

working with the mycobacterium, it can take up to two years to complete an experiment. That's compared to just three weeks for a disease such as cholera. So when it comes to publishing, you have to submit studies in small pieces, which isn't very attractive to prestigious journals – so the research isn't attractive for ambitious young scientists.

The costs are also higher; not just because of the time taken, but the containment environments need to be quite stringent to prevent any accidental outbreaks of the disease. Because there's less financial return, industry makes less of an investment in the first place.

*Q: Mycobacterium tuberculosis is becoming resistant to more and more drugs, cheap diagnosis leaves much to be desired, and the BCG vaccine has varying efficacy and is 80 years old. Why has it taken so long for control measures to be updated, and where do we go from here?*

A: After the Second World War, antibiotics had just been developed and people thought they could solve any problem and kill any microbe. For

many bacteria, it was true. But after we had the antibiotics revolution, we had the revolution in microbial resistance to antibiotics. In recent years, scientists have come up with new research looking at the genetics of *M. tuberculosis*, but we've lost 20 years of research time because of the [over] confidence we had in antibiotics.

Increased drug resistance has meant that scientists and public health officials cannot act independently. We are hampered by the political and socioeconomic situation. Many people in need of improved tuberculosis control are in countries that lack political stability, resources and infrastructure. When the political system and infrastructure collapsed in the former Soviet Union, for instance, a new political system appeared but there was no new health system. That led to patchy drug distribution and patients not having the supplies to finish their treatment, which again led to drug resistance.

*Q: WHO declared tuberculosis a global emergency 15 years ago in 1993. Has*

*progress been made since then in terms of tuberculosis control or are things getting worse?*

A: The situation has been improving since 2003. After an initial increase in cases, we've now reached stabilization and even a small decline. It's not good, but it could be worse.

There have been major breakthroughs and more money is appearing, but a lot of it is going into specific tuberculosis research. Many scientific advances come from outside the field. For instance, the discovery of restriction enzymes, which cut DNA into small pieces, was made by Werner Arber and colleagues who were looking at the immune systems of bacteria but the work ended up having a big biotech impact. We need more basic research to acquire knowledge on the TB bacillus and its interactions with its host – if we only put the money into research specifically for precise goals like new antibiotics, vaccines or diagnostics, much of it will just be wasted. ■

## Recent news from WHO

- WHO joined the World Alliance for Breastfeeding action to celebrate **World Breastfeeding Week**, 1–7 August. Breastfeeding ranks among the most effective interventions for improving child survival and health, but less than 4 in 10 infants under the age of 6 months are exclusively breastfed. WHO has developed, together with the United Nations Children's Fund (UNICEF), a range of infant and young child-feeding counselling courses and job aids for use by health-care workers and lay counsellors.
- **Severe flooding in Moldova, Romania and Ukraine** since 23 July has caused the loss of 42 lives and the evacuation of 40 000 people, as of 1 August. WHO has been supporting the local ministries of health with investigations and technical assistance. As well as the immediate drowning-related deaths, the main health concerns include contamination of water by toxic chemicals and disruption of health infrastructures and supplies of water and food.
- An extra **US\$ 50m to help prevent mother-to-child transmission of HIV** was announced at the global conference on HIV and AIDS in Mexico City by WHO, UNICEF and UNITAID on 31 July. The money will be targeted to the Central African Republic, China, Haiti, Lesotho, Myanmar, Nigeria, Swaziland, Uganda and Zimbabwe.
- Also in Mexico, new guidelines were announced on 4 August to help **stop the spread of TB among HIV positive drug users**, focusing on the use of antiretrovirals and isoniazid, which slow the development of AIDS and reduce the risk of TB, respectively. The guidelines are available at: [http://whqlibdoc.who.int/publications/2008/9789241596930\\_eng.pdf](http://whqlibdoc.who.int/publications/2008/9789241596930_eng.pdf)
- WHO has welcomed the announcement of the Bill and Melinda Gates Foundation and Bloomberg Philanthropies to put US\$ 375 million into **the global fight against tobacco use**. This contribution will help countries with limited resources to reduce tobacco use through such measures as "quit smoking" programmes.
- **A new report on the progress of improving access to drinking water and sanitation** has been published by WHO and UNICEF's Joint Monitoring Programme for Water Supply and Sanitation. According to the report, 2.5 billion people suffer from a lack of access to adequate sanitation and nearly 1.2 billion practise open defecation, the riskiest sanitary practice of all. The report is available at: [http://www.who.int/entity/water\\_sanitation\\_health/monitoring/jmp2008.pdf](http://www.who.int/entity/water_sanitation_health/monitoring/jmp2008.pdf)

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