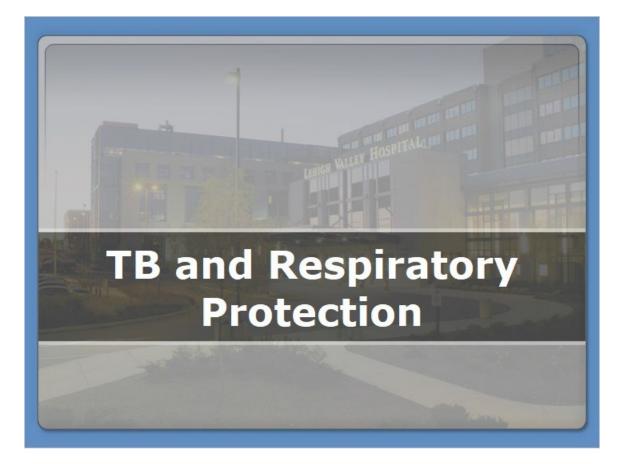
TB Respiratory

1. TB and Respiratory Protection

1.1 TB and Respiratory Protection



Notes:

Tuberculosis (TB) is a disease present throughout the United States. Lehigh Valley Health Network is concerned about your health and needs your help to prevent the spread of TB in the workplace.

Although the risk is low, your chances of getting infected with TB can be reduced by understanding the ideas presented in this training module.

1.2 Course Information

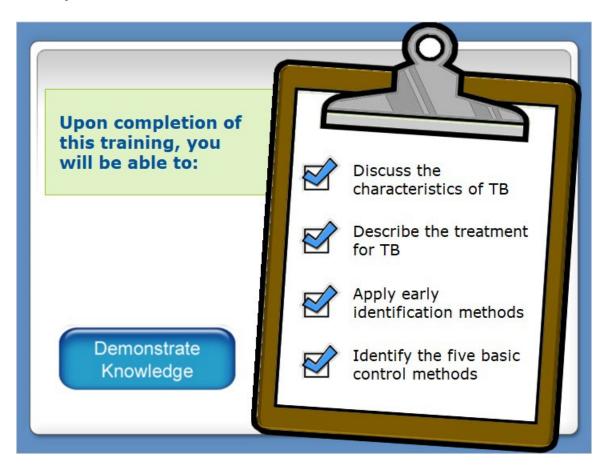
ourse Information		
Course Title:	TB and Respiratory Protection	
Regulations/Standards:	TB and Respiratory Protection	
Approximate Time to Complete:	15 minutes	
Intended Audience:	All LVHN Employed Staff	
Technical Specifications:	Internet Explorer 11, Course Contains No Audio PLEASE REVIEW NOTES TAB FOR MORE COURSE INFORMATION	
Date Revised:	May 2022	
Subject Matter Experts:	Refer to the Resources tab for your site-specific Subject Matter Experts	
Please call the I/S Support Center at 6	10-402-8303 with any technical issues.	

Notes:

This course fulfils the training requirements for Tuberculosis and Respiratory Protection. The course will take approximately 15 minutes to complete.

If you have any questions, please contact the appropriate number listed here. Remember, all technical issues related to the course or the eLearning System should be directed to the Technology Support Center at 610-402-8303.

1.3 Objectives



Notes:

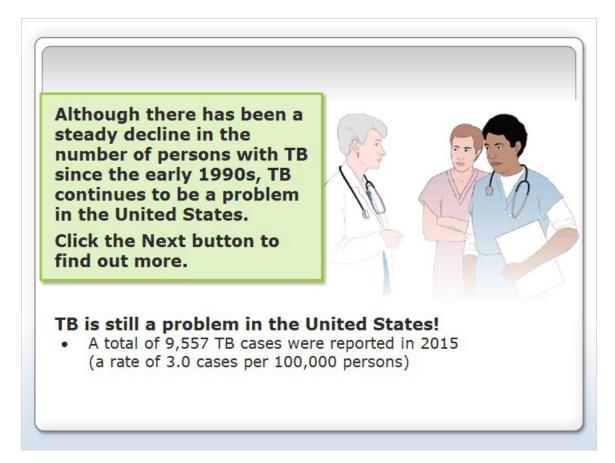
Upon completion of this training, you should be able to:

- Discuss the characteristics of Pulmonary Tuberculosis, including how the disease is spread and the risk factors and symptoms associated with TB.
- Describe the treatment for patients with TB.
- Apply the early identification methods used to protect yourself and others from TB.
- Identify the five basic control methods used to prevent the spread of TB to others.

If you feel you have already mastered the content described in the course objectives and would like to demonstrate your knowledge, you may click the "Demonstrate Knowledge" button and move directly to the course test. You must earn a score of at least 80% on the test to successfully pass this course.

However, it is suggested that you review the content as it has been updated. To continue onto the course content, please select the next button located at the bottom of the screen.

1.4 Untitled Slide



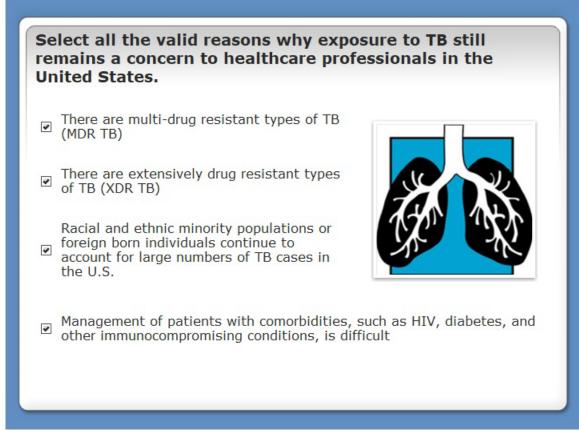
Notes:

Although your chances of contracting TB are low, you may be surprised at how prevalent cases of TB are. Click the Next button to find out how prevalent TB is.

1.5 Select all the valid reasons why exposure to TB still remains a concern

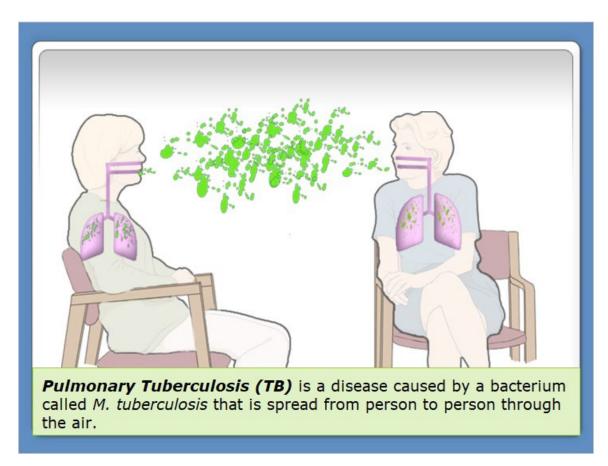
to healthcare professionals in the United States.

(Multiple Response, 10 points, 1 attempt permitted)



That's right! These are all valid reasons why exposure to TB still remains a legitimate concern in healthcare settings.

1.6 What is TB?



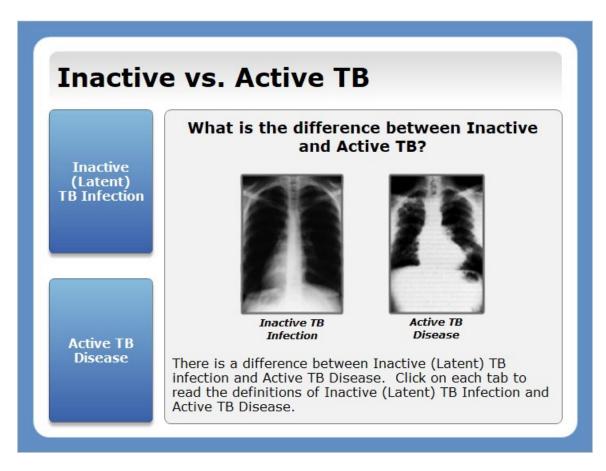
Notes:

Pulmonary Tuberculosis (TB) is a disease caused by a bacterium called *M. tuberculosis* that is spread from person to person through the air.

When an individual is infected with active TB disease, tiny particles called droplet nuclei can be spread through coughing or sneezing. You may become infected by breathing in the air surrounding the person with active TB.

After the TB bacteria move through the air, they travel into the lungs. TB infection begins when enough bacteria reach the lungs and multiply.

1.7 Inactive vs. Active TB



Notes:

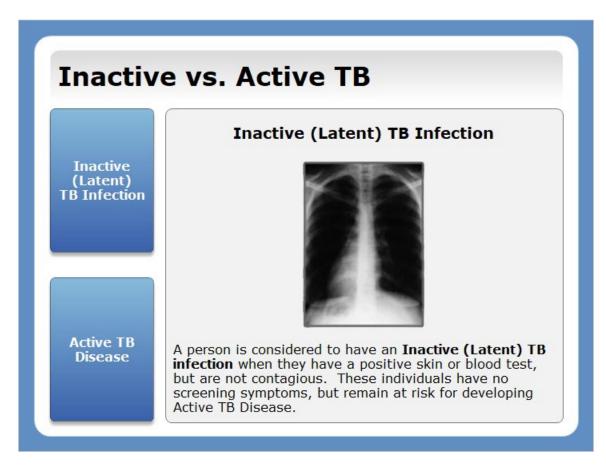
It is important to understand that there is a difference between Inactive (Latent) TB Infection and Active TB Disease.

Everyday, we breathe in disease-producing bacteria. But, our immune systems work to prevent most diseases from ever developing. Click the buttons to read the definitions of Inactive (Latent) TB Infection and Active TB Disease.

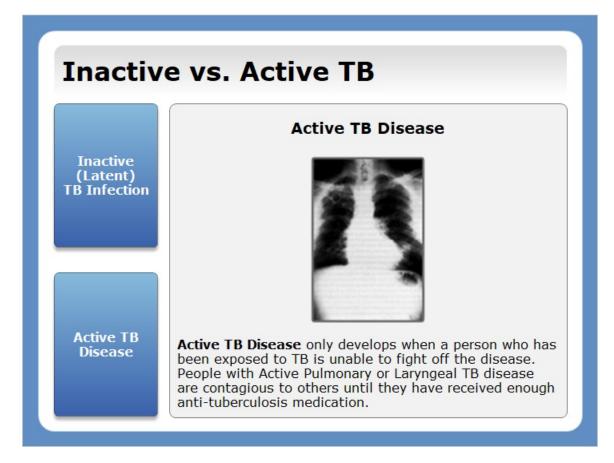
Inactive (Latent) TB Infection - A person is considered to have an Inactive (Latent) TB Infection when they have a positive skin or blood test, but are not contagious. These individuals have no screening symptoms, but remain at risk for developing Active TB Disease.

Active TB Disease - Active TB Disease only develops when a person who has been exposed to TB is unable to fight off the disease. People with Active Pulmonary or Laryngeal TB Disease are contagious to others until they have received enough anti-tuberculosis medication.

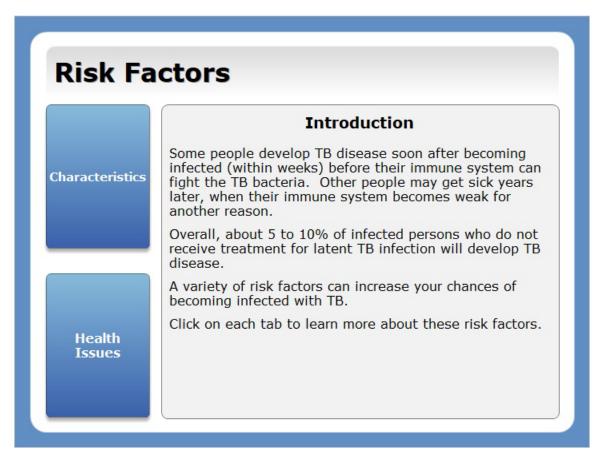
Inactive TB (Slide Layer)



Active TB (Slide Layer)



1.8 Risk Factors



Notes:

Introduction

Some people develop TB disease soon after becoming infected (within weeks) before their immune system can fight the TB bacteria. Other people may get sick years later, when their immune system becomes weak for another reason.

Overall, about 5 to 10% of infected persons who do not receive treatment for latent TB infection will develop TB disease.

A variety of risk factors can increase your chances of becoming infected with TB.

Click the Characteristics button and the Health Issues button to learn more about these risk factors.

Characteristics

- Persons with a higher rate of TB infection include:
- Close contacts of a person with infectious TB disease

- Persons who have immigrated from areas of the world with high rates of TB
- Children less than 5 years of age who have a positive TB test
- Groups with high rates of TB transmission, such as homeless persons, injection drug users, and persons with HIV infection
- Persons who work or reside with people who are at high risk for TB in facilities or institutions such as hospitals, homeless shelters, correctional facilities, nursing homes, and residential homes for those with HIV

Health Issues

If your body's defense are down, you are more likely to get TB. The following are examples of medical conditions or problems which may weaken your body's defenses:

- HIV infection (the virus that causes AIDS)
- Substance abuse
- Silicosis
- Diabetes mellitus
- Severe kidney disease
- Low body weight
- Organ transplants
- Head and neck cancer
- Medical treatments such as corticosteroids or organ transplant
- Specialized treatment for rheumatoid arthritis or Crohn's disease

Characteristics (Slide Layer)

Risk Factors		
	Characteristics	
Characteristics	 Persons with a higher rate of TB infection include: Close contacts of a person with infectious TB disea Persons who have immigrated from areas of the wo with high rates of TB Children less than 5 years of age who have a positi 	
Health Issues	 Crimien less than 5 years of tige who have a positive TB test Groups with high rates of TB transmission, such as homeless persons, injection drug users, and persons with HIV infection Persons who work or reside with people who are at high risk for TB in facilities or institutions such as hospitals, homeless shelters, correctional facilities, nursing homes, and residential homes for those with HIV 	

Health (Slide Layer)

Risk Factors	
	Health Issues
Characteristics	If your body's defense are down, you are more likely to get TB. The following are examples of medical conditions or problems which may weaken your body's defenses: • HIV infection (the virus that causes AIDS)
	Substance abuse Silicosis
Health Issues	Diabetes mellitus
	Severe kidney disease
	Low body weight
	 Organ transplants Head and neck cancer
	 Medical treatments such as corticosteroids or organ transplant
	 Specialized treatment for rheumatoid arthritis or Crohn's disease

1.9 Symptoms of TB

Symptoms of TB

If you are infected with Active TB Disease, you may have some or all of the following symptoms:

- Fatigue
- · Fever, night sweats
- Weight loss
- · Cough
- · Chest pain
- Blood-tinged sputum
- Chest X-ray changes

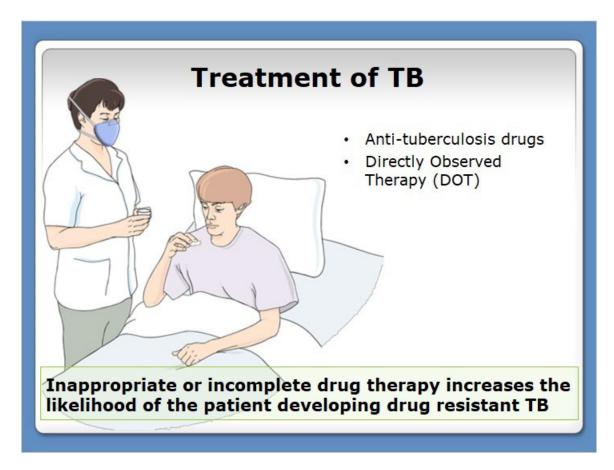


Notes:

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- Fatigue
- Fever, night sweats
- Weight loss
- Cough
- Chest pain
- Blood-tinged sputum
- Chest X-ray changes

1.10 Treatment of TB



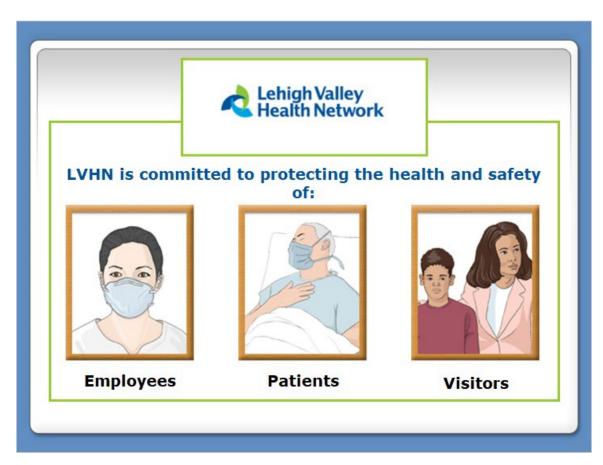
Notes:

Patients with Active TB Disease are treated with an appropriate combination of antituberculosis drugs. Initial therapy includes daily doses of several anti-tuberculosis medications.

Drug sensitivity tests are performed on all tuberculosis patients. After several weeks, the results are available and the drug regime should be adjusted accordingly.

Patients must be directly observed while taking anti-tuberculosis drugs. This is referred to as Directly Observed Therapy, or DOT. It is important to observe patients while taking these medications because inappropriate or incomplete drug therapy increases the likelihood of the patient developing a drug resistant strain of TB.

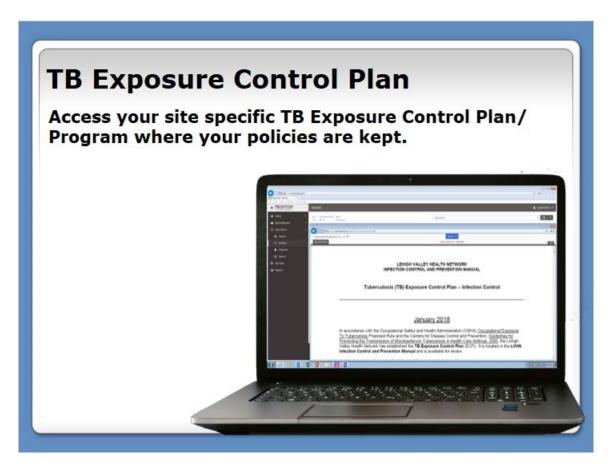
1.11 Protecting Yourself and Others



Notes:

LVHN is committed to protecting the health and safety of all employees, patients and visitors since TB is an airborne disease that can be transmitted from one person to another, it is important to practice appropriate infection control procedures to protect yourself and others from getting TB. The following section will provide you with more detail on how you can protect yourself and others from TB infection.

1.12 TB Exposure Control Plan



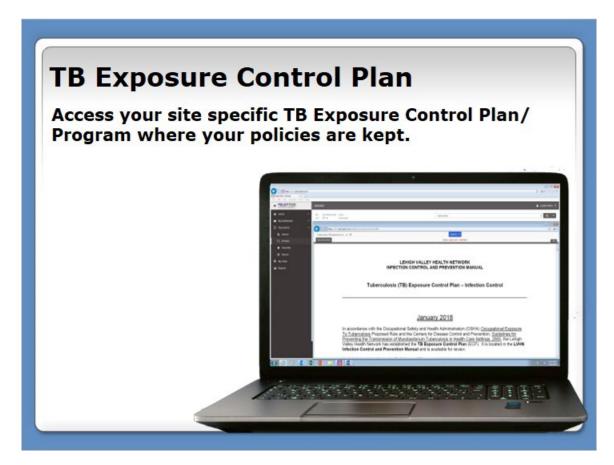
Notes:

Lehigh Valley Health Network has developed a TB Exposure Control Plan for your protection. You can view a complete copy of this plan wherever your site specific policies are kept.

The TB Exposure Control Plan includes information, such as:

- TB screening procedures
- Identification of individuals with TB
- Procedures for the care of patients with TB
- Respiratory Protection Program

Untitled Layer 1 (Slide Layer)



1.13 Key Principles for Protection

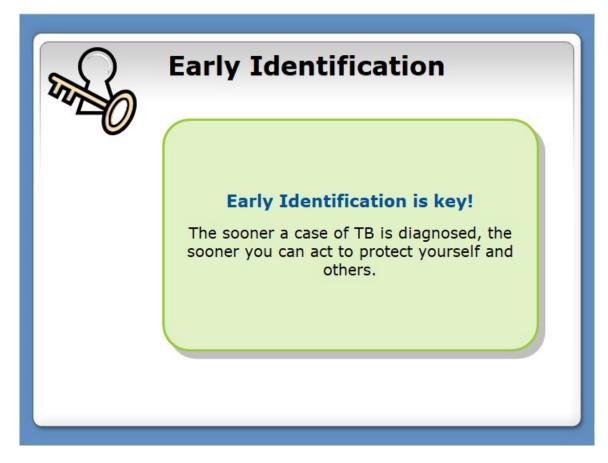


Notes:

There are two key principles to protect yourself and others from TB infections; early identification and basic control methods.

The next section will provide more detail on each of the key principles.

1.14 Early Identification

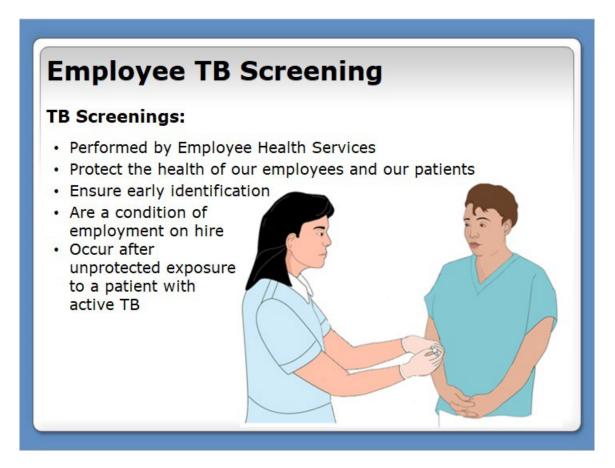


Notes:

Early identification is key! The sooner a case of TB is diagnosed, the sooner you can act to protect yourself and others.

People with Active TB Disease will not always be aware that they have been infected by the disease. It is important to follow the screening procedures to identify infected persons as soon as possible.

1.15 Employee TB Screening

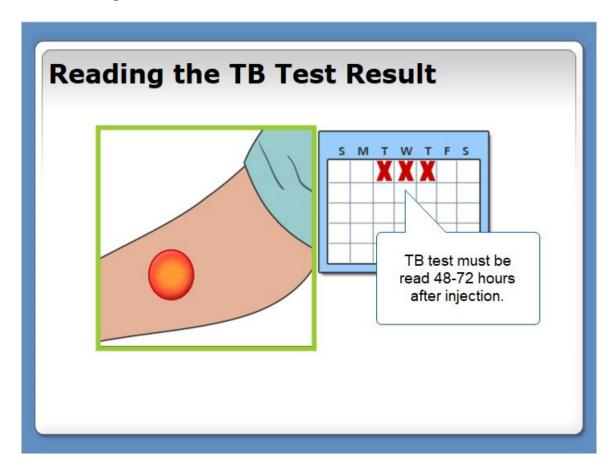


Notes:

Employee Health Services performs Tuberculosis screenings for employees. The screenings protect the health of our employees and our patients. This testing helps to ensure early identification of changes in TB status and provides those infected with quick medical treatment. Because of the health impacts associated with TB, these screenings are a condition of employment on hire at LVHN.

Screening is performed by one of two methods; Mantoux Tuberculin Skin Tests or Quantiferon TB Gold Test. All employees are first screened for TB before starting work at LVHN. Employees are also screened following unprotected exposure to a patient with active TB.

1.16 Reading the TB Test Result



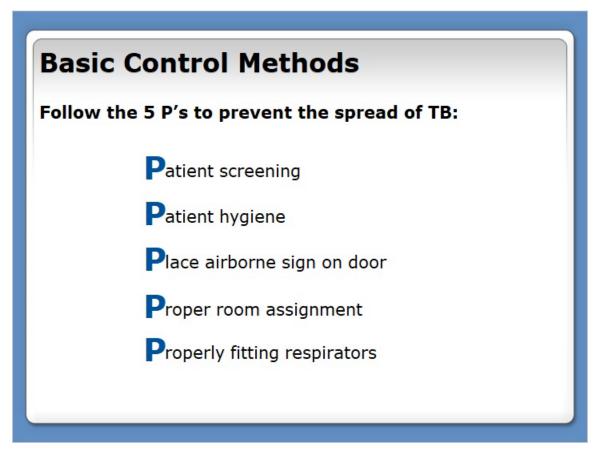
Notes:

The TB skin test must be read 48-72 hours after injection. The results must be read by an employee health nurse or other designee.

A negative test result shows no visible swelling or discoloration after 72 hours.

This is an example of a **potentially** positive skin test. Redness alone does not indicate a positive test, a skin test must always be read by a trained professional such as an employee health practitioner. Staff properly identified with a positive skin test may be monitored or put on medication.

1.17 Basic Control Methods



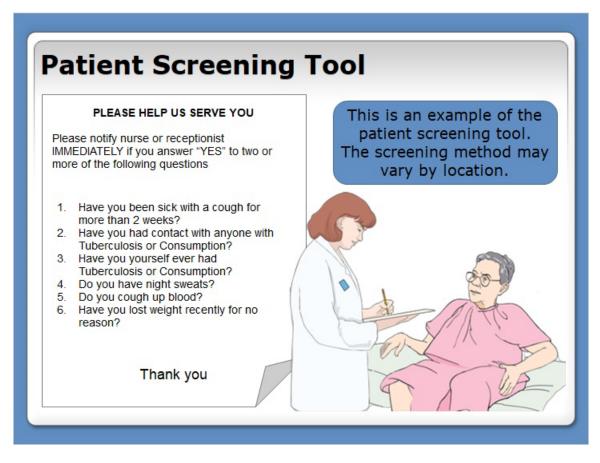
Notes:

Once someone has been identified as being infected with active TB disease, how can you prevent the spread of the disease to others?

Following some basic control methods will help prevent the spread of TB. To help you remember, think of the 5 P's:

- Patient TB screening
- Patient hygiene
- Place airborne isolation sign on door
- Proper patient room assignment
- Properly fitting respirators

1.18 Patient Screening Tool

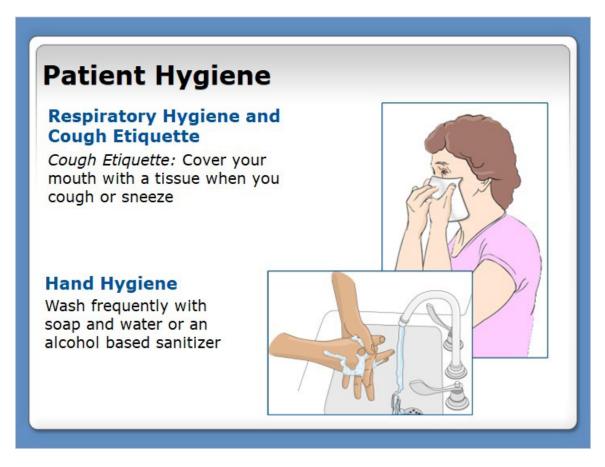


Notes:

Screening tools have been developed for use throughout LVHN to help identify patients that may have TB. This screening tool is another form of early identification. The other control methods will not be effective if infected patients are not identified early. Screening tools may vary by network location.

Once Active TB Disease is diagnosed in a patient, appropriate therapy should begin immediately. Active TB is identified in patients through history, physical exam, chest x-ray, Tuberculin skin test or Quantiferon Gold Test and bacteriological examination.

1.19 Patient Hygiene



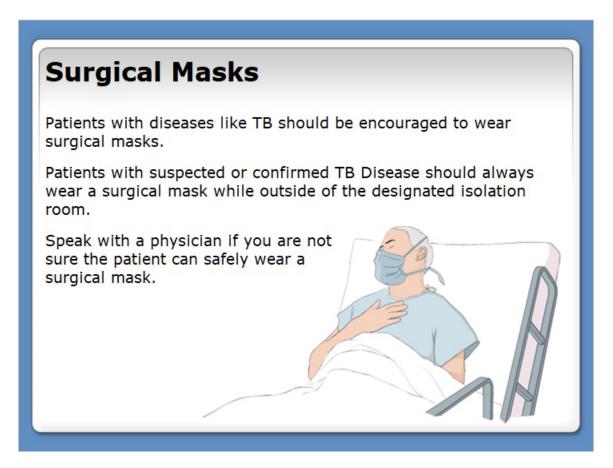
Notes:

Remember that TB is a disease that is spread through the air. To prevent the spread of TB, it is important to explain "Respiratory Hygiene and Cough Etiquette" to any patients whose illnesses are associated with airborne transmission.

Cough Etiquette simply means instructing your patient to cover their mouth with a tissue when they cough or sneeze. Special Cough Etiquette stations are located in common waiting areas. These organizers hold tissues, masks, hand sanitizers, and signs for cough etiquette. For more information, click the Resources tab above to view the "Cover Your Cough" poster.

Another important hygiene rule to follow is to wash your hands frequently. Instruct your patients to properly wash with soap and water or an alcohol based hand sanitizer.

1.20 Surgical Masks



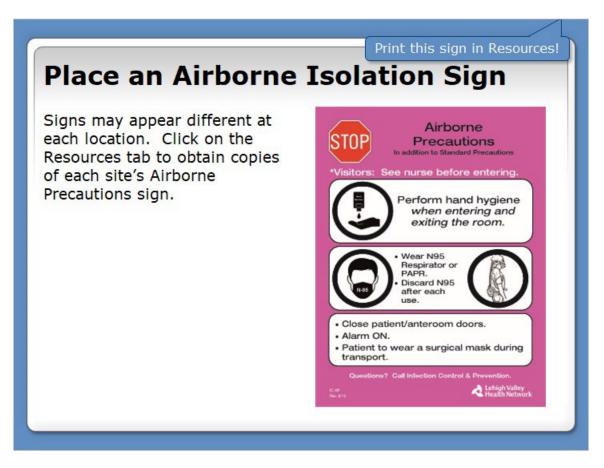
Notes:

Patients infected with diseases transmitted through the air, like TB, should be encouraged to wear surgical masks. Surgical masks limit the number of contaminated bacteria released into the air by the patient.

Patients with suspected or confirmed active TB Disease should always wear a surgical mask (not a respirator/N-95 mask) while outside of designated isolation rooms. This includes waiting rooms, treatment rooms, and during transport or ambulation. Visitors will be instructed on the use of the N-95 respirator mask worn by the healthcare workers.

Please note that not all patients will be able to tolerate wearing a surgical mask. Speak with a physician if you are not sure if the patient can safely wear a surgical mask.

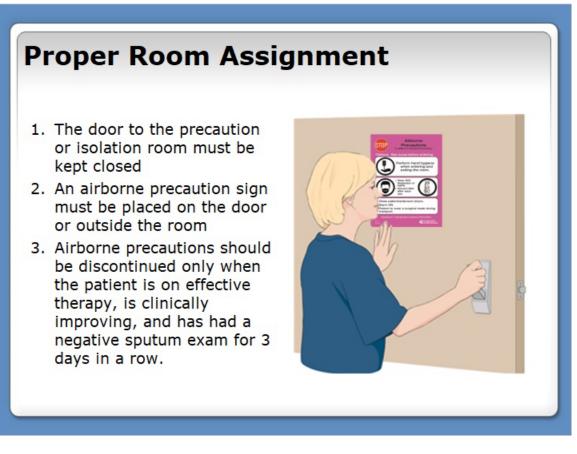
1.21 Place an Airborne Isolation Sign



Notes:

Place an Airborne Isolation Sign on the door for patients who have suspected or confirmed TB. Place this sign on the door or outside the room immediately to alert staff to use special precautions.

1.22 Proper Room Assignment



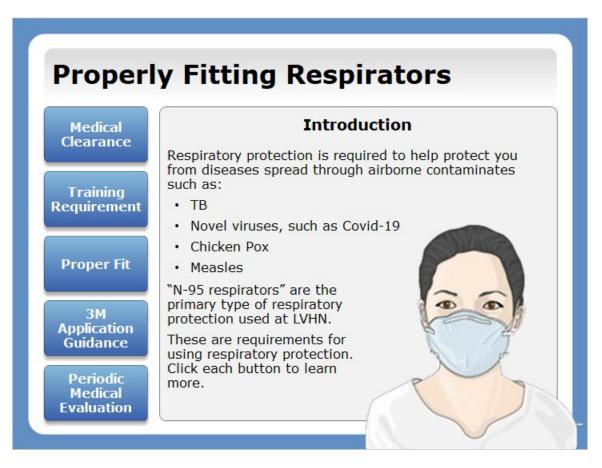
Notes:

Proper placement of patients with suspected or confirmed TB will help to prevent exposure to others. These patients should be placed in a room with negative air flow. LVHN has numerous airborne isolation rooms that are designated to safely house patients on airborne precautions.

It is important to remember the following points for patients who are on airborne precautions or in an isolation room:

- 1. The door to the precaution or isolation room must be kept closed.
- 2.An airborne precaution sign must be placed on the door or outside the room.
- 3. Airborne precautions should be discontinued only when the patient is on effective therapy, is clinically improving, and has had a negative sputum exam for tubercule bacilli for three days in a row. Precautions are discontinued on a case by case basis at the physician's discretion.

1.23 Properly Fitting Respirators

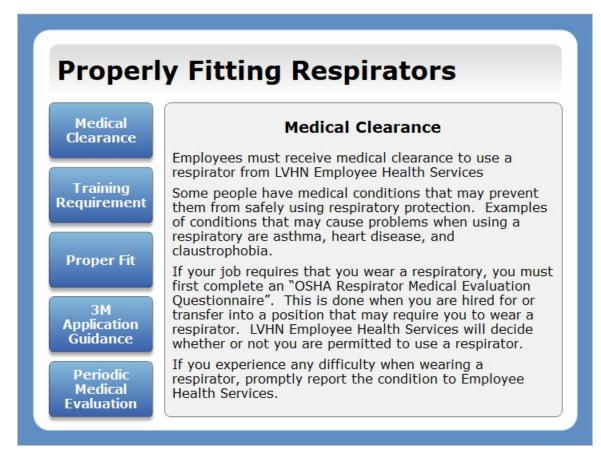


Notes:

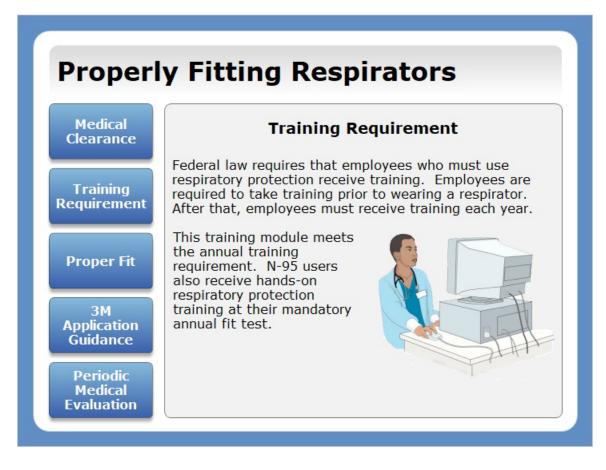
Patients infected with illnesses such as TB, Chickenpox, and other emerging infectious diseases, such as Covid-19, can spread bacteria through the air. Respiratory protection is required to help protect you from diseases spread through airborne contaminates.

"N-95 respirators" are the primary type of respiratory protection used at LVHN.

There are requirements for using respiratory protection. Click each button to learn more.



Training (Slide Layer)



Properly Fitting Respirators

Medical Clearance Training Requirement Proper Fit 3M Application

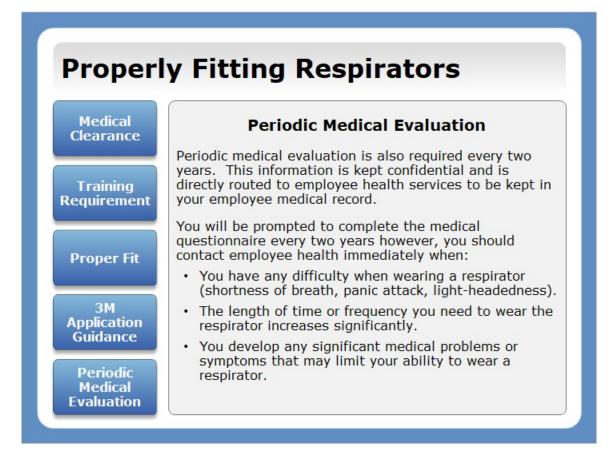
Periodic Medical Evaluation

Guidance

Proper Fit

Respirators only provide protection when they are properly fitted to the individual. For this reason, the government requires that all personnel permitted to use N-95 respirators receive an initial fit test. Employees must be properly fitted before they are assigned tasks using N-95's. In addition, annual fit tests may be required to determine if the same type of mask provides adequate protection.

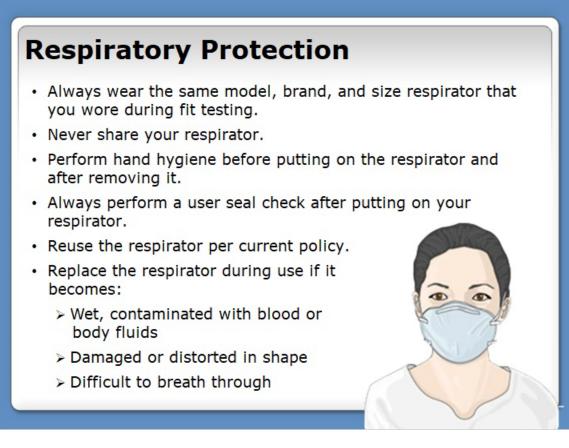
During fit tests and hands-on training, you will learn how to properly wear a respirator. You will also learn how to perform a user check. Perform a user check each time you wear a respirator to ensure you have a good fit.



3M (Slide Layer)



1.24 Respiratory Protection

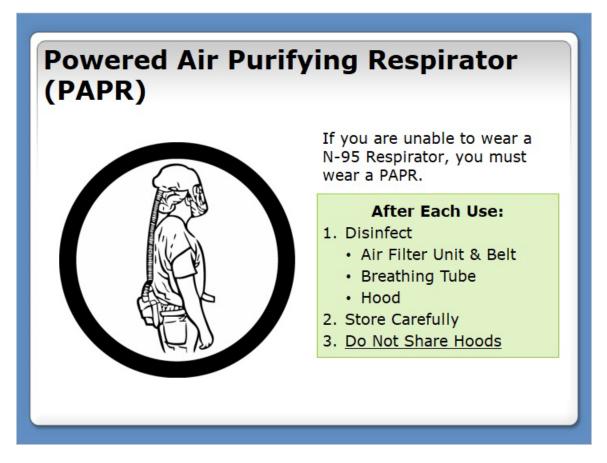


Notes:

Always wear the same model, brand, and size respirator that you wore during fit testing. Failure to do so could reduce the level of protection provided by the respirator. Never share your respirator. N-95's are only intended to be used by one person. Perform hand hygiene before putting on the respirator and after removing it. Always perform a user seal check after putting on your respirator. Reuse the respirator per current policy. Replace the respirator during use if it becomes:

- Wet, contaminated with blood or body fluids
- Damaged or distorted in shape
- Difficult to breathe through

1.25 Powered Air Purifying Respirator (PAPR)



Notes:

Employees who are unable to be fitted to wear a N-95 Respirator are trained in the use of the Powered Air Purifying Respirator (PAPR).

When using a PAPR you must remove the hood after use, disinfect, and store in a safe place. Never share your hood. Disinfect the air filter unit & belt, breathing tube, and hood after each use.

1.26 Important Warning



Notes:

N-95 Respirators do not provide protection against chemical vapors. Never assume an N-95 will provide any protection against chemical odors, gases, or vapors.

If protection from chemicals is required, contact your site's Respiratory Program Manager for specific information.

1.27 Contact Information



Notes:

If you have any questions about respiratory protection, please contact the Respiratory Protection Program, the Safety department, or Employee Health.