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# Afghanistan : Tuberculosis

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## Tuberculosis in Afghanistan

### Introduction

Afghanistan is a low income nation with a population of over 30 million located in the Middle East. The 30 million individuals in Afghanistan together worship Islam, as it is practiced by 99.7% of the country. The government has a presidential structure, and is called the “Islamic Republic.” Together they work on the problems faced by the country, like the internal war, poverty, and the ongoing epidemic of tuberculosis.

### Tuberculosis

Tuberculosis is one of the world’s top infectious killers. There are twenty-two countries that suffer the highest burden of tuberculosis, and Afghanistan makes this list. Annually, there are around thirteen thousand deaths due to tuberculosis in Afghanistan. Tuberculosis (TB) is defined as an infectious disease most often affecting the lungs. When people affected with tuberculosis cough, they expel germs into the air. Symptoms of tuberculosis include cough (sometimes with sputum or blood), fatigue, loss of appetite, weight loss, fever, chills and night sweats. Tuberculosis is treatable with a 6-month course of antibiotics and the vast majority of cases can be cured when medicines are provided and taken properly. Without treatment, mortality rates are high, and TB can spread to other parts of the body through the bloodstream, including bones, kidneys, and even the brain.

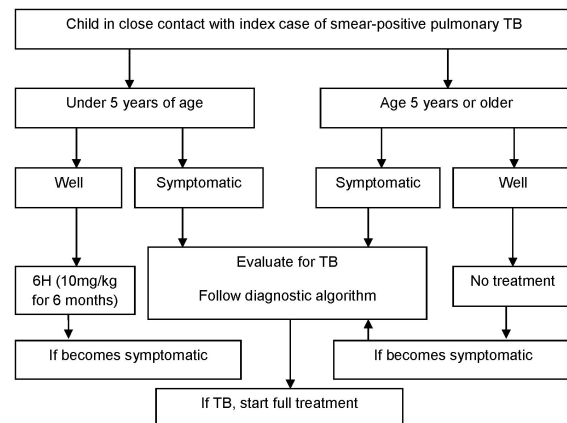
### Epidemiology

According to the Minister of Public Health in Afghanistan, Dr. Firozuddin Feroz, the tuberculosis epidemic in Afghanistan is “completely preventable and curable. The Government is committed to ensuring that each and every Afghan has access to quality TB services and medicines and that people are better informed about the disease, its causes and symptoms so they know to seek care when needed. We need to also fight the stigma associated with TB.” As recently as 2014, there were an estimated 58,000 cases in Afghanistan. But, more than 25,000 of these cases were missed by Afghanistan’s health system (WHO). Currently, the individuals who are at the most risk are women, children, the poor and malnourished, and

refugees. Women in Afghanistan make up two thirds of the patients in Afghanistan affected with tuberculosis.

### The DOTS Program

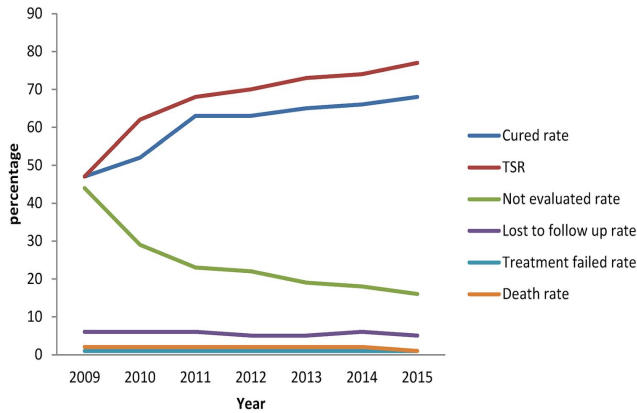
The treatment of Afghanistan’s TB crisis is constantly improving despite the current level of crisis in the country. Thanks to the National Tuberculosis Control Program (NTP) established in 2005, hospitals have been established in specific provinces of Afghanistan where prevalence of tuberculosis is higher. With the help of NTP, the internationally recognized technique of DOTS, or Directly Observed Treatment, Short Course was applied to the treatment of TB in Afghanistan. DOTS is considered by WHO to be highly efficient and cost effective, which is good news for Afghanistan, a low income country. In 2009, the NTP and TB CAP (TB Control Assistance Program) developed a team from WHO to implement the DOTS program in Kabul City.



<http://journals.plos.org/plosone/article/figure?id=10.1371/journal.pone.0178053.g001>

Through this coordinated and collaborative approach, 681 health workers were trained to apply the consultative process and standard operating procedures to suspected carriers of tuberculosis from 2009-2015. Through DOTS, an overall algorithm for identifying and treating tuberculosis in children who were in close contact with someone who may have been tested positive for pulmonary tuberculosis. The flow chart for this algorithm (Figure 1) is shown above on page 1. The outcome of the DOTS algorithm being implemented into Afghanistan showed a remarkable change in how TB was treated in Afghanistan. In 2010 when the program was first implemented, only 25% of

private health facilities agreed to begin DOTS, but by 2015 this almost doubled and increased to 46%.



<http://journals.plos.org/plosone/article/figure?id=10.1371/journal.pone.0178053.g004>

Other results of these programs are shown in a very positive light, which is reflected by Figure 2. The TSR (Treatment Success Rate) and Cured Rate increased by more than 20%, with TSR increasing from 52% to 80%. During the process of the DOTS program, there is also a decrease seen in cases of tuberculosis that were not evaluated. This was the most drastic decrease, from 52% in 2010 down to almost 4% in 2015. Along with this is the shown decrease in failed treatment and death rate as a result of TB. Even a slight decrease in those is still progress. Overall, the DOTS program proved to be successful, but continued efforts are needed to further improve the study of TB indicators and treatment, and to uphold the achievements of the urban DOTS program in Kabul City.

### Personal Address

I believe that Afghanistan can further reduce the spread of tuberculosis more than the DOTS program already has. In utilizing the punnett square, a better method can be used to diagnose and treat possible cases of TB for those who were exposed to someone who was already diagnosed.

In fig. 3 I made a punnett square to visualize who would be quarantined and who would be isolated.

		+	Disease	-	
+	Exposure	+	Exposed and has TB	-	Exposed and does not have TB
-	-	+	Not exposed and has TB	-	Not exposed and does not have TB

Those who have been exposed to someone with diagnosed TB would first be placed in quarantine to see if any changes occur in symptoms. If after a certain amount of time and no change in health, they are released, but if an individual begins to develop TB symptoms, they are placed in isolation to keep other individuals unexposed and to begin treatment as soon as possible to increase the TSR. This process may be difficult in areas without good medical care, but as experience with treating these diseases increases, so does the ability to have a greater outreach and cure TB in Afghanistan.

The implementation of the urban DOTS program in Kabul contributed a lot to the discussion of how to cure TB in both private and public health sectors nationwide. By testing in a more densely populated area, access to better quality TB services improved, and also proved that increasing the TSR rate in a difficult, more populated area can be successful. But there will still be challenges in the future to improve the success of treatment in hard to reach areas, but the effort continues to cure TB in Afghanistan.

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