

## TB drug prices slashed for poor countries

In their ongoing efforts to keep tuberculosis (TB) at bay, WHO and its partners achieved a significant breakthrough in July. After months of delicate negotiations, WHO, together with Médecins Sans Frontières (MSF), the Harvard Medical School, and other partners, managed to persuade drug manufacturers to slash their prices for five “second-line” drugs by 48–97% for delivery to poor countries. The move mirrors recent cuts in AIDS drugs for developing countries, though for the TB drugs no lengthy legal battles with pharmaceutical companies were required.

The price reductions were made possible through bulk purchasing arrangements, with MSF acting as sole customer. WHO and its partners estimate that some poor countries will be able to save up to 94% of their current spending on these second-line drugs, which are needed to treat multidrug-resistant TB (MDR-TB). “This project proves that with an organized system of procurement, prices can be reduced dramatically and that people with this form of TB will no longer be condemned to death,” says Dr Bernard Pécoul, director of MSF’s *Access to Medicines* campaign.

Second-line drugs, such as capreomycin, cycloserine, para-amino salicylic acid, ofloxacin and ciprofloxacin, are increasingly needed to combat the spread of TB strains that have developed resistance to first-line antibiotics, such as isoniazid and rifampicin.

MDR-TB can develop when patients stop taking drugs before completing the full prescribed course of treatment. Only about 3–4% of all TB patients harbour MDR-TB strains worldwide, but a recent WHO report notes that drug-resistant TB is spreading rapidly in certain hot spots, such as the Russian Federation and other parts of Eastern Europe. Overall, TB causes an estimated 1.7 million deaths a year.

Although the first-line drugs needed to treat “regular” TB cost only about US\$ 10 per patient for an entire course, until now the second-line drugs, costing as much as US\$ 15 000 per patient for a full course, have been prohibitively expensive for poor countries. Under the new agreement the overall price tag for treating an MDR-TB patient will amount to less than US\$ 3000, says Mr Edward Sagebiel, spokesperson for Eli Lilly, the manufacturer of capreomycin and cycloserine, two of the most widely used second-line drugs.

Under the terms of the new deal Eli Lilly will sell capreomycin, which normally costs up to US\$ 25 per dose, to MSF for as little as US\$ 1 — a 96% discount. The price for cycloserine will be reduced by about the same margin, from US\$ 3.38 to US\$ 0.14. And Jacobus Pharmaceuticals, a small privately owned US company based in New Jersey, will offer a 40% discount on para-amino salicylic acid. The other commonly used second-line drugs will also be offered at discounted prices, although the suppliers

and details of the discounts have not yet been announced.

Bulk purchasing was not the only incentive that helped sway the corporate partners to reduce the prices of their second-line drugs. A second, and perhaps even more convincing, “selling point” was the creation of a mechanism to ensure proper use of the drugs, the so-called Green Light Committee. About two years ago, in the light of the emerging MDR-TB crisis, a WHO working group on TB treatment (called “DOTS-plus for MDR-TB”) created this committee and thereby provided a regulatory mechanism to “protect” second-line drugs. The committee’s members include representatives from WHO, MSF, the Harvard Medical School, the US Centers for Disease Control and Prevention (CDC), the Royal Netherlands Tuberculosis Association (KNCV), and Peru’s national TB control programme.

## Big trouble

MDR-TB treatment is anything but simple. “A cocktail of between five and eleven drugs has to be taken for a minimum of 18 months,” says Dr Marcos Espinal of WHO’s Stop TB programme. If patients fail to comply with the stringent regime, the risk of resistance could escalate. “If that happened we would be in big trouble because we would have no weapons left in our hands to treat TB,” says Dr Jong-Wook Lee, director of Stop TB.

This would be a nightmare scenario not only for patients and public health officials but also for the pharmaceutical industry, because it would make their TB drugs useless and wipe out their profits. “Maintaining the integrity of these drugs is crucial and was the prime reason for creating the Green Light Committee,” says Lee.

Any country can apply for access to the discounted drugs but each application will be scrutinized by the committee because “not every country has the necessary infrastructure in place to deliver and administer these drugs,” says Espinal. Countries already given the committee’s “green light” include Estonia, Latvia, Peru, the Philippines and two badly hit regions in Russia, Tomsk and Oriel. “Other countries are already under review,” says Espinal, who hopes eventually to expand the pilot project to a global level and turn it into a permanent programme. “Who knows, maybe our scheme might



Mark Edwards/Still Pictures

Cheaper drugs should save patients from the “nightmare scenario” of drug-resistant TB.

also serve as an example for fighting other infectious diseases," he says.

For now, the project will run for two years and provide treatment for about 2000 patients worldwide. The Green Light member organizations will monitor the progress of the project. Industry too will keep a close watch on developments. "It's a pilot effort. We will certainly look and see if this partnership with WHO can have an impact on patients with MDR-TB," says Eli Lilly's Sagebiel. ■

Michael Hagmann, *Zurich, Switzerland*

### Electromagnetic fields in homes carry leukaemia risk for children, WHO agency says

Electromagnetic fields, in particular the 50- or 60-Hz magnetic fields generated by household appliances, are possibly carcinogenic to children, WHO's International Agency for Research on Cancer (IARC) has concluded after a review of dozens of studies conducted over the past two decades. Children with the highest exposure experienced a twofold risk for leukaemia, but no significant association between electromagnetic fields and other childhood or adult cancers was found. Nor was there evidence of an increased risk to children living near high-tension power lines.

The review was conducted by an IARC scientific working group, which examined data from hundreds of laboratory and animal studies conducted since 1979, when the first scientific reports appeared suggesting a link between cancer in children and exposure to residential magnetic fields. Dr Robert Baan, who coordinated the group's deliberations, said that the research does not prove that low-level electromagnetic fields actually cause leukaemia. "One of the intriguing problems with this evaluation is that there is no scientific explanation for the association between magnetic fields and childhood leukaemia," he said.

But the group did find that two recent analyses provided consistent evidence of an increased leukaemia risk. The most convincing study, published last year in the *British Journal of Cancer*, pooled data from nine studies on a total of 3247 leukaemia cases and 10 400 controls. Children exposed daily to magnetic fields higher than 0.4 microtesla showed a twofold risk of leukaemia. However, less than 1% of the children with cancer were in this group. Such high levels only occur in households with "considerably higher than average" electricity use, Baan said. (Magnetic fields are measured in tesla. The general population is exposed to an average of about 0.1 microtesla, according to a recent study conducted by Germany's Federal Office for Radiation Safety in 2000 people across a range of occupations and lifestyles.) The other study, published last year in *Epidemiology*, reviewed data from 15 less rigorous studies and found a relative risk of 1.7 for children exposed to more than 0.3 microtesla.

Appliances like hair dryers, vacuum cleaners, radios and refrigerators generate magnetic fields that diminish quickly with distance. For instance, a portable radio generating a field of 20 microtesla at 1 cm produces less than 0.01 microtesla at a range of 1 m. According to the IARC review, such wide ranges make logging and measuring daily exposure difficult. The reviewed studies could be biased by these and other methodological quirks, the group believed, but they concluded that the mass of evidence outweighed such concerns.

Another IARC working group will review data from studies of high radio-frequency electromagnetic fields produced, for example, by radio and television transmitters, cell phones, and radar equipment, after publication of long-term studies in three or four years. ■

Brian Vastag, *Bethesda, Maryland, USA*