Tuberculosis is an infection of the lungs caused by bacteria named Mycobacterium tuberculosis. A bacterial infection that begins in the lungs and can rapidly pass to any organ of the body. The kidneys, bones, and brain are most often affected. It travels through the lymph nodes and blood stream. Tuberculosis is one of the oldest diseases and one of the leading causes of infection and death in adults. Even though there is a vaccine, about one third of the world's population is still affected by this disease. The most affected areas include Africa, Western Pacific and Southeast Asia. Tuberculosis can be spread from an infected person to a healthy person through the air. This can include sneezing, coughing, laughing and other forced respiratory acts. Infection happens when particles are small enough to cross the upper respiratory defense. Many antibiotics were developed in the 1950s and helped get rid of tuberculosis in many countries. Years later, antibiotic resistant strains of the bacteria came to light. COPD hinders breathing by limiting lung airflow and with time can become severe. COPD is the fourth leading cause of death in the United States. The key to diagnosing someone with COPD is early screening. Major loss of lung function can occur if not detected early. With COPD, changes in the respiratory tract causes the volume of inhaled and exhaled air to be reduced. These changes can include, alveoli and air passages losing their ability to stretch, damaged alveolar walls, inflammation or thickening of the walls of air passages and clogging of air passages due to mucus. There are two types of COPD, emphysema and chronic bronchitis. Obstructive sleep apnea is when an obstruction causes you to stop breathing in your sleep. The tongue muscles become relaxed causing an obstruction. The lungs are getting no air as a result of this. Your O2 saturation starts to drop and the resistance within the lungs increase. This sends a signal to the brain to let it know there is a problem. Causing the brain to wake up out of its sleep and send a signal down to the tongue muscles to tighten and air will reach the lungs again. However, the sympathetic response from the lungs is stopped, resulting in the brain and tongue muscles to go back to sleep, closing off the airway again. There are two things that can make sleep apnea worse. One is sleeping supine and the second is being in REM sleep. Pneumonia is inflammation of the alveoli and surrounding tissues. The air sacs can fill with pus or fluid making it difficult to breathe. Pneumonia usually takes the biggest toll on newborn babies and children below the age of two, people of 65 years of age or older, regular smokers and those with weakened immune systems. Pneumonia can be classified by what part of the lung is infected. For example, bronchial pneumonia is defined as the inflammation of the bronchial tubes. Whereas lobar pneumonia is defined as one or more of the five main lobes of the lungs are infected. Pneumonia can also be classified based on how the infection was acquired. Unfortunately, there are multiple ways you can acquire pneumonia. Hospital acquired pneumonia is acquired after being admitted to the hospital for another reason. You can obtain community acquired pneumonia from social surroundings, but it does not come from health care facilities or hospital. Another type of pneumonia is ventilator associated pneumonia. A patient may develop this when they are on a ventilator. Someone with a weakened immune system due to another medical condition, such as AIDS, can be affected by opportunistic pneumonia. Lastly, aspiration pneumonia bacterial infection in the lungs cause by inhaling foods, liquids, saliva or vomit. A tube inserted into the pleural space of the lungs is know as a chest tube. The purpose of a chest tube is to remove air or fluid to help re-expand the lung. Another kind of chest tube is called a mediastinal chest tube. This chest tube is placed under the sternum after a cardiac surgery and drains fluid from around the heart. Many times, after surgery, blood and fluid can collect around the heart and compress it, causing cardiac tamponade. A pneumothorax is defined as air entering the pleural space. This can happen from trauma, but it can also happen unexpectedly. However, fluid in the pleural space is known as

pleural effusion. There are three different types of pleural effusions. A hemothorax is when blood enters the pleura space due to disease, trauma, or a blood clotting issue. Empyema is infection in the pleural space. Lastly, a chylothorax is defined as lymphatic fluid in the pleural space. These are all possible reasons a chest tube could be placed. There are two chest tube drainage systems: wet suction and dry suction.