkway, Building 2, 3rd Floor, Richmond, CA 94804
510-425-5757 • www.cdph.ca.gov/program/oh

English and Spanish posters

VALLEY FEVER
Coccidioidomycosis or "cocci"


**Do you work outdoors?
Have you had a cough, fever, or painful
breathing for more than two weeks?**

**REPORT SYMPTOMS TO YOUR EMPLOYER
AND SEE A DOCTOR ABOUT VALLEY FEVER**

Valley Fever is caused by a fungus that lives in soil or dirt in some areas of California. You can get it by breathing in dust where the fungus grows.

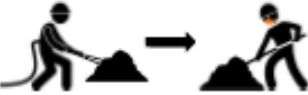
ANYONE can get Valley Fever. Even healthy people. People who work outdoors in dirt or dusty areas where the Valley Fever fungus grows may be at more risk of getting sick, especially those who do activities such as:

- Digging
- Truck driving
- Construction work
- Operating heavy machinery



If you work outdoors in such areas:

- Stay upwind of dirt disturbance
- Wet soil before digging
- Wear a respirator or
- Ask your employer about other ways to keep dust down



For more information, visit <http://bit.ly/ValleyFeverWork> or call the CDPH Workplace Hazard Helpline (866) 282-5516

FIEBRE DEL VALLE
coccidioidomycosis o "cocci"

**¿Trabaja al aire libre?
¿Ha tenido tos, fiebre o dolor al respirar
por más de dos semanas?**


**INFORME A SU EMPLEADOR SOBRE CUALQUIER SÍNTOMA
Y CONSULTE A SU DOCTOR SOBRE LA FIEBRE DEL VALLE**

La Fiebre del Valle es causada por un hongo que vive en el suelo o la tierra de ciertas zonas de California. Usted la puede contraer al respirar polvo donde crece el hongo.

CUALQUIERA puede contraer la Fiebre del Valle. Aun las personas sanas.

Las personas que trabajan al aire libre en la tierra o las zonas polvorientas donde crece el hongo de la Fiebre del Valle pueden correr mayor riesgo de infectarse, especialmente si hacen actividades como:

- Excavar
- Conducir camiones
- Trabajar en la construcción
- Operar maquinaria pesada



Si trabaja al aire libre en estas áreas:

- Manténganse alejado del viento de donde se altera la tierra
- Moje la tierra antes de excavar
- Use una mascarilla (un respirador) o
- Pregunte a su empleador sobre otras formas de reducir el polvo



Para más información, visite (en inglés): <http://bit.ly/ValleyFeverWork> o llame a la línea de ayuda de riesgos laborales (866) 282-5516

Departamento de Salud Pública de California
www.cdph.ca.gov



Cal/OSHA Valley fever web page

has important guidance

The screenshot shows the Cal/OSHA website header with the State of California Department of Industrial Relations logo and navigation menu. The main content area is titled 'Protection from Valley Fever' and includes a text box about work-related cases, a section for 'Information for Employers' with a list of regulations, and a 'What is Valley Fever?' section.

CA.GOV State of California Department of Industrial Relations

Home Labor Law Cal/OSHA - Safety & Health Workers' Comp Self-Insurance Apprenticeship Director's Office Boards

Cal/OSHA : Protection from Valley Fever

Protection from Valley Fever

Work-related cases of Valley Fever at solar installation plants in the Central Valley have drawn attention to the health risks faced by California workers whose jobs may expose them to fungal spores found in soil.

Information for Employers

- Employers have a legal responsibility to immediately report to Cal/OSHA any serious injury or illness, or death (including any due to Valley Fever) of an employee occurring in a place of employment or in connection with any employment. Employers also have responsibilities to control workers' exposure to hazardous materials.
- Applicable regulations with regard to Valley Fever protection and exposure can be found in the California Code of Regulations, Title 8, sections
 - 342 (Reporting Work-Connected Fatalities and Serious Injuries),
 - 3203 (Injury and Illness Prevention),
 - 5141 (Control of Harmful Exposures),
 - 5144 (Respiratory Protection) and
 - 14300 (Employer Records-Log 300).

What is Valley Fever?

Valley Fever is caused by a microscopic fungus known as *Coccidioides immitis* which lives in the top two to 12 inches of soil in many parts of the state. When soil is disturbed by activities such as digging, driving, or high winds, fungal spores can become airborne and potentially be inhaled by workers. Populations with more than 20 cases annually of Valley Fever per 100,000 people are

www.dir.ca.gov/dosh/valley-fever-home.html



Speaking from experience

Glenn Bugler, President, Bugler Construction



“The most important thing is to be aware of the geographic locations it’s [Valley fever is] likely to be present. If they know this, they can protect themselves and be aware of any symptoms that may show up.”



Summary

- Valley fever can be serious and cause permanent harm
- Exposure to spores in dust and soil puts workers at risk
- Valley fever is preventable
 - Plan for Valley fever ahead of jobs in endemic areas
 - Train all supervisors, employees, and subcontractors
 - Minimize soil disturbance, dust generation, and exposure
 - Stop work to increase protection when necessary
 - Get any workers with symptoms a medical evaluation



Stay in touch with OHB

- Work-related Valley fever website
www.cdph.ca.gov/workrelatedvalleyfever
- Workplace Hazard Helpline (866) 282-5516
Toll-free in California
- OHB website www.cdph.ca.gov/OHB
- Sign up for monthly e-newsletter
<http://bit.ly/SubscribeOHW>



Thank you

- Associated General Contractors of California
- Construction Employers Association
- United Contractors
- Sacramento and Shasta Regional Builders Exchanges
- California Department of Transportation
- State Building Construction & Trades Council of CA, AFL-CIO
- LIUNA - Laborers Health & Safety
- Operating Engineers Local 3
- Worksafe
- Contractors State License Board
- State Compensation Insurance Fund
- Zenith Insurance Company
- American Society of Safety Professionals – various CA chapters
- American Industrial Hygiene Association
- National Inst. of Environmental Health Sciences Worker Training Program



CDPH publications

Das et al. 2012. Occupational coccidioidomycosis in California: Outbreak investigation, respirator recommendations, and surveillance findings. *JOEM* 53, No. 6 Suppl:S38-S41.

Wilken et al. 2015. Coccidioidomycosis among workers construction solar power farms, California, USA, 2011-2014. *Emerg Inf Dis* 21(11):1997-2005.

Cooksey et al. 2017. Dust exposure and coccidioidomycosis prevention among solar farm construction workers in California. *Am J Public Health* 107(8):1296-1303.

Laws et al. August 24, 2018. Coccidioidomycosis outbreak among workers constructing a solar power farm—Monterey County, California, 2016-2017. *MMWR Morb Moral Wkly Rep* xx:xx-xx.

www.cdc.gov/mmwr/index2018.html

CDPH. 2018. Epidemiologic Summary of Coccidioidomycosis in California, 2017.

www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciEpiSummary2017.pdf



Questions & Answers