



## Exposure to Zoonotic Aerosol Transmissible Disease Hazards



July 2024

This document is neither a substitute for, nor a legal interpretation of, the occupational safety and health regulations. Readers must refer directly to title 8 of the California Code of Regulations and the Labor Code for details regarding the regulations' scopes, specifications, and exceptions, and other requirements that may apply to their operations.

Workplace safety and health information is available online at:

- General information: [www.dir.ca.gov/dosh](http://www.dir.ca.gov/dosh)
- Cal/OSHA regulations: [www.dir.ca.gov/samples/search/query.htm](http://www.dir.ca.gov/samples/search/query.htm)
- Cal/OSHA safety and health publications: [www.dir.ca.gov/dosh/puborder.asp](http://www.dir.ca.gov/dosh/puborder.asp)
- Cal/OSHA etools: [www.dir.ca.gov/dosh/etools/etools.htm](http://www.dir.ca.gov/dosh/etools/etools.htm)

Cal/OSHA Consultation Services offers free telephone, email, and onsite assistance. Find a local office online ([www.dir.ca.gov/dosh/consultation.html](http://www.dir.ca.gov/dosh/consultation.html)) or with the contact information listed in the back of this document.

Copyright © 2024 State of California, Department of Industrial Relations.  
Permission granted to display, perform, reproduce and distribute exclusively for nonprofit and educational purposes, and may not be used for any commercial purpose. All other rights reserved.

# Table of Contents

- 1 About This Publication**
- 2 Abbreviations and Acronyms Used in This Publication**
- 3 Introduction**
  - Examples of Zoonotic Aerosol Transmissible Diseases
  - Who Must Comply With Section 5199.1?
  - Do Employers Need to Comply With the Entire Regulation?
  - What Other Operations Have More Requirements?
  - Real Life Examples
- 8 Which Subsections of Section 5199.1 Apply to You?**
  - Example of How the Regulation May Apply to a Single Employer
- 10 Basic Requirements for All Covered Employers**
  - Addressing Zoonotic ATP Exposures Through the IIPP
  - Controls and Corrective Measures
- 19 Exposures to Potentially Infectious Wildlife**
  - Summary of Subsection (b) Requirements
  - Written Procedures
  - Respirator Use
- 21 Establishments Under USDA or CDFA Quarantine Orders or Movement Restrictions**
  - Summary of Subsection (c) Requirements
  - Restricted Areas
  - Disposal and Laundering of Protective Clothing and PPE
  - Sanitation
  - Medical Services
  - Training
  - Written Procedures
  - Ending the Additional Control Measures
- 25 Response Operations That Involve Animals Infected With Zoonotic ATPs**
  - Summary of Subsection (d) Requirements
  - Written Zoonotic Disease Control Procedures
  - Site Control Measures and Sanitation
  - Knowledgeable Person
  - Personal Protective Equipment and Clothing
  - Respiratory Protection
  - Heat Illness Prevention
  - Application of Toxic or Asphyxiant Gases
  - Disposal
  - Decontamination
  - Medical Services
  - Training
- 36 Recordkeeping**
- 38 Resources and URL Index**



# About This Publication

This publication is intended to assist employers in complying with the requirements of the Cal/OSHA Aerosol Transmissible Diseases – Zoonotic regulation (California Code of Regulations, title 8, section [5199.1](#)).

The regulation requires all covered employers to comply with certain basic requirements to prevent employee exposure to zoonotic aerosol transmissible pathogens in the workplace. It also contains additional requirements for higher-risk situations and certain special operations. This publication explains both the basic requirements and the additional requirements, and it also provides information to help employers to create their own written procedures that comply with the regulation.

Cal/OSHA has also created a customizable model program, available for download from the [Publications](#) webpage, to assist with development of written procedures required by the regulation.

This guide is divided into the following sections:

- The “**Introduction**” describes the basics about zoonotic aerosol transmissible diseases, the types of employers covered by section 5199.1, and the situations when the different subsections apply.
- The “**Basic Requirements for All Covered Employers**” section provides assistance in protecting employees through the injury and illness prevention program and describes the basics about different kinds of practices and control measures. This information applies to all covered employers, including those in higher-risk situations covered by subsections (b), (c), or (d).
- The “**Exposures to Potentially Infectious Wildlife**” section summarizes subsection (b) in brief bullet points and discusses the additional requirements specific to employers covered by subsection (b).
- The “**Establishments Under USDA or CDFA Quarantine Orders or Movement Restrictions**” section summarizes subsection (c) in brief bullet points and discusses some of the additional requirements specific to employers covered by subsection (c).
- The “**Response Operations That Involve Animals Infected with Zoonotic ATPs**” section summarizes subsection (d) in brief bullet points and provides more information about some of the additional requirements specific to employers covered by subsection (d).
- The “**Recordkeeping**” section outlines the recordkeeping requirements of the regulation.
- The “**Resources**” section lists the resources referenced in this publication, plus more, where employers may obtain more help on zoonotic aerosol transmissible diseases.

Note: This publication does not explain every detail of the regulation or discuss every possible zoonotic ATD to which California employees may be exposed. It is also not intended as a legal interpretation of the regulation. You must refer to the full title 8 regulation for the complete requirements.

# Abbreviations and Acronyms Used in This Publication

**ABSL-3** = animal biosafety level 3

**ATD** = aerosol transmissible disease

**ATP** = aerosol transmissible pathogen

**BMBL** = Biosafety in Microbiological and Biomedical Laboratories, 5<sup>th</sup> Edition

**CDC** = United States Centers for Disease Control and Prevention

**CDFA** = California Department of Food and Agriculture

**CDFW** = California Department of Fish and Wildlife (formerly California Department of Fish and Game)

**CDPH** = California Department of Public Health

**IDLH** = immediately dangerous to life or health

**IIPP** = Injury and Illness Prevention Program

**NIOSH** = National Institute for Occupational Safety and Health

**PLHCP** = physician or other licensed healthcare professional

**PPE** = personal protective equipment

**USDA** = United States Department of Agriculture

**USDOI** = United States Department of the Interior, or any of its agencies including the United States Fish and Wildlife Service and the United States Geological Survey

**Zoonotic ATD** = zoonotic aerosol transmissible disease

**Zoonotic ATP** = zoonotic aerosol transmissible pathogen

# Introduction

**P**eople who work with or around animals are potentially exposed to animal diseases. Some of those diseases can infect humans and cause illness. Diseases that are capable of being transmitted from animals to humans are called zoonotic diseases.

The Cal/OSHA regulation, title 8 CCR **5199.1**, Aerosol Transmissible Diseases – Zoonotic, requires employers to protect their employees from occupational exposure to zoonotic aerosol transmissible pathogens (ATPs). Zoonotic ATPs are:

- Infectious bacteria, viruses, and other microorganisms that travel through the air in tiny particles or droplets of respiratory secretions or other body fluids.
- From living or dead animals, or untreated animal parts, products, or wastes.
- Capable of causing disease in humans.

Employees can become infected with a zoonotic ATD through the following ways:

- The employee inhales the particles containing zoonotic ATP from the air.
- An infectious particle directly contacts the mucous membranes of the employee's eyes, nose, or mouth.
- The employee touches a surface contaminated with the pathogen and then touches their eyes, nose, or mouth.

Employees may become infected with a zoonotic ATD when conducting various tasks:

- Handling sick animals.
- Handling or otherwise being exposed to



---

animals that are infected but not showing symptoms.

- Collecting dead animals for disposal or other purposes.
- Handling or otherwise being exposed to animal wastes, including litter, that may contain infectious pathogens.

Note: Section **5199.1** requires control measures to protect employees against zoonotic diseases that can spread through aerosols, but some of these pathogens may also spread through other routes (e.g., direct contact with damaged skin).

Note: Zoonotic pathogens that are not transmitted by aerosols are not covered by section 5199.1, but they are covered under section **3203**, Injury and Illness Prevention Program (IIPP), and other Cal/OSHA regulations, such as sections **3362**, Sanitation; **3380**, Personal Protective Equipment; and **5193**, Bloodborne Pathogens, as applicable.



## Examples of Zoonotic Aerosol Transmissible Diseases

A few examples of zoonotic aerosol transmissible diseases (ATDs) are avian influenza (some types), hantavirus pulmonary syndrome, Q fever, histoplasmosis, psittacosis, and brucellosis.

**Zoonotic avian influenza** is spread from infected wild birds and domestic poultry to humans when people inhale or have mucous membrane contact with aerosolized bird droppings, saliva, or mucous. Symptoms in humans include fever, cough, sore throat, muscle aches, conjunctivitis, and sometimes nausea, abdominal pain, and severe respiratory distress.

Note: There are many types of avian influenza, just as there are many types of human flu viruses. Only some types of avian influenza viruses, such as H5N1, can infect and cause illness in humans.

**Hantavirus** spreads through inhalation of aerosolized dried rodent urine, feces, or saliva. Symptoms of hantavirus pulmonary syndrome include fever, headaches, muscle aches, stomach problems, dizziness, and chills. Fluid in the lungs and related shortness of breath may develop later in the course of the disease.

**Q fever** is a bacterial disease caused by *Coxiella burnetii*, which causes abortions in goats, sheep, and cattle. People become infected when they inhale aerosolized dust contaminated by the urine, feces, milk, placenta, amniotic fluid, or aborted fetuses of infected animals. Symptoms include fever; chills or sweats; nausea, vomiting, or diarrhea; weight loss; and a non-productive cough.

**Histoplasmosis** is a fungal disease spread through the aerosolization of dried bird or bat droppings. Symptoms include fever, cough, fatigue, chills, headache, body aches, and chest pain.





**Psittacosis** is a bacterial disease caused by *Chlamydia psittaci*. People become infected when they inhale the dried and aerosolized droppings or respiratory secretions of infected birds. Symptoms in humans include fever, chills, headache, muscle aches, a dry cough, and possibly pneumonia.

**Brucellosis** is a disease caused by a few different species of *Brucella* bacteria. Animal species most commonly infected with *Brucella* species of zoonotic importance include pigs, cattle, goats, sheep, bison, and elk. People can become infected by inhaling aerosols containing the bacteria or through contact of the mucous membranes of the eye, nose, or mouth with bacteria from infected animal tissues, blood, birthing membranes and fluids, aborted fetuses, and other body fluids. They may also become infected by ingesting unpasteurized milk and milk products. However, California is classified as brucellosis-free by the United States Department of Agriculture (USDA), meaning that human exposure to infected livestock is highly unlikely. Human exposure via aerosol is most likely to occur in medical diagnostic laboratories where aerosol-generating procedures are done on infected human specimens or bacterial cultures. Symptoms in humans include fever, sweating, malaise, anorexia, headache, and muscle and joint pain.

## Who Must Comply With Section 5199.1?

This regulation applies to work in the following facilities, service categories, or operations:

- Operations involving the management, capture, sampling, transportation, or disposal of wild birds or other wildlife.
- Farms producing animals or animal products, including the transport of animals and untreated animal products, byproducts, or wastes to or from farms.
- Slaughterhouses and initial processing facilities for untreated animal products, byproducts, or wastes.
- Veterinary, animal inspection, and other animal health operations.
- Importers of live animals and untreated animal products.
- Zoos, animal parks, pet stores, and other operations in which animals are displayed, transported, or housed.
- Laboratory operations involving samples, cultures, or other materials potentially containing zoonotic aerosol transmissible pathogens (zoonotic ATPs).
- Zoonotic ATP incident response operations as defined in subsection (a)(4) of the regulation.



Note: “Zoonotic ATP incident response” is defined as operations conducted to control an outbreak of an animal disease involving the destruction and/or disposal of animals infected with zoonotic ATPs and the cleanup, decontamination, and disinfection of areas and equipment associated with the infected animals or their remains.

This regulation does not apply to restaurants and facilities or portions of facilities where the sole exposure to animal products, byproducts, or wastes is from carcasses or portions of carcasses that have already passed an inspection done in accordance with USDA or CDFA regulations and been deemed fit for human consumption.

### Do Employers Need to Comply With the Entire Regulation?

It depends on the employer's operations. Section 5199.1 establishes two levels of requirements:

- **Basic.** All employers covered under this regulation must follow the requirements in subsection (a)(2)(A). They must establish procedures consistent with their injury and illness prevention program to prevent exposures to zoonotic aerosol transmissible pathogens.
- **Higher-risk situations.** Under certain circumstances, employers could also be subject to elevated risk requirements. The following operations and higher-risk situations expose employees (or the public) to a known or suspected risk from a zoonotic ATP, so employers have additional requirements:
  - **Potentially infected wildlife.** Employers must comply with subsection (b) when their employees are exposed to potentially infected wildlife when performing the following activities:
    - Capturing or sampling wildlife for the purpose of determining whether they are infected with zoonotic ATPs.
    - Collecting and disposing of wildlife for which an alert regarding the potential of zoonotic ATP infection has been issued by the CDC, CDFA, CDFW, CDPH, USDA, or USDO, and the alert is applicable to the employer's operations.
  - **USDA or CDFA order or restriction.** Workplaces or operations must comply with subsection (c) if they currently fall under a quarantine order, movement restriction, or other infection control order issued by the USDA or CDFA due to an increased risk of zoonotic ATP infection.
  - **Animals are infected.** Employers must comply with subsection (d) if they have operations involving any of these activities:
    - Handling, culling, transporting, killing, eradicating, or disposing of animals infected with zoonotic ATPs.
    - Cleaning or disinfection of areas used, or previously used, to contain such animals or their wastes.

These higher-risk situations are explained further in subsections (a)(2)(B) through (a)(2)(D) of the regulation and later in this publication. Employers with additional requirements in subsections (b), (c), or (d) must also comply with subsection (e) of 5199.1. Note that employers could fall under more than one of these subsections at the same time, depending on their operations.

If an employer's operations do not involve the higher-risk situations discussed in subsections

CDC = United States Centers for Disease Control and Prevention

CDFA = California Department of Food and Agriculture

CDFW = California Department of Fish and Wildlife

CDPH = California Department of Public Health

USDA = United States Department of Agriculture

USDO = United States Department of the Interior, or any of its agencies including the United States Fish and Wildlife Service and the United States Geological Survey

(a)(2)(B) through (a)(2)(D) of the regulation, the employer is not required to maintain the additional procedures. If an employer's operations may sometimes involve these higher-risk situations, the employer must establish the appropriate procedures so that when the time comes, they will be ready.

## What Other Operations Have More Requirements?

Cal/OSHA regulations require additional control measures for:

- Laboratories that handle zoonotic ATPs.
- Vertebrate animal research facilities.
- Certain hazardous waste and emergency response operations.

These employers are discussed below and in subsections (a)(2)(E) through (a)(2)(G) of the regulation.

### Laboratories

Employers with laboratory operations that involve samples, cultures, or other materials that potentially contain zoonotic ATPs must comply with subsection (f) of 8 CCR **5199**, Aerosol Transmissible Diseases, including establishing and implementing a biosafety plan. An employer may make their biosafety plan a part of their IIPP or keep it separate. If the same employer also has operations that meet the criteria in section 5199.1 subsections (a)(2)(B) through (a)(2)(D), then the employer must comply with those subsections. If none of those criteria applies, then the employer does not need to implement those requirements.

### Vertebrate Animal Research Facilities

Vertebrate animal research facilities must implement control procedures consistent with **Biosafety in Microbiological Laboratories, 5th Edition** (BMBL) and also comply with subsection (e) for recordkeeping. This includes conducting a risk assessment, documenting that assessment, and adopting appropriate control measures. If the

employer's risk assessment determines that they are required to use safety precautions of ABSL-3 (Animal Biosafety Level 3) or higher, then the employer must also comply with subsection (d).

## Hazardous Waste Operations and Emergency Response (HAZWOPER)

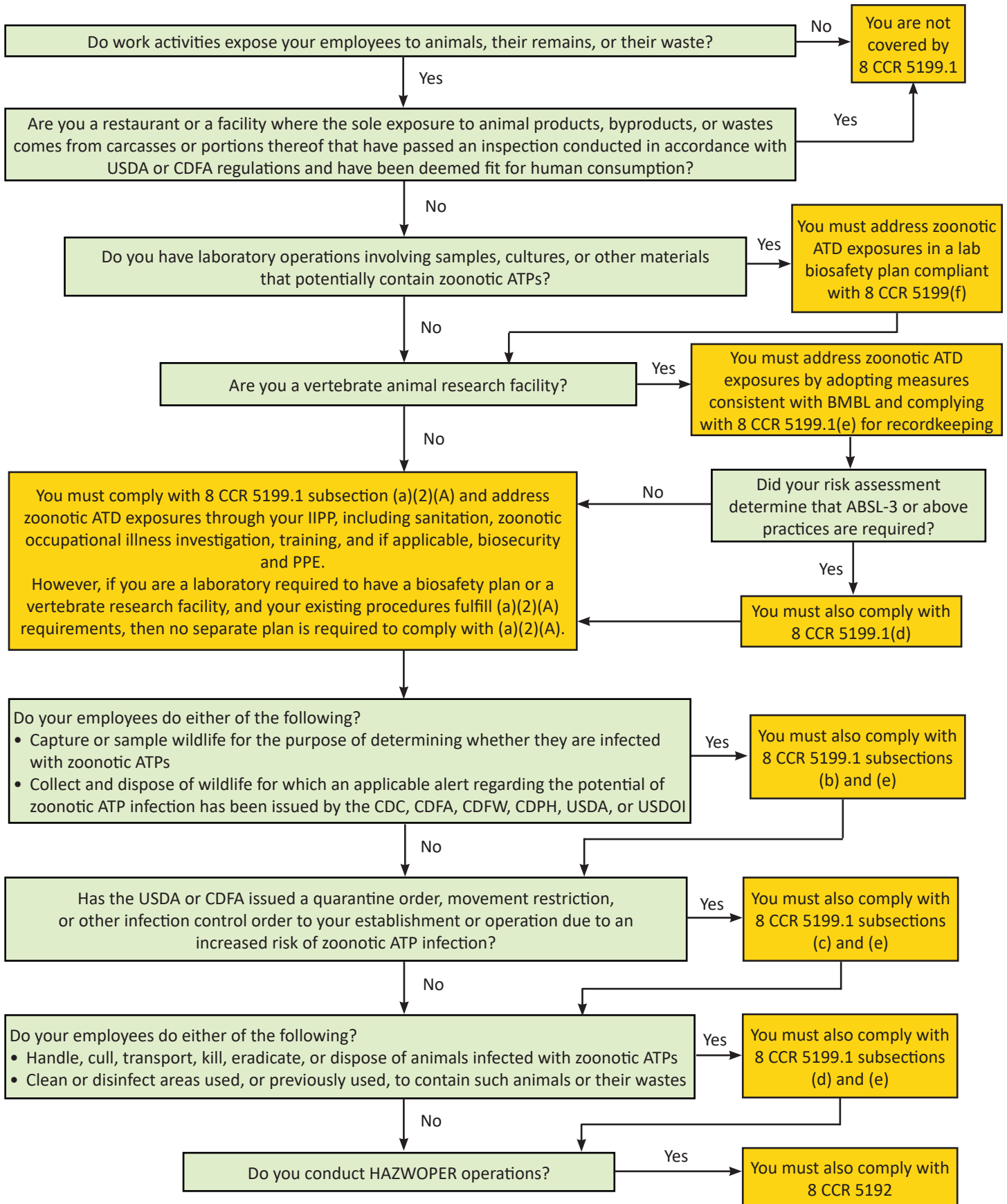
Employers with employees conducting Hazardous Waste Operations and Emergency Response (HAZWOPER) operations must comply with section **5192** and also address any zoonotic ATD hazards in their IIPP.

### Real Life Examples

In 2017, employees working for a rendering plant in California's Bay Area contracted Q fever while performing their duties. They traveled to farms, butcher shops, and slaughterhouses and collected animal carcasses and byproducts by tossing them into a truck and taking them to the rendering plant. Once at the rendering plant, the employees dumped the carcasses onto a screw conveyor and used a hose to rinse the truck with water. Every step of this process generated potentially infectious aerosols, but the employer did not provide any controls or respiratory protection to the employees. Approximately two weeks later, one of the employees became seriously ill with Q fever and was hospitalized for four days.

Also in 2017, a parks and recreation employee became infected with hantavirus while searching for artifacts in several unoccupied buildings at a state park. These buildings had not been cleaned and disinfected, and the employee did not use respiratory protection. The process of disturbing objects and dust in the buildings exposed the employee to hantavirus, which was a potential hazard due to deer mice living in the area. The employee was hospitalized and placed in an induced coma.

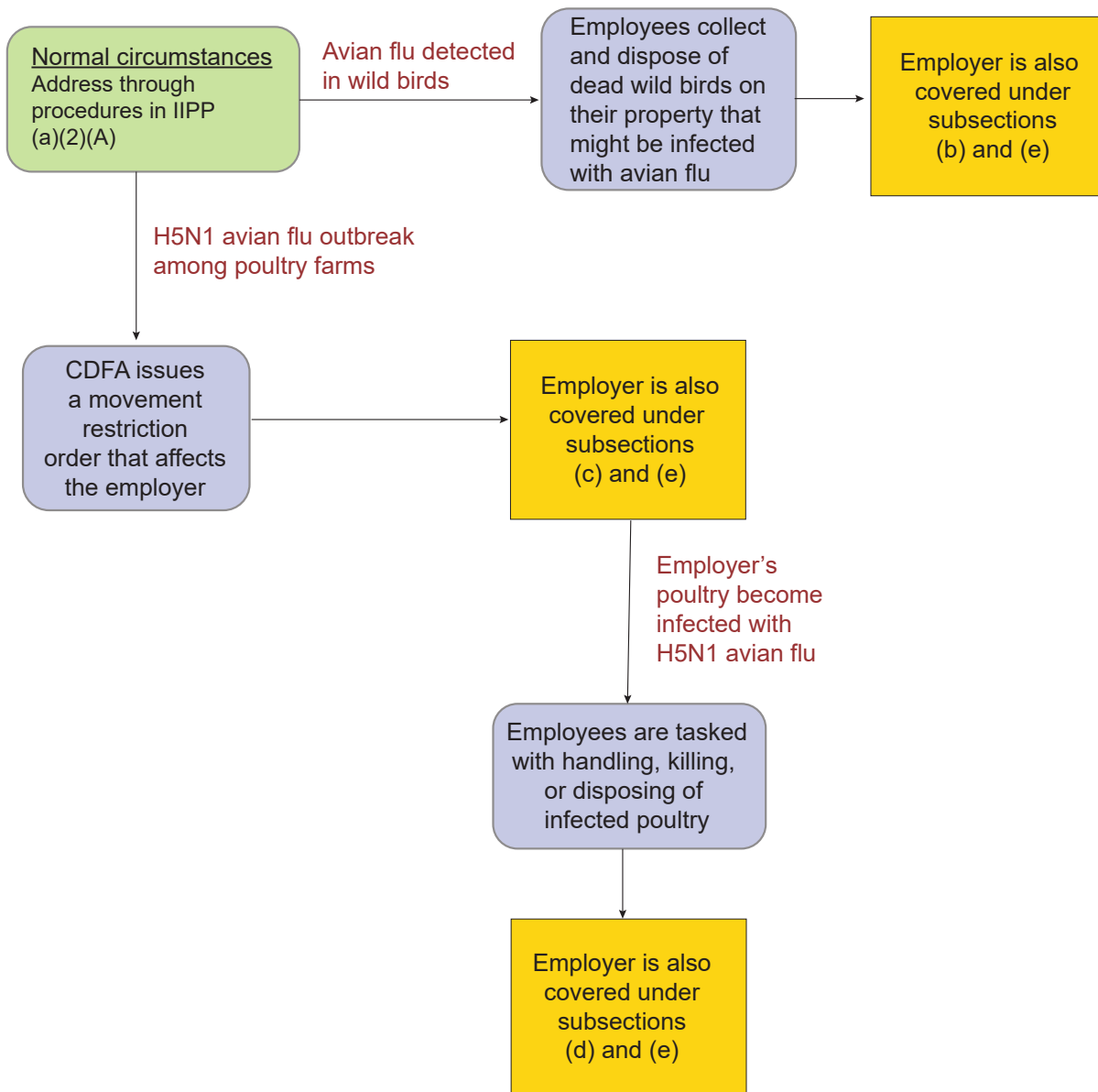
# Which Subsections of Section 5199.1 Apply to You?



## Example of How the Regulation May Apply to a Single Employer

To illustrate how requirements may differ under different circumstances, even for the same employer, here is a hypothetical example. A poultry farmer would normally be covered only under subsection (a)(2)(A). However, if an outbreak of H5N1 avian flu occurs and the CDFA issues a movement restriction covering birds, the same poultry farmer will, at that point, be covered under subsections (c) and (e) as well. In addition, if the employer's flock becomes infected with H5N1 avian flu and birds die, employees may start to handle and dispose of infected animals. At that point, the same employer would also be covered under subsections (d) and (e).

The following flowchart illustrates this example.



If all conditions exist at the same time, the employer is covered under (a), (b) (c), (d), and (e) at the same time.

# Basic Requirements for All Covered Employers

**S**ubsection (a)(2)(A) of section **5199.1** requires all covered employers to prevent exposures to zoonotic ATD hazards through procedures consistent with their injury and illness prevention program (IIPP). The procedures may be contained in the IIPP or in a separate document.

The written procedures must describe how the employer will protect employees from exposures to zoonotic ATPs from animals and contaminated materials. These written procedures must include:

- Sanitation
- Investigation of occupational injuries and illnesses
- Training, which must:
  - cover the employer's exposure control procedures required by subsection (a)(2)(A) and
  - be appropriate in content and vocabulary for the education level, literary, and language of employees.

Procedures must also include the following if necessary to prevent a specific exposure:

- Use of personal protective equipment (PPE)
- Biosecurity

Employers must provide all safeguards at no cost to employees, including PPE, respirators, training, and medical services. Training and medical services must be provided during work hours.



Laboratories must have their designated biosafety officer perform a risk assessment and implement a written biosafety plan, as required under 8 CCR **5199**(f). The employer may address all the requirements of section 5199.1(a)(2)(A) in their biosafety plan, but if they do not, then they must maintain those procedures in writing elsewhere.

Similarly, vertebrate animal research facilities are only required to maintain separate procedures to address subsection (a)(2)(A) requirements if their existing control measures, consistent with the BMBL, do not already do so.

## Addressing Zoonotic ATP Exposures Through the IIPP

There are a variety of approaches to addressing zoonotic ATP exposures through the IIPP. Employers may refer to [Cal/OSHA's Guide to Developing Your Workplace Injury and Illness Prevention Program](#) and think about its recommendations in the context of zoonotic ATP hazards. Alternatively, employers may go through each of the eight IIPP elements and think about how each would apply to controlling exposures to zoonotic ATPs.

These are the eight elements that must be included in any written IIPP:

- Person responsible for implementing the program.
- System for ensuring that employees comply with the employer's health and safety rules.
- System for communicating between employees and employer regarding health and safety.
- Procedures for identifying and evaluating hazards, including inspections.
- Procedures for investigating occupational injuries and illnesses.
- Procedures for correcting deficiencies or issues found during inspections and investigations.
- Procedures for training employees on health and safety.

- Procedures to provide employees and their representatives with access to the written IIPP.

When writing their procedures, employers are not required to divide them neatly into the eight IIPP elements. Employers may use any approach that makes sense to them.

Whatever approach the employer chooses, they should begin by conducting a hazard assessment to determine what protective measures are necessary based on the following:

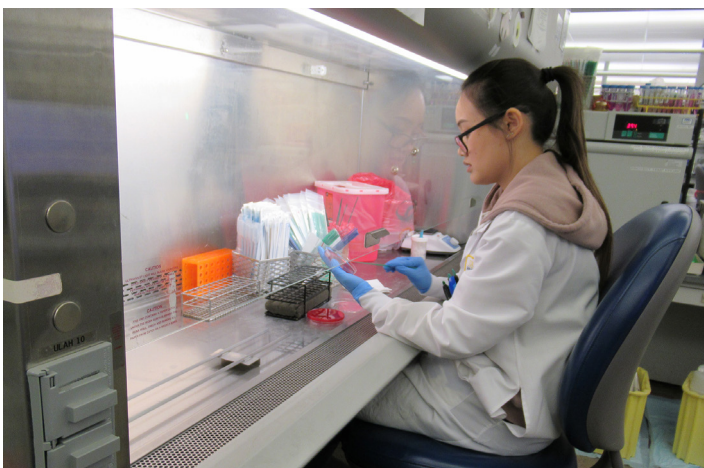
- Animal species involved in the employer's operations or that their employees may encounter while working.
- Zoonotic diseases that are recognized risks (infections the animals could have and how the disease may be transmitted to humans, i.e., the route[s] of transmission).
- Job tasks that may expose employees to ATDs.
- Locations where such exposures could occur.

The employer should list these exposure characteristics in their written procedures.

Where employees work with a variety of animals, such as at zoos and veterinary clinics, the employer must consider zoonotic ATDs potentially carried by all the different species. Different employees may have different exposures, depending on their job tasks.

Different job tasks that may expose employees to zoonotic ATDs: (left) providing care to a bird; (right) employees may be tasked with removing a bird nest from a power pole such as this one





Laboratory employees working with samples, cultures, or other materials that potentially contain zoonotic ATPs may be exposed when conducting procedures that can aerosolize pathogens. Examples of such procedures are centrifuging, inoculating media with cultures, staining slides, and dividing samples for multiple assays. Laboratory controls need to address the specific exposures present.

The employer must consider all routes of exposure when determining the controls they will need to protect employees. Employees may become exposed to infectious aerosols when they directly handle animals, but they may also be exposed when the animal is not present. For example, this can happen through touching a contaminated surface with their hands and rubbing their eyes, or aerosolizing dried urine or feces and breathing in the infectious aerosols.

For assistance in determining the zoonotic ATDs that may be of concern at their workplace, employers may refer to the Centers for Disease Control and Prevention (CDC) webpage [Facts About Diseases That Can Spread Between Animals and People](#). The webpage contains a list of zoonotic diseases and information about them, including how they spread and who may be at risk of exposure.

## Controls and Corrective Measures

Employers must implement controls and corrective measures to minimize potential zoonotic ATD exposures to employees. This may include changing tools or modifying the way that a task is conducted. It may also involve providing PPE, including respiratory protection, if other controls are not adequate or feasible. See below for how these different kinds of protective measures can be used to protect employees against zoonotic ATDs.

### Safe Work Practices

Safe work practices are methods of performing a task to minimize employee exposures to zoonotic ATPs. Work practices may include procedures like wetting down the area when cleaning up bird droppings to prevent any dried material from getting into the air.

For example, if disposing of a dead animal, such as a mouse or a bird, spray the animal with an appropriate disinfectant, allow it to sit and soak for the required contact time, bag the animal using the inverted bag technique, and wipe up



Wet the bird droppings before cleaning or use a wet cleaning tool, such as a damp sponge or mop, to keep down potentially infectious dust. Also wear appropriate personal protective equipment (PPE).







Use safe work practices when disposing of a dead animal.

the area with paper towels. The most appropriate disposal method may depend on the pathogen of concern. Employers should contact their local waste management, rendering companies, or animal control for disposal options because this is subject to local regulations.

However, under certain circumstances, it is better not to touch or handle the dead animal:

- If circumstances are unusual.
- Multiple animals or species are affected.
- The animal is a threatened or endangered species.

Such cases should be reported to the California Department of Fish and Wildlife (CDFW), as they may want to test the carcass. The CDFW accepts such reports on their [Wildlife Mortality Reporting](#) webpage.

For more information on how to properly dispose of a dead animal, see the CDFW webpage [Protocols for Safe Handling and Disposal of Carcasses](#). Information on disposal of larger animals, such as cattle, is on the [Cal EPA Emergency Animal Disposal Guidance](#) webpage.

## Engineering Controls

Employers must also use engineering controls, if feasible. For example, they could install screens on barns to prevent infected wildlife from entering. Vertebrate animal research facilities could use ventilation equipment to remove pathogens from employee areas. Veterinary clinics could use ventilation equipment when working with potentially infected animals. Depending on the procedure and other equipment used, this could be an “elephant trunk”-style local exhaust ventilation or an enclosed ventilated cabinet with built-in gloves, for example.

## Respiratory Protection

Because zoonotic ATDs can be transmitted through inhalation, respirators are required in certain situations, including the high-risk situations covered by section [5199.1](#) subsections (b), (c), or (d). However, employers not covered under those subsections may still require their employees with certain exposures to wear respirators, as long as they comply with section [5144](#).

Employers must select respirators based on the infectious disease hazard; the setting; degree of exposure; the task being performed; whether there are other respiratory hazards, such as chemical vapors; and whether the operations are high-risk. For the high-risk situations, the minimum respiratory protection requirements are discussed in their respective parts of this publication.

Appropriate respirators must either filter out infectious particles or supply clean breathing air to employees. Particulate respirators may be:

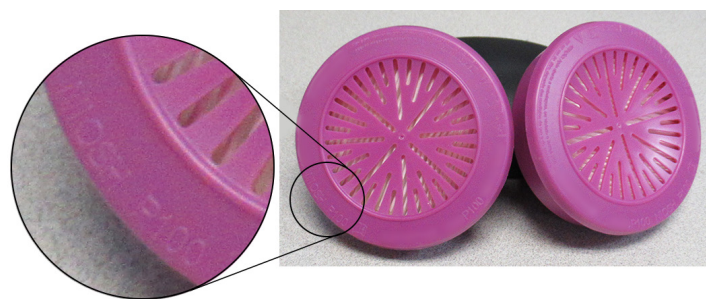
- Filtering facepieces, where the entire mask is the filtering material.
- Half- or full-face respirators with changeable filters and cartridges.
- Powered air-purifying respirators (PAPRs), which draw air through a filter worn on the belt and a hose leading to a tight-fitting mask or loose-fitting hood.

Filters must be NIOSH-certified and adequate for the particular work conditions. Filters that collect aerosol particles with an efficiency of at least 95% of are given a designation of “95.” Those that collect 99.97% of aerosol particles receive a “100.” Filters are also rated for their resistance to oil. The letter “P” indicates that the filter is suitable for use in an atmosphere containing oil mist (“oil-proof”), while “R” indicates that the filter may be used for short durations in such atmospheres (“oil-resistant”). “N” filters are not suitable for such atmospheres.

NIOSH-certified filtering facepiece respirators (and filters for half- and full-face respirators) have “NIOSH” and the filtration efficiency rating (e.g., N95, P100) printed on them.

N95 is the minimum level of filtration required against zoonotic ATPs, but certain conditions may require other filters (i.e., N100, R95, P95, and P100). For instance, when protection is also needed against gas or vapor hazards, employers must provide either combination cartridges or separate particulate and gas/vapor cartridges that can be screwed together for simultaneous use. If eye or face protection is also needed, full-face respirators and PAPRs may be recommended since that protection is built in.

A full-face respirator, which includes eye and face protection



Close-up of the NIOSH efficiency rating on a P100 cartridge

In addition, filtering facepiece respirators are not recommended for wet locations.

Regular dust masks that do not have a NIOSH certification (such as those with a single strap or ear loops) are not adequate in situations requiring respiratory protection.

If the employer determines that respirators are required, then provision and use must be in accordance with section [5144](#). This requires implementing a written respiratory protection program including respirator selection, medical evaluations, fit testing, and training on proper use and limitations of the respirator. For more information on implementing a respiratory protection program, refer to section [5144](#), Respiratory Protection, and Cal/OSHA’s [Respiratory Protection in the Workplace](#) publication.

For information on respiratory protection requirements specific to the higher-risk situations covered by subsections (b), (c), or (d), please refer to the appropriate section of this guide.

### Personal Protective Equipment and Clothing

Any use of personal protective equipment (PPE) and clothing must comply with title 8 sections [3380 through 3387](#). This includes assessing PPE needs to determine what is necessary to protect their employees under the specific circumstances of their operation—including exposures to the zoonotic ATPs and any other

relevant hazards—and certifying that in writing. It also includes training employees on proper PPE use. The employer must also pay for the PPE and protective clothing and for their cleaning and disposal.

Depending on the circumstances and zoonotic ATP exposures, employers may need to provide:

- Coveralls
- Aprons
- Gloves
- Head covering
- Shoe covers
- Eye protection

Eye protection should be provided if there is concern for disease transmission through the eye and mucous membranes.

PPE must be reasonably comfortable and must not prevent the employee from moving as necessary to perform their work. Protective clothing should be provided in appropriate sizes for proper fit. Otherwise:

- Employees may not wear it.
- The PPE may cause accidents or injuries.
- Employees may try to alter the PPE to fit but end up causing it to be ineffective.

If PPE becomes damaged, the employer must have a method of repairing or replacing it.

Gloves in different sizes. Provide PPE in sizes based on the needs of your worker population.



One employee helps another put on PAPR, disposable coveralls, and gloves. Photo: Centers for Disease Control and Prevention

The PPE and protective clothing must also be cleaned when necessary to ensure they continue to protect employees and do not pose a hazard themselves. This is especially important for eye and face protection because many zoonotic ATPs can be transmitted through contact with the eye, nose, or mouth. PPE and protective clothing must also be capable of being decontaminated and disposed of in accordance with the employer's control measures.

Employers must also consider other safety issues. For example, aprons that have ties may not be appropriate for employees who work near machinery with moving or rotating parts because they may become entangled in the machinery. In these cases, full coveralls may be appropriate.

In addition, if using latex liner gloves underneath rubber outer gloves is too uncomfortable for employees to wear due to sweat accumulation, the employer may switch to cotton liner gloves instead.

Similarly, cotton coveralls may be preferable to impermeable disposable suits in hot environments or over long periods of time. However, make sure any contaminated fluids and aerosols cannot penetrate and reach the employee's skin if that is a concern. Clothing

should be lightweight to prevent heat illness. However, this also means that employees should periodically check their suits for tears or holes throughout the shift.

Whatever PPE or protective clothing is chosen, it must be effective at performing its primary function of preventing hazardous substances from reaching employees' skin, clothing, and mucous membranes.

If employees wear multiple pieces of PPE, train employees on removing PPE in the proper order. Otherwise, contaminants may transfer from the protective clothing to the employee's skin and mucous membranes.

1. Remove apron, if worn.
2. Remove shoe covers.
3. Remove coveralls and head covering
4. Remove gloves.
5. Wash hands.
6. Remove eye protection.
7. Remove respirator.
8. Wash hands again.

### Eye Protection

If eye protection is required from splashes, sprays, and respiratory droplets, indirectly vented goggles with anti-fog coating are the best option. Many styles of goggles fit over prescription glasses, but for better protection, goggles must fit snugly, particularly from the corners of the eye across the brow.

Goggles only protect the user's eyes, so if protection is required from splash or spray to other parts of the face, then a face shield should also be worn.

When respiratory protection is also needed, the following are the best options because they include built-in eye protection:

Employers must consider other safety hazards, such as:

- Entanglement hazards
- Heat illness
- Skin issues from possible sweat accumulation



- Full-face respirator.
- Powered air-purifying respirator (PAPR) with a loose-fitting hood.

Some goggles can alter the fit of a half-face respirator. To ensure that the eye protection does not interfere with a respirator facepiece seal, it should be worn during the respirator fit test and when workers conduct seal checks each time they put on the respirator.

Employees should remove eye protection carefully to prevent contaminated equipment from contacting their eyes, nose, or mouth.

### Sanitation and Biosecurity

Employers must maintain a clean, sanitary workplace and describe their sanitation procedures in writing. This includes ensuring that employees have access to sanitation facilities, such as handwashing facilities or showers, as appropriate. In addition, employees who handle animals should not eat or drink in animal handling areas. They should also wash their hands before eating, drinking, taking a break, or leaving at the end of a shift.

Disinfection must be performed on equipment, protective clothing, respirators, and surfaces that may have become contaminated with animal material such as respiratory secretions, fecal matter, or blood. Employers must use disinfectant products that are registered with the [EPA](#). These products will have an EPA registration number printed on the label. Because disinfectants degrade over time, employers must follow the manufacturer's directions for testing or replacing the disinfectant to ensure effectiveness.

Biosecurity procedures are additional measures to reduce the risk of transmission of disease agents via a person, animal, or material both within the facility and between different facilities. Normally, activities such as incidental removal of animal carcasses or waste only require basic sanitation measures, but if they may introduce pathogens into areas where animals are housed, then employers must also use biosecurity procedures.

Examples of biosecurity measures include:

- Confining animals to certain areas.
- Using boot washes or shoe coverings when entering barns.
- Providing change rooms and requiring the use of showers to enter and exit animal areas.
- Controlling traffic into, out of, and within the facility.
- Installing screens on barns and other animal areas to prevent entrance of wild birds or rodents that may spread disease.

Creating these procedures ahead of time eliminates the panic and rush to create them when an outbreak occurs. It also allows employees to implement the appropriate biosecurity measures without delay. For more information about biosecurity, please see the [CDFA's Biosecurity web page](#).

## Communication

Depending on the operations, the employer may need to consider various methods for communication regarding zoonotic ATDs (e.g., emails, posters, bulletins, signs). For example, they may post signs at entrances to areas where wild animals—and therefore zoonotic ATPs—may be encountered, or they may have staff meetings to discuss where they may encounter zoonotic ATPs. Communication may be either verbal or written, but in any case, it must be in a language



readily understandable to all affected employees.

Zoonotic ATP infection and disease outbreaks are often unexpected and can develop quickly. Because regular communication methods may not be sufficient in an outbreak situation, employers should consider developing ahead of time a clear means for rapid two-way communication between management and employees about new hazards.

## Illness Investigations

Under their IIPP, employers are required to have procedures for investigating occupational illnesses. This includes occupationally acquired zoonotic ATDs. However, procedures for investigating zoonotic ATP exposures and correcting identified hazards may include additional considerations.

For example, the time period to be covered by the investigation depends on the incubation period for the disease in question (also called a latency period). The incubation period is the time between exposure to the zoonotic ATP and when the employee begins to show signs and symptoms of disease. Incubation periods can be hours, days, or weeks after exposure and will vary by infectious agent. It may also vary slightly from person to person for the same infectious agent.

Because of this, employers should be aware that the employee who showed symptoms first may not be the first employee exposed to the zoonotic ATP. The employer should investigate the conditions associated with the illness to determine whether other employees have been or are still being exposed and whether additional control measures are necessary.

The investigation should also include interviewing the affected employee and any other employees who were present at the time of zoonotic ATP exposure. If the employer's normal work procedures include having employees write logs or reports of their job activities for the day, these should also be reviewed. If possible, the site

where the exposure occurred should be visited and inspected.

An employee who shows signs of, or reports symptoms consistent with, a zoonotic disease should be sent to a knowledgeable physician or other licensed healthcare professional.

### Training

The employer's protective measures and equipment will only be effective if employees are trained to use them. Training must cover all the employer's exposure control procedures. This should include:

- Potential zoonotic ATD hazards that employees may be exposed to.
- The job tasks that may expose them to these hazards.
- How to recognize signs of animal disease, such as an increase in the number of animal deaths and changes in their eating patterns.
- The safety equipment that the employer provides to protect employees from the zoonotic ATD hazards, including control measures, PPE, and respiratory protective equipment.

- Work practices that employees can use to protect themselves, such as frequent handwashing, decontamination procedures, and other sanitation procedures.
- The employer's occupational injury and illness investigation procedures.
- Employer's biosecurity procedures, if applicable.
- Employer's medical services program, including surveillance, vaccinations, prophylaxis, and heat illness prevention, if applicable.

Training must be provided at no cost to employees during work hours. In addition, training must be appropriate in content and vocabulary for the education level, literacy, and language of employees.

# Exposures to Potentially Infectious Wildlife

The first category of higher-risk situations is occupational exposure to wildlife while conducting one or both of the following tasks:

- Capturing or sampling wildlife for the purpose of determining whether they are infected with zoonotic ATPs.
- Collecting and disposing of wildlife for which an alert regarding the potential of zoonotic ATP infection has been issued by the CDC, CDFA, CDFW, CDPH, USDA, or USDOJ.



A deer mouse, which may carry hantavirus

Note: An “alert” is a public announcement or notification issued by a local health officer or a California (CDFA, CDFW, CDPH) or federal (CDC, USDA, USDOJ) agency regarding a detected zoonotic ATP hazard.

If any of an employer’s employees performs any of the above tasks, then the employer is required to comply with subsections (b) and (e) of section 5199.1. If none of their employees performs any of these tasks, the employer is not required to comply with subsection (b). They may still be required to comply with subsection (e) if they are in either of the other higher-risk situations that are discussed later in this guide.

Depending on employee job duties, examples of employers in this category are certain state parks and vector control districts. But some employers may be in this category even if their employees’ job tasks do not specifically involve animals.

For example, removal of wildlife or associated debris falls into this category when the wildlife, nests, or debris are the subject of an alert from a designated agency. An example of such a task is removal of nests from power lines by utility workers. If no alert from a designated agency applies at the time of the work, the utility company would instead fall under subsection (a) (2)(A) and must, therefore, cover employees with procedures through their written IIPP.

Note: The definition of “wildlife” in this regulation includes the animal, their remains, and their wastes.

## Summary of Subsection (b) Requirements

- Written procedures
- Respirator use in certain circumstances

Please see the “**Basic Requirements for All Covered Employers**” section of this publication for general information about different control measures, including protective clothing and PPE, respiratory protection, sanitation, and training. See below for requirements specific to employers covered under subsection (b). Please also refer to section **5199.1** for complete requirements.

## Written Procedures

Employers must prepare written procedures to protect employees during the period when they conduct the tasks covered under subsection (b). These procedures must be available at the worksite where covered operations occur.

These procedures must include all of the following:

1. Work procedures that minimize production of aerosols
2. PPE to minimize contact (e.g., gloves)
3. Cleaning and decontamination procedures (e.g., handwashing, use of disinfectants)
4. Medical services as recommended by the CDC, CDPH, or local health officer
5. Training

The employer must develop the procedures based on specific animal exposures and job tasks their employees have that could generate infectious aerosols.

## Respirator Use

The employer’s written procedures must include provision and use of a respirator at least as effective as an N95 filtering facepiece respirator, in accordance with section **5144**, when any of the following conditions exists:

- There is increased potential of exposure to infectious aerosols, such as when handling animals in an enclosed or indoor area.
- When employees respond to a mortality event involving a significant number of animals.
- There are animal-related dusts in the environment that are reasonably likely to be an aerosol infection hazard to employees.

Regarding animal-related dusts, the employer must determine whether the dust in the environment is reasonably likely to be an aerosol infection hazard to employees, such as when it is breezy. When making this determination, the employer should take into account the effectiveness of any dust control measures and natural or mechanical ventilation. If control measures and ventilation are adequate to control the hazard, then respiratory protection is not required.



# Establishments Under USDA or CDFA Quarantine Orders or Movement Restrictions

The United States Department of Agriculture (USDA) and the California Department of Food and Agriculture (CDFA) conduct poultry and livestock health surveillance. In the event of a disease outbreak in animals, these agencies may issue quarantine orders or movement restrictions to prevent the spread of diseases. Orders may be based on detection of an infection on the employer's premises, the employer's proximity to an infected site, or the employer's contact with another establishment that has been identified as infected.



The second category of higher-risk situations involves such orders and restrictions. An employer must take additional protective measures if:

- the USDA or CDFA issues a quarantine order, movement restriction, or other infection control order that applies to the employer, and
- that order involves a zoonotic ATP.

An employer in this higher-risk situation must comply with subsections (c) and (e) of the zoonotic ATP regulation. Employers that are not in this higher-risk situation do not need to comply with subsection (c). However, they may still need to comply with subsection (e) if they are in either of the other higher-risk situations discussed elsewhere in this guide.

This subsection could apply to poultry or egg producers, farms, dairies, slaughterhouses, and other operations.

The requirements of subsection (c) are designed to protect employees during the disease's incubation period when infected animals may not show symptoms, during the period when the disease has only infected a few animals and has not become widespread in the establishment yet, or during a period where a disease outbreak is still being investigated.



## Summary of Subsection (c) Requirements

- Written procedures for zoonotic ATD control.
- Restricted access to areas where exposure to potentially infected animals or their waste may occur.
  - Signs posted in all languages necessary so all employees in the vicinity can understand.
- Protections for employees working in the restricted area:
  - Supervisor who is knowledgeable in the employer's zoonotic disease control procedures.
  - Protective clothing and equipment.
    - Protective clothing, head coverings, gloves, foot covers.
    - Eye, nose, and mouth protection where the disease may be transmitted by contact with eyes or mucous membranes.
    - Disposal or laundering of the PPE and equipment.
  - Respiratory protection in enclosed areas where aerosols from potentially infectious animals or animal wastes are present.
    - Usage in accordance with section 5144.
  - Sanitary facilities, change rooms, shower rooms, and drinking water and access to them.
  - Medical services, including surveillance, vaccinations, and prophylaxis recommended by the Centers for Disease Control and Prevention (CDC), California Department of Public Health (CDPH), or local health officer.
  - Training.
  - Record of persons who enter the restricted area.



Please see the “**Basic Requirements for All Covered Employers**” section of this publication for general information about some of the required control measures, including protective clothing and PPE, respiratory protection, sanitation, and training.

Continue reading for information specific to employers covered under subsection (c). Please also refer to section **5199.1** for complete requirements.

## Restricted Areas

Employers in these higher-risk situations are required to identify areas of their facility where occupational exposure to potentially infectious animals may occur. They must post signs at all the entrances to these areas identifying them as restricted areas. These signs must be in all languages necessary to ensure that all employees who may be in the vicinity will understand.

The only people entering a restricted area should be those who have a need to enter. If fewer people enter a restricted area, then fewer people will be exposed to potentially infectious animals and materials. The employer is responsible for ensuring that anyone who enters a restricted area is provided protections specified in subsection (c), summarized in the list above.

The employer must establish procedures for recording the entry of all persons into the restricted area. Records should include the person's first and last name and the date and time of entry. These records must be maintained and made available in accordance with subsection (e).

## Disposal and Laundering of Protective Clothing and PPE

Disposal and laundering of clothing and PPE must be provided in a way that does not further expose employees to potentially infectious materials.

Laundry must be handled in accordance with section **5193(d)(3)(J)**. Required practices include properly bagging and handling contaminated laundry, labeling the laundry bags with the biohazard symbol, and informing off-site laundry facilities of the hazard.

## Sanitation

Sanitary facilities must meet the requirements of title 8 sections **3360 through 3368**.

Change rooms and showers are necessary because many pathogens can infect when they are transmitted from a person's skin or clothing to their eyes, nose, mouth, or other mucous membranes. Portable showers with portable enclosures like those used for asbestos abatement work would be feasible in most situations.

Exception: Where change rooms and shower rooms are not feasible, the employer must implement alternative but equally effective procedures. To claim the exception, the employer must be able to demonstrate that the required change rooms and shower facilities are not feasible in their circumstances. When implementing alternative measures, employers must do so in a way that does not pose additional hazards.

## Medical Services

In California, the local health department, CDPH, and CDC make recommendations for medical surveillance, vaccinations, and prophylaxis for employees exposed to infected animals and contaminated areas during zoonotic disease outbreaks.

The local health department response may include monitoring all exposed employees for symptoms over time. This is one reason the employer must keep an accurate list of employees who enter the restricted area.

The employer must make all the recommended medical services available to employees at no cost, during the employee's work hours.

## Training

The employer must provide training that is appropriate in content and vocabulary for the educational level, literacy, and language of employees.

Training topics must include:

- The nature of the zoonotic disease hazard.
- The employer's control measures.
- The use of personal protective equipment and respiratory protective equipment.
- Decontamination procedures.
- The employer's medical services program, including recommended surveillance, evaluations, vaccinations, and prophylaxis.
- Heat illness prevention.

Note that if the employer has outdoor operations, then they must establish and implement a heat illness prevention program that complies with section **3395**, Heat Illness Prevention. That regulation requires employers to provide drinking water and shade in addition to training for outdoor employees and their supervisors.

Also note that if employees work indoors and the indoor temperature or heat index reaches 82°F, then the employer is required to establish

and implement an indoor heat illness prevention program. This program must comply with section **3396**, Heat Illness Prevention in Indoor Places of Employment. That regulation also requires employers to provide drinking water, cool-down areas, and training. Employers covered under the Indoor Heat regulation are additionally required to provide protections when employees wear clothing that prevent the body from cooling down. This likely includes the protective clothing worn in restricted areas.

For help with developing their heat illness prevention program, employers can refer to [Cal/OSHA's heat illness webpage](#) and [Model Heat Illness Prevention Plan](#).

### Written Procedures

Employers covered by subsection (c) must establish, implement, and maintain effective written zoonotic disease control procedures, which must be available onsite at all times when employees are present. Procedures must include all the elements required in subsection (c), listed in the summary above.

### Ending the Additional Control Measures

An employer is no longer required to comply with subsection (c) if the quarantine order, movement restriction, or other infection control order is lifted.

Additionally, even if the quarantine or movement restriction remains in effect, the employer may be allowed to stop using the additional control measures, depending on testing. The additional control measures would no longer be required if the employer has testing conducted on their establishment and the testing meets both of the following criteria:

- It is acceptable to the agency that placed the quarantine, restriction, or other infection control order.
- It determines that animals in the establishment are not infected with a zoonotic pathogen and are no longer at increased risk.

# Response Operations That Involve Animals Infected With Zoonotic ATPs

The third category of higher-risk situations includes performance of work operations that involve any of the following:

- Conducting the following tasks with animals infected with zoonotic ATPs:
  - Handling
  - Culling
  - Transporting
  - Killing
  - Eradicating
  - Disposing
- Cleaning or disinfecting areas used, or previously used, to contain animals infected with zoonotic ATPs or their waste.

Under this regulation, an animal is considered infected with a zoonotic ATP if it meets at least one of the following criteria:

- It has been diagnosed through recognized testing methods.
- It meets the clinical definition of a suspected case of infection with a zoonotic ATP.
- It has been identified by CDFA, CDFW, USDA, or USDOJ as requiring isolation, quarantine, or destruction due to suspected or confirmed infection.

Employers that have employees who conduct any of these higher-risk tasks must comply with subsections (d) and (e) of this regulation. Employers without employees that conduct any of these tasks do not need to comply with subsection (d). However, they may still need to comply with subsection (e) if they are in either of the other higher-risk situations discussed elsewhere in this guide.



## Summary of Subsection (d) Requirements

- Supervision in the restricted area by a knowledgeable person who
  - is authorized to enforce the employer’s zoonotic disease control procedures and
  - will ensure all persons who enter the restricted area have been trained and their entry recorded.
- Personal protective equipment (PPE) and clothing meeting the requirements of sections **3380 through 3387**.
- Eye protection.
- Respiratory protection during operations in the restricted area in accordance with section **5144**.
  - Protection against infectious disease hazard and hazardous substances.
  - Elastomeric or PAPR in enclosed areas.
- Written zoonotic disease control procedures:
  - Detailed work plan:
    - Assessment of risks to employees, including the following types of hazards:
      - Biological.
      - Chemical.
      - Physical.
      - Safety.
    - Site control measures including designation of a restricted area consisting of:
      - Contaminated zones.
      - Contaminant reduction zones.
  - List of all jobs, tasks, or procedures in which employees may have occupational exposure.
- The measures the employer will use to control employee exposure:
  - Engineering and work practice controls.
  - Exposure monitoring.
  - Procedures for the safe handling of hazardous substances, including those used for disinfection and decontamination.
  - Procedures for the application of toxic or asphyxiant gases, if used.
  - Respiratory protection.
  - Personal protective equipment and protective clothing.
  - Decontamination procedures.
  - Disposal of animal waste and contaminated PPE.
  - Medical services.
  - Training.
  - Recordkeeping.
- Ready or frequent access to drinking water and sanitation facilities, including appropriate decontamination methods for employees who need to access them.
- Heat illness prevention.
- Additional procedures for applying toxic or asphyxiant gases or foams:
  - Ensure that no person is in the restricted area prior to application of asphyxiant gas unless they are protected by all the measures required in section **5144(g)** for IDLH (immediately dangerous to life or health) atmospheres:
    - Physical or visual search of the area.

(continued on next page)

- Audible or visual warning that is distinctive and recognizable by all people in the area.
- An accounting for all personnel known to be in the restricted zone.
- Post signs at all possible entry points to the restricted area, visible from 12 feet:
  - The words “Danger — Do Not Enter.”
  - The poison symbol.
  - Name of the gas being applied.
- Ventilate the area prior to reentry of employees.
- Monitor the air in the restricted area to ensure the following before allowing required signs to be removed:
  - Oxygen is not deficient.
  - IDLH conditions do not exist.
  - The levels of the applied gases are not above either the ceiling or short-term exposure limits set in section **5155**.
- Continuously monitor for oxygen deficiency and toxic gases in the areas where employees are working adjacent to the area where the gases are applied and where a hazardous atmosphere may exist.
- Confined space entry procedures in accordance with section **5157**, if employees enter confined spaces.
- Fumigation procedures in accordance with sections **5221 through 5223**.
- Appropriate treatment and disposal of animal waste and contaminated PPE and clothing.
- Decontamination of employees when they leave the restricted area.
- Medical Services:
  - Initial medical evaluation prior to first entry into a restricted area.
  - Surveillance for signs and symptoms of zoonotic disease, and if needed, follow-up evaluation by a PLHCP.
  - Surveillance for overexposures to hazardous substances, as appropriate.
  - Vaccinations or prophylaxis as recommended by the CDC, CDPH, local health officer, or PLHCP.
  - Follow-up medical evaluations as recommended by the CDC, CDPH, local health officer, or PLHCP.
  - Written report from the PLHCP containing the following information:
    - Respirator medical evaluations — the information required in section **5144(e)(6)(A)**.
    - Vaccination or prophylaxis — whether the employee has been provided with vaccine and/or prophylaxis, and whether the employee is authorized to enter the restricted area.
    - Referrals and follow-up medical evaluations — the fact that the employee has received the evaluation, whether additional evaluation is required, and whether the employee is authorized to work in the restricted area.
- Training.

Please refer to the “**Basic Requirements for All Covered Employers**” section of this publication for general information about some of these control measures. Topics include protective clothing and PPE, respiratory protection, sanitation, and training.

See below for information specific to employers covered under subsection (d). For complete requirements, please refer to section **5199.1**.



## Written Zoonotic Disease Control Procedures

Employers covered by subsection (d) must establish, implement, and maintain written zoonotic disease control procedures to minimize the risk of disease transmitting from the animals to the employees. These procedures must be available onsite at all times when employees are present and must be maintained as an employee exposure record, in accordance with section [3204](#).

The employer's exposure control measures must address all hazards related to zoonotic ATDs relevant to the employer's operations. The minimum procedures and provisions that must be included are listed in the summary of requirements for written procedures above.

## Site Control Measures and Sanitation

When covered tasks are conducted with animals infected with a zoonotic ATD or their wastes, any employees in the area will be exposed to zoonotic ATPs, including those not performing the tasks. To limit the number of employees exposed, these tasks must be conducted in restricted areas.

Restricted areas should have distinct perimeters that are clearly marked. Zones should be defined so that dirty operations and clean operations do not take place in the same zones.

Support equipment and personnel must be staged outside of the restricted area.

The CDC and CDPH will provide guidance on site control measures during outbreaks. For assistance with biosecurity concepts, you may refer to the USDA [National Animal Health Emergency Management System \(NAHEMS\) Guidelines](#) webpage, which includes sections on biosecurity and selection of PPE.

## Knowledgeable Person

Operations in the restricted area must be supervised at all times by a person both

- knowledgeable in the employer's control procedures and
- authorized by the employer to enforce those procedures.

This supervisor is responsible for ensuring that any employee who enters the restricted area

- has been trained in the control measures required for the operation and
- is wearing the required PPE.

The supervisor must also keep records of every entry and exit made to and from the restricted area. The records for each entry must include all the following information:

- Identity of the person who enters.
- Time of entry.
- Time of exit.

These records must be maintained and made available in accordance with section 5199.1(e).



## Personal Protective Equipment and Clothing

The employer must conduct a hazard assessment to select the appropriate personal protective equipment and clothing, in accordance with title 8 sections **3380 through 3387**. Then they must provide it and ensure that employees use it. The employer should repeat the hazard assessment periodically over the course of the disease outbreak because conditions, including weather, may affect exposures.

To be considered adequate, the PPE and protective clothing must prevent hazardous substances and contaminated fluids and aerosols from penetrating to the wearer's skin or mucous membranes.

For details on different kinds of PPE, you may refer to the USDA **National Animal Health Emergency Management System (NAHEMS) Guidelines** webpage.

### Eye Protection

Employers must provide and ensure employees use eye protection for work in the restricted areas. Employees must wear eye protection because some zoonotic pathogens may cause conjunctivitis and may infect through the mucous membranes of the eye. Avian influenza and avian chlamydiosis (which causes psittacosis in people)

are two examples of zoonotic diseases that may be transmitted through the mucous membranes of the eye.

Eye protection must fit on the face with minimal gaps. However, some goggles can alter the fit of a half-face respirator. To ensure that the eye protection does not interfere with a respirator facepiece seal, it should be worn during the respirator fit test and when workers conduct seal checks each time they put on the respirator.

Other options for eye protection include a full-face respirator or a powered air-purifying respirator (PAPR) that includes either a loose-fitting hood or helmet and face shield.

Employees should remove eye protection carefully to prevent contaminated equipment from contacting their eyes, nose, or mouth.

### Respiratory Protection

The employer must select and provide appropriate respiratory protection to their employees and ensure that they use it when working in the restricted area. This is required unless the employer demonstrates through objective evidence that engineering and work practice controls have eliminated the risk of disease transmission to employees.

The employer must determine the level of respiratory protection appropriate for their

A hazard assessment should determine whether PPE such as disposable coveralls and eye protection are required. It should also determine the types of gloves required for different tasks.



## Exposure to Zoonotic Aerosol Transmissible Disease Hazards

employees' exposures. Employers must consider exposures to the infectious disease hazard and any hazardous substances, such as chemicals used for decontamination. If the respirators are not full-face or PAPRs that provide eye protection, the employer must also provide and ensure that employees wear appropriate eye protection.

Filtering facepiece respirators may be acceptable for use in unenclosed areas. However, they may deteriorate in hot or humid conditions or after prolonged use or heavy labor. When N95 respirators are not adequate, the employer must supply a more effective type of respirator.

Employees who work in enclosed areas must wear a minimum of either half-mask or full-face elastomeric (silicone or rubber-type) respirators or PAPRs with appropriate filters or cartridges. This is required unless the employer demonstrates through objective evidence that these types of respirators are not necessary.

Employers should repeat the hazard assessment periodically throughout the course of the disease outbreak because conditions and hazards may change over time, requiring different respiratory protection. For example, changes in weather could affect exposures to zoonotic ATP in the air. In addition, if dead animals are not incinerated or removed from the property, their decomposition could produce hazardous concentrations of organic vapors, such as methane, hydrogen sulfide, and ammonia.

Respirators must be worn until work areas have been decontaminated and the risk of disease transmission has been eliminated.

All use of respiratory protection must be done in accordance with title 8 section **5144**.

For help selecting the appropriate respirator for the given zoonotic disease, you may refer to CDC or CDPH guidance released during the outbreak or the USDA **National Animal Health Emergency Management System (NAHEMS) Guidelines** webpage.

(top right): full-face elastomeric respirator;  
(middle right): half-mask elastomeric respirator;  
(bottom right): example of a combination cartridge to filter particles, gases and vapors



## Heat Illness Prevention

All employers covered under subsection (d) must assess the risk of heat illness in their operations and develop their own effective procedures for preventing it.

Employers with outdoor operations are also required to comply with section **3395**, Heat Illness Prevention. However, for operations covered under section 5199.1(d), only taking the measures required in section 3395 may not be sufficient to protect all employees from heat illness. For example, full body protection, which could contribute to overheating, is not addressed in that regulation.

Employers with indoor operations are also required to comply with section **3396**, Heat Illness Prevention in Indoor Places of Employment, if the indoor temperature or heat index reaches 82°F.

For help developing a heat illness prevention program, see [Cal/OSHA's Heat Illness Prevention](#) web page. Employers may also use [Cal/OSHA's Model Heat Illness Prevention Plan](#).

## Application of Toxic or Asphyxiant Gases

Employers may use toxic or asphyxiant gases or foam to cull, kill, or eradicate large numbers of animals. These may also be used afterwards to aid in decontamination. These gases and foams are toxic to humans as well as animals so they must be handled with great care.

Subsection (d) requires covered employers to implement additional procedures, which must be in writing, when their employees use toxic or asphyxiant gases or foams.

The following sections describe the additional procedures.

## Unprotected People

Before applying the toxic or asphyxiant gas or foam to any area, the employer must take positive measures to ensure that no unprotected person is in the area. A person is considered protected only if they

- are wearing respirators that protect against atmospheres that are immediately dangerous to life or health (IDLH) and
- are provided all the protections required under section **5144(g)**.

**Important note:** Only self-contained breathing apparatus (SCBAs) and supplied air respirators with auxiliary SCBA are permitted to be used in IDLH atmospheres. Air-purifying respirators (those using filters or cartridges) are not protective in IDLH atmospheres and, therefore, must not be worn in gas or foam application areas.

These measures must include all of the following:

- A physical or visual search of the area.
- An audible or visual warning that is distinctive and recognizable by all persons in the area to mean that gas or foam is about to be applied.
- An accounting for all personnel who are known to be in the restricted zone.

The supervisor of the restricted area must document in writing and sign that they completed these measures.

## Signs

Prior to applying toxic or asphyxiant gases or foams, the employer must post signs at all possible entry points to the area. The signs must be readable from 12 feet away and include the following:

- The words “Danger – Do Not Enter.”
- The poison symbol shown in [Appendix A](#) of section 5199.1.
- Name of the gas or foam being applied.

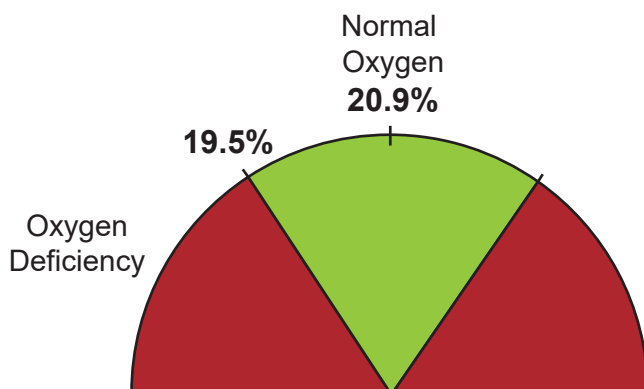
The signs must be in all languages necessary to ensure that all employees can understand. Once the signs have been posted, employees are not allowed in the area unless they are protected by all the measures required for IDLH atmospheres.

## Monitoring the Atmosphere in Adjacent Areas

Employees may work in the areas adjacent to where the toxic or asphyxiant gases or foams are being applied. However, if that is the case, then the employer is required to conduct continuous monitoring for oxygen deficiency and toxic gases in those areas during the following timeframes:

- During gas or foam application.
- Until the application area is tested and cleared for reentry.

Air typically contains 20.9% oxygen. An atmosphere containing less than 19.5% (<19.5%) oxygen is considered oxygen-deficient.



If oxygen deficiency is detected or toxic gases are detected above the permissible exposure limits (PEL) in title 8 section [5155](#), then the employer must do the following:

- Direct employees to exit the area immediately.
- Post signs, as described above, at all possible entry points to the area.
- Do not allow employees to reenter until it is deemed safe using the methods described below (in the “Requirements Prior to Removing Posted Signs” section) for the area where gas or foam is applied.

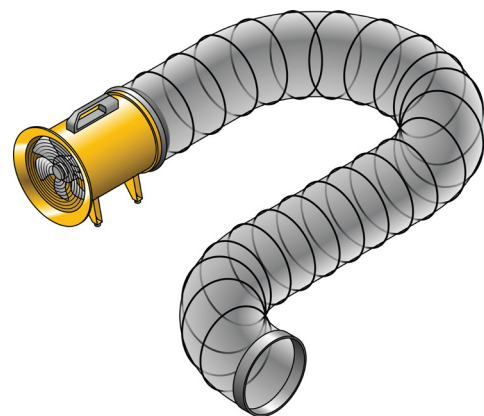
Note: When comparing measured gas concentrations to the PEL, the employer is not to consider the amount of time employees are exposed at this concentration. If levels are above the PEL, employees must be instructed to leave.

## Ventilation Prior to Employee Reentry

Before employees reenter the area of gas or foam application, it must be effectively ventilated in such a way that does not endanger employees working in other areas of the site. Otherwise, if air is ventilated into areas where other employees are working, those employees could become sick from exposure to the gas.

---

An example of a ventilation method.



## Requirements Prior to Removing Posted Signs

Before removing the warning signs, the employer must test the atmosphere in the area for the following conditions:

- Oxygen deficiency.
- IDLH atmosphere.
- Concentration of the applied gases above the ceiling or short-term exposure limits (STEL) set in section **5155**.

If any of these three conditions exist, it is unsafe to reenter, so the employer must continue to ventilate the area until the unsafe condition is eliminated.

The IDLH concentration differs for different gases. The more toxic a gas is, the lower its IDLH concentration. The employer can obtain the IDLH concentration for the applied gas from the **NIOSH Pocket Guide to Chemical Hazards**.

Cal/OSHA ceiling limits and short-term exposure limits (STEL) are contained in **Table AC-1** of section 5155.

The testing must represent all potential atmospheric exposures in the area and be done at numerous locations to ensure that all areas are free of such hazards. The employer must keep a record of the test results, including:

- Specific locations where the measurements were taken.
- Date and time the measurements were taken.
- Name and job title of the person taking the measurements.

The record must be posted at the entrance to the area for the duration of the work operation. After the work is completed, the record must be retained in accordance with section **5199.1(e)**.



## Confined Spaces

If employees need to enter confined spaces, the employer must comply with title 8 section **5157**, Permit-Required Confined Spaces.

For more information on confined spaces, please refer to the Cal/OSHA publication **Confined Space Guide for General Industry**.

## Fumigation Operations

Fumigation operations must comply with title 8 sections **5221 through 5223**. These sections require sealing any cracks, holes, or other openings in the room to be fumigated and evacuating adjoining rooms, including those upstairs or downstairs from it.

## Disposal

The employer is required to establish procedures to treat and dispose of the following:

- Animal waste
- Contaminated PPE
- Contaminated protective clothing

The procedures must minimize employee exposure to zoonotic disease hazards and comply with applicable California Environmental Protection Agency (Cal EPA) and U.S. Environmental Protection Agency (US EPA)

standards. Information on disposal of larger animals, such as cattle, is on the [Cal EPA Emergency Animal Disposal Guidance](#) webpage. The [US EPA webpage Carcass Management During Avian Influenza Outbreaks](#) provides an overview of the animal disposal process during an outbreak.

PPE and protective clothing may be contaminated with both zoonotic ATPs and chemicals used in disinfection. Therefore, the employer must be mindful to protect their employees from both types of hazards and to properly dispose of the contaminated items.

## Decontamination

The employer must establish decontamination procedures to ensure the following:

- Any employees working in the restricted area are decontaminated when exiting the area.
- Contaminated clothing and equipment are appropriately decontaminated or disposed of.

The employer must provide decontamination facilities that include:

- Change rooms
- Showers

Change rooms and showers must meet the sanitation standards of title 8 sections [3360 through 3368](#).

**EXCEPTION:** If change rooms and shower facilities are not feasible, then the employer must provide some other equally effective methods of decontamination and changing clothes that protect employees from infectious materials and hazardous substances that may be on their bodies or clothing.

However, to claim this exception, the employer must be able to demonstrate that the required change rooms and shower facilities are not feasible in their circumstances.

## Medical Services

The employer is required to provide medical services to all employees who enter restricted areas. When developing a program for medical services, the employer must consult with a physician or other licensed healthcare provider (PLHCP) knowledgeable about chemical and zoonotic disease hazards.

The medical program must include the following services for employees:

- Initial medical evaluation provided prior to first entrance into a restricted area, including a respirator medical evaluation, in accordance with section 5144(e).
- Surveillance for signs and symptoms of zoonotic disease, including immediate referral of employees exhibiting signs or symptoms of zoonotic disease and employees requesting referral to the PLHCP for follow-up evaluation.
- As appropriate, surveillance for signs and symptoms of overexposures to hazardous substances present in the work operation, including immediate referral of employees exhibiting these signs or symptoms to the PLHCP for follow-up evaluation.

The employer must further investigate to identify the source of the potential overexposure and take corrective measures, as needed.

- Provision of vaccinations or prophylaxis, as recommended by the CDC, CDPH, the local health officer, or the PLHCP.
- Follow up medical evaluations, as recommended by the CDC, the CDPH, the local health officer, or the PLHCP.
- A written report from the PLHCP containing only the following information:
  - For respirator medical evaluations, the information required in section [5144\(e\)\(6\)\(A\)](#).

- For provision of vaccination or prophylaxis, information as to whether the employee has been provided with vaccine and/or prophylaxis, and whether the employee is authorized to enter the restricted area.
- For referrals and follow-up medical evaluations, a statement that the employee has received the evaluation, and information on whether additional evaluation is required and whether the employee is authorized to work in the restricted area.

The local health officer, the CDPH, and the CDC make recommendations for medical surveillance, vaccinations, prophylaxis, evaluation, and treatment for employees exposed to infected animals and contaminated areas. The employer is required to provide the medical services recommended by the PLHCP, the local health department, the CDPH, and the CDC.

Follow-up medical evaluations may be recommended for exposures to either the zoonotic pathogens or the toxic and asphyxiant gases or both.

The CDPH recommends that employers offer annual seasonal influenza vaccinations to employees responding to an avian influenza outbreak. The seasonal influenza vaccine does not protect against infection with avian influenza viruses, but it reduces the possibility of dual infection with avian and human influenza A viruses, which could result in the formation and spread of new and more virulent influenza viruses.

To encourage employees to participate in the medical services program, the employer must maintain confidentiality of employee medical information, in accordance with section **3204**.

## Training

Ongoing training is important due to the constantly changing conditions of the work environment during the period when an employer is subject to this subsection. Section 5199.1 requires training employees when they are initially assigned to job tasks where they have exposure, when site conditions change substantially, and when new hazards are introduced or recognized.

As always, training content must be relevant to employee workplace exposures and provided in vocabulary appropriate for their education level, literacy, and language(s). Training must include the following information:

- The identification and description of the zoonotic diseases that may be present in the work operation, and their signs and symptoms.
- The processes and procedures employees will use in restricted areas or when dealing with infected animals or their waste.
- The employer's safety program, including engineering and administrative controls, the use of personal and respiratory protection equipment, cleaning and decontamination procedures, access to sanitation facilities and drinking water, exposure monitoring and the results of exposure monitoring, and methods to control the risk of heat illness.
  - The meaning of signs that will be used onsite.
  - Hazard communications training in accordance with section 5194.
  - The employer's medical services program.

# Recordkeeping

Employers must maintain records showing implementation of their zoonotic ATD control procedures. They must maintain the records that apply to them in their given circumstances.

The following table summarizes the recordkeeping requirements of the zoonotic ATD regulation.

Record	Related subsection of title 8 CCR 5199.1	Other applicable title 8 section
Inspection records showing identification and evaluation of zoonotic ATD hazards at the workplace, including documentation of the steps taken to correct the hazards	(a)(2)(A)	<b>3203(b)(1)</b>
Records of employee training required by 8 CCR 5199.1	(a)(2)(A), (b)(2)(E), (c)(2)(F), (d)(9)	<b>3203(b)(2)</b>
Employee's exposure record <ul style="list-style-type: none"> <li>• Employer's zoonotic disease control procedures</li> <li>• Entry into restricted areas</li> <li>• Records of atmospheric testing</li> <li>• Records of exposures to hazardous substances</li> </ul>	(b), (c), (d)	<b>3204(d)(1)(B), 3204(e)</b>
Employee medical records (must be kept confidential)	(b), (c), (d)	<b>3204(d)(1)(A), 3204(e)</b>
Records required by the Respiratory Protection Program <ul style="list-style-type: none"> <li>• Medical evaluation</li> <li>• Fit test records</li> <li>• Written respiratory protection program</li> </ul>	(b), (c), (d)	<b>5144(m), 3204(d)(1)(A), 3204(e)</b>



Upon request, the employer must provide employee medical records to the employee whose records they are, anyone who has the employee's consent, Cal/OSHA representatives, NIOSH, and the local health officer.

The employer must make the other types of records available to all employees, employee representatives, Cal/OSHA representatives, NIOSH, and the local health officer.

The local health department and the California Department of Public Health have broad authorities to investigate and control communicable disease that could spread from animals to humans. For example, when an outbreak of avian influenza occurs in poultry, the local health officer typically asks the employer for records, including a list of employees who entered the restricted areas. The local health officer will determine whether medical monitoring for avian influenza is being conducted by the employer for each employee. In some cases, the local health officer will provide medical monitoring as well for employees to identify any transmission to humans in their jurisdiction.

## Recording and Reporting Zoonotic Illnesses

Employers must record work-related employee illnesses, including zoonotic ATDs, on their Log of Work-Related Injuries and Illnesses (also called the Cal/OSHA Form 300 or Log 300) that involve any of the following (see section **14300.7** for more details):

- Death
- Days away from work
- Restricted work or transfer to another job
- Medical treatment beyond first aid
- Loss of consciousness

For more information on the Log 300 and how to complete it, employers may see Cal/OSHA's **Brief Guide to Recordkeeping Requirements**.

If the work-related zoonotic illness meets the definition of a serious illness, then the employer is also required to report it immediately to the local **Cal/OSHA Enforcement office**, in accordance with section **342(a)**. A *serious illness* is one that results in any of the following:

- Death
- Inpatient hospitalization for other than medical observation or diagnostic testing
- Amputation
- Loss of an eye
- Any serious degree of permanent disfigurement

This report must be made within eight hours of when the illness meets this definition. For example, if an employee becomes ill but they are not hospitalized for treatment until five days later, then the employer must report the illness to Cal/OSHA within eight hours after the employee was hospitalized.

# Resources and URL Index

## Telephone:

- For workplace safety and health questions or assistance from Cal/OSHA Consultation, call the toll-free assistance number (800) 963-9424 or find your local office on the back cover of this guide.
- Health care providers may call the local health department's communicable disease controller for advice regarding testing, diagnosis, and treatment for zoonotic diseases and about infection control methods. Find **California Local Health Department Communicable Disease Reporting Contact Information** on the CDPH website.
- Employers, employees, or health care providers may call the California Department of Public Health, Occupational Health Branch, Hazard Evaluation System and Information Service toll free Workplace Hazard Helpline at (866) 282-5516.

## Online:

### Cal/OSHA

#### **Title 8 CCR 342(a), Reporting Work-Connected Fatalities and Serious Injuries:**

<https://www.dir.ca.gov/title8/342.html>

#### **Title 8 CCR 3203, Injury and Illness Prevention Program:**

[www.dir.ca.gov/Title8/3203.html](http://www.dir.ca.gov/Title8/3203.html)

#### **Title 8 CCR 3204, Access to Employee Exposure and Medical Records:**

[www.dir.ca.gov/Title8/3204.html](http://www.dir.ca.gov/Title8/3204.html)

#### **Title 8 CCR 3360 through 3368, Sanitation:**

[www.dir.ca.gov/Title8/sb7g2a9.html](http://www.dir.ca.gov/Title8/sb7g2a9.html)

#### **Title 8 CCR 3362, Sanitation General Requirements:**

[www.dir.ca.gov/Title8/3362.html](http://www.dir.ca.gov/Title8/3362.html)

#### **Title 8 CCR 3380 through 3387, Personal Protective Equipment:**

[www.dir.ca.gov/Title8/sb7g2a10.html](http://www.dir.ca.gov/Title8/sb7g2a10.html)

#### **Title 8 CCR 3395, Heat Illness Prevention:**

[www.dir.ca.gov/Title8/3395.html](http://www.dir.ca.gov/Title8/3395.html)

#### **Title 8 CCR 3396, Heat Illness Prevention in Indoor Places of Employment:**

[www.dir.ca.gov/Title8/3396.html](http://www.dir.ca.gov/Title8/3396.html)

#### **Title 8 CCR 5144, Respiratory Protection:**

[www.dir.ca.gov/Title8/5144.html](http://www.dir.ca.gov/Title8/5144.html)

#### **Title 8 CCR 5155 Table AC-1, Permissible Exposure Limits for Chemical Contaminants:**

[www.dir.ca.gov/Title8/5155.html](http://www.dir.ca.gov/Title8/5155.html)

**Title 8 CCR 5157, Permit-Required Confined Spaces:**

[www.dir.ca.gov/Title8/5157.html](http://www.dir.ca.gov/Title8/5157.html)

**Title 8 CCR 5192, Hazardous Waste Operations and Emergency Response:**

[www.dir.ca.gov/Title8/5192.html](http://www.dir.ca.gov/Title8/5192.html)

**Title 8 CCR 5193, Bloodborne Pathogens:**

[www.dir.ca.gov/Title8/5193.html](http://www.dir.ca.gov/Title8/5193.html)

**Title 8 CCR 5199, Aerosol Transmissible Diseases:**

[www.dir.ca.gov/Title8/5199.html](http://www.dir.ca.gov/Title8/5199.html)

**Title 8 CCR 5199.1, Aerosol Transmissible Diseases, Zoonotic:**

[www.dir.ca.gov/Title8/5199-1.html](http://www.dir.ca.gov/Title8/5199-1.html)

**Title 8 CCR 5199.1, Appendix A, Poison Symbol:**

[www.dir.ca.gov/Title8/5199-1a.html](http://www.dir.ca.gov/Title8/5199-1a.html)

**Title 8 CCR 5221 through 5223, Fumigation:**

[www.dir.ca.gov/Title8/sb7g16a111.html](http://www.dir.ca.gov/Title8/sb7g16a111.html)

**Title 8 CCR 14300.7, General Recording Criteria:**

[www.dir.ca.gov/T8/14300\\_7.html](http://www.dir.ca.gov/T8/14300_7.html)

**Brief Guide to Recordkeeping Requirements:**

[www.dir.ca.gov/dosh/dosh\\_publications/RecKeepOverview.pdf](http://www.dir.ca.gov/dosh/dosh_publications/RecKeepOverview.pdf)

**Cal/OSHA Confined Space for General Industry Publication:**

[www.dir.ca.gov/dosh/dosh\\_publications/ConfSpa.pdf](http://www.dir.ca.gov/dosh/dosh_publications/ConfSpa.pdf)

**Cal/OSHA Enforcement Offices:**

[www.dir.ca.gov/dosh/DistrictOffices.htm](http://www.dir.ca.gov/dosh/DistrictOffices.htm)

**Cal/OSHA Guide to Developing Your Workplace Injury and Illness Prevention Program:**

[www.dir.ca.gov/dosh/dosh\\_publications/iipp.html](http://www.dir.ca.gov/dosh/dosh_publications/iipp.html)

**Cal/OSHA Heat Illness Prevention:**

[www.dir.ca.gov/dosh/heatillnessinfo.html](http://www.dir.ca.gov/dosh/heatillnessinfo.html)

**Cal/OSHA Model Heat Illness Prevention Plan:**

[www.dir.ca.gov/dosh/dosh\\_publications/HIP-Sample-Procedures.docx](http://www.dir.ca.gov/dosh/dosh_publications/HIP-Sample-Procedures.docx)

**Cal/OSHA Publications:**

[www.dir.ca.gov/dosh/puborder.asp](http://www.dir.ca.gov/dosh/puborder.asp)

**Protection from Avian Influenza:**

<https://www.dir.ca.gov/dosh/avian-flu/>

**Respiratory Protection in the Workplace Publication:**

[www.dir.ca.gov/dosh/dosh\\_publications/respiratory.pdf](http://www.dir.ca.gov/dosh/dosh_publications/respiratory.pdf)

**California Department of Public Health****California Local Health Department Communicable Disease Reporting Contact Information:**

[www.cdph.ca.gov/Programs/CCLHO/Pages/LHD-Communicable-Disease-Contact-List.aspx](http://www.cdph.ca.gov/Programs/CCLHO/Pages/LHD-Communicable-Disease-Contact-List.aspx)

**CDPH — Cal/OSHA's Aerosol Transmissible Disease Standards and Local Health Departments:**

[www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/CDPH%20Document%20Library/ATD-Guidance.pdf](http://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/CDPH%20Document%20Library/ATD-Guidance.pdf)

**Zoonotic Diseases:**

[www.cdph.ca.gov/Programs/CID/DCDC/Pages/ZoonoticDiseases.aspx](http://www.cdph.ca.gov/Programs/CID/DCDC/Pages/ZoonoticDiseases.aspx)

**Centers for Disease Control and Prevention (CDC) and National Institute for Occupational Safety and Health (NIOSH)****What Causes Bird Flu Virus Infections in Humans:**

[www.cdc.gov/bird-flu/virus-transmission/avian-in-humans.html](http://www.cdc.gov/bird-flu/virus-transmission/avian-in-humans.html)

**Biosafety in Microbiological and Biomedical Laboratories (BMBL), 5th Edition:**

[www.dir.ca.gov/dosh/documents/CDC-BMBL5thEd.pdf](http://www.dir.ca.gov/dosh/documents/CDC-BMBL5thEd.pdf)

**Facts About Diseases That Can Spread Between Animals and People:**

[www.cdc.gov/healthy-pets/diseases/index.html](http://www.cdc.gov/healthy-pets/diseases/index.html)

**NIOSH Alert: Protecting Poultry Workers from Avian Influenza (Bird Flu):**

[www.cdc.gov/niosh/docs/2008-128/pdfs/2008-128.pdf?id=10.26616/NIOSH PUB2008128](http://www.cdc.gov/niosh/docs/2008-128/pdfs/2008-128.pdf?id=10.26616/NIOSH PUB2008128)

**NIOSH Avian Influenza Topic Page:**

[www.cdc.gov/niosh/topics/avianflu/](http://www.cdc.gov/niosh/topics/avianflu/)

**NIOSH Pocket Guide to Chemical Hazards:**

[www.cdc.gov/niosh/npg/default.html](http://www.cdc.gov/niosh/npg/default.html)

**Zoonotic Diseases in Rural America as a Public Health Issue:**

[www.cdc.gov/rural-health/php/public-health-strategy/public-health-strategies-for-zoonotic-diseases-in-rural-america.html](http://www.cdc.gov/rural-health/php/public-health-strategy/public-health-strategies-for-zoonotic-diseases-in-rural-america.html)

**Other Resources**

**California Department of Fish and Wildlife: Protocols for Safe Handling and Disposal of Carcasses:**

<https://wildlife.ca.gov/Conservation/Laboratories/Wildlife-Health/Monitoring/Protocols>

**CDFW: Wildlife Mortality Reporting:**

<https://wildlife.ca.gov/Conservation/Laboratories/Wildlife-Health/Monitoring/Mortality-Report>

**California Department of Food and Agriculture: Biosecurity:**

[www.cdffa.ca.gov/AHFSS/Animal\\_Health/Biosecurity.html](http://www.cdffa.ca.gov/AHFSS/Animal_Health/Biosecurity.html)

**California Environmental Protection Agency: Emergency Animal Disposal Guidance:**

<https://calepa.ca.gov/disaster/animals/>

**Federal OSHA Safety & Health Information Bulletin: Avian Influenza: Protecting Poultry Workers at Risk:**

[www.osha.gov/sites/default/files/publications/shib121304.pdf](http://www.osha.gov/sites/default/files/publications/shib121304.pdf)

**National Association of State Public Health Veterinarians, Compendium of Veterinary Standard Precautions for Zoonotic Disease Prevention in Veterinary Personnel:**

[www.avma.org/resources-tools/avma-policies/compendium-veterinary-standard-precautions-zoonotic-disease-prevention-veterinary](http://www.avma.org/resources-tools/avma-policies/compendium-veterinary-standard-precautions-zoonotic-disease-prevention-veterinary)

**UC Davis: Footbaths for Animal Facilities: Easier Than You Think!**

<https://anrcatalog.ucanr.edu/pdf/8281.pdf>

**USDA National Animal Health Emergency Management System (NAHEMS) Guidelines:**

[www.aphis.usda.gov/animal-emergencies/nahems-educational-training-materials](http://www.aphis.usda.gov/animal-emergencies/nahems-educational-training-materials)

**US EPA: Carcass Management During Avian Influenza Outbreaks:**

[www.epa.gov/homeland-security-waste/carcass-management-during-avian-influenza-outbreaks](http://www.epa.gov/homeland-security-waste/carcass-management-during-avian-influenza-outbreaks)

**US EPA-Registered Disinfectants:**

[www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants](http://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants)

## NOTES



# Cal/OSHA Consultation Programs

Toll-free Number: 1-800-963-9424

Internet: [www.dir.ca.gov](http://www.dir.ca.gov)

## On-site Assistance Program Area Offices



**Voluntary Protection Program** – Oakland, CA 94612 (510) 622-1081

This guide is available with active links at: [www.dir.ca.gov/dosh/PubOrder.asp](http://www.dir.ca.gov/dosh/PubOrder.asp)

