

Rights/Notification (Slide Layer)

Access to Employee Exposure and Medical Records

Click on each button

Location/Availability

Rights/Notification

You have the right to review your relevant exposure records and Kaiser must make available a copy of the standard. The below Standard and Appendices please visit the Resources in the upper right course of this training content.

- OSHA Standard 29 CFR 1910.1020
- Standard's Appendix A
- Standard's Appendix B

NOTE: Before finishing this training, you must know how to contact your Employee Health Department which is responsible for maintaining and providing access to Employee Exposure Records.


10 of 10 | You've completed 0% of the lesson.

Infection Prevention and Control (MOC)

1. Bloodborne Pathogens

1.1 Bloodborne Pathogens

Bloodborne Pathogens



When completed in conjunction with orientation to job-specific and site-specific policies and procedures, this module meets the training requirements for bloodborne pathogens as described in Federal Standard 29 CFR 1910.1030 and California Standard 8 CCR 5193.

Your department will provide additional training when changes such as modification of tasks or procedures or institution of new tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created.

1 of 33 | You've completed 0% of the lesson.

Notes:

1.2 OSHA's Bloodborne Pathogens Standard

OSHA's Bloodborne Pathogens Standard

The Bloodborne Pathogen (BBP) Standard aims to minimize your exposure to bloodborne pathogens.

Employers must select and implement appropriate engineering controls to prevent employee exposure to BBPs. The standard requires that those at risk of BBP exposure be included in the process of evaluation and selection of these devices.

A hands-on demonstration in the use of the approved safety devices used in your work area is required. **Employees and physicians are required to use safety devices that are provided by the employer.**

Talk to your Department Manager for more information on specific procedures performed or devices approved for use in your department.

For your reference the BBP standard is available in the [Resources menu](#).



2 of 33 | You've completed 0% of the lesson.

1.3 Introduction

Asking Questions

The BBP standard requires that you have an opportunity for interactive questions and answers about this material. [Contact your local Infection Prevention or Employee Health department \(EH&S Community\).](#)

If you do not know how to contact them, you can find their contact information in the [Resources menu](#).

In addition, OSHA's BBP Standard requires that our records include a summary of the training content and the names and qualifications of the trainers. KP's BBP training was created by National EH&S and content was developed by our national Subject Matter Expert (SME) for Bloodborne Pathogens with contributions from national and regional Infection Prevention and Employee Health leaders. Onsite support is provided by your local EH&S, Employee Health and Infection Prevention departments.

The BBP Training Addendum in the [Resources menu](#) provides a summary of course elements and the qualifications of our training developers.



3 of 33 | You've completed 0% of the lesson.

Notes:

1.4 Epidemiology and Symptoms of BBPs



Epidemiology and Symptoms of BBPs

BBPs are pathogenic microorganisms present in human blood that can cause disease in humans. **BBPs are transmitted** through direct contact of the eyes, nose, mouth or non-intact skin with:

- The **blood or body fluids** of an infected person (body fluids include but are not limited to urine, saliva, sweat, feces, vomit, breast milk and semen);
- **Objects** (like needles and syringes) that have been contaminated

These pathogens include, but are not limited to, Human Immunodeficiency Virus (HIV), Hepatitis B virus (HBV), Hepatitis C virus (HCV) and Ebola.


[Click on each disease for more information.](#)

Human Immunodeficiency Virus (HIV)	Hepatitis B Virus (HBV) Hepatitis C Virus (HCV)	Ebola
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4 of 33 | You've completed 0% of the lesson.

Notes:

HIV (Slide Layer)



Human Immunodeficiency Virus

Infection by **Human Immunodeficiency Virus (HIV)** causes the progressive loss of immune system function. Acquired Immunodeficiency Syndrome (AIDS) can result from HIV infection and is characterized by opportunistic infections, cancers, neurologic disorders and other syndromes.


Symptoms may include but are not limited to:

Flu-like illness	Fever
Sore throat	Swollen lymph nodes
Muscle aches	Fatigue
Chills	

CLOSE

4 of 33 | You've completed 0% of the lesson.

Hepatitis B and C (Slide Layer)



Hepatitis B and C

Hepatitis is an **inflammation of the liver**, and one major type is viral hepatitis. **Hepatitis B and C** are the more serious viral forms and are **spread through contact with human blood or tissue** and perhaps through contact with other body fluids. They can result in chronic, debilitating and potentially fatal liver disease.

You can have Hepatitis B or C for many years before you even know you have the virus. However, by then your liver may already be damaged. You can be infectious weeks before the onset of symptoms, and you will stay infectious while you are sick. Most people with Hepatitis C, and some people with Hepatitis B remain infectious indefinitely.


Symptoms of infection from Hepatitis B and C include, but are not limited to:

Loss of appetite	Abdominal discomfort
Nausea and vomiting	Joint pain and rash
Jaundice (yellowing of the skin and eyes)	Flu-like symptoms

CLOSE

4 of 33 | You've completed 0% of the lesson.

Ebola (Slide Layer)



Ebola

Ebola Virus Disease (EVD) is an infectious disease caused by the Ebola virus. It is classified as a viral hemorrhagic fever (VHF) because of the fever and abnormal bleeding. Among the VHFs, Ebola is feared because of its high mortality. There are no specific treatments, but supportive therapy can be provided to address bleeding and other complications.

- Persons are not contagious until they develop symptoms.
- Persons at highest risk for EVD include healthcare workers and family and friends of infected patients. Effective isolation of patients and appropriate infection control measures applied to any suspect EVD patient would contain any potential spread.
- Healthcare workers who will care for patients with suspected or confirmed Ebola will receive additional training.

Symptoms of infection from Ebola may appear 2 to 21 days after exposure to Ebola and include:

Fever	Vomiting
Severe headache	Stomach pain
Joint and muscle aches	Diarrhea
Weakness	Unexplained hemorrhage

CLOSE

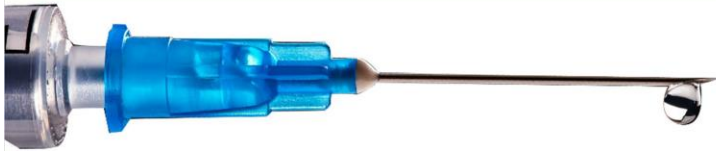
4 of 33 | You've completed 0% of the lesson.

1.5 BBP Modes of Transmission

BBP Modes of Transmission

The modes of BBP transmission to healthcare workers are:

- Needlesticks/punctures
- Splashes into the nose, mouth or eyes
- Cuts or contact with non-intact skin (percutaneous)



5 of 33. | You've completed 0% of the lesson.

Notes:

1.6 BBP Exposure Control Plan

BBP Exposure Control Plan

Each Kaiser Permanente clinical facility maintains a [Bloodborne Pathogen Exposure Control Plan](#).

Your Facility's plan:

- Describes Kaiser Permanente's role in protecting employees and your obligation to use protective measures.
- Identifies the procedures that put employees at risk and the protective measures to be taken.
- Describes the procedure for reporting BBP Exposure and Post-Exposure Prophylaxis.

You can obtain a copy of your site's BBP Exposure Control Plan from your supervisor or contact Environmental Health & Safety, Infection Prevention or Employee Health Services.



6 of 33. | You've completed 0% of the lesson.

Notes:

1.7 Activities That May Involve BBP Exposure

Activities That May Involve BBP Exposure

Examples of tasks that could involve exposure to **Bloodborne Pathogens or Other Potentially Infectious Materials (OPIM)** include any assigned duties during which skin, nose, mouth, eye, or parenteral contact with blood or OPIM can be reasonably anticipated.

Including:

- Surgical or invasive procedures
- IV/Central line placement
- Splash-related events (e.g., during suctioning, childbirth, GI and pulmonary procedures)
- Blood drawing
- Cleaning up blood or body fluid spill
- Lab specimen processing and handling

There is a list of commonly performed procedures in the [Resources menu](#) that may lead to exposure to BBPs.



7 of 33. | You've completed 0% of the lesson.

Notes:

1.8 Common Causes of Sharps Injuries (click on each)

Common Causes of Sharps Injuries

(click on each)

Device Activation Issue

Patient Moved/Jumped

Insufficient Training

User Error

Improper Handling

Sharps not Disposed of Properly

8 of 33. | You've completed 0% of the lesson.

Device Activation (Slide Layer)

Common Causes of Sharps Injuries

(click on each)

Device Activation Issue

Patient Moved/Jumped

Insufficient Training

- Needle slipped or finger slipped during activation of safety feature
- Safety mechanism malfunctioned
- Between steps of a multi-step procedure (user unable to activate safety feature until all steps completed)

User Error

Improper Handling

Sharps not Disposed of Properly

8 of 33. | You've completed 0% of the lesson.

Patient Moved/jumped (Slide Layer)

Common Causes of Sharps Injuries

(click on each)

Device Activation Issue	Patient Moved/Jumped <ul style="list-style-type: none">Lack of stabilizationPatient unprepared for the procedureUncontrolled pediatric patient	Insufficient Training
User Error	Improper Handling	Sharps not Disposed of Properly

8 of 33. | You've completed 0% of the lesson.

Insufficient Training (Slide Layer)

Common Causes of Sharps Injuries

(click on each)

Device Activation Issue	Patient Moved/Jumped	Insufficient Training <ul style="list-style-type: none">User didn't receive in-service on how to activate the safety deviceUser didn't know how to activate device appropriately even though they received training
User Error	Improper Handling	Sharps not Disposed of Properly

8 of 33. | You've completed 0% of the lesson.

User Error (Slide Layer)

Common Causes of Sharps Injuries

(click on each)

Device Activation Issue	Patient Moved/Jumped	Insufficient Training
User Error <ul style="list-style-type: none">Did not engage safety featureRecapped used device with two handed techniqueUsed a non-safety device when a safety device was availableStuck hand in sharps container	Improper Handling	Sharps not Disposed of Properly

8 of 33. | You've completed 0% of the lesson.

Improper Handling (Slide Layer)

Common Causes of Sharps Injuries
(click on each)

Device Activation Issue

Patient Moved/Jumped

Insufficient Training

User Error

Improper Handling

- Hand passing instrument
- Leaving inactivated or loose needle on instrument field during or after procedure
- Using device inappropriately
- Two-handed activation of safety feature

Sharps not Disposed of Properly

8 of 33. | You've completed 0% of the lesson.

Sharps not Disposed (Slide Layer)

Common Causes of Sharps Injuries
(click on each)

Device Activation Issue

Patient Moved/Jumped

Insufficient Training

User Error

Improper Handling

Sharps not Disposed of Properly

- Sharps sticking out of sharps container
- Sharps found outside of sharps container (e.g., found in trash, floor, bed cracks, linen, food tray, etc.)
- Overfilled sharps container

8 of 33. | You've completed 0% of the lesson.

1.9 Prevention of BBP Exposure

Prevention of BBP Exposure

Hierarchy of Controls must be used to prevent and reduce exposure to Bloodborne Pathogens. Starting with "Elimination" click through each level for more information.

Hierarchy of Controls

- Elimination** (Most effective): Physically remove the hazard
- Substitution**: Replace the hazard
- Engineering Controls**: Isolate people from the hazard
- Administrative Controls**: Change the way people work
- PPE** (Least effective): Protect the worker with Personal Protective Equipment

9 of 33. | You've completed 0% of the lesson.

Notes:

PPE (Slide Layer)

PPE

Depending on the equipment selected, PPE can protect the skin, eyes, mouth and nose during normal use and during the entire length of time it is worn. Examples of PPE are gloves, gowns and/or disposable plastic aprons, masks, face shields and protective eyewear.

Located in the [Resources menu](#) is a list of commonly performed procedures and the PPE required.

All PPE has limitations. Gloves may develop small holes. Even appropriate PPE does not provide a foolproof guarantee of safety.

Your **department manager** is responsible for **maintaining an adequate supply** of protective gear to prevent employee exposure and for **informing you** of the proper use, location, removal, handling, cleaning, decontamination and disposal of PPE used at your worksite.

NOTE:

- Disposable gloves cannot be washed or decontaminated for reuse.
- Employees must remove any PPE when it becomes torn or damaged, before leaving the work area, or when the PPE becomes contaminated, and place it in appropriate containers for decontamination or disposal. Disposable PPE, when contaminated with visible fluid blood, dried oiled on blood or other infectious material, should be discarded in a biohazard container (or in a chemo container if the PPE has come in contact with chemotherapeutic agents).



Close

Work practices (Slide Layer)

Administrative Controls

Handle blood/body fluids of all patients and laboratory specimens as potentially infectious.

Decontaminate hands before putting on gloves, before patient contact, after touching equipment, after touching patient's environment, after specimen contact and after removal of gloves.

Place used sharps in sharps container immediately after use. Do not recap or manipulate needles.

Do not eat, drink, apply cosmetics or lip balm, or handle contact lenses in patient care areas or laboratory processing areas.

Do not pick up used sharps or broken glassware that may be contaminated directly with your hands. Perform clean up carefully using tools such as a brush and dustpan, tongs or forceps.

Protect your non-intact skin (i.e., chapped or abraded skin) from contact with blood or bloody fluids.



Close

Engineering (Slide Layer)

Engineering Controls

Use sharps safety devices. Use of these devices is required by OSHA with only a few exceptions. Examples of safety devices include safe needle devices for injection, IV starts, and blood draws; safety scalpels and lancets.

A limitation of safe needle devices is that most devices have safety features that must be actively engaged to be effective.

Employees and physicians are required to use safety devices that are provided by the employer!



Close

Elimination (Slide Layer)

Elimination

Where clinically appropriate, look for ways to eliminate sharps use.

Examples include using needleless IV systems and surgical adhesives (a non-invasive alternative to skin sutures and staples).



Image source: B Braun

Close

Substitution (Slide Layer)

Substitution

There are ways of reducing the risk of a sharps injury by substituting the type of device or material used.

Examples include:

- Using blunt filter/fill needles for medication preparation to reduce needlesticks.
- Using plastic test tubes instead of glass, where clinically appropriate, to reduce potential cuts.
- Using blunt-tip suture needles for suturing fascia, muscle, fat, and organ tissue is recommended by American College of Surgeons where clinically appropriate.



Image source: BD

Close

1.10 Explanation for Selection of PPE

Explanation for Selection of PPE

Your supervisor will need to review your job responsibilities for tasks that may involve exposure to bloodborne pathogens.

Selection of Personal Protective Equipment (PPE) is based on the type and degree of risk associated with the task being performed. Your facility EH&S and/or Infection Prevention Departments can help with selection and evaluation of PPE.

Any concerns about PPE (what type to use, proper training, etc.) should be discussed with your department manager or contact your EH&S Department for more information.



10 of 33. | You've completed 0% of the lesson.

1.11 Hepatitis B Vaccine

Hepatitis B Vaccine

KP offers hepatitis B vaccine to all employees. The vaccine can be obtained **free of charge** from Employee Health Services. The benefit of being vaccinated against hepatitis B is that it will prevent infection and liver disease associated with exposure to the hepatitis B virus.

The vaccine:

- is highly effective and safe
- is recommended for all employees
- does not expose the recipient to bloodborne pathogen diseases
- is given in three injections in the arm at day 0, 1 month and 6 months

Adverse reactions to the hepatitis B vaccine are rare but include:

- injection site reactions, including redness, soreness, swelling
- fatigue/weakness
- headache
- malaise
- irritability



For more information on the Hepatitis B Vaccine see the [Resource menu](#).

Hepatitis B vaccine must be offered to all employees at risk for blood or body fluid contact, and is strongly recommended for all employees. A declination form (available from Employee Health Services) must be signed if you choose to refuse the vaccine. You may decide later to be immunized.

11 of 33. | You've completed 0% of the lesson.

Notes:

1.12 For your reference the BBP standard is available

Actions to Take in an Emergency

The most obvious exposure incident is a needlestick. However, when blood or other infectious material comes in contact with your eyes, nose, mouth, other mucous membrane, or non-intact skin, this is also considered an exposure incident.

- Skin – intact or non-intact – should be washed IMMEDIATELY with soap and water.
- Nose, mouth and eyes can be flushed with water or saline. You may use an emergency eyewash station if available.
- Next, follow the procedures appropriate for your region as described in the following slides.



12 of 33. | You've completed 0% of the lesson.

1.13 Where Do You Work?

Where Do You Work?

Click on the Market you work in to get Market-specific information on actions to take in an emergency (i.e., if you have a BBP incident).

If you work in Program Office or are a Shared Services employee or physician, select the Market you work in.



13 of 33. | You've completed 0% of the lesson.

1.14 Georgia

Georgia

IMMEDIATELY notify your supervisor.

The supervisor notifies Employee Health and sends the employee to Internal Medicine (or ED if the employee is working in the hospital).

Employee to complete the Sharp/Splash Exposure Interview Form and email (don't fax) the form to Employee Health mailbox:
KPGA-Employee-Health@kp.org



1 of 33 | You've completed 0% of the lesson.

1.15 Colorado

Colorado

IMMEDIATELY notify your Manager and call Employee Health at **(303) 344-7527**.

Urgent care may be utilized after hours and holidays.



1 of 33 | You've completed 0% of the lesson.

1.16 Northwest

Northwest

IMMEDIATELY contact **Employee Health** at

1-844-951-2060 during business hours (8:30 a.m. – 5:00 p.m.).

After business hours or on weekends:

- **Hospital Staff:** Call the on-site Hospital Supervisor (HAS).
- **Ambulatory/Dental Staff:** Proceed to nearest Urgent Care.
- **Ambulatory Surgery Center (ASC) and Care Essentials Locations:** Utilize your after-hours resource binder.



1 of 33 | You've completed 0% of the lesson.

1.17 Hawaii

Hawaii

IMMEDIATELY notify your supervisor/manager or person in charge and you will be directed for evaluation and treatment.



1 of 33 | You've completed 0% of the lesson.

1.18 MAS

Mid-Atlantic States - Maryland, Virginia and Washington DC

IMMEDIATELY notify Employee Health and your supervisor for any bloodborne pathogen exposures.

After hours, on weekends and holidays: Healthcare workers should seek post-exposure evaluation, care and treatment at **Urgent Care** centers.



1 of 33 | You've completed 0% of the lesson.

1.19 Maui

Maui Health Systems

IMMEDIATELY notify Manager, Charge AND Notify Nursing Supervisor.

Seek medical treatment in the ED within **2 hours of exposure**.

Follow up with Employee Health the next business day, call **(808) 442-5051**.



1 of 33 | You've completed 0% of the lesson.

1.20 KP Washington

KP Washington

IMMEDIATELY notify your department manager/supervisor or person in charge and page Employee Health at **206-344-9375**.

On the KP network, visit the KPWA SharePoint website via <https://mykp.kp.org>. Search for "Employee Health WA," then "Click Here" for NEEDLESTICK OR SPLASH EXPOSURE?



11 of 33 | You've completed 0% of the lesson.

1.21 Post-Exposure Procedure

Post-Exposure Procedure

In the event you are exposed to any blood or other infectious materials, it is CRUCIAL that you follow your site's procedures to facilitate immediate intervention that can deter the development of HBV, HCV, HIV and other potential infections.

[Click here for some examples of the information that will be needed to report BBP exposure:](#)



14 of 33 | You've completed 0% of the lesson.

Post-Exposure Procedure - Copy (Slide Layer)

Post-Exposure Procedure

In the event you are exposed to any blood or other infectious materials, it is CRUCIAL that you follow your site's procedures to facilitate immediate intervention that can deter the development of HBV, HCV, HIV and other potential infections.

[Click here for some examples of the information that will be needed to report BBP exposure:](#)


- The name and medical record number of the source patient (if known)
- The type and level of exposure
- The protective equipment or clothing you were wearing at the time of exposure
- Information on the device involved (including device type, brand/manufacturer, model, volume, gauge and length)
- Whether or not a safety feature was utilized

Employee Health Services enters information provided by the employee regarding the exposure incident into the National BBP Exposure Incident database. The **Sharps Injury Log** for each facility is generated from this database.

Employees who have had an exposure are offered an immediate medical evaluation with appropriate follow-up.

14 of 33 | You've completed 0% of the lesson.

1.22 Post-Exposure Medical Evaluation



Post-Exposure Medical Evaluation

- Counseling
- Appropriate lab work and treatment in line with current US Public Health Service recommendations and regional policies and procedures.
- At the time of exposure, you will be offered baseline testing for HIV, HCV and immunity to HBV. Follow-up testing for HIV, HCV and HBV (if not immune) may also be recommended if there is a concern that you had a significant exposure.
- Chemoprophylaxis (drug therapy) may be recommended after a high-risk exposure.
- If you do not have immunity to HBV, you may be offered Hep B immunoglobulin and possible revaccination (if needed) at the time of high-risk exposure to HBV.
- Evaluation of reported illnesses that may be related to the exposure.

15 of 33. | You've completed 0% of the lesson.

1.23 Biohazard Labeling

Biohazard Labeling

Biohazard warning labels must be affixed to containers of biohazardous materials. Labels must include the universal biohazard symbol and the legend **BIOHAZARD** or in the case of sharps containers and regulated waste, **BIOHAZARDOUS WASTE** or **SHARPS WASTE**.

Labels are fluorescent orange or orange-red, with lettering and symbols in a contrasting color.

Your department manager will instruct you on proper waste disposal practices for your job duties.



16 of 33. | You've completed 0% of the lesson.

1.24 How to Handle Soiled Linen/Laundry, Lab Samples and Contaminated Equipment

How to Handle Soiled Linen/Laundry, Lab Samples and Contaminated Equipment

Click on each button.

Soiled Linen/Laundry

Lab Samples

Contaminated Equipment

NEVER use a red biohazardous waste bag to contain or cover soiled linen/laundry, lab specimens or contaminated equipment.

If you have questions about how to properly label specimens or contaminated equipment, contact your department manager.

17 of 33. | You've completed 0% of the lesson.

Notes:

Soiled Linen/Laundry (Slide Layer)

How to Handle Soiled Linen/Laundry, Lab Samples and Contaminated Equipment

Click on each button.


Soiled Linen/Laundry

Lab Samples

Contaminated Equipment

Place all soiled linen/laundry directly in a blue soiled linen hamper.

NEVER place soiled linen in a red biohazard bag before placing it in a soiled linen blue bag hamper.



NEVER use a red biohazardous waste bag to contain or cover soiled linen/laundry, lab specimens or contaminated equipment.

If you have questions about how to properly label specimens or contaminated equipment, contact your department manager.

17 of 33. | You've completed 0% of the lesson.

Lab Samples (Slide Layer)

How to Handle Soiled Linen/Laundry, Lab Samples and Contaminated Equipment

Click on each button.

Soiled Linen/Laundry

Lab Samples

Contaminated Equipment

Only use designated specimen bags and coolers to contain laboratory specimens.

NEVER place specimens in a red biohazard bag.



NEVER use a red biohazardous waste bag to contain or cover soiled linen/laundry, lab specimens or contaminated equipment.

If you have questions about how to properly label specimens or contaminated equipment, contact your department manager.

17 of 33. | You've completed 0% of the lesson.

Contaminated Equipment (Slide Layer)

How to Handle Soiled Linen/Laundry, Lab Samples and Contaminated Equipment

Click on each button.



Soiled Linen/Laundry

Lab Samples

Contaminated Equipment

Contaminated equipment needing cleaning or reprocessing (e.g., scopes, surgical tools, slings, IV poles, commodes, etc.) should **NEVER** be placed in or covered by a red biohazard bag.

Only use the specifically designated proper label or tote.



NEVER use a red biohazardous waste bag to contain or cover soiled linen/laundry, lab specimens or contaminated equipment.

If you have questions about how to properly label specimens or contaminated equipment, contact your department manager.

17 of 33. | You've completed 0% of the lesson.

2. Tuberculosis

2.1 Tuberculosis (TB)



Tuberculosis (TB)


This module meets training requirements as described in CPL 02-02-078, Enforcement Procedures for Occupational Exposure to Tuberculosis.

KP's TB training was created by National EH&S and content was developed by our Subject Matter Experts (SMEs) for Aerosol Transmissible Diseases with major contributions from regional and national Employee Health and Infection Prevention leaders. Onsite support is provided by your local EH&S, Employee Health and Infection Prevention departments.

18 of 33 | You've completed 0% of the lesson.

Notes:

2.2 Tuberculosis (TB)



Tuberculosis (TB)

The law requires that you have an opportunity for interactive questions and answers about this material. If you reach a point in this training when you do have a question, STOP and contact your local Infection Prevention or Employee Health department. The contact information is located in the **Resource menu**.

If you close this course and return to it at a later time, you will have the option to start again where you left off.

19 of 33 | You've completed 0% of the lesson.

Notes:

2.3 What is TB

What is Tuberculosis (TB)?

TB is a **contagious airborne disease** caused by the organism known as *Mycobacterium tuberculosis*. TB can infect any part of the body, but **the lungs are the most common site of infection**. TB lymphadenitis is the most common form of extrapulmonary TB. Pulmonary and laryngeal tuberculosis are the most contagious forms of the disease.

About 10% of infected persons (i.e., having Latent TB) will develop TB disease (Active TB) at some time in their lives, but the **risk for developing TB disease is considerably higher** for persons who are **immunosuppressed**, especially those with HIV.

Click on each.

Latent TB

TB Disease (active)



20 of 33. | You've completed 0% of the lesson.

Notes:

Latent TB (Slide Layer)

What is Tuberculosis (TB)?

TB is a **contagious airborne disease** caused by the organism known as *Mycobacterium tuberculosis*. TB can infect any part of the body, but **the lungs are the most common site of infection**. TB lymphadenitis is the most common form of extrapulmonary TB. Pulmonary and laryngeal tuberculosis are the most contagious forms of the disease.

About 10% of infected persons (i.e., having Latent TB) will develop TB disease (Active TB) at some time in their lives, but the **risk for developing TB disease is considerably higher** for persons who are **immunosuppressed**, especially those with HIV.

Click on each.

Latent TB

TB Disease (active)



Latent TB Infection - Persons with latent TB infection do not feel sick and do not have any symptoms. They are **infected with *M. tuberculosis*, but do not have TB disease**. The only sign of latent TB infection is a positive reaction to the tuberculin skin test or TB blood test (immune compromised persons may have false negative test results). Persons with latent TB infection are **not** infectious and cannot spread TB infection to others.

20 of 33. | You've completed 0% of the lesson.

TB Disease (Slide Layer)

What is Tuberculosis (TB)?

TB is a **contagious airborne disease** caused by the organism known as *Mycobacterium tuberculosis*. TB can infect any part of the body, but **the lungs are the most common site of infection**. TB lymphadenitis is the most common form of extrapulmonary TB. Pulmonary and laryngeal tuberculosis are the most contagious forms of the disease.

About 10% of infected persons (i.e., having Latent TB) will develop TB disease (Active TB) at some time in their lives, but the **risk for developing TB disease is considerably higher** for persons who are **immunosuppressed**, especially those with HIV.

Click on each.

Latent TB

TB Disease (active)



TB Disease (Active TB) - TB bacteria **overcome the defenses of the immune system and begin to multiply, resulting in** the progression from latent TB infection to **TB disease**. People with TB disease (Active TB) have symptoms, are sick, and may be infectious if they have the disease in their lungs or larynx. Some people develop TB disease soon after infection, while others develop it later when their immune system becomes weak.

20 of 33. | You've completed 0% of the lesson.

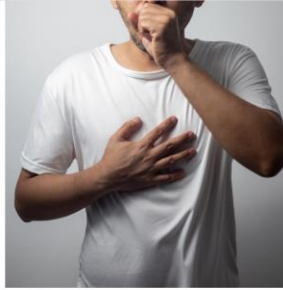
2.4 High Risk

High-risk groups can be divided into two categories

Click on each for more information.

Exposure to or
infection with TB

Developing TB
disease (active TB)
after infection



21 of 33. | You've completed 0% of the lesson.

Infection (Slide Layer)

High-risk groups can be divided into two categories

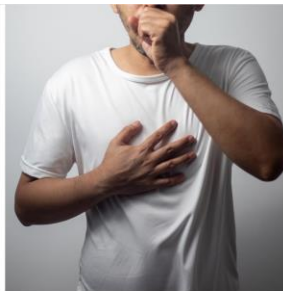
Click on each for more information.

Exposure to or
infection with TB

Developing TB
disease (active TB)
after infection

Groups at high risk for exposure, or infection include:

- Persons who have close contact with someone with tuberculosis disease (Active TB)
- Persons born in areas of the world where TB is common, including some countries in Asia, Africa and Latin America
- Persons who visit areas with a high prevalence of TB disease
- Persons who abuse drugs or alcohol
- Persons with HIV
- Medically underserved low-income populations
- People who live or work in high-risk congregate settings such as correctional institutions, nursing homes, mental institutions or homeless shelters
- Infants, children and adolescents exposed to adults who are at increased risk for latent TB infection or TB disease
- Locally identified high risk populations
- **Healthcare workers (HCW) who provide services to high-risk groups.**



21 of 33. | You've completed 0% of the lesson.

Developing disease (Slide Layer)

High-risk groups can be divided into two categories

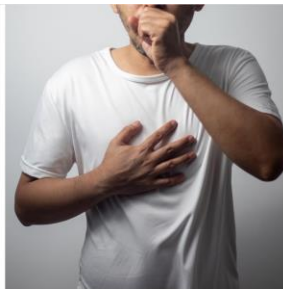
Click on each for more information.

Exposure to or
infection with TB

Developing TB
disease (active TB)
after infection

Groups at High Risk for Developing TB Disease (Active TB) include:

- People living with HIV
- Children younger than 5 years of age
- People infected with M. tuberculosis within the past 2 years
- People with a history of untreated or inadequately treated TB disease
- People who are immunocompromised or receiving immunosuppressive therapy
- People with silicosis, diabetes mellitus, chronic renal failure, leukemia or cancer of the head, neck or lung
- Persons who have had a gastrectomy or jejunioileal bypass
- Persons of low body weight
- Cigarette smokers and persons who abuse drugs or alcohol
- Locally identified high risk populations



21 of 33. | You've completed 0% of the lesson.

2.5 Modes of Transmission

Modes of TB transmission

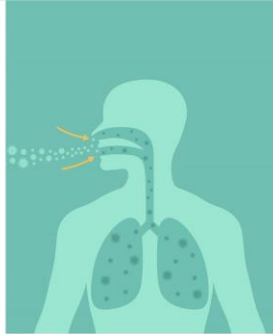
TB is spread from **person to person** by bacteria carried on **tiny particles in the air** (droplet nuclei containing tubercle bacilli). These infectious particles are generated when persons with untreated and active lung or laryngeal TB cough, sneeze, speak or sing. They are so small that normal air currents can keep them airborne for a long time.

Examples of high risk procedures that have higher potential for exposing staff to TB include:

- Endotracheal intubation and suctioning
- Aerosolized administration of drugs, e.g., Pentamidine
- Laryngoscopy and bronchoscopy
- Sputum induction
- Processing of TB specimens
- Cardiopulmonary resuscitation
- Autopsy

Procedures are considered high risk if they may generate significant amounts of aerosolized infectious particles.

TB is NOT transmitted by contact with surfaces or objects!



CDC.gov/tb/education

22 of 33. | You've completed 0% of the lesson.

2.6 Symptoms

Symptoms of TB Disease (Active TB)

The **lungs** are the **most common site of infection**, and pulmonary and laryngeal tuberculosis are the most contagious forms of the disease.

Signs and symptoms:

- A cough that lasts three weeks or longer
- Pain in the chest
- Coughing up blood or mucus
- Unexplained weight loss
- Loss of appetite
- Night sweats
- Fever
- Chills
- Weakness or fatigue



23 of 33. | You've completed 0% of the lesson.

2.7 Prevention

Responsibilities for Prevention - Employee/Physician

You have a responsibility to follow those policies and procedures that have been developed to prevent exposure to tuberculosis.

Employee/Physician Responsibilities:

- Know how to access your Facility's TB Exposure Control Plan. Ask your supervisor or contact Employee Health or the Infection Prevention Department to be directed to this Plan.
- Recognize tasks that include occupational exposure.
- Perform all your tasks according to established work practice controls (for example, know the N95 respirator for which you have been fit tested or the PAPR for which you have been trained).
- Learn to recognize patients with symptoms suggestive of TB disease (active TB).
- Report known or suspected TB exposures to the responsible supervisor and to the Infection Prevention or Employee Health designee as soon as possible for appropriate evaluation and follow up.
- It is your responsibility to complete your annual TB screening when directed by Infection Prevention/Employee Health.

Annual TB Screening:

- Employees will be screened initially upon hire, annually, or as determined by the TB risk assessment in your region. You will receive this notification from Employee Health (TB testing requirement or questionnaire).



24 of 33. | You've completed 0% of the lesson.

2.8 Prevention

Responsibilities for Prevention - Managers

It is a **Manager's responsibility** to:

- Ensure employees complete medical screening through Employee Health
- Train employees on any site-specific protocols including the purpose and proper use of controls to prevent TB exposure
- If employees are required to use a respirator, ensure employees receive a one-time medical evaluation for respirator use from Employee Health. (Additional medical evaluations may be required by the evaluating clinician.)
- Ensure employees required to use a respirator receive initial and annual training on the specific type of respirator they are assigned to use, e.g., N95, elastomeric or PAPR* (*Note: *Maxair CAPR* = type of PAPR)
- Ensure employees using N95 or other tight-fitting respirators receive initial and annual fit testing
- Know how to access PAPRs for those employees unable to use N95 respirators
- Provide an adequate supply of respirators in the models and sizes that staff have been fit tested for (N95, elastomeric) or otherwise assigned to use (PAPR)



It is the manager's responsibility to assure completion of the healthcare workers' annual TB surveillance by Employee Health Services (TB test request or health questionnaire).

For Employee Health contact information refer to EH&S community link in the [Resource menu](#).

25 of 33. | You've completed 0% of the lesson.

2.9 Prevention

Responsibilities for Prevention - Employee Health

Employee Health Services is responsible for notification of employees **potentially exposed to a patient with TB disease (active TB)**. Follow-up should occur 8-10 weeks after exposure.

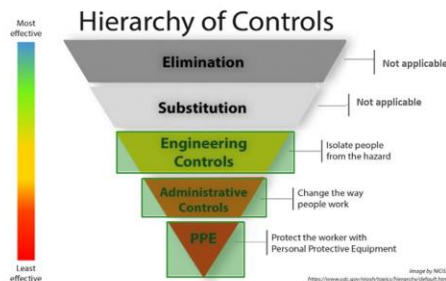


26 of 33. | You've completed 0% of the lesson.

2.10 Prevention of BBP Exposure

Methods to Prevent Exposure

To prevent employee exposure to TB, a 3-step "hierarchy of controls" is recommended by the CDC (click on each "[Hierarchy of Control](#)" starting with "[Engineering Controls](#)" for more information):



27 of 33. | You've completed 0% of the lesson.

Notes:

PPE (Slide Layer)

Personal Protective Equipment (PPE) – Respiratory Protection

Employees should use an N95 respirator, an elastomeric respirator or PAPR in the following situations:

- Entering room of a known or suspected TB patient on airborne isolation precautions, or entering the room after the patient has left but prior to the required clearance time for the room (for example, at least 35 min. for an All room operating at 12 air changes per hour, and at least 70 min. for a room operating at 6 air changes per hour)
- Occupying a room when a known or suspected TB patient is undergoing an aerosol-generating medical procedure (e.g., sputum induction, bronchoscopy, surgery, autopsy, etc.)
- Changing air filters serving airborne infection isolation rooms
- Entering an Acid-Fast Bacilli (AFB) Lab

NOTE:

- When wearing a surgical mask underneath a PAPR, such as in the OR, only the PAPR headcovers recommended by the manufacturer for use with a surgical or face mask underneath may be used.

- Surgical masks are NOT respirators, although they may look similar. A surgical mask does not achieve the tight face seal of an N95 respirator.

To correctly use and wear tight-fitting respirators such as an N95 or elastomeric respirator, you must be trained and fit tested for that type of respirator. OSHA requires that employees wearing these respirators have been trained and fit tested **within the past year**. PAPR users must be trained **within the past year**.



Close

Administrative (Slide Layer)

Administrative Controls

Early Identification and Treatment of TB Cases:

Identify high risk patients as those who have a chronic cough, unexplained weight loss, loss of appetite, night sweats, fever, hemoptysis (coughing up blood), and those who are immunocompromised. Other clues include recent exposure to a person with TB, or country of origin (with high incidence of TB).

Report patients with symptoms suggestive of TB to your supervisor and/or infection Prevention or Employee Health designee.



Close

Environmental (Slide Layer)

Engineering Controls

Airborne Isolation Precautions:

For markets equipped with airborne infection isolation (All) negative pressure rooms:

If TB is suspected, the patient is placed on Airborne Isolation Precautions and placed in an All negative pressure room until diagnosis is confirmed or ruled out. Suspected or confirmed TB patients should wear a surgical mask if they are being transported for any reason outside of the All room.

For markets without inpatient facilities/All rooms: If TB is suspected, the patient is isolated as soon as possible (e.g., moved out of waiting room into exam room) and/or asked to wear a surgical mask, and promptly referred to a facility equipped to properly test, treat and care for this patient. If patient is placed in a room for isolation, close door and, after patient leaves, keep door closed and restrict entry until required clearance time has elapsed (based on room ventilation rate) or require respirator use to enter.

NOTE: The referring department should always notify the receiving department regarding the suspected TB status of the patient.



Close

2.11 Decomp and Disposal of PPE

Decontamination and Disposal of PPE

Employees must remove any PPE before leaving the work area or when the PPE becomes contaminated and place it in appropriate containers for storage, cleaning, decontamination or disposal.

The **exception** is your **respirator (N95, elastomeric or PAPR)**, which must be removed **after leaving the patient room**.

PAPRs or other reusable respirators such as elastomeric respirators must be cleaned and disinfected per manufacturer's instructions. As needed, consult with Infection Prevention to ensure approved products are used.

NOTE: N95s are for single use only unless supplies of stock are extremely low and facility leadership directs staff to implement re-donning of N95s.



28 of 33. | You've completed 0% of the lesson.

Notes:

2.12 TB Exposure

TB Exposure

It's important that staff know what **qualifies** as a **TB exposure**.

A significant TB exposure is a combination of time (how long) and proximity to the infection source. It usually requires extended time with a contagious patient or very direct respiratory contact with aerosolized bacterium.

NOTE: An exposure to TB does not mean that the HCW will contract the disease!

Click on each case.



29 of 33. | You've completed 0% of the lesson.

Notes:

Case 1 (Slide Layer)

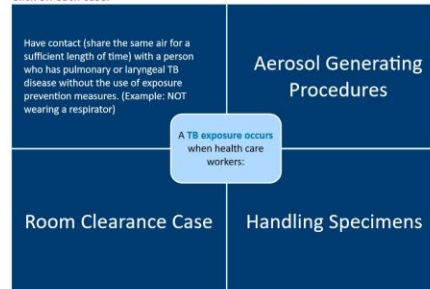
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Click on each case.



29 of 33. | You've completed 0% of the lesson.

Case 2 (Slide Layer)

TB Exposure

It's important that staff know what **qualifies as a TB exposure**.

A significant TB exposure is a combination of time (how long) and proximity to the infection source. It usually requires extended time with a contagious patient or very direct respiratory contact with aerosolized bacterium.

NOTE: An exposure to TB does not mean that the HCW will contract the disease!

Click on each case.



29 of 33. | You've completed 0% of the lesson.

Case 3 (Slide Layer)

TB Exposure

It's important that staff know what **qualifies as a TB exposure**.

A significant TB exposure is a combination of time (how long) and proximity to the infection source. It usually requires extended time with a contagious patient or very direct respiratory contact with aerosolized bacterium.

NOTE: An exposure to TB does not mean that the HCW will contract the disease!

Click on each case.



29 of 33. | You've completed 0% of the lesson.

Case 4 (Slide Layer)

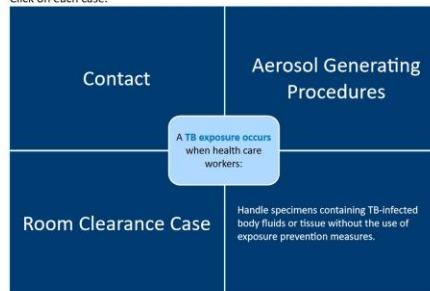
TB Exposure

It's important that staff know what **qualifies as a TB exposure**.

A significant TB exposure is a combination of time (how long) and proximity to the infection source. It usually requires extended time with a contagious patient or very direct respiratory contact with aerosolized bacterium.

NOTE: An exposure to TB does not mean that the HCW will contract the disease!

Click on each case.



29 of 33. | You've completed 0% of the lesson.

2.13 TB Post-Exposure

Post-Exposure Protocol for Latent TB

- All TB exposures must be reported to the responsible supervisor and to the Infection Prevention or Employee Health designee as soon as possible for appropriate evaluation and follow up.
- All follow up will be provided free of charge if a TB test (examples: TST - Tuberculin skin test or IGRA - blood test) conversion is determined to be work-related.



30 of 33. | You've completed 0% of the lesson.

Notes:

2.14 TB Post-Exposure

Preventive Therapy for Latent

- Employees with a positive TB test or IGRA, who do not have TB disease (Active TB), will be evaluated for preventive therapy. This evaluation and resulting treatment will be coordinated by Employee Health Services. Employees may be referred to their primary care provider for treatment.
- The purpose of preventive therapy (prophylactic treatment) is to prevent latent TB infections from progressing to TB disease (Active TB).
- Treatment is usually prophylactic use of daily Rifampin for four months, high dose INH/Rifapentine once weekly for three months or INH for 6 - 9 months. Consultation with Infectious Disease physician is advised.
- Participation in a prophylactic treatment plan is voluntary and may be free of charge through the Employee Health Department or the Public Health Department.



31 of 33. | You've completed 0% of the lesson.

Notes:

2.15 TB Disease Diagnosis


TB Disease Diagnosis

If a health care worker is diagnosed with TB Disease (Active TB):

TB is usually curable if it is diagnosed early and if effective treatment is instituted without delay. Employee Health Services may monitor care to ensure the employee receives appropriate therapy.

Click on each for more information.

[Reporting](#)[Treatment](#)[Return to Work](#)



Confidentiality will be maintained at all times.

32 of 33 | You've completed 0% of the lesson.

Notes:

Return to Work (Slide Layer)


TB Disease Diagnosis

If a health care worker is diagnosed with TB Disease (Active TB):

TB is usually curable if it is diagnosed early and if effective treatment is instituted without delay. Employee Health Services may monitor care to ensure the employee receives appropriate therapy.

Click on each for more information.

[Reporting](#)[Treatment](#)[Return to Work](#)



Employees who are diagnosed with TB disease must be cleared by the Department of Health/Public Health Dept. and possibly by an Infectious Disease physician before returning to work.

Confidentiality will be maintained at all times.

32 of 33 | You've completed 0% of the lesson.

Reporting (Slide Layer)

TB Disease Diagnosis

If a health care worker is diagnosed with TB Disease (Active TB):

TB is usually curable if it is diagnosed early and if effective treatment is instituted without delay. Employee Health Services may monitor care to ensure the employee receives appropriate therapy.

Click on each for more information.

[Reporting](#)[Treatment](#)[Return to Work](#)

Cases of TB disease (Active TB) are reported to the Department of Health/Public Health Dept. and may involve consultation with an Infectious Disease physician.

Confidentiality will be maintained at all times.

32 of 33. | You've completed 0% of the lesson.



Treatment (Slide Layer)

TB Disease Diagnosis

If a health care worker is diagnosed with TB Disease (Active TB):

TB is usually curable if it is diagnosed early and if effective treatment is instituted without delay. Employee Health Services may monitor care to ensure the employee receives appropriate therapy.

Click on each for more information.

[Reporting](#)[Treatment](#)[Return to Work](#)

TB disease should be treated through directly observed therapy by the Department of Health/Public Health Dept. Incomplete treatment can lead to the development of drug-resistant TB.

- Sputum is obtained to confirm the diagnosis suspected on chest x-ray. The patient/employee is off work until the sputum is clear of infection.
- An adequate response to therapy is required before a healthcare worker or patient with TB disease is no longer considered infectious.
- Multiple medications are used up to 9 months.

Confidentiality will be maintained at all times.

32 of 33. | You've completed 0% of the lesson.

