

Tuberculosis:

Tuberculosis is an infection that is caused by mycobacterium tuberculosis. This is an infection that begins in the lungs and can spread, effecting the kidneys, brain, and bones. Tuberculosis is spread through the lymph nodes and blood stream to other parts of the body. Is a leading cause of death in adults. Tuberculosis is spread through sneezing, coughing, laughing, and is highly contagious. Droplets that are able to cross the upper respiratory track and implant in the subpleural lobes of the lower lobes and then spreads to the rest of the lungs. Because this infection is so old, and the antibiotics used to treat this have been around for a while the bacteria has mutated making it harder to kill. This makes some strains of tuberculosis harder to treat, and puts the infected person at a greater risk of death. If you work or live in a heavily populated are where you are in close contact with people you are at more risk for contracting tuberculosis. It is important to see a doctor if you have been exposed to a person with and active TB infection. The earlier you can be diagnosed the better. You can have an inactive form of Tuberculosis where you are not contagious or have any symptoms, however, it can become active at any point. Active TB signs and symptoms productive cough with green or yellow sputum, hemoptysis, weight loss, fatigue, and chest pain when breathing. (6.29 time)

COPD:

COPD stands for chronic obstructive pulmonary disease and is an umbrella term used for two progressive diseases that hinder breathing and limit airflow. The two terms that fall under the umbrella are emphysema and chronic bronchitis. Screening for COPD is extremely important because it can help to avoid major complications. COPD patient experience changes in the respiratory tract which effect the flow of air. Emphysema mainly effects the alveolar wall which then impairs gas exchange. Chronic bronchitis causes inflammation and increased mucous in the lungs and impedes breathing. Inhaling pollutants such as smoke, flumes, and chemicals can lead to COPD. In rare cases COPD can be genetic. Common symptoms are persistent cough with mucus, dyspnea, frequent respiratory infections, wheezing, and decreased activity tolerance. Also, this is a progressive disease so symptoms will worsen over time. Spirometry is a test that is used to diagnose COPD. Spirometry measures the amount to air inhaled and exhaled, and how fast the air moves through the lungs. Other test may be done such as a CT scan and x-ray, but spirometry is the only test used to diagnose chronic obstructive pulmonary disease. Moreover, an arterial blood gas test can be done to determine how far along the disease is. An arterial blood gas test measures the amount of oxygen in the blood. COPD is not a curable disease, but the progression can be slowed through medication and lifestyle changes. Cessation of smoking and avoiding inhalation of harmful chemicals is one of the first steps to treat COPD. When taking medications for COPD you are taking them to treat the symptoms not the disease. The treatments commonly used for COPD patient include medications, oxygen, pulmonary rehabilitation, and surgery. To decrease the number of people effected by COPD we should teach the community that this disease if avoidable in the majority of cases. It can be prevented by not smoking.

Sleep Apnea:

Obstructive sleep apnea is caused by fat that is stored in the back of the throat that relax when you are asleep and your tongue slides back causing an obstruction. The obstruction makes it hard for air to get in and causes the O₂ levels to drop. This drop in O₂ level causes the brain to wake up and sends a signal causing the airway to tighten up allowing air to enter the lungs. After air enters the brain goes back to sleep, causing a loop effect of asleep and awake. While asleep the O₂ level rise and fall. Some risk factors for sleep apnea are obesity, gender (male), race, nasal obstruction, genetic factors, and age.

Pneumonia:

Pneumonia is described by puss filling the alveoli making it difficult to breath. This is easily cured in a healthy person, but the groups that are most susceptible are newborn babies, children under the age of 2, elderly over the age of 65, smokers, and people with a weakened immune system. Three types of pneumonia are community acquired, hospital acquired, and aspiration pneumonia. The most common bacteria to cause pneumonia in adults is streptococcus pneumoniae. Some signs and symptoms of pneumonia are green, yellow, and red-brown sputum. When listening to a patient's lungs you may hear diminished breath sounds, crackles, and wheezing. To diagnose a patient with pneumonia you will need to do a sputum test, and sometimes a blood test is done. Chest X-ray, and CT scans are often done to see the fluid in the lungs but cannot be used to diagnose pneumonia. Treatment with antibiotics is to start within six hours of diagnosis. The main way to avoid getting pneumonia is to wash your hands. Staying healthy, quitting smoking, and vaccination are also great ways to prevent yourself from getting pneumonia.

Chest Tube:

A chest tube is a tube that is inserted into the pleural space. This tube is used to remove air or fluid from the pleural space allowing the lung to re-expand. There are many reasons for a chest tube and a few examples are pneumothorax, pleural effusion, hemothorax, empyema, and chylothorax. There are two types of chest tubes wet suction, and dry suction. In a wet suction chest tube, you have a water seal chamber in the middle that rises and falls with the patient's inhale and exhale. Both chest tubes have an air leak monitoring and you do not want to see continuous bubbling. The main difference between the two chest tubes is the suction chamber. The wet suction chest tube is regulated by the level of water in the control chamber when it is connected to the wall. You will see bubbling in the suction control chamber of the wet suction chest tube. The dry suction tube has no water column and is controlled by a suction monitor bellow. The suction monitor bellow balances the wall suction. Dry suction can have a higher suction rate. You must monitor a patient's respiratory status, the drain system, and what to do if something goes wrong. You need to monitor the drainage chamber and measure the amount draining often. If the chest tube is dislodged apply a sterile dressing and secure it on three sides not four. If the system breaks get a new system and place the tube in one inch of sterile water to form a water seal. Never clamp the chest tube if you do not have an order. Respiratory assessment is very important after the removal of a chest tube.