• Introduction

This Fact Sheet on Tuberculosis (TB) and DOTS treatment is included here because HIV increases a person’s susceptibility to infection with Mycobacterium tuberculosis. Compared to an individual who is not infected with HIV, an individual infected with HIV has a 10 times increased risk of developing TB. The presence of TB may allow HIV to multiply more quickly. This may result in more rapid progression of HIV and AIDS. Pulmonary TB is the most common in HIV patients, although other forms of TB, such as lymphadenopathy and meningitis, are frequently found.

The information which follows addresses the diagnosis, treatment and prevention of TB. For further information contact StopTB (details at the end of this Fact Sheet).

• A Major Killer

Tuberculosis (TB) is a serious public health, social and economic problem, estimated to cause 8 million cases worldwide each year. Although the DOTS (Directly Observed Treatment - Short Course) strategy has been proven to cure more than 85%, only a small fraction of cases (16%) have access to these curative regimens. There are more than 1.9 million deaths due to TB each year. TB kills more youth and adults than any other infectious disease. The disease burden is heaviest in developing countries, where 95% of the cases occur. Even in developed countries, TB is re-emerging as a public health concern. The main reasons for the increasing global burden of disease are:

• increasing poverty, social upheaval and crowded living conditions in developing countries and inner city populations in developed countries;
• inadequate health coverage and poor access to health services;
• inefficient TB control programmes, with low cure rates, because of inadequate and interrupted treatment;
• reluctance to report TB suspects to poorly administered programmes;
• impact of the HIV epidemics, mainly in Africa and Asia;
• lack of political leadership and commitment to implement, sustain and expand DOTS.

TB causes more maternal deaths than any other single cause of maternal mortality, estimated to be in the order of more than one million women per year. It is the commonest cause of death in AIDS patients, because it is reactivated by the failing immune system. It impacts children because they are left without care by their parents’ illness and an unknown number of children themselves fall ill and die of TB annually. The tools for controlling TB are in hand, but wider application of the DOTS strategy is desperately needed. This will require a coalition of health workers, policy makers and the public who have a right to freedom from TB.

What is TB?

The symptoms of TB are a cough, which is persistent and not responsive to antibiotics, fever and weight loss. TB may occur outside of the lungs in lymph nodes, bones, kidneys, the central nervous system. These sites may cause serious illness, but patients are not likely to transmit the disease unless they also have TB of the lung.

How TB is spread

TB infection is spread by coughing the germ, *Mycobacterium tuberculosis*, into the air where it may be inhaled by persons sharing the same breathing space. Only one in ten infected by the germ actually develops active symptomatic TB. The remainder have a healthy immune system which contains the infection in a dormant state. However, many years or decades later, dormant infections may reactivate and cause disease when the immune system fails.

It is estimated that as much as one third of the world’s 6 billion population (1.9 billion) has been infected. Most of the new cases of active tuberculosis develop from this pool of infected persons. The chance that anyone person will become ill with TB after infection is low (one in ten), but in the HIV infected person the chance of developing TB is accelerated by the failing immune system, and may be as high as 50% lifetime risk or 10 % per year.

As the HIV infection progresses previously dormant TB reactivates and new infection progresses rapidly. TB accelerates HIV disease and is responsible for 32% of all HIV related deaths. TB treatment is almost as effective in the HIV infected patient and DOTS is doubly important to assure curative treatment in those with dual infection.
• How to find and cure TB

The primary health worker is usually the first contact for the sick patient. And it is this worker who must know when to suspect TB and refer for sputum examination. In many countries, nurses represent the main providers of primary health care services, as well as the trainers and supervisors of other health care workers who must be knowledgeable about TB control. Once a laboratory has confirmed the diagnosis, treatment must be provided with the support of the health care worker. Treatment must continue for 6-8 months until the patient is cured, and verified as negative by sputum testing.

Primary health care providers are the ones who find TB suspects, refer them for diagnosis and ensure they complete treatment. These tasks are the backbone of the DOTS strategy. To make sure that DOTS is implemented in every district, national nurses associations and individual nurses must lobby their governments for a long term commitment to TB control.

• What is the DOTS strategy?

DOTS is composed of five elements, all of which are essential to a successful TB control programme outcome. These are:

1. Government commitment to make TB a priority programme and to provide resources for nation-wide coverage.

2. Case detection from among persons with persistent cough mainly through sputum smear microscopy in a country-wide laboratory network.

3. An uninterrupted drug supply provided to health centres for the treatment of all TB patients.

4. Use of standardised short-course chemotherapy and a commitment of the patient and health worker to complete treatment ensuring that each dose of drug is taken.

5. A recording and reporting system for monitoring treatment outcome; cohort analysis to reach targets of 85% cure, and training and supervision to assure that this is accomplished.

• Treatment of TB

TB treatment not only cures and saves lives, but also prevents the spread of infection and development of drug-resistant TB, which is far more difficult and costly to treat. Poor treatment can cause drug resistance. In fact, no treatment at all is better than poor treatment. The recommended treatment for TB requires a 6-8 months of combination drug taken daily to achieve cure. The cost of the drugs has been reduced in some countries to as little as US$13 to cure a patient. Treatment of TB has been declared by the World Bank as one of the most cost-effective health intervention strategies in terms of years of life saved.

Remembering to take the drugs for 6 to 8 months can be a problem. It is recommended that a health care worker or volunteer help the patient complete treatment by whatever possible means including direct observation of treatment.
Role of Nurses and other the Health Care worker in DOTS

The World Health Organization (WHO) has worked with country representatives and donors to implement the DOTS strategy within national TB programmes in more than 100 countries. Every element of the strategy depends on a trained and committed health care workers and volunteers without whom the strategy cannot work. Behind the workers is a community that wants to be free from tuberculosis. TB control needs community support and involvement! A successful DOTS strategy requires partnership between the primary health care team, other sectors and the community.

The nurse or other primary health worker may be the first to suspect TB in patients who have been coughing for more than three weeks, or who have not responded to antibiotics, have lost weight or are feeling tired. The village volunteer, who extends the primary health care team into the community, helps TB patients complete their treatment by keeping a regular supply of drugs and assuring they are taken correctly.

Patients suspected of TB must be referred to the district medical officer and laboratory for sputum smear microscopy will identify the bacillus. The doctor will then prescribe the treatment regimen but the health worker will be responsible for teaching the patient about the disease and its treatment. Treatment is the best method of preventing the spread of TB but it is also important to teach the patients to cover their mouths when coughing. The importance of taking drugs every day for 6-8 months under supervision of the treatment supporter must be made clear. Finally sputum checks are done at about two month intervals to monitor the progress towards cure.

Nurses are the best patients’ allies in recognising TB symptoms, referring them for diagnosis and assuring treatment. They must:

- ensure that correct treatment is started and the treatment card filled out,
- ensure a regular supply of drugs is sent to the treatment supporter for the duration of the treatment;
- report and refer drug side effects;
- report completion of treatment and outcome.

Nurses also need to work closely with their community, with laboratory staff, doctors and National TB programme managers to:

- provide information and education on the DOTS strategy;
- build community support (through community leaders, schools and the media) for a strong National TB programme;
- register all TB cases;
- train and supervise the primary health workers to find, educate and treat the patients.

Nursing organisations should be vocal advocates for the DOTS strategy for TB control and can help maintain strong National TB control programmes in every country.
• **What you can do**

  • Increase community awareness of the right of all to free access to effective TB care.
  
  • Make friends, neighbours and colleagues aware of DOTS and how your country’s National Tuberculosis programme can save lives and prevent the spread of TB.
  
  • Contact your National TB Programme, your Nursing Association and your Minister of Health today to find out how you can participate in the **STOP TB** initiative.

*Stop TB* is working to stimulate political movement toward TB control everywhere.

For further information, please contact **STOP TB**

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• **Questions for reflection and discussion**

  • How could you enhance your role in preventing, detecting and treating TB in your community?
  
  • Why would you suspect the presence of TB in the community and in individuals?
  
  • What are the elements of the DOTS strategy?
  
  • Would DOTS be a successful strategy in your community? Discuss the reasons for your responses.