The worst thing that tuberculosis (TB) control programme workers could have wished for was something that made people already infected with the bacterium many times more likely to develop active tuberculosis. That is precisely what HIV (human immunodeficiency virus) has done.

The situation is serious because about a third of the world’s population, and up to 75% of adults in some developing countries, are already infected with *Mycobacterium tuberculosis*, the bacterium that causes TB. They will have got the infection from someone they know, perhaps only slightly, who has developed TB in the lungs and who – by coughing, sneezing or even just talking – spreads the TB bacteria around in tiny droplets in the air. When breathed in, these droplets enter the lungs and lodge at the deepest regions where the oxygen is absorbed. Most TB-infected people live their lives without any further problem from this infection, since the TB bacteria are caught within cells called macrophages. There they are walled off and kept quiet by the person’s immunity (the T-lymphocyte, also called the T-cells) like a cobra in a basket with the lid fastened on. Consequently, in the times before HIV, only about 10% went on to develop active tuberculosis during their lifetime.

HIV is like an evil genie that goes around the body pulling the lids off all the millions of baskets. The lids are the T-cells, the crucial players in the body’s immune system. HIV finds a way into these cells and forces them to produce thousands more microscopic viruses. The T-cells are then destroyed in ways that we still do not fully understand. Once the TB bacteria are set free, they can cause destruction in any part of the body. Tuberculosis in HIV-infected people is often found in parts of the body other than the lungs.

A person who has been infected with both HIV and the TB bacterium may have as much as a 50% chance of developing active TB within his or her remaining lifetime, often less than 10 years. In fact, this is one of the most common diseases that HIV-infected people get. It is certainly the most important one from the point of view of the health of the general public. This is because TB is easily passed from person to person, and it can affect HIV-negative as well as HIV-positive persons. It is not like HIV itself, where it is only through unprotected sex or transfusions of contaminated blood, or blood products, or through perinatal transmission, that you can catch the virus. After all, we all have to breathe!

**These two diseases amount to a double catastrophe. But tuberculosis is curable, and a good TB control programme can prevent its spread to other members of the family. This is a lesson from which decision-makers would profit.**

**Sky-rocketing figures**

Without doubt, the worst-hit areas so far are in sub-Saharan Africa, and parts of the USA and the Caribbean. As many as 80% of the TB patients in some cities of Africa are infected with HIV, and nearly three times as many patients with TB are now being seen in some African countries compared with five years ago. These cases could even rise to twelve times as many!
Medical departments of African hospitals are overflowing with stick-limbed men, women and children, perhaps as many as three to a single bed, with a fourth or fifth on the floor alongside. In some big cities, nearly all of these people are infected with HIV, and perhaps as many as a half also have TB. With weakened immune systems, even those who don’t have TB will soon get it in such surroundings. Often the TB goes unrecognized by doctors too busy to detect the different signs of TB in those who also have HIV. Sometimes, even when diagnosed, patients have no money for the drugs. Relatives won’t help them because they have learnt from terrible experience that AIDS patients don’t survive.

In Asia the problem has just begun. Because over half of the people in the world infected with Mycobacterium tuberculosis live in Asia, the potential for a catastrophe there is very high.

Treatment of patients with HIV and TB is complicated by two things — drug reactions and drug resistance. Drug reactions in TB include severe skin rashes, where the skin can actually peel right away from the body. These can even be fatal, and they happen in about 20% of people with HIV who are treated with a drug called thiacetazone, which is used in many developing countries because it is cheap and because any alternative costs at least three times more. It is hardly ever used in the richer countries.

Drug resistance has been around for many years. It happens when patients do not take their anti-TB medicines regularly right to the end of the course of treatment, either because the drugs are not available or because the patients stop taking them when they feel better – often within about a month of starting treatment. But we know from experience that you have to go right on to the end of the course of treatment to be completely cured. If you stop the drugs too soon or take them irregularly, that is when the TB bacteria can become resistant. Modern treatment using several drugs simultaneously is designed to cure the patients even if their bacteria are resistant to one drug. The new problem that was identified first in the USA is multidrug resistance where the bacteria are resistant to two or more drugs. When this occurs in someone who also has HIV infection, it is almost always fatal and it makes cure of TB extraordinarily difficult, even in non-HIV-infected persons.

Receiving the results of a TB test. The number of TB patients in Africa has increased considerably since the upsurge of the AIDS epidemic.
What can we do?

In spite of the depressing situation that already exists in many places, there is an effective cure for TB. The drugs are there, they are inexpensive, the ways in which they should be used are well worked out, and methods for setting up TB control programmes have been well tried by WHO and others in many countries of Africa and Latin America. So why don’t all countries have effective TB control programmes?

In the first place, the people with power to make such decisions have not realized the damage that TB can cause and is causing. Next, there are often not enough health workers with the right knowledge and experience to set up and manage such programmes. Third, there is always a lack of money to purchase the needed drugs. Politicians do not seem to realize that TB treatment is one of the cheapest and most effective ways of saving a life. And the lives are often those of young parents and workers in society. Fourth, there is a depressing pessimism about treating HIV-infected people on the grounds that they will soon die in any case. It is absolutely clear, however, that they are worth treating, not only to alleviate suffering associated with HIV-related diseases and to prevent the spread of TB to others, but also because of every individual’s right to cheap, effective health care.

Decision-makers should be persuaded that their people will not accept the lack of an effective TB programme.

Once the decision is made to institute a TB control programme, the guidelines recommended by WHO and the International Union against Tuberculosis and Lung Disease should be followed. These lay out very clearly how such programmes should be set up, managed and supervised. They describe clearly how the diagnosis should be made. They tell health workers which drugs should be used and how. They make it very clear how patients should take their drugs and protect their families.

Thiacetazone should be avoided in patients who are known, or suspected, to be infected with HIV. Control programmes must plan to phase it out. For this they will need the financial support of donor countries to enable them to buy alternative drugs.

Drug resistance is best managed by prevention. This means ensuring that every patient who starts anti-TB treatment finishes it, if necessary by having health workers give each streptomycin injection and see that every appropriate tablet is actually swallowed.

Experience has shown that, at present, while AIDS is incurable, TB can be avoided in HIV-infected people. If, however, an HIV-positive person is unlucky enough to have active TB, he or she can be cured of it — and spread of TB infection to others can be prevented — by a good TB control programme.