The history of tuberculosis is one of scientific, medical, and political failure. Although modern short-course treatment for tuberculosis is among the most effective and inexpensive of treatments for life-threatening diseases, tuberculosis remains one of the leading causes of morbidity and mortality worldwide. When WHO declared tuberculosis a global emergency in 1993, the initial response from the international community was slow and inadequate. However, the ensuing resurgence of tuberculosis, which continues to kill nearly 2 million people each year, the emergence of multidrug-resistant tuberculosis, and the devastating effect of the HIV epidemic on control programmes in Africa has forced the international community to unite in a more synchronised and effective way.

World TB Day is commemorated on March 24 each year, and presents an opportunity to review progress in tuberculosis treatment and control, the lessons that have been learnt, and the challenges remaining in bringing the disease under control. To coincide with World TB Day 2006, we have put together in this issue a series of short essays written by experts from all over the world, which analyse areas of global importance and raise awareness of existing research and programmatic developments, and needs for the future.

In the first essay, Christopher Dye reviews the global epidemiology of tuberculosis and conveys the encouraging message that case-notification rates for tuberculosis have been steadily falling over the past decade in many areas; the continued rise in tuberculosis incidence globally is due mainly to the rise of HIV-associated tuberculosis in Africa. This region has also seen the 1991 World Health Assembly targets, of detecting 70% of all infectious cases and curing at least 85% of them by the year 2005, fail spectacularly. Priorities for tuberculosis research clearly need to be revised and directed towards achievable aims, as Phillip Onyebujoh and colleagues discuss. Other problems with antituberculosis treatment include long duration and the growing emergence of resistance. Melvin Spigelman and Stephen Gillespie bring us up to date on progress here.

In terms of prevention, the BCG vaccine introduced in 1921 has had little effect on pulmonary tuberculosis in adults. Mark Doherty and Graham Rook present their views on the mechanisms of immunity to Mycobacterium tuberculosis and explain why some vaccines under development will not be effective in developing countries where most of the burden of tuberculosis occurs.

As these new drugs and vaccines are developed and tested, their successful introduction will depend on a sound agenda for operational research aimed at identifying and testing these interventions for routine use in the field. Christian Lienhardt and Roxana Rustomjee recommend that the best method to improve the operational agenda is through the use of a multi-disciplinary approach that would ensure consideration of the social, environmental, and economic dimensions of disease.

The current WHO-recommended strategy for tuberculosis control, DOTS, has helped improve tuberculosis control in large populous areas of the world. Surendra Sharma and J J Liu summarise the progress of DOTS in...
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global tuberculosis control, and its successes and failings over the past decade. What these results show is that DOTS alone is not sufficient to achieve the 2015 targets set by the Millennium Development Goals and the Stop TB Partnership. The need for a new strategy that builds on, and goes beyond, DOTS is now recognised by WHO and the World Health Assembly. As a result, on Oct 1, 2005, a gathering of 400 tuberculosis experts, programme managers, policymakers, and technical and financial experts from all over the world endorsed a document outlining such an initiative. The resulting New Stop TB Strategy, which is formally announced here in an essay by WHO’s Mario Raviglione and Mukund Uplekar, provides the basis and context to the second Global Plan to Stop TB 2006–2015, launched at the World Economic Forum in Davos in January, 2006. The poverty-related aspects of this new global plan are discussed in our final essay by Bertie Squire and colleagues.

The tuberculosis fraternity has unified in stating its strategy. Now it is up to developing country governments to fully commit resources to tuberculosis control, and for donors to provide catalytic financial aid. Indeed, the Bill & Melinda Gates Foundation has already pledged US$900 million by 2015. European governments and funding agencies should follow suit. Thus the New Stop TB Strategy and the Global Plan, with the important new developments outlined in this issue, present an ideal opportunity to turn the tide against tuberculosis and rid the world of one of the most lethal infectious diseases in the history of humanity.

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Families help cure tuberculosis

From the hill districts of Nepal comes a report in today’s Lancet that family members of patients with tuberculosis can help ensure successful treatment just as well as community health volunteers. James Newell and colleagues’ study arose when the Nepal National TB Programme raised questions about how to implement the WHO policy on DOTS in districts with poor access to health services. These are places where adherence is particularly at risk, and just the places where DOTS by a health worker is simply not feasible. So, with researchers skilled in pragmatic trials in tuberculosis, Newell and colleagues investigated a programme in which nominated family members received the drugs and monitored adherence, and compared this approach with observed treatment by a community-health worker in a trial randomised by district. This carefully constructed study showed good completion rates in both groups, with no apparent difference in treatment success. A trial addressing the same question in Swaziland with 1353 patients individually randomised also did not show any difference.

Direct observation has run deep in global tuberculosis control since the 1950s, as ambulatory care replaced long-term hospital admission; yet the tuberculosis community seems split between whether direct observation is required for all, some, or any patients. Certainly some country strategies were pragmatic; for example, in Papua New Guinea in the 1980s the policy was that tuberculosis control staff, ideally in consultation with the patients, decided whether patients should be allocated twice-weekly supervised outpatient care for 16 months or daily self-treatment at home, depending on the patient’s circumstances. Then came the policy shift: WHO, in revamping a global tuberculosis programme, highlighted direct observation as the “single most important development