

Moving forward to achieve the Millennium Development Goals target for tuberculosis

One of the great strengths of the campaign to halt the growth of tuberculosis (TB) is the high degree of consensus about the key targets, strategies, and constraints. There has been debate about an earlier focus on infectious sputum smear–positive cases (given limitations in capacity) rather than a universal approach of preventing or treating all cases of TB. But this has essentially been a debate about speed of progress, to allow for growth in capacity, rather than about principle. Action to achieve the target should now ensure that all TB patients have access to the universal standard of care based on the proper diagnosis, treatment, and reporting consistent with DOTS and its adaptations.

The key result areas are clear (box 4.1):

- Increasing DOTS coverage, participation, and quality, with improved case detection and cure rates.
- Adopting effective means to tackle HIV-related TB, with strengthened collaboration between TB and HIV/AIDS programs.
- Mainstreaming DOTS-Plus into DOTS to tackle multidrug-resistant tuberculosis (MDR-TB).
- Developing a complete set of new tools: new diagnostics, new drugs, and new vaccines.

Box 4.1 **Key result areas**

- Expand DOTS.
- Tackle TB/HIV effectively.
- Apply DOTS-Plus for multidrug-resistant tuberculosis (MDR-TB).
- Develop new diagnostics.
- Develop new drugs.
- Develop new vaccines.

Effective liaison and collaboration among activities in these various areas is fundamental to success. Planning is already under way to integrate TB treatment with DOTS expansion plans, based on the success of DOTS-Plus pilots. The R&D and implementation communities must plan together to ensure that promising new products reach those in need as quickly as possible. The Stop TB Partnership has a vital role to play in providing the institutional mechanism for rapid sharing of information and fruitful collaboration.

Key intersections with other UN Millennium Project task forces

The global TB community must also reach out to other players and programs (table 4.1). The 2nd Ad Hoc Committee on the TB Epidemic (Stop TB Partnership/WHO 2004b) concluded last year that the main challenge for global TB control was expanding TB control activities across all healthcare providers and other stakeholders within the health sector, and across a broader range of stakeholders in sectors beyond health. In many countries, particularly in Sub-Saharan Africa, mutually beneficial cooperation between TB and HIV/AIDS programs will be crucial.

Table 4.1 Key intersections with other UN Millennium Project task forces	Sector	Intervention
	Health	Controlling TB through universally implemented DOTS strategy and its adaptations where HIV or MDR-TB are common; support development of vaccines, new diagnostic tools, and new drugs. New and expanded primary services are needed, with a particular focus on poor people and geographically isolated communities.
	Agriculture	Improved subsistence farming techniques improve nutritional outcomes for chronically malnourished populations and decrease vulnerability to TB.
	Education	Education and literacy programs promote individual and collective empowerment and increase awareness of ways to prevent and treat a wide range of diseases, acute illnesses, and preventable injuries, including TB. Expanded access to higher education will increase the number of health-care workers at all levels of care.
	Gender equality	Women's empowerment leads to more informed and focused demand for available preventive and treatment options. Focused attention to reducing stigma and other socioeconomic barriers to care should improve outcomes.
	Slum upgrading and urban planning	By eliminating overcrowded and poorly ventilated living and working spaces, vulnerability to TB is reduced. Slum upgrading and urban planning improve access to general health services and disease-specific interventions.
	Science and technology	Research for the development of new drugs, vaccines, and diagnostics is needed to advance an effective response to TB. Improved communication technology can facilitate patient referral, disease surveillance, and control.
	Energy	Reliable, sustainable, and modern energy services simplify and greatly improve the quality of diagnostic and treatment services across the healthcare spectrum.
	Transport	Improved transport infrastructure reduces the distribution costs of drugs and critical supplies (such as diagnostic supplies). Improved geographic access, especially in isolated rural areas, will facilitate access to care and complete treatment. Improved transport infrastructure can facilitate movement of health-care workers and reduce systemic obstacles to working in rural areas.

Box 4.2
UN Millennium
Project Working
Group on TB
recommendations

- Ensure access for all to high-quality TB treatment.
- Address the TB/HIV emergency now.
- Engage all primary care providers in high-quality TB care.
- Partner with communities in the effort to stop TB.
- Stop the spread of MDR-TB.
- Accelerate the development of critically needed new tools.
- Support the Global Plan to Stop TB.

More broadly, progress in TB control both contributes to improved health and poverty reduction and also depends on progress in areas beyond TB. The 2nd Ad Hoc Committee therefore urged the TB constituency to work with the broader constituency of governments and agencies committed to accelerating health improvement and poverty reduction—just as this broader constituency should support TB control as part of its contribution to achieving the Millennium Development Goals. If the targets and Goals are to be achieved, the TB community must dramatically enlarge its current scope to address these issues effectively.

Solutions to constraints to improved tuberculosis control

The 2nd Ad Hoc Committee's extensive review of progress in implementing TB control was very opportune for this working group's current work on how best to achieve the Millennium Development Goals target for TB. The Committee was established on an ad hoc basis in 2003, under the auspices of the DOTS Expansion Working Group of the Stop TB Partnership, and contained representatives from governments, TB control implementers, disease control experts, and financing partners. As part of its task to examine constraints and solutions, it undertook a series of detailed consultations, so its findings have the benefit of drawing on a wide range of experience and views. Its report has been accepted by the Stop TB Partnership's board.

The UN Millennium Project Working Group on TB fully endorses the work of the 2nd Ad Hoc Committee and has built on this work in framing its own recommendations to scale up key TB control interventions, reach the poor, improve TB control tools, and achieve the Millennium Development Goals target by halving TB prevalence and deaths from 1990 to 2015 (box 4.2).

Recommendation 1: ensure access for all to high-quality tuberculosis care

All TB patients should have access to the universal standard of care that is based on proper diagnosis, treatment, and reporting consistent with the DOTS strategy. Providing people who need TB diagnosis and treatment with hugely expanded access to quality treatment under DOTS is an immediate necessity.

Scaling up TB control should build on improvements in health systems

Rationale

The basic pillars of a successful approach to achieving the target of halving TB prevalence and deaths by 2015 are understood, agreed upon, and in many cases already in place. These include structures, strategies, and supplies. New structures for improving global TB control include the Stop TB Partnership and its expert working groups, the Global Drug Facility (GDF), and the Green Light Committee. The DOTS strategy—combining political and patient commitment with a high-quality technical approach—has a proven track record of success. It has been adapted as DOTS-Plus to meet the challenge of treating MDR-TB, and an expanded strategy has been developed to tackle HIV-related TB (see appendix 1 for brief summaries of DOTS and its adaptations).

Although a lot has been achieved, and recent acceleration in access to DOTS quality care is encouraging, there is still a long way to go to achieve the targets.

It is crucial to act now to increase the scope, quality, and impact of the key TB interventions. This requires concerted action on several fronts: national action, international coordination, and innovative support mechanisms. Advocacy and political support will have a critical role to play.

Technically, the massive drive required to ensure that every person with TB has access to an effective DOTS program depends on consolidating and sustaining gains achieved so far, improving DOTS coverage and treatment success rates, and mainstreaming the adapted strategies to combat HIV-related TB and MDR-TB.

Those involved in DOTS implementation must engage more actively with broad health sector issues and health system strengthening. Scaling up TB control should build on and contribute to improvements in health systems—improvements that are critically needed. Five of the top six constraints reported by the TB high-burden countries are about health systems weaknesses, with inadequate infrastructure, weak laboratories, and poor monitoring and evaluation taking their place alongside lack of qualified staff and lack of capacity at peripheral levels.

TB programs alone cannot resolve the full range of these critical bottlenecks. Nonetheless, implementing DOTS can help strengthen health systems, for example through improved laboratory capacity (since microscopists provide a diagnostic service for diseases other than TB), improved documentation of health outcomes (through the TB recording and reporting system), and the potential for improved health management systems using the DOTS strategy as a model for a results-oriented health intervention.

Consistent drug supply is still an issue in many countries. Although the Global Drug Facility has been rightly acclaimed for ensuring enhanced flows of anti-TB drugs to poor countries, its work has been hampered by moments of acute financial stress—in 2003 it even considered temporarily scaling back its operations. It needs a longer-term assurance of funding than it has had so far. Countries embarking on rapid roll-out of DOTS programs and its adaptations

Lack of qualified staff was seen as by far the greatest constraint

must be confident that they will receive the predictable, sustained support they need to deliver the targets.

Among the TB high-burden countries in 2004, lack of qualified staff was seen as by far the greatest constraint to reaching the targets for case detection and cure. The underlying causes of the current human resource crisis are complex and rarely susceptible to quick fixes. They include financial and administrative barriers to creating and filling posts; stagnant employment mechanisms; an unhealthy work environment; HIV-related illness and death among health-care workers in high-HIV countries; and inadequate training, pay, conditions of service, and career opportunities. These broader health workforce problems cannot be solved by one disease program alone.

TB program action to broaden human resources for health includes mobilizing primary health centers and community-based providers to increase case-finding, identify cases earlier, and provide treatment support. Other recommendations already adopted by the Stop TB Partnership include promoting the development of sustainable institutional and individual capacity. Although many national TB program personnel and others involved in TB control at different levels exercise considerable managerial responsibilities, few have had the opportunity to acquire managerial expertise through formal training. More rigorous development of managerial capability among these personnel would help boost the quality of managerial performance (Ad Hoc Committee on the TB Epidemic 2003). Although there is growing recognition of the importance of training and human resource development as an integral part of national TB program activities, there has been little progress in finding ways to counter the loss of healthcare staff involved in organizing and delivering TB care in many developing countries.

Strengthening monitoring and evaluation is another key need. An accurate system of routinely reporting on TB cases and deaths (with national compilations every 3–12 months) is the ultimate tool for monitoring epidemiological trends and the impact of control measures. It is the endpoint toward which all countries should be moving.

In the interim, while systems for routine surveillance are being expanded and strengthened, some countries may wish to carry out population-based surveys of the prevalence of disease (preferably) or infection. Such surveys are highly desirable in any country that has, or probably has:

- A high TB burden.
- A high HIV burden (because the effect of HIV on TB epidemiology is still not well known).
- Poor information on burden and trends.
- A good control program, where a survey gives a baseline for measuring impact.
- In-country experience and expertise in the conduct of surveys.
- Adequate funding.

All TB patients should have access to the universal standard of care

Recommendations

- All TB patients should have access to the universal standard of care that is based on proper diagnosis, treatment, and reporting consistent with the DOTS strategy. It is urgent that people needing TB diagnosis and treatment are provided with massively expanded access to quality care under DOTS and adapted strategies for HIV-related TB and MDR-TB.
- Bringing these activities to successful outcomes will require long-term commitment from national governments, donors, and the Stop TB Partnership in its broadest sense. The TB community should demonstrate to the donor community and TB-endemic countries the effectiveness and added value of the new Stop TB Partnership bodies and their products. It should use their initial successes to advocate for sustained support over the next 10 years in order to achieve the Millennium Development Goals target by 2015.
- Scaled-up TB control at national level should build on and contribute to improvements in health systems. However, wider action to strengthen health systems in general, and health staffing in particular, will be an imperative. The current weakness of health systems is a major constraint to expanding access to quality TB care.
- Countries should plan to develop systems for routine reporting on TB cases and death, and also on drug resistance. In the interim, population-based surveys of the prevalence of TB disease are recommended, especially in countries with high TB or HIV burdens.

Recommendation 2: address the TB/HIV emergency now

“We cannot win the battle against AIDS if we do not also fight TB. TB is too often a death sentence for people with AIDS. It does not have to be this way. We have known how to cure TB for more than 50 years. What we have lacked is the will and the resources to quickly diagnose people with TB and get them the treatment they need.”

—Nelson Mandela, July 15, 2004

Rationale

Along with the lack of universal implementation, availability, and use of DOTS, the HIV pandemic is one of the main reasons for continuing increases in TB burden.

The unprecedented scale of the epidemic of HIV-related TB demands effective and urgent action. At present, the highest numbers of TB/HIV co-infected individuals are found in developing countries, particularly in Sub-Saharan Africa, with growing incidence also found in some countries of the former Soviet Union and in East and South Asia. The deadly interaction of

HIV-related TB demands effective and urgent action

the TB and HIV epidemics feeds on and intensifies underlying conditions of poverty and social exclusion.

Unless HIV is controlled, TB will continue increasing wherever these epidemics overlap. Unless TB is controlled, people with HIV will continue falling sick and dying from a preventable, curable disease. The strategic goal is to reduce TB transmission, morbidity, and mortality (while minimizing the risk of anti-TB drug resistance), as part of overall efforts to reduce HIV-related morbidity and mortality in high-HIV populations.

There is increasing recognition that:

- TB is one of the leading causes of HIV-related morbidity and mortality.
- HIV is fueling the TB epidemic in high-HIV populations.

Tackling TB should include tackling HIV as the most potent force driving the TB epidemic; tackling HIV should include tackling TB as a leading killer of people living with HIV/AIDS. TB programs and HIV programs are thus interdependent and must collaborate at all levels from global policy to national planning and service delivery at the local level. This collaboration should support a strengthened health sector approach to control TB among HIV-infected people.

As noted earlier in this report, achieving the Millennium Development Goals target of reversing the HIV-driven increase in TB requires not only full implementation of the DOTS strategy but also additional measures. TB control in populations with high HIV prevalence requires a new expanded strategy:

- Interventions against TB: full implementation of the DOTS strategy with intensified case-finding and TB preventive treatment.
- Interventions against HIV, and therefore indirectly against TB: for example, the use of condoms, treatment of sexually transmitted infections, and antiretroviral treatment (WHO 2004a, c).

It is no longer acceptable for TB programs and HIV/AIDS programs to continue pursuing largely separate courses; they need to collaborate to exploit synergies in supporting health service providers to deliver these interventions (Dermot Maher, personal communication, 2004). Collaboration has the potential to yield efficiencies in surveillance, case detection, patient counseling and support, preventive therapy and treatment of disease, procurement of drugs and supplies, program management and, most importantly, treatment outcomes. TB/HIV collaboration has already led to progress in the management of both diseases. There is recognition of the differences in clinical presentation and treatment outcomes of HIV-related and of non-HIV-related TB, and therefore, for example, the need for more attention to sputum smear–negative pulmonary TB. The requirements are becoming increasingly clear for scaling up the use of isoniazid preventive therapy, cotrimoxazole preventive therapy, and antiretroviral therapy.

WHO's "Interim Policy on Collaborative TB/HIV Activities" (WHO 2004a) provides guidelines that define specific activities to address the dual epidemics (box 4.3).

Box 4.3
World Health Organization—recommended TB/HIV collaborative activities

Source: Adapted from WHO 2004a.

A. Establish the mechanisms for collaboration.

- A.1 Set up a coordinating body for TB/HIV activities effective at all levels.
- A.2 Conduct surveillance of HIV prevalence among TB patients.
- A.3 Carry out joint TB/HIV planning.
- A.4 Conduct monitoring and evaluation.

B. Decrease the burden of TB in people living with HIV/AIDS.

- B.1 Establish intensified TB case finding.
- B.2 Introduce isoniazid preventive therapy.
- B.3 Ensure TB infection control in healthcare and congregate settings.

C. Decrease the burden of HIV in TB patients.

- C.1 Provide HIV testing and counseling.
- C.2 Introduce HIV prevention methods.
- C.3 Introduce co-trimoxazole preventive therapy.
- C.4 Ensure HIV/AIDS care and support.
- C.5 Introduce antiretroviral therapy.

Aims described in that interim policy include:

- Reducing TB incidence among people living with HIV/AIDS—through collaborative efforts to improve the performance of national TB programs, through isoniazid preventive therapy for co-infected patients, and through earlier detection of active TB through intensified case-finding.
- Reducing HIV incidence and disease among TB patients—through voluntary counseling and testing for people at risk of HIV and preventive methods and therapy.
- Improving the care of people who are infected with both TB and HIV—through cross-training and collaborative care initiatives.

These and other interventions require that health ministries in high-burden countries have leadership, technical assistance, resources, and trained staff to provide HIV testing and counseling, TB treatment services that can cure a high proportion of cases, and teams that can link HIV care and TB control services in novel and effective ways.

A key element will be the rapid expansion of voluntary HIV testing and counseling in existing TB treatment programs, including diagnostic and routine testing and counseling (WHO 2004d).

At the same time, TB case-finding efforts in high-HIV prevalence settings will be intensified. Through cross-training, TB health workers will assist in HIV prevention, antiretroviral medication distribution, and patient care.

By encouraging programs providing antiretrovirals to utilize the lessons learned from TB program experience and, in turn, by utilizing successful HIV program experience in social mobilization and advocacy within national TB programs, both programs will be enhanced, providing expanded outreach and services to patients.

Operational research must be intensified

One continuing area of concern is that existing TB drugs and diagnostics are faring poorly in the battle against HIV/AIDS. Although sputum-smear microscopy detects the infectious TB cases, new diagnostics are needed to improve detection of the noninfectious TB cases. New diagnostics are also needed for earlier diagnosis, since late diagnosis causes life-threatening disease and unnecessary early TB or AIDS mortality. The development of a new, more reliable screening test for latent TB would be particularly helpful. Since interactions between anti-TB and antiretroviral drugs complicate their simultaneous use in treating HIV-infected TB patients, operational research is needed to evaluate current guidelines (WHO 2003a, c). The development of new drugs with fewer interactions would facilitate the simultaneous use of anti-TB and antiretroviral drugs.

Recommendations

- TB and HIV/AIDS partnerships must urgently step up collaboration at the global, national, and service delivery levels to deliver an expanded DOTS strategy to control HIV-related TB. This strategy consists of measures to attack both TB (full implementation of the DOTS strategy with intensified case-finding and preventive treatment) and HIV—and therefore indirectly TB (including prevention of HIV transmission and provision of cotrimoxazole and antiretrovirals).
- Countries and donors must specifically focus on combating the TB/HIV emergency. Tackling the immediate crisis requires an urgent and exceptional effort to maximize the benefit of current levels of funding and support from the international community. Work is now in hand to quantify the increased levels of support needed to meet the Millennium Development Goals target.
- The expanded DOTS strategy to control HIV-related TB will be successful only through patient-centered, countrywide TB and HIV collaborative service delivery.
- Increased priority must be given to the development of drugs, diagnostics, and vaccines that are reliable in HIV-infected TB patients. This includes drugs that are compatible with antiretroviral treatment.
- Operational research must be intensified to define the best strategies for joint management of the overlapping epidemics, including effective program collaboration at all levels to improve performance of both TB and HIV programs.

Recommendation 3: engage all primary care providers in high-quality TB care

TB control depends on effective diagnosis, treatment, and follow-up, mainly in primary care.

**Faster
progress
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Rationale

Faster progress in global TB control and care will entail involving *all* care providers, both public and private, in delivering the same high standard of care and support to all TB patients.

Expanding the reach of the DOTS strategy, while mainstreaming effective TB/HIV linked interventions and DOTS-Plus for MDR-TB, requires implementing current policy guidelines on the contributions of all providers.

Decentralization. The dramatic HIV-driven increase in the TB caseload has greatly increased the pressure on existing government health service providers. This has prompted growing recognition of the need to promote the decentralization of national TB program activities from hospitals to primary care facilities, including their integration with the activities of all general health service providers at the district level. In some programs, the usual policy is to hospitalize TB patients during the initial phase of treatment, with ambulatory treatment during the continuation phase. Decentralization, with ambulatory treatment at a facility as close as possible to the patient's home, provides patients with easier access to care. It could also ease pressure on hospitals, especially in settings struggling with high numbers of HIV patients.

Alongside decentralizing service delivery, decentralizing health system management and financing continues to be a challenge, even in some countries where it has been under way for years. The technical support that would enable staff at provincial and district levels successfully to assume their new responsibilities has not been adequately planned for or provided. Afghanistan, Bangladesh, Cambodia, Kenya, Mozambique, Myanmar, and Pakistan all report having staff with inadequate qualifications working at the peripheral level. This points to the need for much greater planning and support for decentralization.

Private practitioners. Despite the presence of an effective low-cost or free national TB program, a significant number of TB patients opt for treatment by private practitioners. In India, the private sector is believed to manage half of all TB cases. That some people assume significant debt to obtain private treatment available to them free of charge under a government-sponsored national TB treatment program is a lesson about the power of popular perceptions of the public program. This behavior also draws attention to social dynamics associated with poverty, stigma, privacy, gender and ethnic disparities, and the complex relationships between physicians and their patients (Sykes, Tolhurst, and Squire 2003).

Meeting the DOTS targets and providing increased access to good-quality TB care therefore depends on two things. First is addressing the specific concerns that cause so many poor people to opt for private treatment. And second is engaging the full range of health providers under national TB program stewardship. This must cover government services, whether ministry of health (nationally and

locally administrated services) or not (for example, social security schemes, prisons, military), and nongovernment services, such as NGOs, community groups, private practitioners, and employers.

In practice, all health providers should either refer patients to public health facilities delivering TB care under the DOTS strategy or deliver TB care consistent with the DOTS strategy in collaboration with the national TB program. Governments should consider reform of legislative and regulatory frameworks to engage the full range of health providers and will need to invest in developing human resource capacity for strengthened national treatment program stewardship and service delivery.

Public-private mix projects. Since the beginning of 2001, the Stop TB Partnership has coordinated four public-private mix projects to explore innovative forms of partnerships. Robust and effective public-private mix DOTS models share the following features:

- Improved referral and information systems through simple practical tools as an essential component for the effective operationalization and evaluation of public-private mix projects. Training to ensure that national treatment program staff is sensitized to the public-private mix philosophy, and private providers to the DOTS philosophy.
- Sufficient supervision and monitoring of private providers by the government sector.
- Drugs free of charge to patients to improve treatment outcome, promote equity, and also provide a tool for steering private providers through formal or informal “drugs for performance contracts.”
- In the case of the nonpoor, prepayment plans as an alternative to free drugs.

The business sector. To date, there have been only small-scale efforts to involve the business sector (that is, public and private sector organizations and enterprises) in TB control. Yet there are several complementary ways these organizations can contribute, including by providing:

- Expertise in management, communication, and innovative social mobilization techniques and country-specific knowledge.
- Means to reach some TB patients not easily covered by the public health system through workplace and related infrastructure, including employees and their families and remote or rural communities surrounding large business operations.
- In-kind and financial resources, including staff, products, and services, ranging from secondments to training, and from logistics support to medical supplies.

When companies are approached and supported with targeted tools (such as WHO and the International Labour Organization’s “Guidelines for Work-

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place Control Activities” (WHO/ILO 2003), however, results have been very encouraging. Efforts should be scaled up by the TB community at large.

Recommendations

- Scaled-up TB control should be further integrated as a key component of primary care. TB control depends on effective TB diagnosis, treatment, and follow-up, mainly in primary care.
- National TB programs should engage the full range of public, private, and voluntary healthcare providers in TB control activities under their stewardship, with reform of legislative or regulatory provisions if necessary. The delivery by all providers of care consistent with the DOTS strategy as the internationally recommended standard is crucial to achievement of global TB targets.
- The same high standard of care and support should be provided to all TB patients.
- National TB programs should consider public-private mix approaches as a means to expand and strengthen DOTS, with an emphasis on improving case detection and treatment success.
- TB program managers should seek to include TB control measures in established business sector health activities, especially in HIV/AIDS programs. Government programs in high-burden countries should translate the global guidelines for managing TB at the workplace into local partnership tools to guide collaboration with the employers.

Scaling up the supply of effective TB services must go hand in hand with scaling up the demand for them.

Recommendation 4: partner with communities to stop tuberculosis

Scaling up the supply of effective TB services must go hand in hand with scaling up the demand for them.

Rationale

To date, government health service providers have been the main focus of TB control activities. Success in the future demands a broader approach. This includes more active partnership with communities. The community must be part of the solution to challenges in TB control (Stop TB Partnership/WHO 2004b). Securing effective collaboration with these new actors will require new ways of working—and differentiated ways of working, tailored to the specific needs of each group.

Community action for tuberculosis. One of the great challenges of the current global TB emergency is reaching the populations most vulnerable to infection with the information they need on how to recognize an active TB infection,

Donor and technical agencies should support countries in building capacity

on the treatment options available to them, and on organized ways for communities to advocate for treatment programs where they do not currently exist. Reports from some high-burden countries acknowledge the extent to which low public awareness and the stigma of having TB—and, for some people, HIV as well—hampers efforts to detect and treat TB suspects.

The stigma also hampers the growth of grassroots advocacy groups. Persistent public and behind-the-scenes pressure at national and local levels is needed to ensure that pledges are kept and appropriate policies are enacted. Ideally this popular pressure should be generated by the lobbying activities of TB interest groups within countries. Well organized activist groups for TB, however, remain rare. The people most afflicted by TB tend to be among the populations with the least visible presence within the institutions charged with the design and funding of these programs. Stigma and paradoxically the return to fully active, productive life following cure inhibit some sufferers from playing an active advocacy role.

The Stop TB movement needs to partner with whole communities, civil society groups, local NGOs, representatives of groups of TB patients and HIV activists, the local education sector, and local leadership at the grassroots to ensure that the poor and vulnerable are not missed. Through active recruitment and routine inclusion of community and grassroots organizations into the planning, implementation, and evaluation processes, national TB programs could be provided with essential local knowledge and experience.

The effectiveness of HIV/AIDS activists and community advocates in addressing both local and global AIDS issues is one notable example of the value of these approaches. Advocacy, care, and support from within the communities affected by HIV/AIDS can play a vital role in supporting earlier TB case detection, broader access to DOTS, and higher TB treatment completion rates. The key for national TB programs and other players will be to facilitate and support without undermining local ownership. Informed, local participation is the most direct way to address obstructive misconceptions and to facilitate educational outreach (box 4.4).

At the same time, TB programs need to take a more active and innovative approach to improving knowledge of TB symptoms and sources of help, particularly among the most poor and marginalized people. There is scope to learn from other programs (notably for HIV/AIDS), and to pilot TB-specific approaches to find out which are best for a given setting and which messages have the most impact. Appropriate communications and information strategies are vital. Brochures and posters are useful in literate communities that are seeking health information. But other tailored approaches are essential to engage the larger public. These include street rallies, speeches in places of worship, radio programs, television shows, and information at school and at work (box 4.5).

Donor and technical agencies should support countries in building capacity for advocacy, communications, and social mobilization at all levels as a

Box 4.4
Community action
for tuberculosis
in Peru

Source: Van der Linde
 2003. Photograph
 from Partners In Health
 Archives.



Tuberculosis patients and supporters demonstrate in Lima

In 1967, the first specialized division within the health ministry for the detection and treatment of TB (and leprosy) was formed in Peru. By 1976, with TB incidence continuing to grow, a concerted effort was begun by community activists to organize patients diagnosed with TB to demand better and expanded treatment as a basic human right.

By 1987 this movement was recognized on the national level. Even amid the political turmoil of that era in Peru, TB was officially recognized as a growing public health threat

by the government and laws to mandate universal free treatment were enacted. The demonstrations and the formation of community support groups played an important role in shaping government policy and mobilizing effective strategies to overcome logistical barriers to treatment. As expressed by one of the community organizers, “The voice and presence of TB patients in society helps to create wider awareness about the complexity of TB and motivates the commitment of new actors in the fight.”

By 2000, through the joint efforts of the patient organizations, the Peruvian Ministry of Health, and the international TB community, there was full DOTS program implementation in 99 percent of the health services throughout Peru and a scale up of a DOTS-Plus program. In 2001, Peru was the first country to be removed from the high-burden country classification.

routine part of DOTS expansion plans. Information systems should reflect this effort by developing and reporting indicators that can be utilized to monitor progress in these areas.

Seeking to mobilize support for disease-related programs can be met by the assertion of activists within impoverished communities that they suffer from other consequences of poverty that require more immediate attention, such as lack of adequate nutrition, drinking water, sanitation facilities, and safe housing. Starvation and near-starvation trumps most other needs in the short term, including the control of diseases, regardless of how clearly the diseases have been demonstrated to pose a profound global threat. Integrated action to secure the full suite of Millennium Development Goals will be key.

Community-based care. Using neighbors and associates of people diagnosed with TB, MDR-TB, and HIV/AIDS to provide supervised services such as medication administration, routine care, and assistance has proven helpful in many low-income settings. Infectious diseases such as TB and HIV/AIDS rarely have impacts on only one individual. The cost in terms of human and economic resources also has profound consequences for families and communities. So using community TB treatment supporters engages people who have a social and economic investment in improving the quality of life within their community.

Box 4.5
The use of mass media in outreach campaigns: A case for research

The use of the mass media in diagnosis and treatment outreach campaigns is a promising but underdeveloped focus of investigation. However, the best known, most evaluated tools of mass media—television, commercial radio, and newspapers—are not necessarily accessible to or targeted to deeply impoverished communities whose people often suffer from high illiteracy rates. Local programming in the form of community radio campaigns could prove an effective strategy to reach underserved populations. Although not found in every home, radios are often a feature of community gathering places in even the poorest, most rural communities. Because the station output strongly reflects the general knowledge, language, and issues of the community in which it is situated, focused educational campaigns targeted at radio station personnel could provide key information about diagnosis and treatment and contribute to the reduction of stigma. Operational research is needed to determine if community radio could be an effective tool in tuberculosis control.

The model of directly observed treatment developed in the treatment of TB and home-based directly observed therapy for MDR-TB is now being adapted for antiretroviral therapy for people with HIV/AIDS (Farmer and others 2001). It is a cost-effective way to provide medicines and services that brings the added benefit of creating a supportive network for patients and their families (see, for example, Wilkinson and Davies 1997; Wilkinson 1999; Mitnick and others 2002). This becomes critically important in high disease-burden regions where the traditional support provided by extended families may be eroded by the death and disability of multiple family members.

In a review of eight “Community TB Care in Africa” projects in six countries, the investigators made the following recommendations (WHO 2003b):

- Extend TB care in the community to improve access.
- Identify suitable community TB treatment supporters in consultation with the community.
- Ensure that effective systems extend into the community for recording and reporting, and for the supply of anti-TB drugs.
- Monitor community contribution to TB care, using standard indicators.
- Develop costed plans for expansion of the community approach. Ministries of health should ensure adequate financing; coordinate the efforts of national TB programs, donors, and NGOs to ensure sustainability; and consider opportunities for collaboration between national TB programs and HIV/AIDS programs.

In regions hit hardest by the epidemics and experiencing a loss of health workers because they have relocated, emigrated, or are victims themselves, expanding the pool of paid community health workers may be the only immediately available option to support the development and expansion of diagnostic outreach and treatment programs.

It is critical to develop new anti-TB drugs

Recommendations

- National TB programs efforts should intensify efforts to partner with communities in tackling TB and responding to local needs. Potential partners include civil society groups, representatives of TB patients, the broad HIV/AIDS constituency, the local education sector, and local leadership at the grassroots level.
- Donor and technical agencies should support countries in building capacity for advocacy, communications, and social mobilization at all levels, as part of DOTS expansion plans, and in developing information systems that include indicators on advocacy, communication, and social mobilization. National TB programs should be supported in working with grassroots community groups as an essential part of the strategy to articulate demand for improved health care, including TB control.
- National TB programs should work to increase the use of community TB treatment supporters.

Recommendation 5: stop the spread of multidrug-resistant tuberculosis

The threat of MDR-TB is growing. Its emergence in nearly every country of the world holds the prospect of profoundly damaging consequences from an increasingly limited choice of therapeutic options in the face of “super strains” to the far greater difficulty and cost of treating patients with MDR-TB.

Rationale

Drug resistance needs to be tackled as swiftly and effectively as possible. There are three main streams of action, all of which are priorities.

First, it is essential that normal DOTS programs should be expanded and fully and effectively implemented, in order to minimize the conditions for further drug resistance to occur.

Second, treatment of MDR-TB requires that DOTS-Plus be scaled up and mainstreamed into countrywide TB control plans. This is a matter of special urgency in areas where MDR-TB rates are already serious. DOTS-Plus is an adaptation of DOTS, providing a programmatic approach to the diagnosis and treatment of MDR-TB within the context of DOTS programs (see appendix 1).

Third, it is critical to develop new anti-TB drugs, both to treat patients with MDR-TB and to minimize the emergence of new resistance.

Patient access to MDR-TB drugs is key to the success of the DOTS-Plus strategy. The Green Light Committee (GLC) was established in 2000 with the triple aims of preventing the misuse of second-line drugs, promoting access to quality-assured drugs, and providing technical assistance to countries implementing DOTS-Plus. After review by the GLC, successful applications for DOTS-Plus pilot projects can secure preferentially priced, second-line drugs.

**The Green
Light
Committee
is in critical
need of
financing
to support
technical
assistance**

The Committee has succeeded in negotiating price reductions of 95 percent for the most expensive regimens.

To date, the GLC is procuring drugs for and providing technical assistance to 25 DOTS-Plus projects, which are treating 8,200 people with MDR-TB. A further 8 projects, designed to treat 1,500 more patients, are being reviewed. However, in order to move forward, the GLC is in critical need of financing to support technical assistance to current projects and those under consideration.

The pace of enrollment is scaling up due to the endorsement of mainstreaming DOTS-Plus into DOTS by WHO and the TB international community, and to financial support from the Global Fund to fight AIDS, Tuberculosis, and Malaria (GFATM). The GFATM has selected the Green Light Committee as the mechanism for procuring and monitoring second-line drugs for MDR-TB. If projects submitted to the GFATM meet GLC requirements, the GFATM will support them financially. After its first four rounds of applications, the GFATM projects quadrupled MDR-TB treatment globally, with 12,000 new DOTS-Plus treatments for drug-resistant TB being provided by all GFATM-approved programs over five years (Global Fund 2004).

Recommendations

- Preventing MDR-TB should be tackled through full and effective implementation of DOTS, and treatment through scaled up DOTS-Plus programs, with special urgency in areas where MDR-TB rates are already serious. DOTS-Plus must be mainstreamed into countrywide control plans.
- Investment is needed to maintain financial support for existing second-line drugs and to develop new drugs. To treat MDR-TB there needs to be a pipeline of novel drugs, administered in combinations that will minimize the emergence of new resistances.
- Urgent support is needed for the Green Light Committee to allow them to provide technical assistance for programs wishing to implement and scale up DOTS-Plus.
- Drug resistance information should be monitored as an indicator of the quality of treatment programs. At the moment, testing TB patients for drug resistance—like testing patients for HIV—tends to be handled as a separate exercise, but the goal should be to incorporate both into routine case surveillance.

Recommendation 6: accelerate the development of critically needed new tools

Current diagnostics for TB are over 100 years old, no vaccine has come to market since the 1920s, and most of the drugs used to treat the disease are over 30 years old.

Technology exists that can vastly improve detection rates

Rationale

Investment in the development of new tools (diagnostics, drugs, and vaccines), followed by the rapid introduction of new tools in actual program activities, holds out the prospect of faster progress in TB control in future.

In each of the three tool areas, in addition to ongoing academic and government research, there is a new pathfinding research agency combining public and private approaches that is dedicated to developing affordable and better tools for use in TB high-burden environments. Initial support has come from several leading foundations and governments, especially the Bill and Melinda Gates Foundation and the Rockefeller Foundation.

In diagnostics, the nonprofit Foundation for Innovative New Diagnostics was created in 2003 to speed the development of improved diagnostic technologies, particularly for their effective and affordable use in high-burden countries. The recent momentum in drug development is being spearheaded by the Global Alliance for TB Drug Development (TB Alliance), a public-private partnership launched in 2000 that has developed the first pipeline of TB drugs in over 30 years. The agenda for vaccines, a longer term and important undertaking, is led by the Aeras Global TB Vaccine Foundation. Each of these bodies is a key partner in the respective new tool working group within the Stop TB Partnership. Further details of these agencies are given in appendix 6 of this report.

Although there are many examples of public-private partnerships to improve global health, one important feature of these new efforts is their single focus on product development by stimulating and ensuring a global pipeline for better diagnostics, drugs, or vaccines. A second feature is the nonprofit nature of the business model and its emphasis on the pricing of the end product, which must be affordable in order to reach patients and help overturn the trends of the epidemic. Third, these agencies emphasize the important contributions of public and private sectors and leverage the capacity, resources, and counsel of industry, the public health sector, and academic laboratories.

To maximize the success of these partnerships and ensure that end products reach patients in need, policymakers and public health officials should facilitate collaboration between these entities and their partners. Partners include the health and technology sectors of high-burden countries and pharmaceutical and biotechnology companies with relevant expertise and the resources and capacity to contribute. Initial forecasting estimates suggest the enormous synergistic impact of the three new tools. They highlight how the combined introduction of new diagnostics, drugs, and vaccines would dramatically improve TB control by:

- Enabling better detection and treatment of MDR-TB and TB/HIV.
- Expanding avenues of control to include sputum smear–negative cases.
- Overcoming latent infection through effective vaccines.

New diagnostics. At the present time, smear microscopy is the only technique available to diagnose TB in developing countries. Technology exists that can

Increased attention must be given to developing new diagnostics, drugs, and vaccines

vastly improve detection rates of TB, but this has been widely used only in affluent societies. Although smear microscopy requires minimal equipment, it is not highly reliable because it depends largely on the ability of patients (who may be too young, too debilitated, or simply unable) to produce an adequate specimen from the lower respiratory tract for examination. Also, increased attention must be given to the development of diagnostics (as well as drugs and vaccines) that are reliable in HIV-infected TB patients.

The standard for diagnosis of both TB and drug-resistant strains is a culture. Cultures are much more sensitive than smear microscopy, but they require weeks of incubation and careful, temperature-sensitive, light-sensitive, and time-sensitive chain-of-specimen handling from the patient to the laboratory. Reducing the length of time required to definitively diagnose TB or to identify drug-resistant strains—from several weeks to a matter of two to three days—promises to facilitate rapid diagnosis and the prompt initiation of treatment (creating, among other advantages, a decrease in the amount of time patients remain contagious to their close contacts). Public-private collaborations on TB diagnostics have yielded several promising possibilities currently in development that include improved, more rapid (sensitive) culture mediums and new tools. For example, Biotech Laboratories, in partnership with the Foundation for Innovative New Diagnostics (FIND), hopes to launch reliable, fast, low-cost, and easy-to-use products including a multidrug resistance test in early 2005 and a TB diagnostic tool by 2005–06.

New drugs. After several decades of standstill, a coordinated, global effort across public and private sectors to develop new, faster-acting drugs to improve TB control has helped yield the first comprehensive TB drug pipeline since the 1960s. The near-term prospect of simplifying or improving therapy is now a realistic possibility. Two fluoroquinolone drugs, moxifloxacin and gatifloxacin, are in Phase II clinical trials. A third drug, rifapentine, is in a sponsored study to examine its potential to shorten the treatment required for latent infection. Several compounds are in or approaching Phase I clinical trials. These drugs are being studied by sponsors as diverse as Lupin Laboratories, an Indian pharmaceutical company; Sequella, a small biotechnology company headquartered in Rockville, Maryland; and Tibotec, a subsidiary of the multinational pharmaceutical company Johnson & Johnson. The prospect of a novel treatment with a totally new drug is also represented by the family of the nitroimidazole compound PA-824 and its analogs, which are being developed by the TB Alliance and its partners, including the Novartis Institute for Tropical Diseases. In addition, three major pharmaceutical companies are devoting research facilities to the development of new drugs for TB: Novartis' Institute for Tropical Diseases in Singapore, AstraZeneca's facility in Bangalore, India, and GlaxoSmithKline's laboratories in Tres Cantos, Spain.

Box 4.6
Forecasting the potential benefits of a two-month drug regimen for tuberculosis

Current TB drugs impose a lengthy and complex regimen, which is widely recognized as a major challenge to TB control. In order to examine the benefits of new, faster acting drugs and their role in meeting the Millennium Development Goals targets, a team coordinated by the Global Alliance for TB Drug Development and overseen by the KNCV Tuberculosis Foundation developed an epidemiologic model of TB to forecast the impact of a shorter two-month regimen versus a standard six-month regimen in treatment programs.

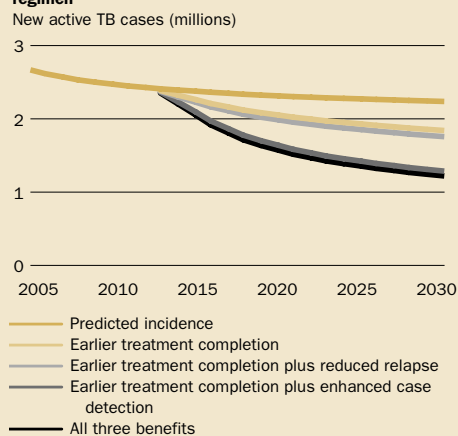
The model is calibrated to different geographic regions. Regional analyses point to several general findings:

- Where cure rates are low, shortening therapy can have a major epidemiologic impact.
- Where case detection rates are low, shorter regimens may offer substantial benefits by enabling expansion of coverage.
- Even where DOTS targets are attained, new drugs can enhance outcomes.

Results are presented here for the example of the Southeast Asia region, as defined by the World Health Organization (including 5 of the 22 high-burden countries: India, Indonesia, Bangladesh, Thailand, and Myanmar).

The study considered various alternative baselines representing possible future treatment conditions in the absence of new, shorter regimens. In an example of a baseline scenario in which DOTS case-detection (of new smear-positive cases) in this region persists at the reported 2002 level of approximately 35 percent, three types of benefits are considered: reduced default through earlier treatment completion, reduced relapse after successful treatment, and enhanced case-detection made possible by reduced resource demands of a two-month versus six-month treatment regimen (figure 1). The study estimated the potential gains through 2030 if the new regimens were introduced starting in 2012. In this example, the total number of new cases between 2005 and 2030 could be reduced by 7–21 percent

Figure 1 New TB cases can be averted with two-month regimen



A modeling study commissioned by the UN Millennium Project Working Group on TB looked into the potential benefits from developing drugs that could treat TB in two months rather than six months. The study suggests that new two-month therapies introduced within the decade have the potential not only to reverse the increasing disease incidence trend, but also to amplify the impact of DOTS, by the 2015 Millennium Development Goals target. If such new, faster acting drugs can be introduced by 2012, they could save up to 6 million lives and prevent nearly 13 million new cases of TB by 2030 (box 4.6).

New vaccines. A vaccine that strengthens the response to initial TB infection, or that boosts immunity in later life, could have an immense impact on disease

(4.7–12.8 million cases) under various combinations of these three types of benefits, and total deaths (not shown) could be reduced by 12–27 percent (2.6–5.9 million deaths).

To consider the implications of delays in developing new treatment technologies, the study team conducted both a retrospective analysis of the hypothetical gains that might have been realized with a new drug introduced in 2002, as well as a more pessimistic projection of the benefits missed by delaying introduction until 2022. The total number of averted cases through 2030 if the drug is introduced in 2012 could be as high as 12.8 million. If the shorter regimen had been available in 2002, an additional 12.1 million new cases might have been prevented (paler area in figure 2). Further delay could result in a missed opportunity to prevent 9.6 million cases (darker area in figure 2).

While additional analysis, particularly for regions with a high prevalence of HIV or high levels of MDR-TB, is ongoing, the findings here highlight the opportunities to make a substantial public health impact by introducing new technologies that could shorten TB treatment. The analysis shown in figure 1 demonstrates that new and improved therapies introduced within the decade

can not only reverse the increasing disease incidence trend, but also amplify the impact of DOTS, by the 2015 Millennium Development Goals target.

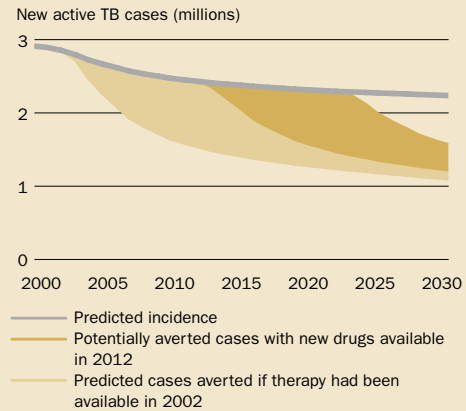
Details of the study methodology are given in appendix 7.

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Figure 2 The impact of delaying new therapies on new TB cases averted



control by preventing new cases and by reducing transmission. An effective vaccine may also be the best deterrent against the spread of MDR-TB.

Decoding of the genome sequence and development of genetic tools for *M. tuberculosis* have stimulated generation of a wide range of new vaccine candidates. More than 200 of these vaccine candidates have been tested in laboratory models of disease. The most promising candidates—those that are able to provide protection better than BCG—are now being advanced to clinical trials. The timeframe for vaccine development is determined in large part by the dynamics of the disease process: several years of monitoring will be required to evaluate whether or not disease develops in a vaccinated individual as part of Phase III efficacy trials. If the current generation of

Stop TB partners should work to ensure that new tools respond to the greatest demand in developing countries

candidates performs well in clinical trials, a new vaccine could be available by 2012.

Recommendations

- Donor agencies should increase their investments in the research and development of new and affordable TB diagnostics, drugs, and vaccines through public-private partnerships, and in related projects such as the strengthening of clinical trials capacity in DOTS programs.
- The Stop TB Partnership and WHO should advocate for these investments to complement their access and treatment efforts. Advocacy should be based on a clear definition of the economic and social justifications of investing in new tools.
- Regulatory agencies should help harmonize streamlined regulatory requirements for introducing new TB diagnostics, drugs, and vaccines.
- The network of Stop TB partners should work to ensure that new tools respond to the greatest demands of users, and should expedite testing and roll-out in high-burden settings.

Operational research

Alongside the development of new tools, substantially more operational research is needed to determine the best ways to implement and monitor the impact of current interventions.

Operational research—“research aimed at developing interventions that result in improved policymaking, better design and implementation of health systems, and more efficient methods of service delivery” has a proud history in TB control (Nunn and others 2002). It was Karel Styblo’s seminal work in Tanzania that led to the development of the DOTS strategy, as well as to a rise in cure rates from around 30 percent to over 80 percent in that pre-HIV era (Styblo and Chum 1987). The value and potential of operational research today is evident in operational research projects that have emerged from countries such as India and Malawi (Salaniponi and others 1999). In Malawi, many of the findings were translated into policy and practice because the research was undertaken within a disease control program and related directly to its problems (box 4.7).

Much of the information that emerges from operational research is currently made available through professional journals, national meetings, and international symposia. However, more needs to be done to make operational outcomes quickly available for use by the individuals organizing treatment programs in local settings. Given access to the Internet by NGOs and community associations, even in many low-income settings, there is an unprecedented opportunity for effective dissemination of practical information drawing on local experience.

A systematic and multilateral plan to increase the use of operational research relating to TB control should:

Box 4.7
Malawi national
operational
research program
in tuberculosis

Source: Adapted from personal communication with Dr. Anthony Harries.

Malawi provides a very successful example of a national operational research program in TB. Health systems research in TB control began in Malawi in 1994 with the recognition that the National TB Control Program (NTP) was not coping with the dramatic increase in cases fueled by HIV: cases were diagnosed without adequate investigation, “hot spots” of transmission were suspected, and cure rates were poor.

The College of Medicine and the NTP set up research studies to address these problems with initial support from WHO. The diagnostic process and its shortcomings were analyzed in detail; different screening methods for diagnosis were explored; healthcare staff’s adherence to NTP guidelines was assessed; the association between HIV and TB treatment outcome was defined; and the prevalence of TB in “hot spot” areas such as prisons and healthcare institutions was measured. A program management group that developed and implemented control and research strategy was formed.

Operational research became an integral component of the NTP and the research agenda was firmly linked to the objectives of its five-year development plan. During a seven-year period, over 100 research papers were published, many in international peer-reviewed journals. More importantly, however, because the research was undertaken within the structure of a disease control program and answered questions directly relevant to disease control, many of the findings were translated into policy and practice.

Two examples illustrate this practical response to research findings.

- One study showed that over 40 percent of smear-positive TB patients had spent at least one month with a traditional healer before coming to orthodox medical care. The NTP has since trained over 3,000 traditional healers in 15 districts.
- The incidence of TB in healthcare staff was found to be 3.6 percent per year. The NTP produced guidelines to reduce nosocomial TB transmission for use in every hospital.

This close integration of research with program activities has attracted further funds from a variety of donors.

- Ensure that sufficient, qualified operational researchers are available in low-income countries.
- Assess training needs systematically (such as the development of region-specific field-training manuals).
- Bridge the gulf between disease control personnel and academic researchers.
- Generate opportunities for operational researchers to interact, especially at the regional and country levels.
- Provide adequate funding.

Recommendation

- Operational research to determine the best ways to implement current interventions, and to monitor their impact, needs to be substantially increased. This requires financial and technical support for national TB programs to enhance local capacity for such research.

Public pronouncements yield their full value only when translated into practical action

Recommendation 7: support the Global Plan to Stop TB

Generating widespread political commitment to effective TB control has been a key focus of activity over the last few years. The commitment of national governments, donor governments and agencies, UN agencies, and other bodies to the Stop TB Partnership and its Global Plan represents a reinforced political commitment to tackle TB.

Rationale

Explicit expressions of political commitment have been made by senior political leaders in a series of international gatherings. In 2000, ministerial representatives of 20 high-burden countries at the Amsterdam conference issued the Amsterdam Declaration to Stop TB, committing themselves to “ensuring that sufficient human and financial resources are available on a sustainable basis and expanded to meet the challenges of stopping TB.” Similar statements were issued by African heads of state at the Abuja Summit in 2000, and—as the Washington Commitment to Stop TB—by partners at the first Stop TB Partners Forum in Washington in 2001.

Such public pronouncements yield their full value only when translated into practical action, maintained over time. National leaders have not always increased resources commensurate with their publicly stated international commitments (WHO 2004e), nor acted vigorously enough to secure sufficient political will to tackle only seriously at all levels within their own countries. Reports from the 22 high-burden countries in 2003 indicated that 8 saw wavering political commitment, either centrally or locally, as a continued obstruction to TB control efforts (WHO 2004j). In particular, countries with systems that were recently decentralized are finding it hard to expand DOTS because they lack local political support. Solutions include providing better support to local government following decentralization, forming provincial task forces, and building country-level advocacy for TB control. A coordinated and multifaceted effort to build political will, and to translate that commitment into effective public policy and programming, is an essential prerequisite to the expansion of DOTS programs.

Similar practical commitment to stop TB needs to be shown at the international level too. Regrettably, the UN Millennium Project does not specify TB alongside HIV/AIDS and malaria under Millennium Development Goal 6, despite overwhelming evidence of the scale of devastation wrought by the TB epidemic. Millennium Development Goal 6 should be amended to read: “Combat HIV/AIDS, malaria, tuberculosis, and other diseases.”

What is needed and what is committed comes together in the Global Plan to Stop TB. The Global Plan provides the roadmap for achieving the Millennium Development Goal targets and sets the course for eventual elimination of TB as a public health problem. Long-term planning and sustainable financing

are crucial to success. Work to extend the Global Plan to 2015 is already under way. It must support national planning, targeted for effective execution.

Recommendations

- All those involved at global, national, and local levels should come together to invest in the Global Plan to Stop TB, implement its key interventions, and work together to secure its targets: halving TB prevalence and deaths by 2015.
- Ministries of health in countries badly affected by TB should ensure dedicated budget lines for TB control activities. They should address TB control needs as part of poverty reduction strategies and efforts to strengthen health systems.