

# TB poses growing international health threat

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Tuberculosis, or TB, poses a growing threat to world health. According to an article in the *New Scientist* magazine, it is estimated that a third of the world's population carry the disease, but nine out of ten do not show symptoms. It infects one person every four seconds. Eight million people a year develop the disease, of which three million die. According to the charity TB Alert, by 2050 there will be five million deaths a year from the disease. Many of its victims are young.

TB is an airborne infection spread by coughing. The disease can affect any part of the body, but is usually sited in the lungs where it slowly destroys tissue. IT is responsible for more deaths than Aids or malaria, but TB combined with HIV—the virus responsible for AIDS—is a deadly cocktail, according to TB Alert. HIV increases the risk of developing TB a hundred fold.

According to Mario Raglivione, head of the World Health Organisation's TB control, "virtually the whole of sub-Saharan Africa is infected" by TB. As HIV reduces immunity, latent TB infections are triggered by the spread of HIV. The *New Scientist* article states, "HIV is to TB what matches are to kindling, and Africa could be just the start of the wildfire", adding that it is like "Ebola with wings."

Barry Kreisirth of New York University says, "The spread of HIV in India and China where TB is endemic, will be a disaster."

In Britain TB infections mushroomed in the 19th century and early 20th century. Rapid industrialisation meant workers malnourished from poverty were thrown together in appalling conditions, enabling TB to spread.

The situation now developing in contemporary Russia and Eastern Europe mirrors these circumstances. Economic collapse, with the resultant decimation of health and social care, has led to the explosive increase in the number of TB cases. Again the coincidence with HIV dramatically heightens the scope of the disease. Richard Coker researches TB at the London School of Hygiene and Tropical Medicine. He has spent time in the former Soviet Union and says, "the epidemic of HIV is clashing

with TB, which means things could get monumentally out of control."

The growing incidence of drug resistant forms has greatly increased the virulence of the disease. Normally the TB bacterium is susceptible to basic antibiotics. However, to completely eradicate the disease in any individual patient requires pro-longed medication. Uncompleted courses of treatment add to the threat of drug resistance. This is happening on a large scale in places such as Russian prisons and could provide the basis for a global spread of drug resistant forms of TB.

In her book *Betrayal of Trust—The collapse of global public health*, Laurie Garrett described the TB epidemic in the former Soviet Union and its neighbours as being out of control. She says that drug-resistant TB has "swept over the Russian region."

In 1990 the World Health Organisation initiated a programme to control TB. At its launch the aim was to target the 22 worst affected countries, to detect 70 percent of cases and cure 85 percent of this figure by the year 2000. The treatment given by the scheme is known as a Direct Observed Treatment Short Course (DOTS). It involves supervising the patient to ensure the full medication course is completed.

Compliance with the medication regime is vital. Mohta Smith, an expert on drugs and poverty at Oxfam, says, "Much as DOTS is a good programme it's very difficult to get people to comply." Tom Frieden who was the former head of New York's eradication programme said, "A poorly run programme can create multidrug resistant TB faster than you can eradicate TB".

But the *New Scientist* reports that Peru and Vietnam have met the target. With just one person in five having access to the necessary antibiotics, the programme is unviable. Fully 75 percent of the costs of the medication has to be met by the impoverished countries in the scheme.

According to Garrett, drug resistant TB is now gaining hold in Peru. She quotes a letter written in 1997 by Harvard University TB expert Dr Paul Farmer, then

working in Peru. Farmer writes that, “We have been able to identify the process by which poor Peruvians become sick with drug-resistant TB: inequalities in access to effective treatment are producing a vicious cycle which permits the emergence and transmission of this deadly disease.”

According to Dr Farmer the drug-resistant form of TB had become established in over 100 countries by 1999.

There is no meaningful research and development being undertaken to find new drugs or a vaccine to fight the TB threat. The existing TB vaccine was developed over 80 years ago. Only one new antibiotic, rifapentine, has been developed in the last 30 years. Mohta Smith of Oxfam claims many potential TB drugs are being mothballed. In the 1970s DuPont developed a class of antibiotics known as oxazolidinones. These held out the promise of being very effective against TB. Pharmacia, the US drug company, bought up the rights but has only developed them for home consumption. It developed linezolid to treat pneumonia and hard-to-treat infections developed in hospital.

In 1996 a study of linezolid derivatives indicated their potential effectiveness against TB. A study on linezolid itself this year also showed it to be potentially very effective against TB. When asked by *New Scientist* why they were not being developed, a Pharmacia spokesman said, “TB is not an indication we are currently pursuing.”

Peter Davies, a TB expert at Liverpool University, says the amount of money being invested in TB research is derisory. “They’re doing no more than they need to buy some immunity against attacks and get the press off their backs.” *New Scientist* notes that GlaxoSmithkline spends just £2 million a year on TB research, out of a total £2.4 billion on Research and Development. This is less than the £2.8 million paid to the company’s two chief executives.

According to Davies the low priority of TB drugs is encouraging doctors to ignore the possibility of TB as a diagnosis. The teenager at the source of the recent TB outbreak in Leicester, England had been treated for asthma for nine months before being confirmed as having TB. “Doctors don’t think of TB because there isn’t a company producing goods saying ‘think of TB’”, said Davies.

Garrett explains how in 1998, the World Health Organisation organised a meeting of all the leading pharmaceutical companies to explore the possibility of developing an effective TB drug. The companies said their interests lay in producing for the \$1 billion US

market of “big hitters”. To the drug companies it is not worth developing drugs that will give a profit of less than \$350 million a year over a five year period.

TB poses great dangers, even in the advanced countries. A press release from the British Public Health Laboratory Service in January this year showed the highest number of cases since 1983. There was an increase in the rate of notification of the disease of 10.6 percent in the year 2000, with 6,797 notifications of which two thirds were in London. Since 1987 there has been a 34 percent increase in the numbers having TB. Up to 1987 the numbers with the disease had decreased by tenfold.

Newham in the East End of London, for example, has become the “tuberculosis capital of the affluent Western world”, according to *New Scientist*. The borough has 108 cases of the disease per 100,000 of its population, putting it ahead of Russia where the collapse of the public health system has led to 91 cases per 100,000. In India the figure is 41 per 100,000.

The disease thrives wherever people live in poverty, suffer malnutrition, overcrowding, homelessness and drug addiction. Half of the figures in Newham are as a result of people from India, Bangladesh and sub-Saharan Africa seeking asylum. Many asylum seekers carry the microbe in a harmless latent form. It is the dire conditions they face in Britain that stimulates the disease.

Clearly a global strategy and the necessary resources are needed to fight the threat of disease like TB. But a 258-page report sponsored by the Soros Open Society Institute issued in 1999 gave detailed coverage of how control of TB was failing on an international scale. The report said \$1 billion a year would have to be spent to regain control of the disease. Dr Farmer, one of the authors of the report, warned, “If new money isn’t made available immediately the epidemic may become virtually impossible to control.”

#### Sources:

*New Scientist* No 2298 July 7 2001

TB Alert website [www.tbalert.org](http://www.tbalert.org)

*Betrayal of Trust— The Collapse of Global Public Health*, Published by Hyperion, New York, 2000

British Public Health Laboratory Service Press Release 26 January 2001



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