

Summary of achieving stop tb partnership goals

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Summary of “ Achieving STOP TB PartnershipGoals” The ultimate destruction of TB depends on the identification and treatment of all TB cases. Driving social factors such as poverty, immunosuppression, smoking, diabetes and poor health services make eradicating the current TB pandemic crucial in trying to control the epidemic. Current research has been focusing on early detection, treatment, and vaccination. The STOP TB Partnership was formed in May of 2000 by the World Health Assembly in efforts to reduce the number of people being infected by TB.

However, “ In 2006, the TB pandemic continued to kill 2 million people annually and was growing by 1% each year, despite the World Health Organization also known as WHO having declared it a ‘ Global Emergency’ over a decade earlier. ” The United Nations has even stated that the goal is to cut the number of TB deaths in half by the year 2015. This is a goal not so easily achieved considering the fact that an estimated 2 billion people are latently infected with tuberculosis worldwide. (Kupferschmidt 1) Tuberculosis is caused from a bacterium called *Mycobacterium tuberculosis*. *M. tuberculosis* is an obligate aerobe that grows in tissues with a high oxygenated content, such as the lungs. It is a slow growing bacteria that takes anywhere from 12 to 20 hours to generate. The cells are hydrophobic and have high lipid content in the cell wall and tend to clump together. TB is an airborne disease that is spread from person to person by coughing, sneezing, or speaking. Tuberculosis is diagnosed by a simple skin test that if positive will show a reaction to a small quantity of tuberculosis antigens. A positive confirmation can be made by a chest X-ray, and a microscopic examination of a sputum sample.

A new significant development in TB diagnosis has been found in Xpert MTB/RIF assay. The Xpert MTB/RIF is made to detect DNA sequences specific for *Mycobacterium tuberculosis* and rifampicin resistance by polymerase chain reactions. The MTB/RIF test purifies concentrates and identifies targeted nucleic acid sequences in *M. tuberculosis* genomes which can take about 90 minutes to complete. MTB/RIF assay has met some of the minimum requirements of the governing groups, such as being easily administered by a low skilled technicians and operating in different temperatures with minimal requirement from the test operator.

There has also been price reduction availability for countries with the pandemic. (Zumla 819) While MTB/RIF assay seemed to be the miracle answer for TB testing, it still falls short of the requirements set forth by the STOP TB Partnership. For example, the shelf life is half the expected 2 years, high cost of the machine and cartridges to run it and constant electricity make it difficult for key areas. Safe recycling of large amounts of cartridges also remains an environmental concern being that sputum and positive buffers are present in the used cartridges. (Zumla 822)

There are 11 new TB drugs on the horizon. Hopefully, by 2015 at least 2 of them will be released for public consumption. The current drug-susceptible TB treatment is the medication called Isoniazid or INH. INH is available worldwide, is relatively inexpensive and is generally well tolerated. INH is used to for latent tuberculosis infection to help kill the dormant bacteria and to reduce the risk of the infection becoming active tuberculosis later in life. This medication is taken for 6-9 months; where as the new drugs that are still in clinical trials would shorten this to 4 months.

However, these unfortunately are not available yet. What are really needed to eradicate this disease are TB vaccines. The present TB Vaccine, Bacillus Calmette-Guerin or BCG, is an attenuated strain of *Mycobacterium bovis* which was introduced in 1922. It is used primarily in children in countries outside the US. Not all administered BCG vaccines have been effective either, only helping with severe childhood versions of TB (ex: disseminated and meningeal). As of 2011, at least 6 TB vaccine candidates were in preclinical trials, with 21 additional next generation candidates in the vaccine discovery phase.

A more effective tool for the United States would be a post infection vaccine, due to the vast majority of cases being remote infections. This would nearly eradicate TB in the US. But, one has currently not been created. (Zumla 823) TB has plagued the human race for decades, only improving when social, economical, and general living conditions were bettered. Recent research continues to look for vaccines, diagnostics, and treatments. However, no new trial based vaccine has been introduced since BCG in the 1950's.

The STOP TB Partnership's goal of lessening the yearly cases of infection by one million is admirable, but so much more needs to be done to control the spread of infection. More people need to be tested and become aware of what a huge problem it currently still is. People know about the disease but many people are not educated about the disease and what the symptoms are until it is too late and have probably already spread it to other people. Despite the years of effort that has been dedicated to TB research, the end still seems to be decades away. Works Cited Alimuddin Zumla, et al. Achieving STOP TB Partnership Goals: Perspectives On Development Of New

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