

Epidemiology paper essay sample

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According to the Center for Diseases Control and Prevention, Tuberculosis (TB) is an infectious bacterial disease caused by *Mycobacterium tuberculosis*. The bacteria normally infects the lung but can invade any organ such as the spine, kidney and brain. If the infection is not appropriately treated the person can die (CDC, 2012). There are two TB related conditions: latent TB infection and TB disease. TB is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease. For instance, coughing, sneezing, speaking, or singing by someone infected with TB; people in close proximity may inhale these microorganisms and become ill (World Health Organization, 2014a). TB is not transmitted by kissing, shaking hands, sharing foods, sharing a toilet seat or using the same tooth brush. Latent TB has no symptoms and the immune system keeps the TB inactive without spread to other people. However if the immune system becomes weak the person can develop active TB disease.

TB disease symptoms can include low grade fever, weight loss, night sweats, listlessness, cough, hemoptysis, positive skin test, respiratory congestion, and abnormal chest x-ray / sputum culture (Maurer & Smith, 2013). If left untreated TB can be fatal or lead to other complications that spread to the blood stream and infect the brain, bones, liver or kidneys. If the bones become involved spinal pain and joint destruction are possible. TB in the brain can cause meningitis and if it attacks the heart it could cause cardiac tamponade. If TB infects the kidney/liver the person cannot eliminate waste properly (Mayo Clinic, 2013).

Treatment for latent TB depends on your risk of developing TB disease (CDC, 2014). In order to control and hopefully eradicate TB those with latent TB are

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often treated with isoniazid (INH), rifampin (RIF), rifapentine (RPT) antibiotics (CDC, 2014). Treatment of TB disease can be treated by taking several drugs, typically for 6 to 9 months (CDC, 2014). The drugs most often used are isoniazid (INH), rifampin (RIF), ethambutol (EMB), pyrazinamide (PZA) and the time of treatment is based on number of doses completed in a period of time. It is imperative to complete the medication, and take them precisely as prescribed (CDC, 2014).

If an infected person stop taking the medication too soon, the person will become ill again (WHO, 2014a). If the medication is not taken properly, the germs are still active may become unaffected by the drug (WHO, 2014a). TB that is resistant to drugs is tougher and more costly to treat (CDC, 2014). Nearly ten million people become infected with TB yearly and about one and a half million people will die from the disease globally. TB is an issue of global concern and a major focus for prevention and control efforts for CDC and partners throughout the world. The Global Plan to Stop TB 2011-2015 has established a goal of 50% reduction in TB prevalence and death rates by 2015 (CDC, 2012). Determinants

TB can affect any person, but it is most frequently seen amongst young adults in the Eastern part of the Region and among immigrants and elderly people in the Western countries (CDC, 2012). TB is predominantly linked to social determinants of health such as immigration, incarceration and social marginalization (CDC, 2012). TB is more prevalent among immigrants, African Americans, American Indians and homeless people. Such inequalities are prejudiced, pose a monumental financial burden to the world in respect to the health care requirements and lost productivity, and are preventable.

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They are also counter to health as a human right (CDC, 2012). These groups of people often live in close quarters to one another, they are poor and have little to no income, unequal access to healthcare and incarceration.

Epidemiological

The epidemiological triangle consist of host, agents and environmental factors that affect health. Host factors for TB include minorities, young adults, and alcoholics, people who are exposed for long periods of time to infected persons, immigrants, the poor and most often the uneducated (CDC, 2014). The health of the individual is usually poor or compromised and potentially recovering or already sick with some other disease (CDC, 2014). The person's immune system is already compromised and the nutritional intake is less than optimal so they do not have the ability to fight off any type of infection (CDC, 2014). The agent is an infectious bacterial disease caused by *Mycobacterium tuberculosis* that is transmitted via droplets and are breathed in by people in very close proximity (WHO, 2014a). The environment is affected by the bacteria when the droplets are released in the air and it can live for several hours (CDC, 2014a). It is utmost important to insure people have more access to healthcare to insure they are treated for this disease. Unfortunately, the health of children is still threatening by preventable diseases and environmental toxins. Role of Community Nurse

The community health nurse plays an integral part in the community. One of the major role of the nurse is to improve the general health of the community as well as that of individuals and families (Maurer & Smith, 2014). The nurse is active in several ways. These nurses provide thorough care to clients in their homes, health fairs, institutions, schools, and people

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with individual healthcare needs (Meadows, 2009). Communities have many dynamics, therefore the nurse must adapt in order to provide clients with the appropriate care they may need (Meadows, 2009). Among these encounters, community nurses can assist in progressing the health outcomes and expansion of the infrastructure for monitoring and managing diseases (Meadow, 2009). They also develop and implement wellness programs in organizations, thereby supporting the welfare of employees. Organizations

The WHO organization provides leadership on problems crucial to health and engaging in organizations where partnerships is needed (WHO, 2014b). It also shapes the research program and ensure knowledge that will be valuable to everyone. Additionally, it sets norms and values that promote and monitor the implementation of the organization. More importantly, it communicates the proper evidence-based policies. Providing technical services, implementing change, increasing institutional capacity; surveillance of health situation and evaluating health trends (WHO, 2014b). Conclusion

In conclusion, people are unable to distinguish if a person is infected with TB visually because there is not any overt changes in appearance. Furthermore, this disease does not discriminate against a person's financial status, economic status, age, or race. The healthcare community needs to provide more education and resources to the public. Education plays an important part of preventing diseases. Fortunately, the community nurse as well as other healthcare professionals can ensure the public is made aware that TB is a treatable disease.

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