

## Gas exchange paper

Tuberculosis is an infection that is caused by a bacteria called *Mycobacterium tuberculosis*, this bacteria begin in the lungs and can also affect the kidney, bone, and brain and this bacteria travel by bloodstream and lymph nodes. Tuberculosis is more common in Africa, Western Pacific, and Southeast Asia make up 86% of all cases. Tuberculosis is the primary cause of death worldwide. A vaccine was created in 1950 but the bacteria evolve into multidrug resistant TB several years later which make it more dangerous and more infectious. Some signs and symptoms for tuberculosis is weight loss, fever because the body is trying to fight off the bacteria. The lungs are the most common place for tuberculosis is because this bacteria love oxygen. There is active and inactive form of TB, inactive form of TB is when a healthy person have TB but show no sign and does not transmit the bacteria to other but when their immune system gotten weaker, the bacteria will grow and become fatal. It's better to go get test for TB because it is very fatal. Treatment for tuberculosis could take up to 6-9 months because we have to try different type of antibiotics.

COPD is limited airflow, and it will become severe with time if left untreated. There is 2 types of COPD, Emphysema, and chronic bronchitis. For Emphysema, the damage is taken place in the alveolar wall, the alveolar become damage so there is less surface area for gas exchange. For chronic bronchitis, it is an inflammation of the bronchial. The leading cause of COPD is smoking and genetics can also cause COPD. Some signs and symptoms are SOB during physical activity, frequent respiratory infection. Spirometry is how COPD diagnose, the damage is irreversible but early testing for COPD could help you to prevent further damage to the lungs and prevent further complication.

Pneumonia is an infection that cause an inflammation of the alveoli. Aspiration Pneumonia is one of way to acquired this infection, food and liquid get aspirated into the lungs making a reservoir for bacteria to grow. Another way to acquired is hospital acquired pneumonia, is when occur within 48 hours of admission in the hospital. Signs and symptoms for pneumonia is fever, chill, dyspnea, abnormal lungs sound, productive coughing that have green, yellow sputum, chest pain that is with breathing. Chest x-ray is to confirm if you have pneumonia and a sputum culture will be acquired to see which antibiotics is needed to treat the bacteria. Delay use of antibiotic is very fatal so that is why sputum culture is needed to acquired and soon as possible.

Chest tube is inserted into the pleural space of the lungs (not into the lungs) to remove air or fluid to help re expand the lungs. Some of the reason needed to insert a chest tube is air enter into pleural space that is cause by trauma. Another reason that a chest tube could be inserted is after surgery because there could be fluid seeping into the pleural space and a chest tube is needed because the extra blood and fluid could put a patient into cardiac arrest. Tuberculosis could also be one of the reason because there could be extra fluid in the pleural space. There are a few different type of chest tube suction and one of them is wet suction. Wet suction is regulated by the height of the water in the chamber and the water will seal up so the air will not go back to the patient and we would like to see bubble in the chamber to make sure that the suction is working properly. and for dry suction, there is no water in the chamber and we could adjust the power of suction. Dry suction could be adjust to higher pressure and we would see no bubble in the chamber. We have to educate the patient to keep the chamber below the patient

chest, try not to kinks the tube. We have to monitor how much fluid is coming out of the patient body, lungs sound, and we have to do a respiratory assessment on the patient. for removal of a chest tube the doctor will do it and we assist the doctor.