

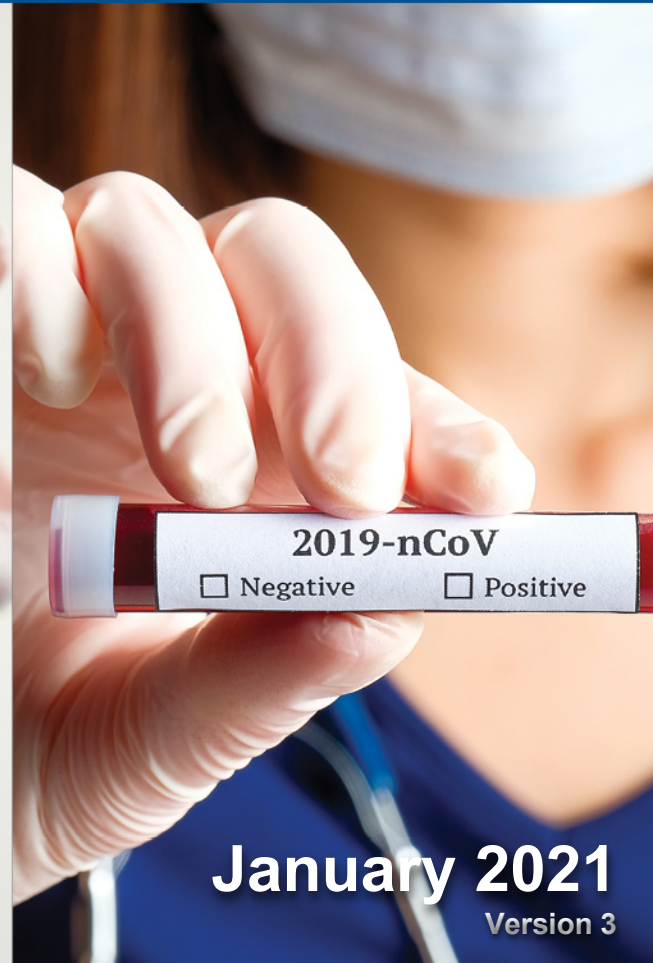


National Institute of
Environmental Health Sciences
Worker Training Program

NIEHS COVID-19 Response Training Tool

Protecting Yourself from COVID-19 in the Workplace

Safety and Health Awareness for Workers



January 2021
Version 3

Goal and learning objectives

Goal: Increase health and safety awareness for responders and workers with potential exposure to the SARS-CoV-2 virus that causes COVID-19.

Learning objectives: After attending participants will be able to:

- Explain basic facts about SARS-CoV-2 virus.
- Explain basic facts about COVID-19 disease.
- Assess the risk of workplace exposure to COVID-19.
- Define key steps in worker protection and infection prevention and control.
- Identify methods to prevent and respond to COVID-19 exposure in the workplace.

CAUTION!



This presentation by itself ***is not*** sufficient training for personnel who have potential for occupational exposure to the SARS-CoV-2 virus.

Personnel must be trained to their employer's site-specific policies and procedures. Training must include ***practice*** in putting on and taking off PPE and respirators and performing decontamination procedures until competency and confidence can be demonstrated.

Information on COVID-19 is rapidly changing, sometimes daily. Refer to reliable sources such as the CDC, OSHA, NIOSH, State Health Departments and peer reviewed science publications.



Employer and worker responsibilities

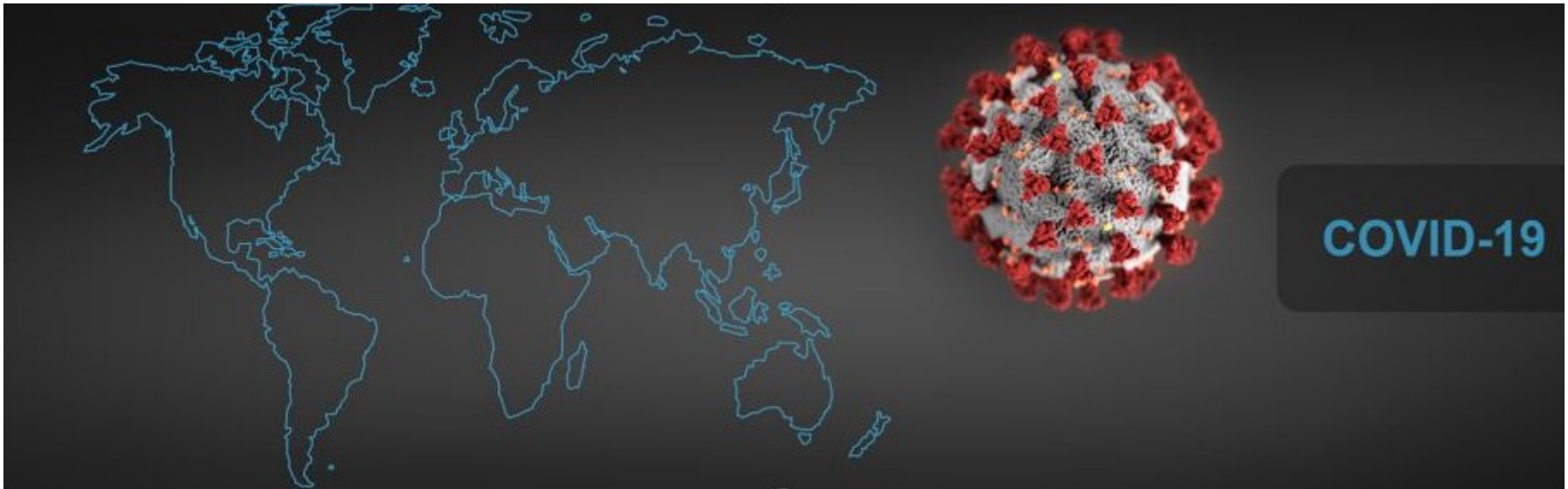


Employers and workers have responsibilities under the OSH Act.

- The Occupational Safety and Health Act requires that employers provide a safe and healthy workplace free of recognized hazards and follow OSHA standards.
- Workers should participate in the development and implementation of the employer's safety and health policies and help ensure that they are appropriate and implemented.

Speak up! You have a right to file a complaint with OSHA, the state or local health department, the mayor, or the police!

Worldwide distribution map



Click the link to see the [latest global numbers and numbers by country visit.](#)

US distribution map



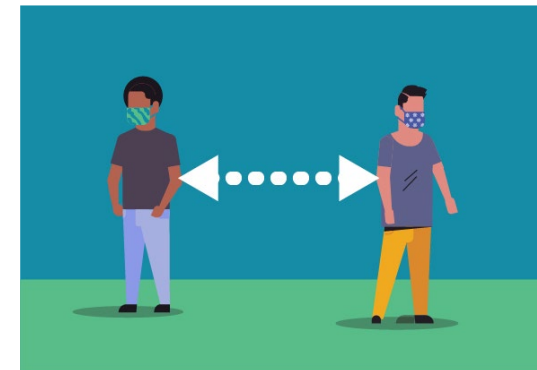
Click the link to see [the current cases in the U.S.](#)

Pandemic declaration

- On March 11, 2020, the World Health Organization (WHO) characterized COVID-19 as a pandemic.
- It has caused severe illness and death. It features sustained person-to-person spread worldwide.
- It poses an especially high risk for the elderly (60 or older), people with preexisting health conditions such as high blood pressure, heart disease, lung disease, diabetes, autoimmune disorders, and certain workers.

What can individuals do?

- Be informed and prepared.
- Wear a mask.
- Maintain social distancing (6 feet).
- Wash your hands frequently.
- Use alcohol-based hand sanitizer.
- Avoid touching your eyes, nose, and mouth.
- Stay home when you are sick.
- Cough or sneeze into a tissue or your elbow.
- Clean and disinfect frequently touched objects and surfaces such as cell phones.



Five steps to proper handwashing

- **Wet** your hands with clean, running water (warm or cold), turn off the tap, and apply soap.
- **Lather** your hands by rubbing them together with the soap. Lather the backs of your hands, between your fingers, and under your nails.
- **Scrub** your hands for at least 20 seconds. Need a timer? Hum the “Happy Birthday” song from beginning to end twice.
- **Rinse** your hands well under clean, running water.
- **Dry** your hands using a clean towel or air dry them.



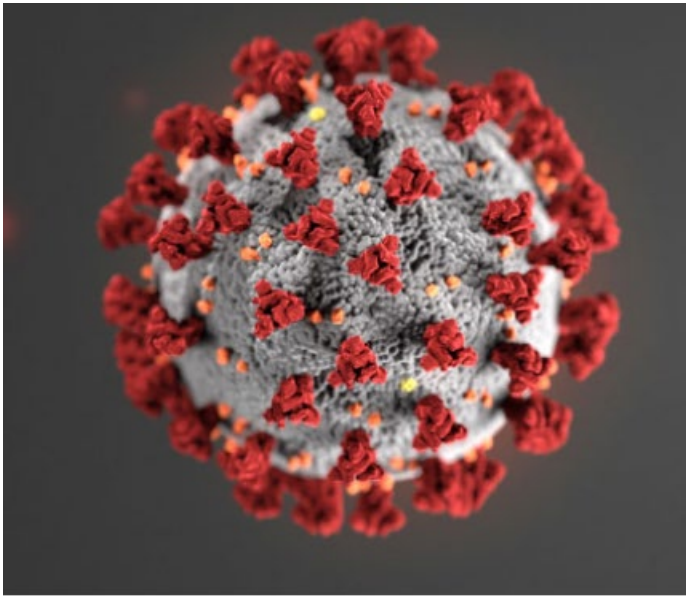
Precautionary principle

When it comes to worker safety, we should be driven by the **'precautionary principle'** that reasonable steps to reduce risk should not await scientific certainty about the nature of the hazard or risk.

MODULE 1: COVID-19 BASICS



What is SARS-CoV-2?



SARS-CoV-2 is the virus that causes coronavirus disease 2019 (COVID-19)

- SARS = severe acute respiratory distress syndrome
- Spreads easily person-to-person
- Little if any immunity in humans

Detailed information:

<https://www.cdc.gov/coronavirus/2019-ncov/index.html>

Transmission

COVID-19 is spread from person to person mainly through coughing, sneezing, and talking and breathing.



- **Droplet** - respiratory secretions from coughing or sneezing landing on mucosal surfaces (nose, mouth, and eyes)
 - **Aerosol** - a solid particle or liquid droplet suspended in air
- **Contact** - Touching something with SARS-2 virus on it and then touching mouth, nose or eyes
- **Other possible routes:** Through fecal matter

Incubation period

- The incubation period is the time between exposure to a virus and the onset of symptoms.
- With COVID-19, symptoms may show 2-14 days after exposure.
- CDC indicates that people are most contagious when they are the most symptomatic.
- Several studies show people may be contagious before developing symptoms.

COVID-19 can cause mild to severe symptoms

Most common symptoms include:

- Fever
- Cough
- Shortness of breath

Other symptoms may include:

- Sore throat
- Runny or stuffy nose
- Body aches
- Headache
- Chills
- Fatigue
- Gastrointestinal: diarrhea, nausea
- Loss of smell and taste

Severe symptoms – emergency warning signs for COVID-19

- Most people will have mild symptoms and should recover at home and **NOT** go to the hospital or emergency room.
- Get medical attention immediately if you have:
 - Difficulty breathing or shortness of breath.
 - Persistent pain or pressure in the chest.
 - New confusion or inability to arouse.
 - Bluish lips or face.



What is a person under investigation?

- A person who has both consistent signs or symptoms **and** risk factors as follows:

Suspect Case

A potential exposure within 14 days before the onset of symptoms.

Symptoms, including cough, fever, and shortness of breath.

Confirmed case

A confirmed case is a suspect case with laboratory-confirmed diagnostic evidence of SARS-CoV-2 virus infection.



U.S. Centers for Disease Control and Prevention via AP

How long does SARS-CoV-2 survive outside of the body?

- It is not clear yet how long the coronavirus can live on surfaces, but it seems to behave like other coronaviruses.
 - Virus may persist on surfaces for a few hours or up to several days, depending on conditions and the type of surface.
- It is likely that it can be killed with a simple disinfectant on the EPA registered list below.

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

Increased risk of severe illness

COVID-19 poses a greater risk for severe illness for people with underlying health conditions:

- Heart disease
- Lung disease such as asthma
- Diabetes
- Suppressed immune systems

The elderly have higher rates of severe illness from COVID-19. Children and younger adults have had less severe illness and death. Because COVID-19 is new, there are a lot of scientific unknowns such as the impact on pregnant women and their fetuses.

Seasonal flu vs. COVID-19

- COVID-19 has the potential to cause more deaths and hospitalizations
- SARS-CoV-2 is much more infectious and spreads faster than the seasonal flu



Seasonal flu vs. COVID-19

- So far, the case fatality rate (CFR) of COVID-19 is estimated to be at around 2%. The CFR of seasonal influenza is estimated to be around 0.1%, making SARS-CoV-2 about 20 times more deadly than the seasonal flu.
- An estimated 15-20% of infected individuals may suffer from severe symptoms that require medical attention, including pneumonia with shortness of breath and lowered blood oxygen saturation.
- No Treatment
- Immunity: unknown how long it will last post illness or vaccination.

Pandemic influenza

Experts have been recommending preparedness, warning about the likelihood of future pandemic influenza outbreaks for decades.

Flu pandemic fatalities, worldwide, in the last century:

- 1918 – between 40 and 100 million
- 1957 – 2 million
- 1968 – 1 million



Treatment and vaccines

- In December 2020, the FDA gave emergency use authorization to two COVID-19 vaccines, with many more in the pipeline.
- There is no specific FDA -Cleared medication or treatment for COVID-19.
- Treatment is supportive.
- People who are mildly ill with COVID-19 should isolate at home during their illness.



MODULE 2: ASSESSING THE POTENTIAL FOR EXPOSURE TO COVID-19 IN THE WORKPLACE



Key exposure factors in the workplace

- Does the work setting require close contact with people potentially infected with the COVID-19 virus?
- Do specific job duties require close, repeated or extended contact with people with known or suspected COVID-19?
- Has the community spread of the virus included cases in the workplace?

High potential for exposure

High exposure risk occupations are those working with people with known or suspected COVID-19, especially while performing aerosol generating procedures.

Examples of work settings

- health care
- laboratories
- autopsy suites



Examples of job activities

- bronchoscopy
- sputum induction
- working with specimens in laboratories
- some dental procedures
- some autopsy procedures

High potential for exposure

Examples of work settings

- hospitals and other types of healthcare facilities
- medical transport
- correctional facilities
- drug treatment centers
- homeless shelters
- home health care
- environmental clean-up of SARS-CoV-2
- correctional facilities
- long term and resident care facilities

Examples of job activities

- direct patient or long term resident care
- emergency medical services
- housekeeping and maintenance in patient and resident areas
- meat packing



Medium potential for exposure

Examples of work settings

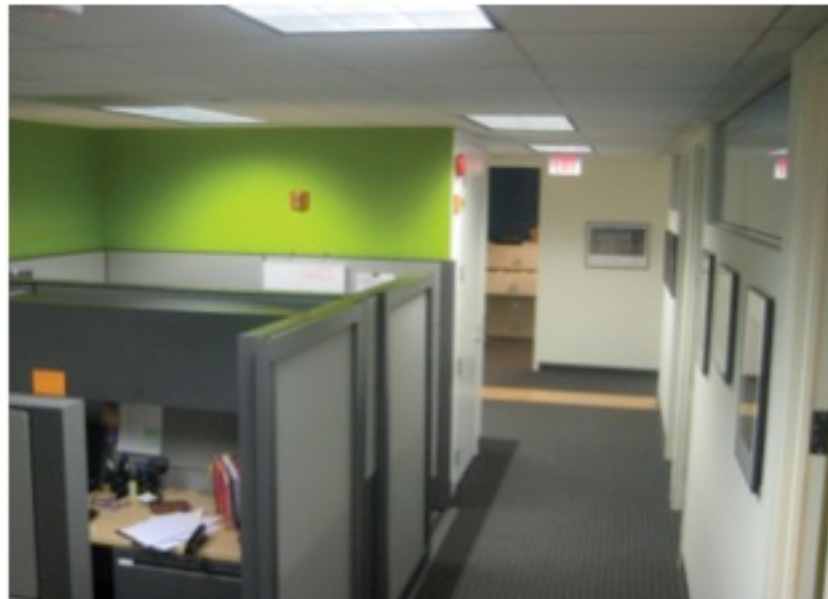
- Retail stores
- Public transportation
- Home visiting occupations
- Postal and warehouse workers
- Public services

Examples of job activities

- Stocking shelves
- Checking out customers
- Emergency home repairs
- Handling mail and goods
- Processing public benefits

Low potential for exposure

Low potential for exposure occupations are those that do not require contact with people known to be infected nor frequent contact with the public.



The next few slides will review key considerations for the health care and emergency services industries as well as continuity of operations and the role of public health.



Healthcare settings

Refer to the CDC and state health department guidelines for protection of healthcare workers. In the current and past coronavirus outbreaks, healthcare workers have had a high rate of infection. It is especially important to ensure that procedures, equipment, and training are fully protective.

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/index.html>

- The CDC site includes guidelines for infection control, EMS, home care, long term care, clinical care, evaluating persons under investigation, and more.

Long term, nursing, and resident care

- There have been a very large number of COVID-19 cases among resident care workers because of the high prevalence and severity of cases of residents in long term care.
- Many agencies have guidance for long term care, nursing homes, assisted living facilities, and other resident care facilities.

Emergency services

Emergency services and critical infrastructure must be able to function during a national emergency.



Emergency services and critical infrastructure include:

- law enforcement
- fire and EMS
- hospitals
- public utilities

Healthcare facility identification and isolation

The most important steps to prevent spread of COVID-19

- Procedures for rapid identification and isolation of suspect COVID-19 cases.
- Community and hospital procedures to ensure symptomatic people are not in public places, waiting rooms, reception areas, emergency departments, or other common areas
 - Collect a travel history for patients presenting with fever, cough, or shortness of breath.
 - Immediately isolate – using standard, contact, and droplet precautions for suspect or confirmed cases.

Community/workplace connection

When a community outbreak occurs, any workplace or event location where people gather has a high potential for exposure.

Examples of work settings

- schools
- sports and arts events
- social services
- high density of coworkers
- high contact with the general public including retail and grocery stores

Examples of job activities

- classroom instruction
- aiding clients
- serving customers



Critical infrastructure

Keeping critical infrastructure and key resources operating is a priority!

- Government Facilities
- Dams
- Commercial Facilities
- Nuclear Power Plants
- Food and Agriculture
- Public Health
- Health care
- Banking and Finance
- Chemical Manufacturing and Storage Facilities
- Defense Industrial Base
- Water
- Energy
- Emergency Services
- Information Technology
- Telecommunications
- Postal and Shipping
- Transportation

Continuity of Operations (COOP)

- All businesses and agencies should have a strategy to overcome potential disruptions to operations for:
 - maintaining critical utilities and infrastructure;
 - rostering personnel with authority and knowledge of functions;
 - policies that enable employees to work remotely;
 - communications with employees and customers, including during disruptions to usual services;
 - stockpiling supplies or developing multiple suppliers in the event of a supply chain disruption.

Role of public health officials

- Cases reported by employer to local health department to do contact tracing.
 - Investigate contacts of worker who is infected to determine what other cases may be present and to identify potential source.
- Case identification and containment.
- Communication and education.
- Mitigation may include restrictions on public events and gatherings, transportation, and other activities.
- Promote physical and social distancing and other safety and health measures.

MODULE 3: METHODS TO PREVENT COVID-19 IN THE WORKPLACE



Key steps for preparing for and managing epidemics in the workplace

- Preparing for the threat.
- Implementing preventive measures.
- Implementing the continuity of operations plan.
- Managing business recovery post-epidemic.



Community spread can impact any workplace

- Mitigation may include shutting down events and worksites where people gather.
- For example, the National Basketball Association suspended its season on March 11, 2020.
- Many universities and colleges have suspended in person classes and have moved to distance learning.
- Workers at stadiums, arts centers, and other places where people gather are impacted.

Consider the impact on workers

- Will a worker be paid if their workplace shuts down or they are quarantined?
- What can be done for workers who are sick but have no paid sick leave?
- How can workers cope with the impact if their child's school is shut down or their child is placed in quarantine?
- What can be done for low wage and immigrant workers who have no access to health care?
- Other impacts?

Basic hygiene and social distancing

- Stay home when sick.
- Wear a mask.
- Wash hands or use sanitizer frequently and after coughing, sneezing, blowing nose, and using the restroom.
- Avoid touching your nose, mouth, and eyes.
- Cover coughs and sneezes with tissues or do it in your sleeve.
- Dispose of tissues in no-touch bins.
- Avoid close contact with coworkers and customers (6 feet)
- Avoid shaking hands/wash hands after physical contact with others.




STOP shaking hands!



Key elements: COVID-19 workplace plan

- Management leadership and employee participation
- Hazard identification and assessment
- Hazard prevention and control
- Risk communication, education, and training
- System evaluation and improvement
- Family preparedness
- Emergency operations procedures
- Post pandemic recovery



National Institute of Environmental Health Sciences
Worker Training Program

Workplace Checklist for Prevention of Exposure to SARS-CoV-2 Virus in Non-Healthcare Industries

CONTENTS

- 2 COVID-19 Exposure Control Plan
- 3 Measures to Maintain Social Distancing
- 4 Engineering Controls
- 5 Work Practices
- 6 Enhanced Cleaning and Disinfection
- 7 Personal Protective Equipment (PPE) and Respiratory Protection
- 8 Sick Leave, Symptom Screening, and Employee Health
- 9 Exposures and Case Reporting
- 10 Measures to Protect Employee Mental Health and Physical Well-Being

Introduction

This checklist is a tool to help employers, unions, and workers in non-healthcare facilities assess workplace exposure, and identify prevention and control measures for SARS-CoV-2, the virus that causes COVID-19 disease. Key exposure risk factors include working within 6 feet of people who are known to be or are potentially infected with the virus and working with equipment, materials, and/or surfaces that are potentially contaminated with the virus.

This document may be completed collaboratively by employer and worker representatives or individually by each party. The checklist uses a yes/in progress/no format. If a question is not applicable, users should select the N/A button. The "Note" box should be used to list the checklist item number and provide details for follow-up actions.

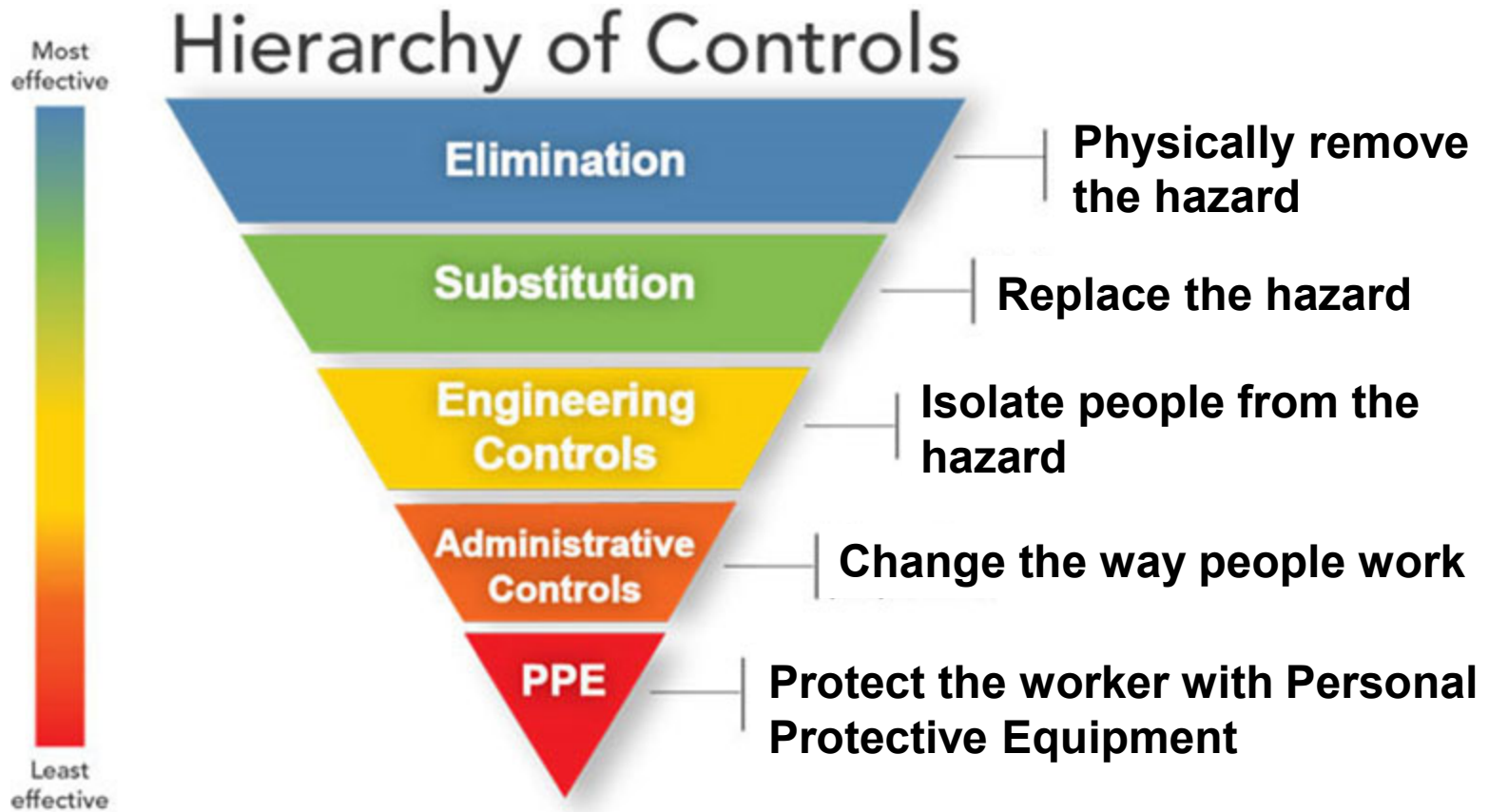
After completing the checklist, be sure to:

1. Review each item.
2. Develop an action plan that lists each item, who is responsible, what needs to be done, and by when.
3. Develop a communication plan to inform employees, customers, and the public of actions taken by the organization to protect workers and the public from exposure to the virus.

Employer/Agency Name	
Employer/Agency Location(s)	
Industry Type (e.g., retail, manufacturing, office)	
Name of person(s) completing this checklist	
Date of completion	

Protecting workers

Start with the most effective method to protect workers.



Engineering controls

- Ventilation
- Drive-thru service
- Plastic shields and other barriers
- Sneeze guards



Engineering controls for high exposure potential jobs in health care and laboratories

- Examples include:
 - Negative pressure isolation rooms
 - Biological safety cabinets/HEPA filtration
 - UV irradiation systems



Administrative controls and work practices to reduce exposure



- Enable sick workers to stay home
- Establish work from home policy
- Minimizing contact among workers and clients
- Discontinue non-essential travel
- Limiting the number of staff present for high potential exposure tasks
- Training

Additional administrative controls

Cleveland Clinic

COVID-19 Coronavirus

Visitor Precautions During COVID-19 Outbreak

DON'T VISIT
If you're sick, have a fever or a confirmed case of COVID-19, don't visit or accompany a patient.


VISITORS ARE LIMITED
Patients may only have up to 2 people with them at any time. Visitors must be age 16 and older.

SPECIAL EXCEPTIONS
Visitors can speak with a caregiver about exceptions and special circumstances.

FOLLOW VISITING HOURS
No visitors allowed from 10 p.m. - 8 a.m., unless accompanying a newly-admitted patient.

MUST WASH HANDS
We're asking visitors to wash their hands (or use sanitizer) before and after leaving rooms and hospital buildings.

Thank you for helping us protect one another.



Soft barriers include use of tables, ropes, signs, and floor markings to maintain social distancing.

Adjust policies to reduce exposures

Policies that can help to reduce exposure to COVID-19 include:

- Encouraging workers who are ill to stay home without fear of reprisals or loss of pay or benefits
- Using email, phone, teleconferences instead of face-to-face contact



OSHA PPE standard



- Where applicable, the OSHA PPE standard requires employers to:
 - Conduct an assessment for PPE
 - Provide PPE at no cost, appropriate to the hazard
 - Train employees on how to don (put on) and doff (take off) PPE
 - Train workers to maintain, store, and replace PPE
 - Provide medical evaluation and fit testing

Decontamination

- Employers should develop site specific decontamination procedures.
- Depending on the workplace, decontamination may require consultation with the health department or use of a consultant specializing in environmental cleanup.
- Use of an EPA registered disinfectant effective is recommended.
- Worker and building occupant protection is essential to protect against the virus and adverse effects of the disinfectant.

EPA List: <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

Respirators

Respirators are needed when there is a potential for aerosol transmission.

An N95 respirator is the minimum level of protection to prevent inhaling coronavirus.



Respirators (continued)

Advantages of reusable respirators:

- Durability
- Stand up to repeated cleaning & disinfection
- Maintain fit over time
- Cost savings
- Powered air-purifying respirator (PAPR)
- Half or full-face elastomeric respirators



Half-Face Elastomeric
Respirator



Powered Air Purifying Respirator



Elastomeric Full-Face Respirator
with HEPA Cartridge

Respirators (continued)

Surgical masks are not respirators!

Surgical masks **do not**:

- Fit tightly against the skin to form a seal
- Filter tiny particles, such as viruses or bacteria that are in the air



Respiratory protection standard

Respiratory programs must comply with all elements of OSHA Standard 29 CFR 1910.134

- Written program
- Selection according to hazard
- Medically fit to wear
- Fit testing
- Ensure proper use of respirators
- Respirator maintenance
- Labeling/color coding filters
- Employee training
- Program evaluation
- Recordkeeping



PPE for jobs with high potential exposure

- Face/eye protection
- Gloves
- Gowns
- Respirators
 - At least N95
 - PAPR or full or half face elastomeric for greater protection
- NOTE: there is a worldwide shortage of PPE!



Training and drills

- Must be hands-on and frequent
- Should **not** be primarily computer based or lecture
- Must include an opportunity to drill the actual process of donning and doffing PPE and respirators
- Should include a trained observer
- Cover site specific decontamination procedures.



Prevention in all work settings

- Wash hands after removing gloves or when soiled.
- Wear a mask.
- Keep common surfaces such as telephones, keyboards clean.
- Avoid sharing equipment if possible.
- Minimize group meetings by using phone, email, and avoid close contact when meetings are necessary.
- Consider telework.
- Limit unnecessary visitors to the workplace.
- Maintain your physical and emotional health with rest, diet, exercise, and relaxation.

Protection of essential workers

- Fire, police, grocery stores, gas stations, utilities, communications, and health care facilities are examples of essential industries and operations that remain open during a pandemic shutdown.
- A site and job task specific risk assessment should be conducted to document the necessary protective measures.
- Social distancing measures include use of barriers, signs, modifying work procedures that require close human interaction. Other steps include increased cleaning and disinfection, use of PPE and respirators, and training.

OSHA Hazard Communication standard

The hazard communication standard, 29 CFR 1910.1200, establishes a worker's right to know about chemicals in the workplace

Employers are required to develop:

- List of all hazardous chemicals in the workplace
- Labels on containers
- Chemical information (safety data sheets)
- Training
- Written program and worker access to information

These rights may be relevant to the cleaning and disinfecting of chemicals

Portable containers



- Portable containers must be labeled
- Exception: portable containers do not have to be labeled if only the worker who transfers the chemical uses it during that shift

Cal OSHA Aerosol Transmissible Disease (ATD) Standard

<http://www.dir.ca.gov/Title8/5199.html>

- Enforceable in California, it applies to many types of health care settings, police services, correctional facilities, drug rehab centers, homeless shelters, and other settings.
- Requires different types of engineering controls, work practices and administrative controls, and PPE depending on the level of potential exposure.
- It is a useful reference for all states.

Mental health and stress

As the number of cases of COVID-19 increase, so does the associated anxiety and stress. Consider the following steps:

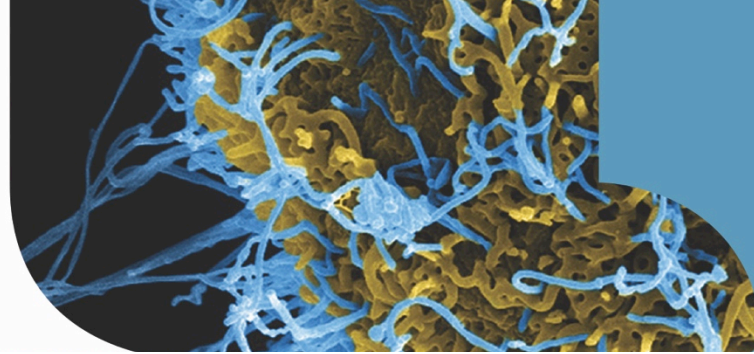
- **Use your smart phone** to stay connected to family and friends. Shift from texting to voice or video calling to feel more connected.
- **Keep comfortable.** Do more of the things you enjoy doing at home.
- **Practice stress relief** whenever you feel anxiety building – do some deep breathing, exercise, read, dig in the garden, whatever works for you.
- **Avoid unhealthy behavior** such as excess drinking – that will just increase your anxiety afterwards.
- **Keep looking forward.** Think about plans you'd like to make down the road.

The Role of the Vaccine

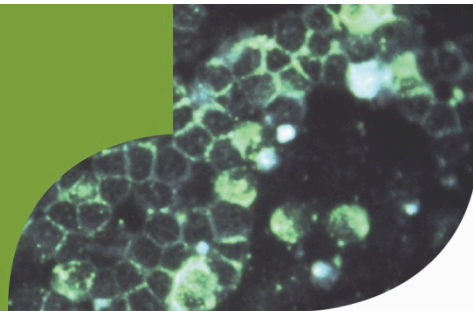
- Cases of COVID-19 will decrease with the administration of the vaccine.
- With uptake of the vaccine and continued workplace controls in place, occupational exposures will decrease.
- People who are vaccinated can still be exposed and potentially expose someone else even if they don't become sick.
- A continued focus on maintaining workplace preventive measures is important to protect workers in all industries.

Workers have the right to:

- » Receive workplace safety and health training in a language you understand.
- » Be protected from potentially toxic chemicals like cleaners and disinfectants.
- » Request an OSHA inspection and speak to the inspector.
- » Report an injury or illness and get copies of your occupational medical records.
- » Get copies of the employer's log of recordable work-related injuries and illnesses.
- » Complaints can be filed by calling 800-321-OSHA or filing an online complaint, as well as in person.
 - » Information is available on OSHA's website at <https://www.osha.gov/workers/file-complaint>.



The PSD Training Module trains workers how to use existing resources to research and evaluate the characteristics of infectious disease hazards and also to understand the recommended methods for controlling them.



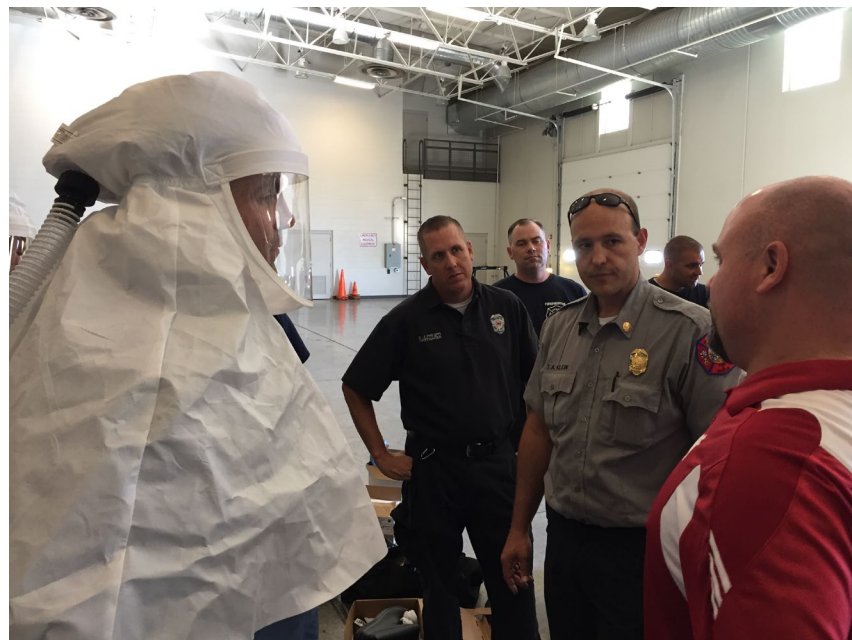
Pathogen Safety Data (PSD) Guide Training Module

OCTOBER 2016

NOTE: This module should not be used as a comprehensive stand alone safety & health training module on infectious diseases. Rather, users are encouraged to adapt and incorporate this module into new and existing programs. Also, the Trainer notes below each slide contain important information that should be reviewed prior to using this module.

Program design

- Interactive
- Adult training techniques
- Designed for workers & community
- All hazards approach
- Structured training materials



Objectives

Upon taking this module, participants will be able to:

1. Access and use existing resources for pathogen safety data.
2. Look up key terminology used in pathogen safety data resources.
3. Explain the use of pathogen safety data resources in risk assessment and infection prevention and control activities.

PSD guide training materials

- PPT presentation
- Participant worksheet
- The PSD Guide
- A glossary
- Four case studies that can be used as alternative to activities
- An instructor guide

Download the PSD materials:

<https://tools.niehs.nih.gov/wetp/index.cfm?id=2554>

Acronyms

- CDC Centers for Disease Control and Prevention
- EPA U.S. Environmental Protection Agency
- HEPA high-efficiency particulate air
- HHS U.S. Department of Health and Human Services
- JCAHO Joint Commission on Accreditation of Healthcare Organizations
- LRN Laboratory Response Network
- NIOSH National Institute for Occupational Safety and Health
- OSH Act Occupational Safety and Health Act of 1970
- OSHA Occupational Safety and Health Administration
- PAPR Powered air-purifying respirator
- PPE Personal protective equipment
- SNS Strategic National Stockpile
- WHO World Health Organization

For more information

Centers for Disease Control and Prevention (CDC)

<http://www.cdc.gov>

Occupational Safety and Health Administration (OSHA)

<http://www.osha.gov>

World Health Organization

<http://www.who.int/en/>

National Institute for Occupational Safety and Health (NIOSH)

<http://www.cdc.gov/NIOSH/>

NIEHS Worker Training Program

<https://tools.niehs.nih.gov/wetp/index.cfm?id=2554>

Why this training tool was created

This training tool was created by the NIEHS National Clearinghouse for Worker Safety and Health Training under a contract (HHSN273201500075U) from the National Institute of Environmental Health Sciences Worker Training Program (WTP).

WTP has trained more than 2 million emergency responders and hazardous waste workers since 1987 to do their jobs safely. WTP is a part of the U.S. Department of Health and Human Services, which is a cooperating agency under the Worker Safety and Health Support Annex of the National Response Plan. As part of the coordinated effort, the National Clearinghouse worked with NIEHS, WTP to create this orientation briefing for those who may be exposed to COVID-19 (coronavirus disease 2019).