

## **TUBERCULOSIS IN THE WORLD**

The World Health Organization (WHO) estimates that between one and a half and two million people die every year of tuberculosis.

The estimates are that there is a TB death every minute.

We have more cases globally now than we ever had in the history of mankind.

TB is a disease caused by germs that can spread from one person to another. But that's not sufficient to make you sick with TB, you have to have in addition to the germs things like poverty, poor economic situations, poor social conditions, in order for TB to really spread very widely.

TB was an enormous problem in Europe, it was the most frequent cause of deaths in adults in all of Europe but particularly it touched northern and western Europe. It was an enormous problem, it affected everybody. One in 200 people died of TB every year. But in the big cities, for example, in the slum areas, the rate was multiple times higher because of the terrible conditions that people lived in. These conditions were mainly overcrowding that led to the spread of the germs and under nutrition which affected their immune systems. Nowadays in Europe, TB has almost disappeared in the European-born population, particularly in those very countries that were most affected in the past, in the north of Europe and in the west of Europe.

Most of the TB patients today are people who come from other places where TB is more common.

We have more TB patients today than we had a 100 years ago, even though we have made huge progress in what are now the rich countries which, then, had large slums and poor areas. We've made big progress there but we now have more cases globally now than we ever have had in the history of mankind.

That's for several reasons. First of all, TB now rests mainly in the poor countries, and in those poor countries, TB spreads easily because of the same conditions that we saw in Europe a 100 years ago.

In addition to that, population growth in poor countries is much greater than the population growth in rich countries so, the number of TB cases grows because of that.

The problem of TB in India is of enormous proportions. The estimates are that there is a TB death every minute. It's enormous.

80% of all the TB patients in the world live in 22 countries. The largest number of patients in the world, in any single country, is in India, and that's followed by China, Indonesia, Pakistan, Bangladesh and then of course the countries of Africa.

The countries of Africa are emerging very rapidly and will become the centre of TB in the future because of the association of TB with the HIV infection.

The reason that people don't get sick with TB when they get infected, or a large proportion of them don't get sick, is because their immune system keeps the germs suppressed. When their immune system is knocked down, for example by HIV, then those germs start to grow and TB spreads.

So Africa is very heavily affected now by TB because of the HIV problem. Today some 70-80% of TB patients in Africa, in many countries, have the HIV infection.

The WHO estimates that between one and a half and two million people die every year of TB. And these are preventable deaths. Hardly anybody needs to die of TB anymore.

TB can develop resistance to the medications that are used if the medications are not used properly. For example if the doctor gives the wrong prescription or if the doctor does not observe the patient to swallow the medications, then the germs can develop resistance to those medications and then the medications don't work any more.

There are 2 medications in particular that are the most powerful medications and if a patient's germs develop resistance to those 2 medications, it's very difficult to cure such patients. You can treat them, but the treatment instead of being 6 months or 8 months, which is already difficult, becomes 18 or 24 months and many of the medications that are used cause side effects and they are very difficult to take. So, it really complicates the issue and even if the patient takes all the medications, the chance of succeeding to cure the patient is very much diminished.

In an ordinary patient, whose germs are susceptible to the medications, 85 – 90 95 % of them can be cured. In a patient whose germs are resistant to the 2 essential medications, 50 – 60 % can be cured so it's a huge change. In addition to that, the medications are tremendously expensive, they are at least 100 times more expensive than the medications we use to treat most TB patients.

TB is cured using medications because it's an infectious disease caused by a germ. These medications need to be of a high quality. In order to cure the patients, they need to be given over a long period of time and they need to be observed to be swallowed by the patient.

We did a study for example of the quality of medications, selecting 10 medications on the general market and 8 out of those 10 were not of good quality. In addition to that, the patient has to take it over a long period of time so you have to support the patient. It is not easy for the patient to come in every day to a health service or to a health-care worker so the patient needs a lot of support.

You have to observe the swallowing of the medication, because we know that if you do not observe the patient swallowing the medication, the germs can become resistant to the medications.

Secondly, they have to be available and this is a big challenge in the poorest places of the world where most of the TB patients live. Delivering medications systematically, never running out of them is not an easy thing to do.

In addition to that, the health service needs to be accessible, to their homes. If you have to walk to get medical care as many people in poor countries have to do, if you have to walk for 4 5 days, it's very clearly difficult to access care and diagnosis, particularly if you are ill.

In addition to the health services being available, they have to be able to provide the diagnosis of a good quality. The microscopic examination of the sputum is the most important part so somebody needs to know how to prepare the slides and the slides need to be of good quality.

We need to track what we do, we need to have an accountability so that we're sure that we are actually delivering the services in a good way. That means we have to record and report the activities and monitor them as they are being given.

These are the essential components of the DOTS strategy.

But the most important part of it is first of all that the government is serious about it. No single humanitarian or missionary organisation can solve the TB problem, the government has to do it.

The most important thing is that we have tools available today by which we can expand rapidly, something known as the DOTS strategy. Unfortunately, only 30 % of the world's TB cases today have access to good treatment, namely DOTS, so we have to expand this rapidly, double it or triple it.

At the moment the control of the TB problem is only through DOTS which aims that 70 % of the patients in the community are to be detected and 85% of these patients are to be cured.

The International Union Against Tuberculosis and Lung Disease developed the DOTS strategy and we've partnered with many countries in all regions of the world to show that it's actually feasible to do it even in the most difficult situations.

In some areas of the world, we made real progress and we started to see TB declining quite rapidly. For example in Peru over the last 10 yrs, we saw TB go way down and this is what we had hoped for all over the world but now we see the emergence of HIV infection and in those areas, until we control HIV infection, we cannot hope to control TB. The main objective in those areas is to treat the patients correctly, save their lives, make them healthier and prevent them from getting drug resistant.