

WEEK ONE REFLECTION

I always heard of tuberculosis but never really understood what it was. I learned that tuberculosis is a very bad infection caused by a bacteria that starts in the lungs, it can also spread to places like the brain, your kidneys, and any major organ. The infection travels through the blood stream and lymph nodes. Tuberculosis is one of the leading causes of death in adults (every 1 in 3 people can have it), it is also one of the oldest diseases known to man. Tuberculosis is a droplet contagious bacteria (caregivers must wear mask when treating), however, there is a vaccine that you can get called BCG. When you do have TB there is a lot of test that can be done to check to see if you have it, some are chest Xray, septum examination, and IGRA test. The most common one is an injection into the forearm (intradermal) and if you get a red bump within 48-72 hours you are positive. Some things you could do to prevent TB are, staying away from people who do have it and getting vaccinated. Treatment plan for active TB includes strong toxic medications that can be bad for the liver. Treatment plan for latent TB is just preventing it from becoming active. Latent TB means you have the bacteria but it is not active but unfortunately it can become active. TB is a very serious and contagious infection but luckily has been controlled and treatment always progresses.

Chronic obstructive pulmonary disorder is a lung disease that limits air flow. It can be either emphysema, chronic bronchitis, or both. Emphysema takes place in the walls of the lungs and chronic bronchitis is when air passages are blocked. This can happen by the air passages clogging due to mucosa, inflammation/thickening of the walls, damaged alveoli walls, and air passages and alveoli losing their stretching ability. COPD is the fourth leading cause of death in the United States. Smoking is the leading cause of COPD, you can also get it with secondhand smoke, toxic gasses and chemicals. Some early on signs of COPD are, a productive cough (can last about 3-4 months), thick mucus in the morning, and dyspnea (difficulty breathing), some more advance signs could be fever, headaches, cyanosis and barreled chest. To be diagnosed you can take a test such as breathing into a spirometer, you can get x-rays done, another one could be an arterial blood draw. COPD is irreversible which means it won't ever go away but some things to help is number one quit smoking if you do smoke, medication one example bronchodilators, and for severe COPD lung therapy may be necessary (oxygen), surgery to remove damaged lung tissue, and a pulmonary rehabilitation program. People with COPD need to know when to call 911, one reason being if they can't walk and talk at the same time. The main thing about COPD is to not smoke and avoid toxic fumes to prevent getting this lung disease.

Sleep apnea is where you stop breathing because of obstruction. The obstruction can be caused by too much fat storage, your tongue falling back, excessive tissue and when you fall asleep your muscles fall asleep to and relax blocking the air way. When the area is blocked you don't have air flow which causes negative air pressure in the lungs. When this happens O₂ drops and resistance increases sending a signal to the brain to tighten the muscles so air can go through again. Two main things that make sleep apnea worse is sleeping supine and being in REM (deep dream sleep, paralyzed sleep which relaxes the muscles more). Some risk factors for sleep apnea are being male (24% chance) because men store more fat in the neck. However, women have more of a chance after menopause. Another risk factor is obesity, you have a 10-14X more chance of getting sleep apnea if you are obese. Race plays a big role like Asians have more of a chance and nasal obstruction can determine if you get it. A couple more risk factors are genetics

and age. Preventing sleep apnea could be as simple as losing a couple pounds to as advance as rhinoplasty.

Pneumonia is where the alveoli sacs fill with fluid or pus which makes it hard to breath. Pneumonia is easy to get over with a healthy person but is more sensitive to newborns, children under the age of 2, adults 65 or older, smokers, and those with a weaken immune system. Pneumonia can be caused by a virus, bacteria (most common), fungus, or mycoplasma (both viral and bacteria). There are a variety of types of pneumonia such as, bronchial pneumonia (inflated bronchial tube), lobar pneumonia (1 of 5 lobes are infected), Community acquired pneumonia, hospital acquired pneumonia (most serious), ventilator acquired pneumonia, and opportunist pneumonia (caused due to another condition). Signs and symptoms differ with everyone, but some common ones are cough, sweating, fever and chills, dyspnea, chest pain, weakness and muscle pain. Diagnostic testing includes, listening to the lungs, chest x-ray (more to see location), blood test, CT scan, and pulse ox etc. One of the main things before treatment is getting a blood culture to see if its bacterial so antibiotics can treat it. To prevent pneumonia, you could have good hygiene, well balanced diet, exercise, quit smoking and getting vaccination.

There are different chest tubes one being the chest tube in the lungs and the other under the sternum. The one under the sternum is the mediastinum it drains fluid around the heart. The other one is the one in the pleural space, the purpose of this one is to remove fluid or air to help expand the lung. There is a dry and wet drainage system that goes in the pleural area. The wet suction is filled with water and you regulate the pressure with how much water is in there (can evaporate) you will hear and see bubbles on this system. The dry suction is not run-on water it is adjusted by a dial you shouldn't hear bubbles on this one. You would use the wet or dry system when the patient has a pneumothorax (air needs to be removed in pleural space) or pleural infusion (fluid in the pleural space). Pleural infusion consists of hemothorax (blood), empyema (infection), or chylothorax (lymphatic fluid). With chest tubes they must always be kept below the chest and make sure it is draining down.

