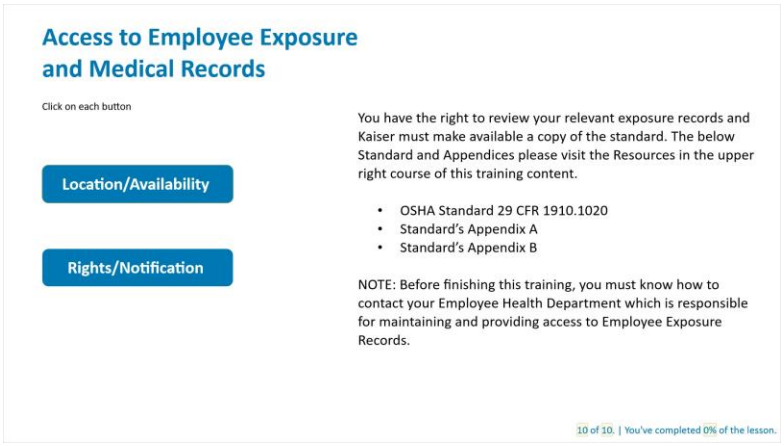
Rights/Notification (Slide Layer)



Infection Prevention and Control (MOC)

1. Bloodborne Pathogens

1.1 Bloodborne Pathogens

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

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

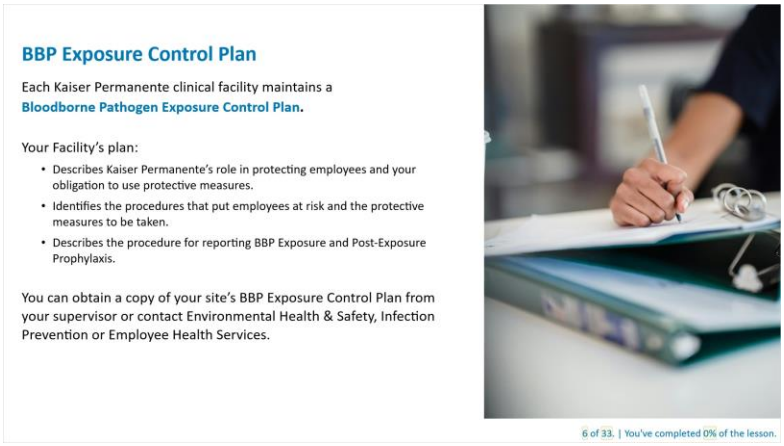
CLOSE

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

1.5 BBP Modes of Transmission

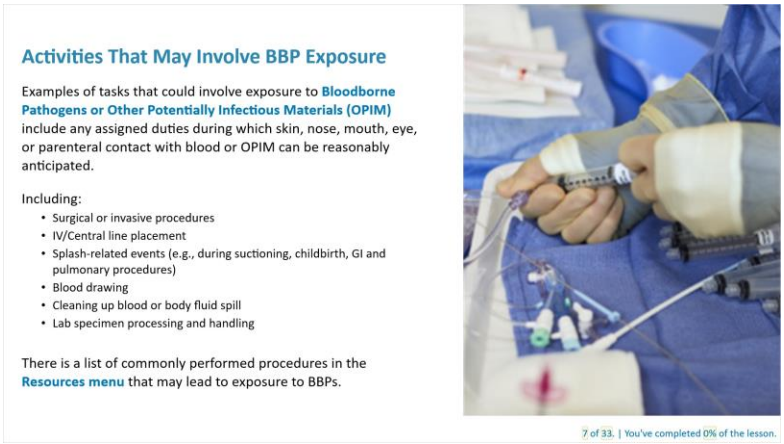
Notes:

1.6 BBP Exposure Control Plan



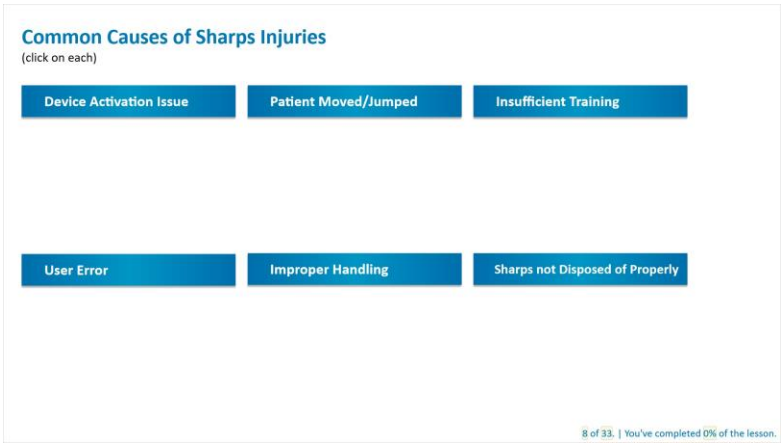
Notes:

1.7 Activities That May Involve BBP Exposure

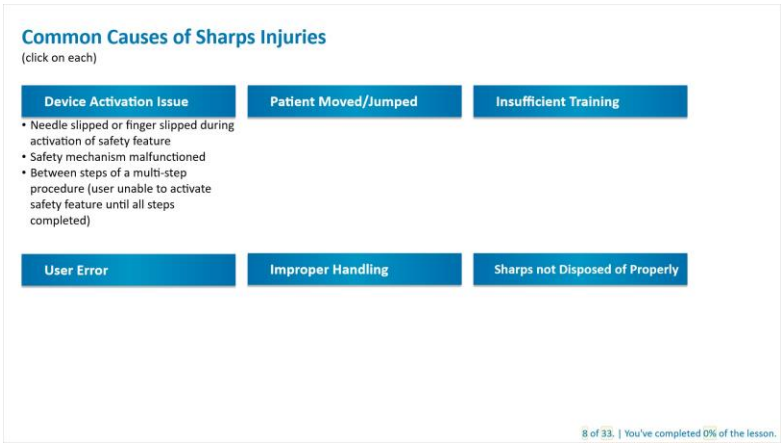


Notes:

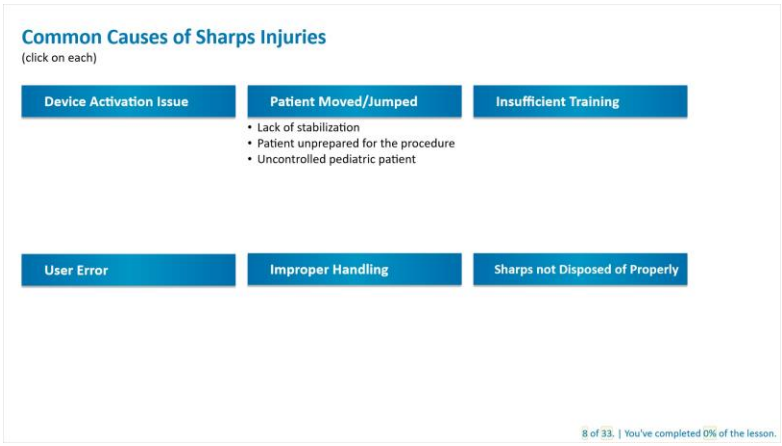
1.8 Common Causes of Sharps Injuries (click on each)



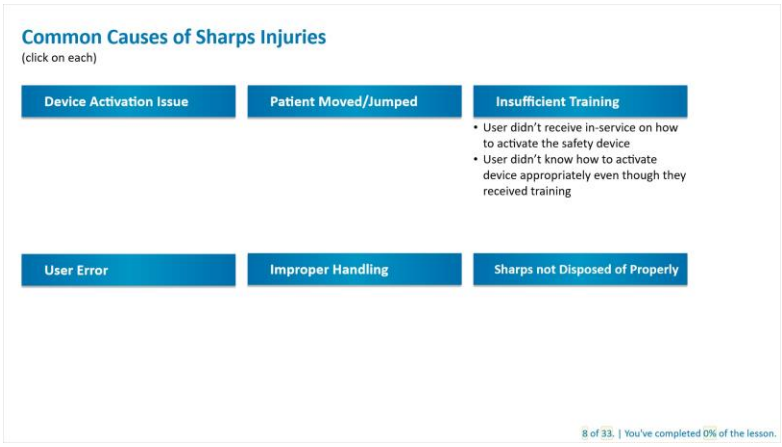
Device Activation (Slide Layer)



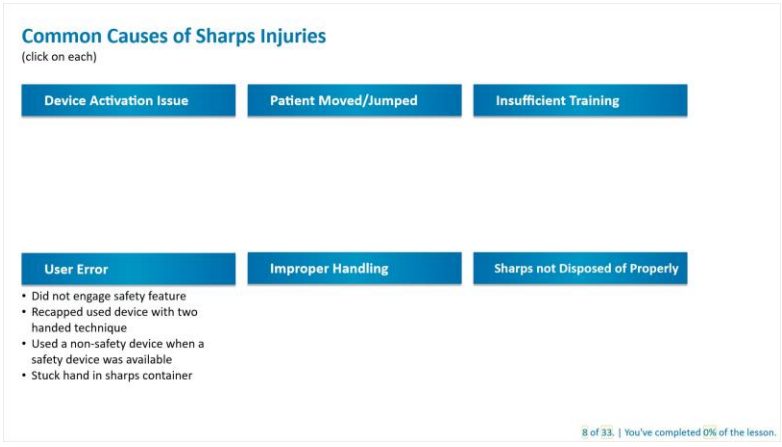
Patient Moved/jumped (Slide Layer)



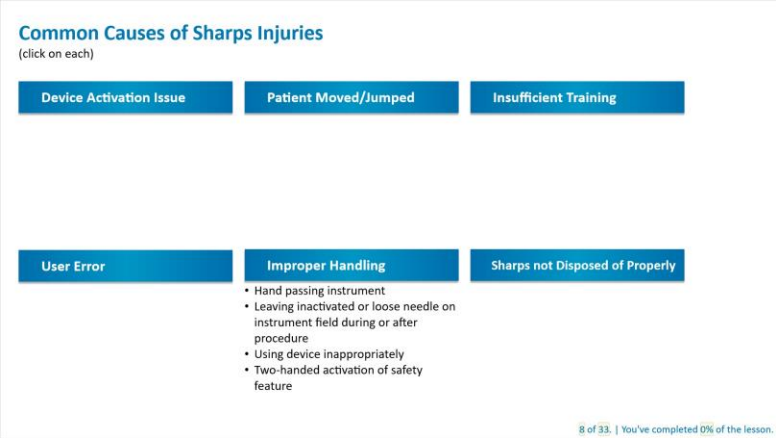
Insufficient Training (Slide Layer)



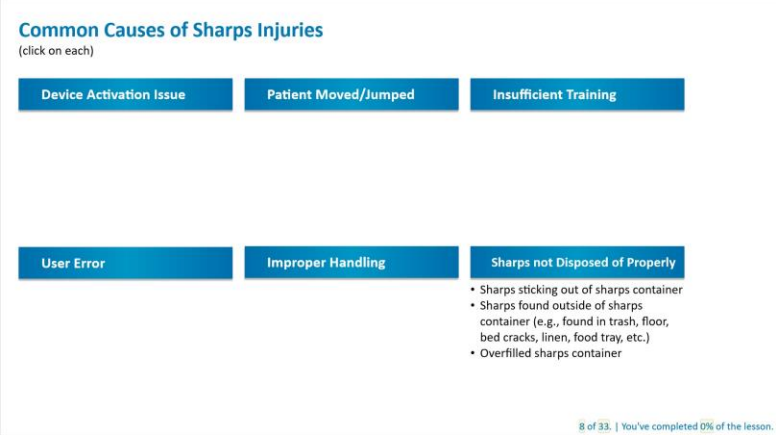
User Error (Slide Layer)



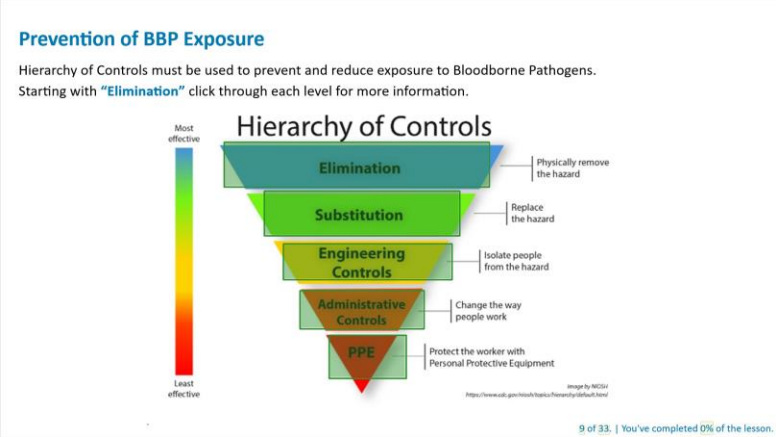
Improper Handling (Slide Layer)



Sharps not Disposed (Slide Layer)

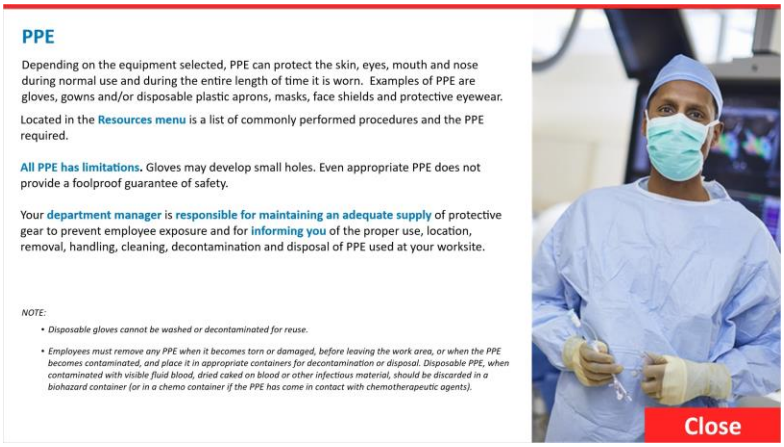


1.9 Prevention of BBP Exposure

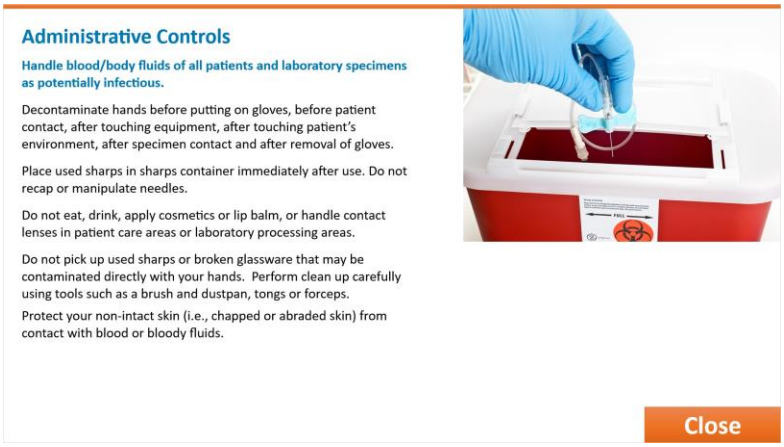


Notes:

PPE (Slide Layer)



Work practices (Slide Layer)



Engineering (Slide Layer)

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.

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.

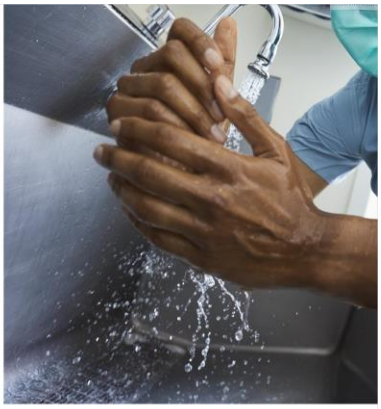
Notes:

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

1.15 Colorado

Colorado

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

Urgent care may be utilized after hours and holidays.

1.16 Northwest

Northwest

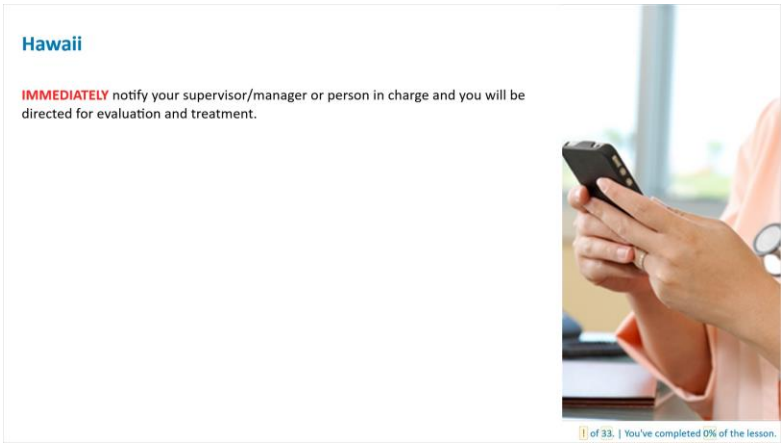
IMMEDIATELY contact **Employee Health** at

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

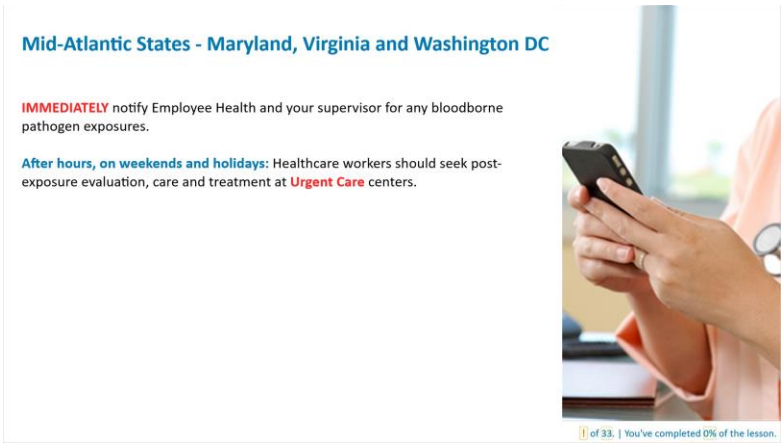
After business hours or on weekends:

- **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.

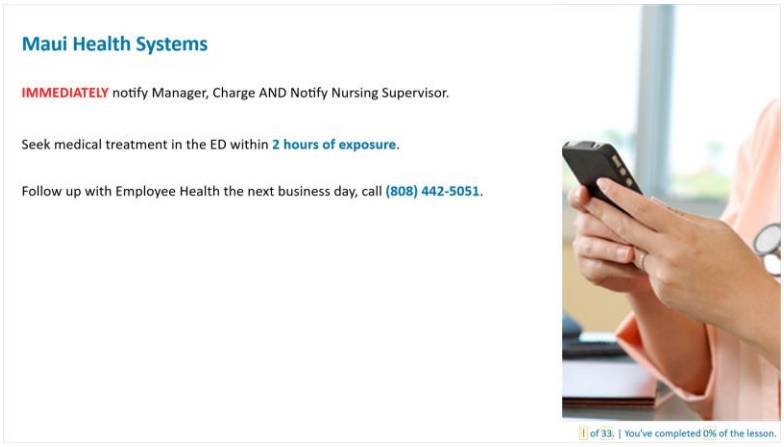
1.17 Hawaii



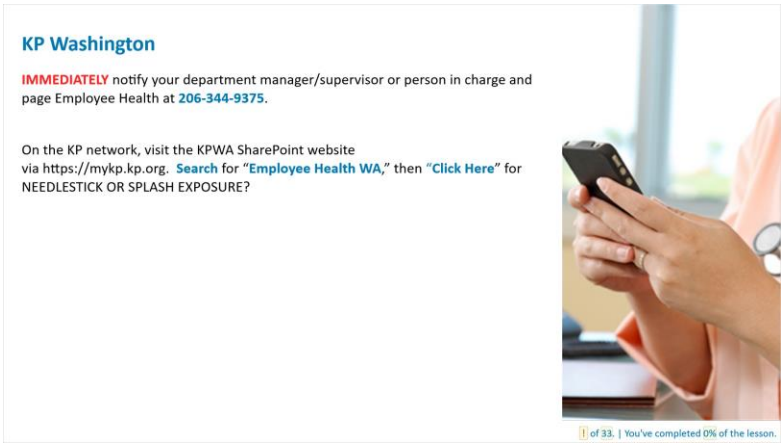
1.18 MAS



1.19 Maui

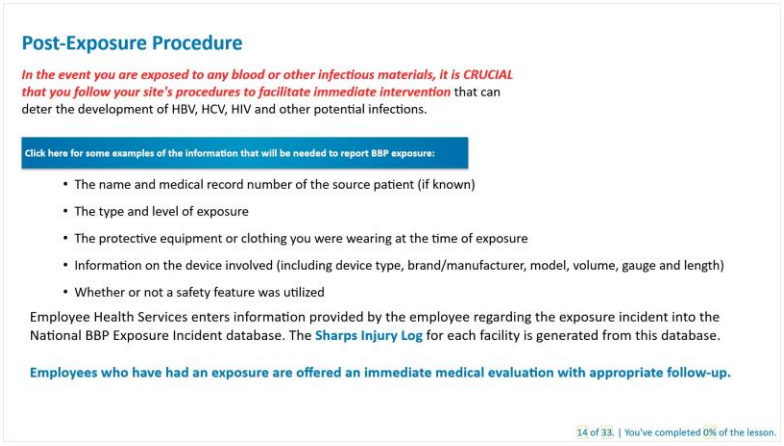


1.20 KP Washington

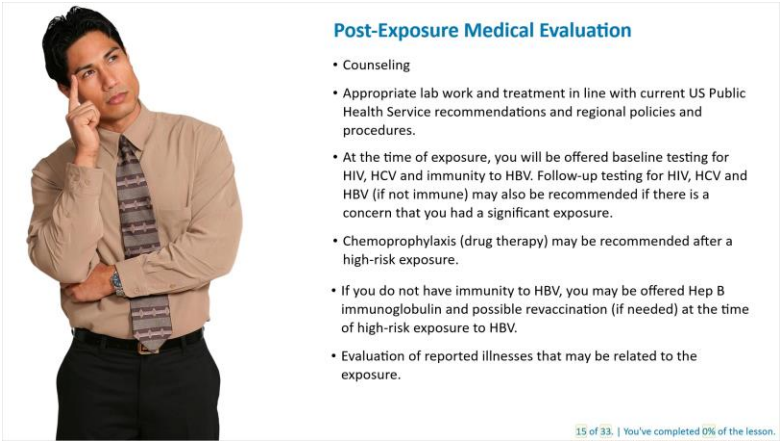


1.21 Post-Exposure Procedure

Post-Exposure Procedure - Copy (Slide Layer)

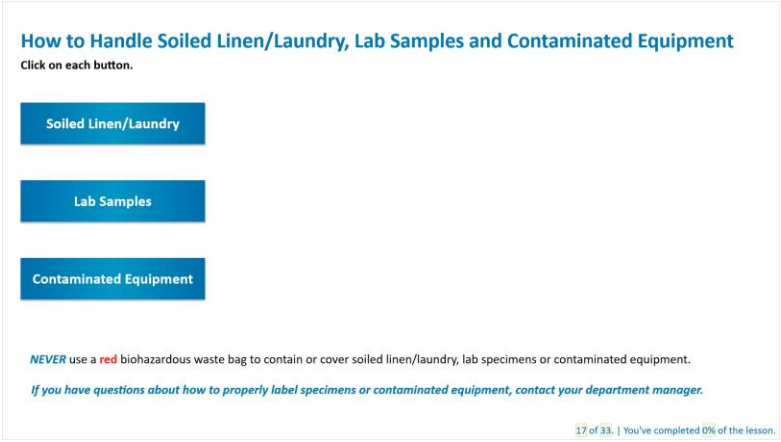


1.22 Post-Exposure Medical Evaluation



1.23 Biohazard Labeling

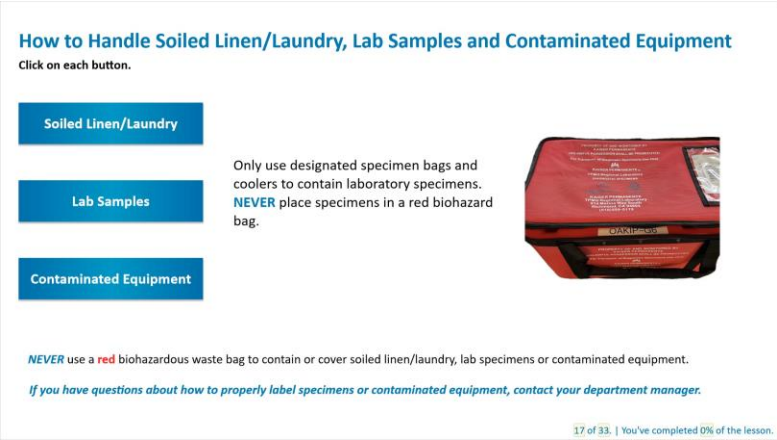
1.24 How to Handle Soiled Linen/Laundry, Lab Samples and Contaminated Equipment



Notes:

Soiled Linen/Laundry (Slide Layer)

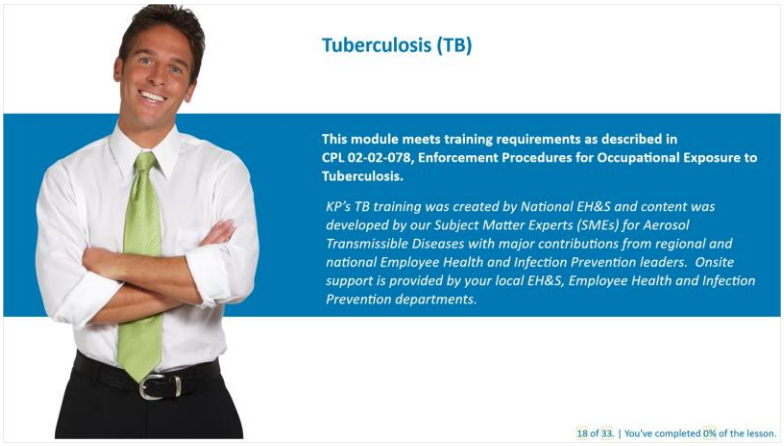
Lab Samples (Slide Layer)



Contaminated Equipment (Slide Layer)

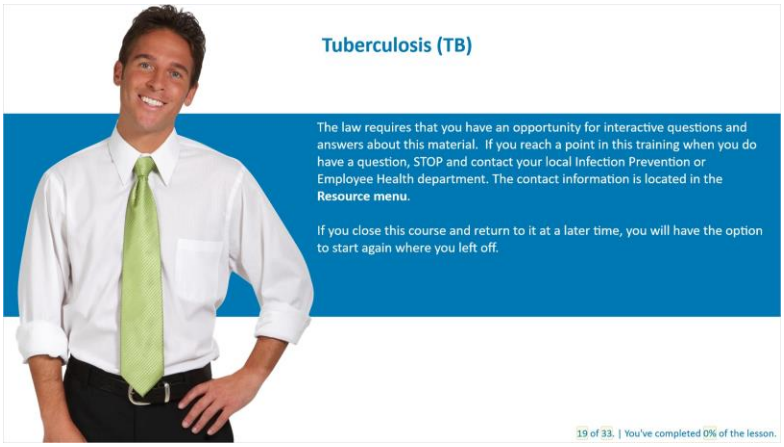
2. Tuberculosis

2.1 Tuberculosis (TB)



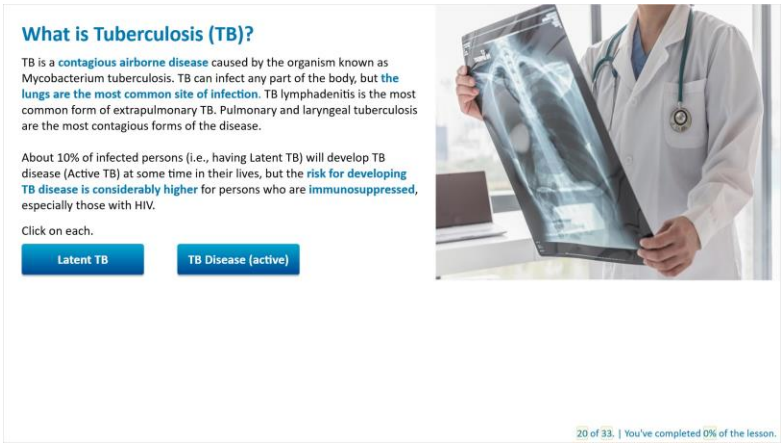
Notes:

2.2 Tuberculosis (TB)



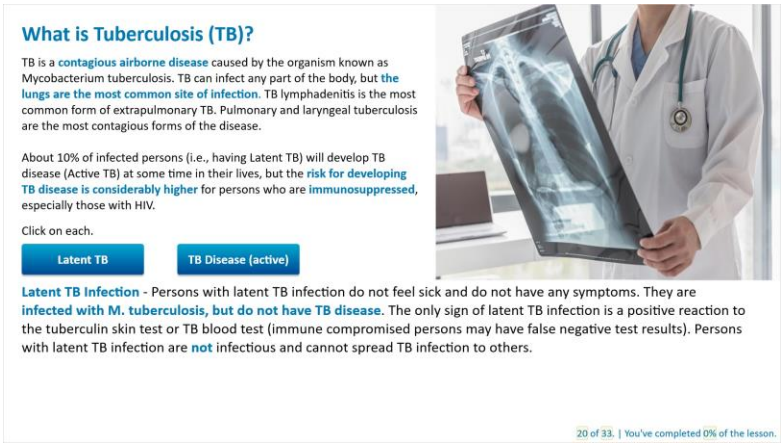
Notes:

2.3 What is TB

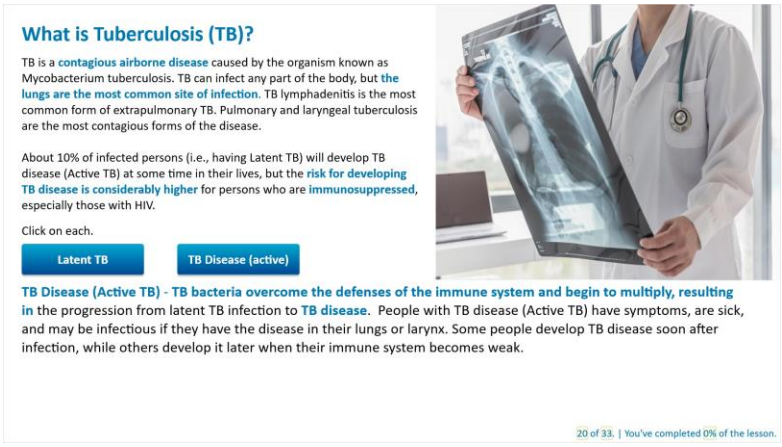


Notes:

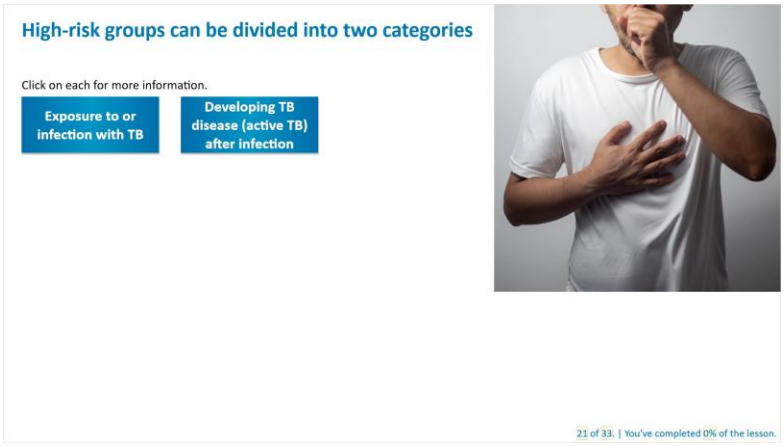
Latent TB (Slide Layer)



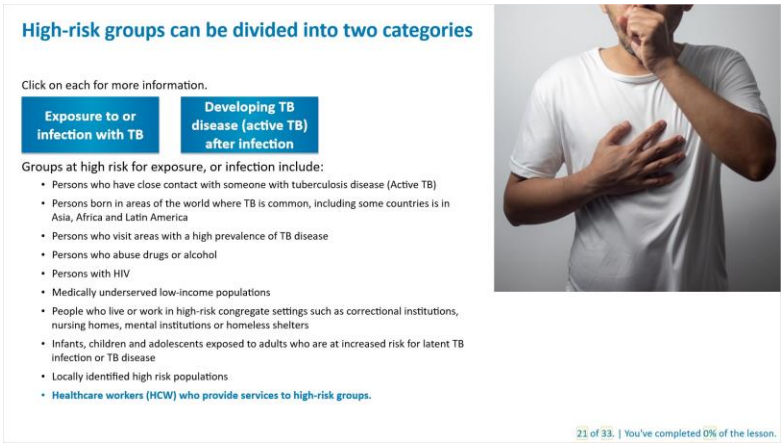
TB Disease (Slide Layer)



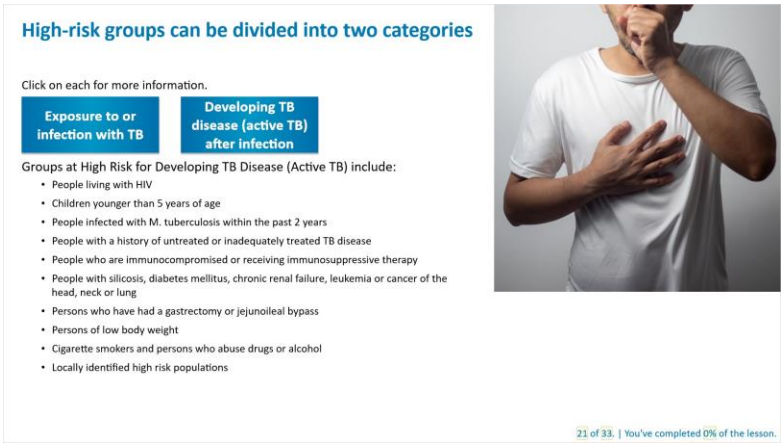
2.4 High Risk



Infection (Slide Layer)



Developing disease (Slide Layer)



2.5 Modes of Transmission

Modes of TB transmission

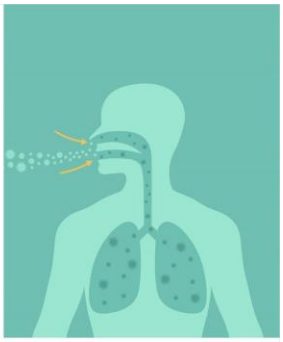
TB is spread from **person to person** by bacteria carried on **tiny particles in the air** (droplet nuclei containing tubercle bacilli). These infectious particles are generated when persons with untreated and active lung or laryngeal TB cough, sneeze, speak or sing. They are so small that normal air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

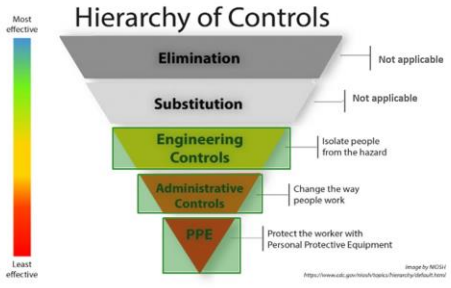
Employee Health Services is responsible for notification of employees **potentially exposed to a patient with TB disease (active TB).** Follow-up should occur 8-10 weeks after exposure.

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 AII 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 a 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)

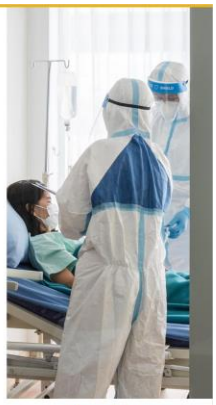
Engineering Controls

Airborne Isolation Precautions:

For markets equipped with airborne infection isolation (AII) negative pressure rooms: If TB is suspected, the patient is placed on Airborne Isolation Precautions and placed in an AII 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 AII room.

For markets without inpatient facilities/AII 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 Dispoal 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

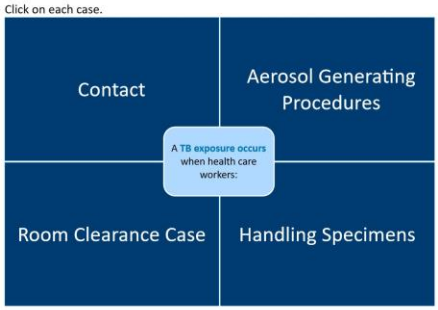
TB Exposure

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!*

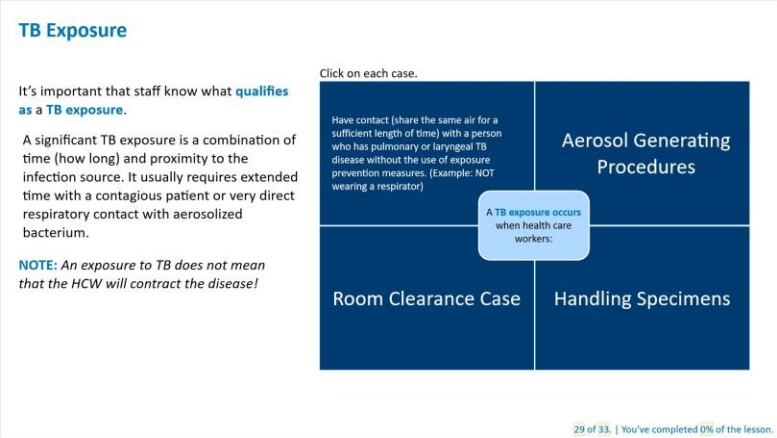
Click on each case.



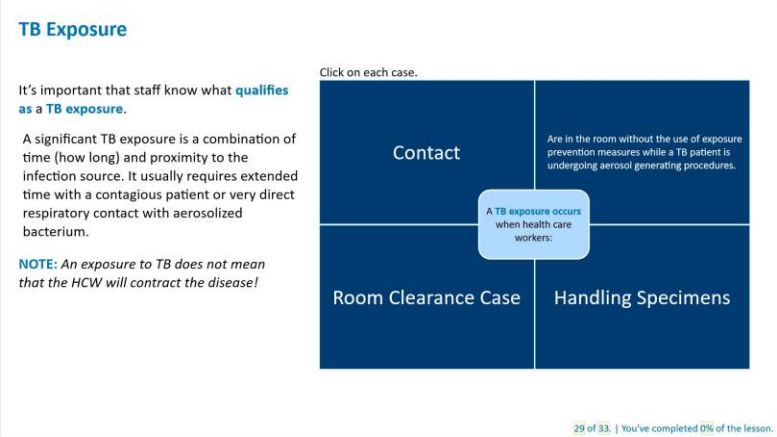
29 of 33. | You've completed 0% of the lesson.

Notes:

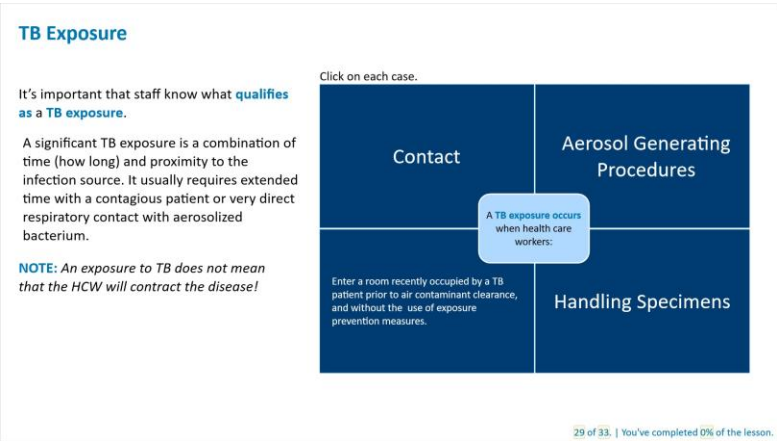
Case 1 (Slide Layer)



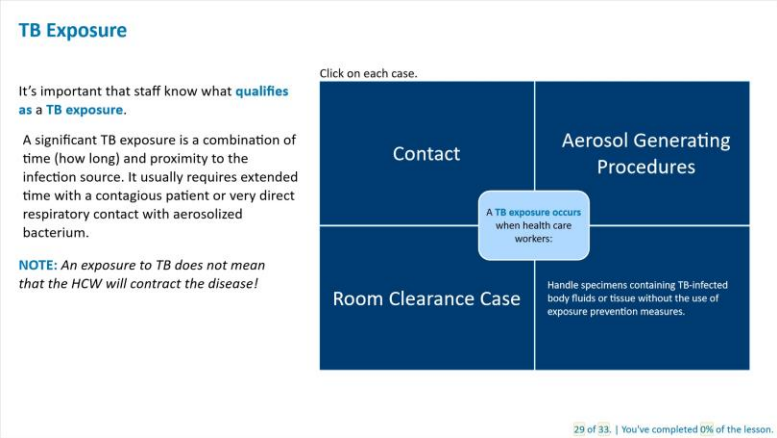
Case 2 (Slide Layer)



Case 3 (Slide Layer)



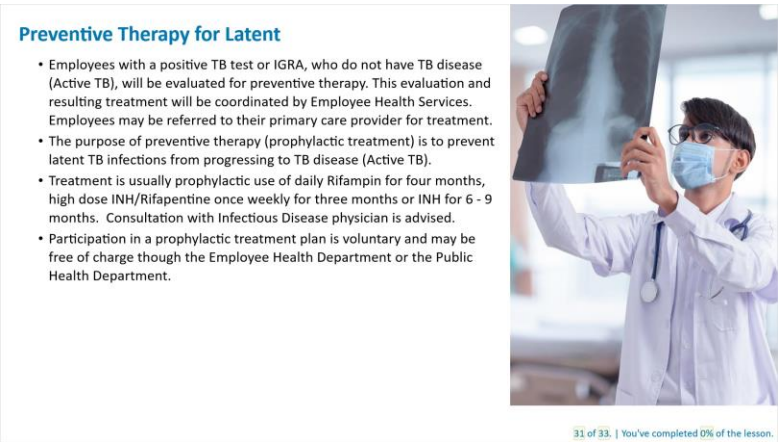
Case 4 (Slide Layer)



2.13 TB Post-Exposure

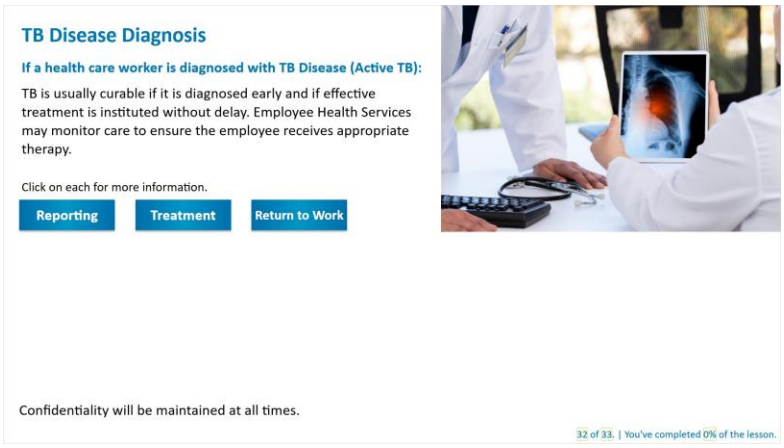
Notes:

2.14 TB Post-Exposure



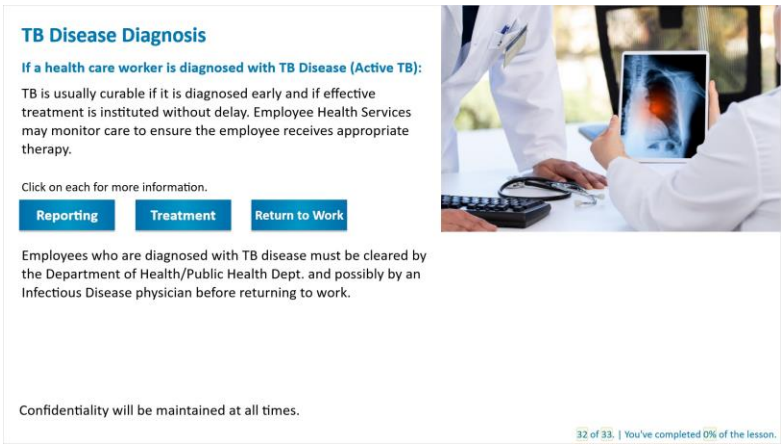
Notes:

2.15 TB Disease Diagnosis

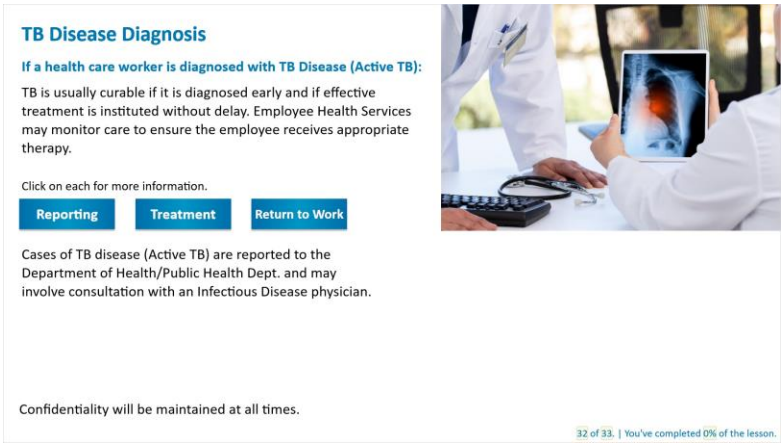


Notes:

Return to Work (Slide Layer)



Reporting (Slide Layer)



Treatment (Slide Layer)