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**Assignment Model: Two (2)**

**Assignment**

1. Diabetes is a condition in which the level of glucose in the blood is poorly controlled, so that sometimes it rises too high and at other time it falls low (WHO,2010). It cannot be classified as communicable disease because but a non-communicable disease.

* Infectious agent: The disease develops as a long period conditions in an individual as a result of feeding and habit lifestyle. It’s not introduced to the human body by an infectious agent
* Cannot be transmitted to other people from an infected people
* Not associated with the environment or reservoirs: diabetes has no interaction with the environment or reservoir.
* Vaccine: Diabetes mellitus cannot be prevented by a vaccine. Examples of communicable diseases like measles can be prevented by a vaccine hence there is no vaccination against diabetes making it to be categorized under noncommunicable diseases.
* Mode of transmission: The disease cannot be transmitted from one person to another, it does not have exit and entry route.
* Airborne: Some communicable disease like tuberculosis can be transmitted through the air, but diabetes cannot then it cannot be termed as a communicable
* Risk factors: In comparison of the risk factors for communicable diseases (over crowed, poor water, forced displacement; (Charllote Hamper, 2018) and diabetes (unhealthy diet, physical inactivity, unhealthy use of alcohol; WHO 2015), they are different; so diabetes cannot be classified as communicable diseases.

1. Epidemiology is the quantitative analysis of the circumstances under which disease processes, including trauma, occur in population groups, factors affecting their incidence, distribution, and the host response and use of this knowledge in prevention and control;(Evans,1978).

From the above description, pulmonary tuberculosis is classified as airborne disease which can be transmitted from one person to another by air.

**Importance of epidemiologic classification of disease**

Epidemiologic classification enables the selection of prevention and control measures which are common to communicable diseases in the same class to interrupt the mode of their transmission.

* Evaluation of risk factors leading to infection; due to epidemiological studies, public health professionals are able to gather all the risk factors leading to the infection of a disease and then an awareness can be done to mitigate infection.
* Evaluation of factors affecting the transmission of an organism, in communicable diseases infectious agents and transmitted from a reservoirs to a host or humans to humans, with the knowledge of epidemiology, factors for the transmission are identified and the route of transmission influence by these factors and broken to prevent an outbreak for example cholera.
* Prevalence; diseases comes and its severity changes in certain seasons of the year, public health professional uses data of when some common disease occurs in the community for sensitization purposes to reduce mortality rate.
* Route of transmission; epidemiology studies the diseases, causes and transmission of diseases in the community, ideally if a route of transmission of a disease is known its spread is terminated by blocking the route of transmission. For example, a diarrhea can be prevented by latrine construction.
* Prevention; this is the preparation in advance to stop occurrence of a disease. Public health professional applies knowledge of epidemiology and talk to the community. For example, what hygiene messages are given to the community on prevention of WASH related diseases.

1. Bacterial vaccine-preventable diseases are diseases that can be prevented by immunization with a vaccine (WHO,2012). These diseases are the major causes of death of children in Africa.

**Tuberculosis:**

This is a potential serious infectious disease that mainly affects our lungs. The bacteria that causes tuberculosis are spread from one person to another through tiny droplets released into the air via coughs and sneezes (Mayo clinic,2019)

**Signs and symptoms of active tuberculosis**

Coughing that lasts three or more weeks, coughing up blood, Chest pain, or pain with breathing or coughing, unintentional weight loss, fatigue, fever, night sweats, loss of appetite, chills

**Causes**

Bacteria is the infectious agent of tuberculosis. It can spread from person to person through microscopic droplets released into the air. This can happen when someone with the untreated, active form of tuberculosis coughs, speaks, sneezes, spit, laughs or sings.

**Prevention**

Active variety of tuberculosis is the only contagious one, so prevent your latent tuberculosis from becoming active. For prevention purposes

* Stay home, do not go to work or school or sleep in a room with other people during the first few weeks of treatment for active tuberculosis.
* Ventilate the room, tuberculosis germs spread more easily in small closed spaces where air does not move. If it is not too cold outdoors, open the windows and use a fan to blow indoor air outside.
* Cover your mouth, use a tissue to cover your mouth anytime you laugh, sneezes or cough. Put the dirty tissue in a bag, seal it and throw it away.
* Wear a mask, wearing a surgical mask when you are around other people during the first three weeks of treatment may help lessen the risk of transmission.

**Diphtheria:** This is an infection caused by the bacterium Corynebacterium diphtheria. It causes a thick covering in the back of the throat. It can also lead to difficulty breathing, heart failure, paralysis, and death, (CDC,2017)

**Causes and Transmission**

The disease is caused by the Corynebacterium diphtheriae bacterium.

It spreads (transmits) from person to person through respiratory droplets, like from coughing or sneezing. A person also can get the disease by coming in contact with an object, like a toy, that has the bacteria that cause diphtheria on it.

**Symptoms**

The disease-causing agents attach to the lining of the respiratory system which includes parts of the body that helps you to breathe. When it happens, the bacteria can produce a poison (toxin) that can cause

* Weakness
* Sore throat
* Fever
* Swollen glands in the neck.

**Prevention**

Center for disease control and world health organization recommends vaccination as a measure to prevent diphtheria. The vaccines effective are DTap, Tdap, DT, and Td.

**Pertussis**

Pertussis (whooping cough) is a highly contagious respiratory disease caused by the bacterium Bordetella pertussis. It is characterized by uncontrollable, violent coughing which often makes it hard to breathe. Infected person needs to take deep breaths, which results in a whooping sound. The disease can affect people of all ages, but can be very serious, even deadly for babies less than a year.

**Causes**

Pertussis is a very contagious respiratory illness caused by Bordello pertussis. These bacteria attach to the cilia that line part of the upper respiratory system. The cilia are damage by poison released by the bacteria and cause airways to swell.

**Transmission**

Pertussis is a very contagious diseases that can only be found in humans, people spreads pertussis from person to another person by coughing or sneezing or when spending a lot of time near one another where you share breathing space (Bisgard KM,2004)

**Symptoms**

Pertussis usually develop within 5 to 10 days after you are exposed. There are causes that the symptoms develop as long as 3 weeks (Stehr K,1998)

* Runny nose
* Low grade fever
* Mild, occasional cough
* Apnea
* Paroxysms
* Vomiting
* Exhaustion after coughing fits

**Pneumonia**

Pneumonia is an infection that inflames the air sacs in one or both lungs. The air sacs may fill with fluid or pus (purulent material), causing cough with phlegm or pus, fever, chills and difficulty breathing. It can be cause by varieties of organism (bacteria, viruses and fungi), (Mayo Clinic)

**Causes**

Many germs can cause pneumonia, the common are bacteria and viruses in the air we breathe. community acquired pneumonia is the most common type of pneumonia. It occurs outside of hospitals or other health care facilities. It may be caused by

* Bacteria. Streptococcus pneumonia can occur on its own or after you have had a cold or the flu. It may affect one part (lobe) of the lung, a condition called lobar pneumonia.
* Bacteria-Like organisms. Mycoplasma pneumonia also can cause pneumonia.

(Mayo Clinic) <https://www.mayoclinic.org/diseases-conditions/pneumonia/symptom>

**Symptoms**

* Chest pain when you breathe or cough
* Confusion or changes in mental awareness (in adults age 65 and older)
* Cough, which may produce phlegm
* Fatigue
* Fever, sweating and shaking chills
* Lower than normal body temperature (in adults older than age 65 and people with weak immune systems)
* Nausea, vomiting or diarrhea
* Shortness of breath

**Prevention**

To help prevent pneumonia

* Get vaccinated. Vaccines are available to prevent some types of pneumonia and the flu, but you need to review your vaccination status because vaccination guidelines changes hence be in consultation with your doctor.
* Emphasize children vaccination. Doctors recommend a different pneumonia vaccine for children younger than age of 2 and for children ages 2 to 5 years who are at risk of pneumonia disease. Children who attend a group childcare center should get the vaccine. Flu shots are also given to children older than 6 months.
* Practice good hygiene. To protect yourself against respiratory infections that sometimes lead to pneumonia, wash your hands regularly or use alcohol-based hand sanitizer.
* Do not smoke. Smoking damages your lungs’ natural defenses against respiratory infection.
* Keep your immune system strong. Get enough sleep, exercise regularly and eat a healthy diet.

1. Meningitis; this is an inflammation of the lining around the brain and spinal cord caused by and infection mostly in children, teens, and young adults. Older adults and people who have long-term health problems, such as weakened immune system are at risk.

**There are two main kinds of meningitis**

* Viral meningitis is common. It does not cause illness, in severe cases, it can cause prolonged fever and seizures.
* Bacterial meningitis is not common, but it is very serious. It needs to be treated right Away to prevent brain Damage and health.

**Causes of bacterial meningitis**

Bacterial meningitis is caused by several types of bacteria, these bacteria can live in your body and the environment around you. These bacteria stay harmless until they enter into your bloodstream and travel to your brain and spinal cord to start an infection, (pneumococcus, meningococcus, Hib and E. coli).

The infection is spread through

* Coughing
* Sneezing
* Kissing
* Eating Soft cheeses
* Eating Hot dogs
* Eating sandwich meats

**Prevention**

**Immunization and vaccination**: vaccination is the only key to prevent meningitis.

(Erica Roth, 2016)<https://www.healthline.com/health/bacterial-meningitis-causes-and-how-they-re-spread>

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| Image result for picture of a resting position for an anopheles mosquito larvae on water surface Water surface  Anopheles | Image result for picture of a resting position for an anopheles mosquito larvae on water surface Water surface  Culex |

* They don't have a siphon and stay parallel to the water surface.
* Culex larva has a siphon for breathing and for hanging down from the water surface

(TerezinhaSouza,2017)

<https://www.researchgate.net/post/How_to_identify_Culex_Anopheles_and_Aedes_mosquitoes_and_their_larvae>