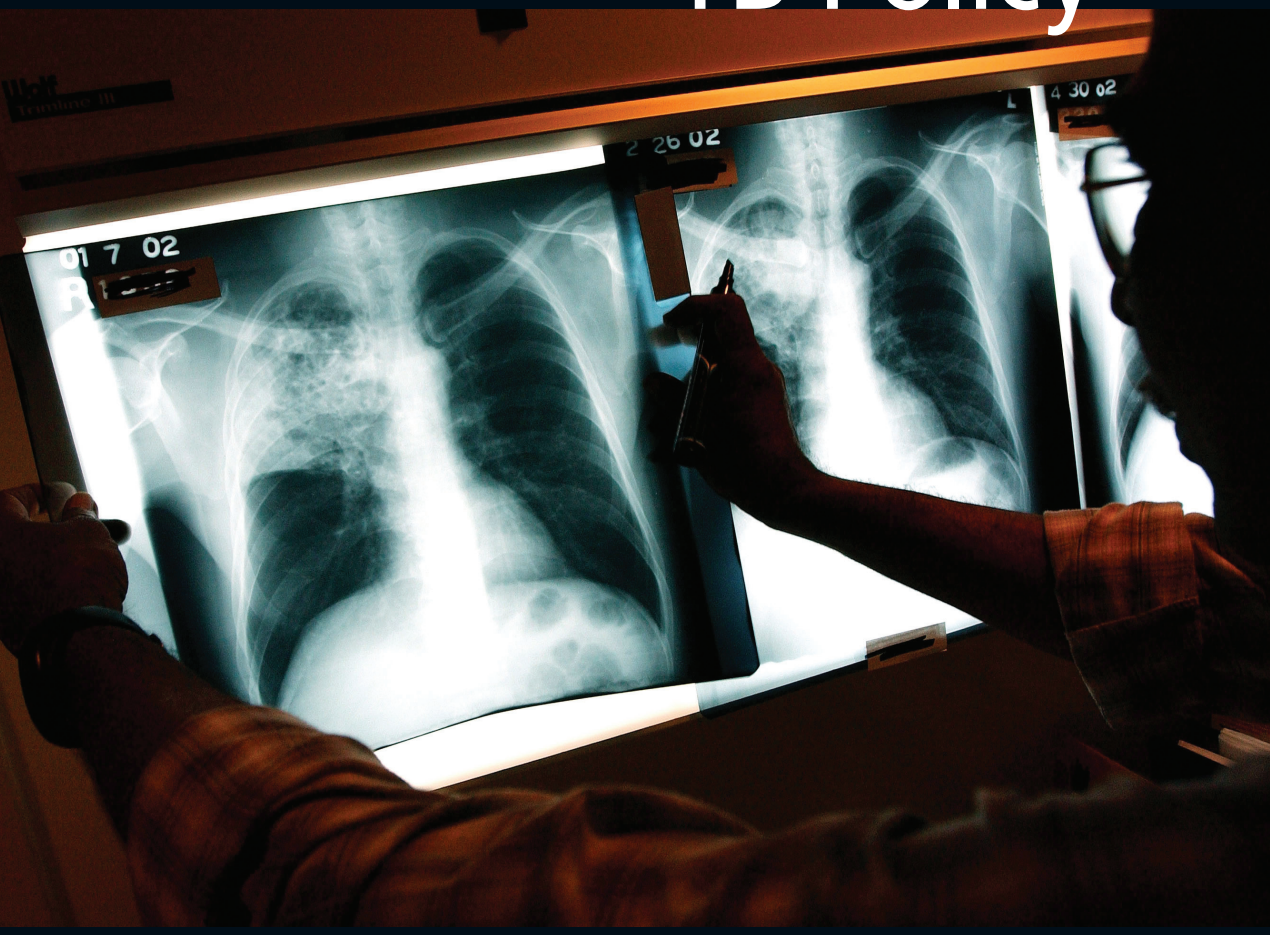
CIVIL SOCIETY Perspectives on TB Policy



in Bangladesh, Brazil, Nigeria, Tanzania, and Thailand

PUBLIC HEALTH WATCH

OPEN SOCIETY INSTITUTE
Public Health Program

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For more information:
Public Health Watch
Open Society Institute
Email: phwinfo@sorosny.org
Website: www.publichealthwatch.info

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Foreword

TB is responsible for the deaths of more than 5,000 people every day and 1.7 million people every year. In 2005, more people died of TB—a curable disease—than in any other year in history. This is simply unacceptable.

TB, like HIV/AIDS and malaria, hits the poorest communities and countries the hardest. These Public Health Watch reports highlight the formidable obstacles that people living in poverty continue to face not only in accessing TB treatment but in raising their voices and mobilizing their communities to demand better health services.

As the overview report to this volume states, "it is clear that greater social mobilization around TB and TB/HIV will be necessary to eliminate TB as a public health concern, but this will not occur without a concerted and sustained effort on the part of donors, national and international policymakers, and community leaders." Scientists, activists, and politicians from industrialized and developing nations alike will have to unite efforts if we are to turn the tide on the worldwide TB pandemic. The new Stop TB Strategy integrates these approaches into a plan for ongoing action to scale up TB care, control, and research.

The Stop TB Partnership's recently launched Global Plan to Stop TB 2006–2015 provides a clear roadmap to meet the Millennium Development Goal and Stop TB targets and to move towards elimination of TB, but the challenge of mustering the political commitment and funding required for implementation of the plan has just begun. Skyrocketing rates of TB/HIV coinfection and drug-resistant forms of TB have created new complexities, yet there can be no question that the world community has the resources and scientific capacity to eliminate TB worldwide. The question is whether we have the will.

The Public Health Watch reports offer an important ingredient that has been largely lacking in advocacy and social mobilization efforts to date: input from the communities and populations most affected by TB. These voices—those of patients, health workers, community volunteers, and other members of civil society—are vitally important because they offer first-hand experience on the gaps between policy and practice, the social and economic impact of the disease, and—on a more hopeful note—successful interventions that should be replicated or scaled up.

The battle against TB cannot be won by health care workers and doctors alone; these reports sound a clarion call for increased action, by a wider range of actors, and more quickly.

—Dr. Jorge Sampaio, former president of the Portuguese Republic and
UN Secretary General First Special Envoy to Stop Tuberculosis

Preface

On the first World TB Day of the new millennium, ministerial representatives of the 20 countries carrying 80 percent of the global tuberculosis (TB) burden adopted the Amsterdam Declaration to Stop TB. By adopting the Declaration, these governments pledged to take bold new steps in addressing the TB epidemic in their countries and affirmed their commitment to "implement, monitor and evaluate" their national TB programs according to the TB control strategy recommended by the World Health Organization (WHO).

In the Declaration, the governments also expressed their will to "promot[e] the development of . . . partnerships to stop tuberculosis with all stakeholders in society, including government departments and organizations, the private health sector, industry, *nongovernmental organizations and the community*" (emphasis added).

Public Health Watch supports independent monitoring of governmental compliance with the Amsterdam Declaration as part of its mandate to promote informed civil society engagement in policymaking on tuberculosis and HIV/AIDS—two closely linked diseases that lead to millions of preventable deaths annually. Established by the Open Society Institute's Public Health Program in 2004, Public Health Watch also supports civil society monitoring of governmental HIV/AIDS and TB/HIV policies, examining compliance with the United Nations Declaration of Commitment on HIV/AIDS and the WHO Interim Policy on Collaborative TB/HIV Activities.

For the TB Monitoring Project, Public Health Watch civil society partners in Bangladesh, Brazil, Nigeria, Tanzania, and Thailand have prepared assessments of national TB policies based on a standardized questionnaire, which facilitates structured review of governmental compliance with key elements of the Amsterdam Declaration and the WHO TB control strategy. Public Health Watch researchers come from a range of backgrounds, including academia, development, journalism, and independent activism, and from both large and small nongovernmental organizations (NGOs).

The Public Health Watch monitoring methodology incorporates multiple opportunities for dialogue and exchange with a range of policy actors during report preparation. Researchers convene an advisory group of national TB experts, activists, and policy actors. They prepare draft reports on the basis of input from the advisory group, desktop and field research, interviews, and site visits. Researchers then organize in-country roundtable meetings to invite feedback and critique from policymakers, academics, government officials, representatives of affected communities, and other key stakeholders. Finally, Public Health

Watch supports researchers in conducting targeted advocacy at the domestic and international levels around their report findings and recommendations.

To access all five country reports of the TB Monitoring Project or to learn more about Public Health Watch, including the HIV/AIDS Monitoring Project and the TB/HIV Monitoring and Advocacy Project, please see: www.publichealthwatch.info.

Acknowledgments

This publication contains reports on TB policy drafted by Public Health Watch researchers, including Faruque Ahmed, Afsan Chowdhury, and Akramul Islam of BRAC (Bangladesh Rural Advancement Committee) in Bangladesh; Ezio T. Santos Filho, a long-time HIV/AIDS activist in Brazil; Olayide Akanni, the lead researcher from Journalists Against AIDS (JAAIDS) in Nigeria; Jamillah Mwanjisi in collaboration with Media Bank and Mangi Ezekiel Muhimbili of the University College of Health Sciences in Tanzania; and Amara Soonthorndhada of the Institute for Population and Social Research at Mahidol University in Thailand.

Public Health Watch staff prepared the overview and provided editing and administrative assistance. Additional editing and production assistance was provided by the Communications Office of the Open Society Institute.

We would also like to acknowledge the invaluable contribution of the many individuals and organizations in Bangladesh, Brazil, Nigeria, Tanzania, and Thailand who shared their expertise and experiences with our researchers, and who generously shared their time by reviewing and commenting on earlier drafts of these reports. For a full list of acknowledgements for each country, please see individual country reports at www.publichealthwatch.info.

Finally, Public Health Watch would like to acknowledge the valuable guidance and input of the members of our international advisory group.

Public Health Watch TB Monitoring Project

Public Health Program

The Open Society Institute's Public Health Program promotes health policies based on social inclusion, human rights, justice, and scientific evidence. The program works with local, national, and international civil society organizations to foster greater civil society engagement in public health policy and practice, to combat the social marginalization and stigma that lead to poor health, and to facilitate access to health information.

www.soros.org/initiatives/health

Open Society Institute

The Open Society Institute works to build vibrant and tolerant democracies whose governments are accountable to their citizens. To achieve its mission, OSI seeks to shape public policies that assure greater fairness in political, legal, and economic systems and safeguard fundamental rights. On a local level, OSI implements a range of initiatives to advance justice, education, public health, and independent media. At the same time, OSI builds alliances across borders and continents on issues such as corruption and freedom of information. OSI places a high priority on protecting and improving the lives of marginalized people and communities.

Investor and philanthropist George Soros in 1993 created OSI as a private operating and grantmaking foundation to support his foundations in Central and Eastern Europe and the former Soviet Union. Those foundations were established, starting in 1984, to help countries make the transition from communism. OSI has expanded the activities of the Soros foundations network to encompass the United States and more than 60 countries in Europe, Asia, Africa, and Latin America. Each Soros foundation relies on the expertise of boards composed of eminent citizens who determine individual agendas based on local priorities.

www.soros.org

Abbreviations

ACSM	Advocacy, communication and social mobilization
ART	Antiretroviral therapy
ARV	Antiretroviral drug
BRAC	Bangladesh Rural Advancement Committee
CB-DOTS	Community-based DOTS
CCM	Country Coordinating Mechanism
CDC	U.S. Centers for Disease Control and Prevention
CIDA	Canadian International Development Agency
DCT	Diagnostic counseling and testing
DDC	Department of Disease Control
DFID	Department for International Development (United Kingdom)
DOT	Directly observed treatment
DOTS	The internationally recommended strategy for TB control
DRS	Drug Resistance Surveillance
DTLC	District TB and leprosy coordinator
EQA	External Quality Assurance
FCT	Federal Capital Territory
FHI	Family Health International
FIDELIS	Fund for Innovative DOTS Expansion through Local Initiatives to STOP TB
FMOH	Federal Ministry of Health
GDF	Global Drug Facility
GDP	Gross Domestic Product
GLC	Green Light Committee
GLRA	German Leprosy and Tuberculosis Relief Association
HNPSP	Health Nutrition and Population Sector Program
HSSP	Health Sector Strategic Plan
ICASA	International Conference on AIDS and Sexually Transmitted Infections in Africa
ISAC	Intensified Support and Action Countries
IEC	Information, education, and communication
ILEP	International Federation of Anti-Leprosy Associations
IMF	International Monetary Fund
IPT	Isoniazid preventive therapy
IRIN	Integrated Regional Information Network
IUATLD	International Union Against Tuberculosis and Lung Disease
JAAIDS	Journalists Against AIDS

KfW	German Reconstruction Bank
KNCV	Royal Netherlands Tuberculosis Association
LGA	Local Government Area
MDR-TB	Multidrug-resistant TB
MDG	Millennium Development Goal
MoH	Ministry of Health
MSF	Médecins Sans Frontières
MSH	Management Sciences for Health
MTDP	Medium Term Development Plan
NACA	National Action Committee on AIDS
NACP	National AIDS Control Program
NASCAP	National AIDS and STIs Control Programme
NASP	National AIDS/STD Programme
NDHS	National Demographic Health Survey
NGN	Nigerian Naira currency
NGO	Nongovernmental organization
NIH	U.S. National Institutes of Health
NIMR	Nigeria Institute of Medical Research
NSF	National Strategic Framework
NTBLCP	National Tuberculosis and Leprosy Control Programme
NTLP	National Tuberculosis and Leprosy Programme
NTP	National TB Program
OSIWA	Open Society Initiative for West Africa
OSISA	Open Society Initiative for Southern Africa
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PHC	Primary health care
PPM	Public-private mix
STBLCO	State Tuberculosis and Leprosy Control Officer
STI	Sexually transmitted infection
SWAp	Sector wide approach
TACAIDS	Tanzania Commission for AIDS
Tk	Taka (Bangladeshi currency)
TUC	U.S. Centers for Disease Control Collaboration
TZS	Tanzanian shilling
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCT	Voluntary counseling and testing for HIV infection
WHO	World Health Organization

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Overview

Estimated Global TB Burden Among High-Burden Countries, 2004

		Population 1,000s	**TB Incidence (all forms)** number 1,000s*	**TB Incidence (all forms)** per 100,000 population	**TB Mortality (all forms)** per 100,000 population	**HIV Prevalence in Incident TB Cases** %
1	India	1,087,124	1,824	168	30	5.2
2	China	1,307,989	1,325	101	17	0.9
3	Indonesia	220,077	539	245	46	0.9
4	Nigeria	128,709	374	290	82	27
5	South Africa	47,208	339	718	135	60
6	Bangladesh	139,215	319	229	51	0.1
7	Pakistan	154,794	281	181	40	0.6
8	Ethiopia	75,600	267	353	79	21
9	Philippines	81,617	239	293	48	0.1
10	Kenya	33,467	207	619	133	29
11	DR Congo	55,853	204	366	79	21
12	Russian Federation	143,899	166	115	21	6.8
13	Viet Nam	83,123	147	176	22	3.0
14	Tanzania	37,627	131	347	78	36
15	Uganda	27,821	112	402	92	19
16	Brazil	183,913	110	60	7.8	17
17	Afghanistan	28,574	95	333	92	0.0
18	Thailand	63,694	91	142	19	8.5
19	Mozambique	19,424	89	460	129	48
20	Zimbabwe	12,936	87	674	151	68
21	Myanmar	50,004	85	171	21	7.1
22	Cambodia	13,798	70	510	94	13

* The WHO ranks the high-burden countries by the absolute number of new TB cases in each country and is not adjusted due to population size.

Source: "Table 6: Estimated TB burden, 2004," in WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing*, WHO, Geneva 2005, p. 28.

The Public Health Watch TB Monitoring Project partners with civil society researchers in Bangladesh, Brazil, Nigeria, Tanzania, and Thailand, all of which are WHO-designated TB high-burden countries, to monitor and advocate for improved governmental policies and services to control TB. The five reports that have resulted from their monitoring efforts reveal a number of overarching themes regarding TB and TB/HIV.

Researchers all found low levels of awareness of the basic facts about TB and TB/HIV coinfection among political officials and the general population, including within high-risk groups such as people living with HIV/AIDS. Widespread ignorance of how TB is spread and the fact that the disease can be cured contribute to high levels of stigma and discrimination against people living with TB. Media coverage of TB is limited, and national TB programs (NTPs) generally lack strong communications strategies and staff with the experience and skills to interact effectively with the press.

Reports from all five countries highlight a number of other issues as well.

First, inadequate attention to the linkages between TB and poverty has resulted in a paucity of government measures to address the hidden costs of treatment that burden the poor and other vulnerable groups, including women.

Second, the fact that TB patients often rely on private service providers leads to inequitable access to quality services, constrains government capacity to monitor the course of the epidemic, and raises concerns about the potential of increasing resistance to first-line TB drugs.

Third, context-specific approaches to TB control that integrate community participation are showing positive results but require additional support and funding from domestic and international sources.

Finally, Public Health Watch research suggests that in the absence of public awareness and engagement around TB and TB/HIV, political and financial accountability for TB control efforts falters. At present, there are few structured mechanisms to encourage broad public participation in the design, implementation, and evaluation of TB policy at the domestic or international level.

In addition to the common themes and findings outlined in this overview, country-specific recommendations can be found at the end of each national report.[1]

High-level political commitment?

The adoption of the Amsterdam Declaration to Stop TB in 2000 marked an important milestone in the attempt to muster high-level political commitment to a reinvigorated global TB control effort. Governments of the countries with the highest burden of TB pledged to expand access to the WHO-recommended DOTS framework for TB control in their countries;[2] to ensure sufficient human and financial resources to support implementation; to monitor and evaluate their national TB programs in line with WHO standards; to ensure "quality, access, transparency and timely supply" of TB drugs; and to support partnerships with NGOs and the community.[3]

However, rhetorical commitment to the Declaration has not been reflected in adequate budgetary allocations at the national and subnational levels. Without strong national leadership, state and local officials are less likely to give budgetary priority to either TB control, particularly in highly decentralized political systems as in **Brazil** and **Nigeria**, or health care reforms, as in **Tanzania** and **Thailand**, where cost-cutting measures have had a dramatic impact on the capacity of national TB programs, particularly with regard to monitoring and evaluation, staffing, and training.

Underfunding of the health sector in general has compromised capacity to treat TB within existing public health systems in **Bangladesh**, **Nigeria**, and **Tanzania**. The executive director of Nigeria's National Primary Health Care Development Agency commented that "where [primary health care] services are available, the quality is such that people prefer to go elsewhere for the services."[4] Public Health Watch researchers from all five countries judged that government spending on TB was inadequate to ensure the effective implementation of national TB policies. For example, only about two-thirds of all Bangladeshi laboratories have the capacity to perform high-quality smear tests,[5] and laboratory rooms in some subdistricts are small and poorly ventilated, creating health risks for staff. As researcher Afsan Chowdhury noted, "If you measure political commitment [in Bangladesh] in terms of resource mobilization—if you see this as a measure of the extent to which TB is on the political agenda—it's low, there's not much."[6] TB workers are underpaid and overworked, leading to high turnover, sagging morale, and low recruitment. As funding for TB control has declined in Brazil over the past few decades, so has the prestige of TB work, even as increased investment in HIV/AIDS since the early 1990s has helped enhance the status of HIV/AIDS workers.

In **Brazil**, **Nigeria**, **Tanzania**, and **Thailand**, the HIV/AIDS epidemic has fueled a dramatic resurgence in TB rates and put an additional strain on health infrastructures, yet governments have been slow to respond with corresponding increases in TB budgets and personnel. In **Tanzania**, the resurgence in TB rates—a six-fold increase in the number of cases between 1983 and 2003—has largely been attributed to the HIV epidemic. HIV preva-

lence among TB patients in **Nigeria** increased more than four-fold over the period between 1991 and 2001.[7] In **Thailand**, the resurgence of TB and the number of patients coinfected with TB/HIV has been similarly dramatic, yet the integration of the TB control program into the more powerful and better funded National AIDS Control Programme—intended to promote collaborative TB and HIV policies and services—has instead dissipated the authority and resources of the TB program.

International donors cover a large share of TB control budgets in **Bangladesh**, **Nigeria**, and **Tanzania**. For instance, the Tanzanian government in 2003 contributed 10 percent of the National TB and Leprosy Programme's total annual budget.[8] As one Nigerian health care provider noted, "remove the donor, and everything would crash."[9] Public Health Watch researchers unanimously recommend that donors should take greater care to ensure that assistance programs strengthen long-term capacity to conduct TB control activities without external support. "Most international cooperation is project-based," researcher Akramul Islam of Bangladesh said. "But we're trying to do long-term thinking. Many international organizations think they will come here and transfer knowledge—but how can you just transfer knowledge and then wash your hands?"[10]

Even in countries such as **Brazil** and **Thailand**, where domestic spending accounts for the greater part of the health budget, donor resources are playing an increasingly significant role in TB control. In 2005, 45 percent of the Thai National TB Programme budget came from the Global Fund to Fight AIDS, Tuberculosis and Malaria. In recent years, bilateral agencies such as the U.S. Agency for International Development (USAID) and other external public and private funding sources have provided most of the investment in clinical and operational research in Brazil. Access to global funding streams is making a clear contribution to national TB control efforts in all five countries. Yet Public Health Watch researchers all expressed concern about the potential for displacement of government responsibility and the impact on the capacity of governments to sustain TB control efforts in the long term.

There has been minimal public mobilization around the need to hold governments accountable for their commitments to reach Amsterdam Declaration targets. Without effective pressure from domestic constituencies, governments have had little incentive to improve their performance on TB control. Researcher Ezio T. Santos Filho believes that the position of a middle-income country such as **Brazil** on the list of TB high-burden countries can only be explained by the absence of mechanisms to ensure that critical scrutiny of government TB control efforts includes the participation of people from communities most directly affected by TB. And **Bangladeshi** researcher Afsan Chowdhury insists that the involvement of dedicated National TB Programme officials is not enough; other sectors must lend their support as well. "We need a broad cross-section of actors involved to have an effective TB control policy," Chowdhury said. "We need advocates *around* the minister of

health—we need to make TB activists out of politicians. And TB needs to be pushed onto the political agenda, not only of the health ministry, but also of the ministries of finance and planning."[11]

The marginality of the Declaration at the country level is symptomatic of a broader issue: insufficient public awareness of the scope and seriousness of the TB epidemic. Global incidence of TB has increased over the past 10 years.[12] TB kills approximately 2 million people a year[13] and is a leading cause of death by infectious disease for people living with HIV/AIDS. Yet when contrasted with the extent of social mobilization around health issues such as HIV/AIDS, the general lack of awareness that TB is a serious health threat is striking.

Lack of awareness

> *There is nothing more than a poster on the wall in health facilities to promote awareness.*
>
> *—Ezio T. Santos Filho, Public Health Watch researcher, Brazil*[14]

Public Health Watch researchers from all five countries identified lack of awareness about TB at all levels as a critical issue—one that has multiple adverse consequences and implications for the effectiveness of TB control efforts.

In the high-burden countries under study, many people do not know the basic facts about TB: how the disease is transmitted; that it can be treated and cured; and where to access free treatment. In **Bangladesh**, where over half of the population is infected with the TB bacillus, a recent study found that some women believed they could get TB by wearing torn slippers.[15] According to one Nigerian doctor, "most people [in Imo State] still think that TB patients have been poisoned. Some think it is a curse from the gods—especially when many family members get infected—and go to fortune tellers and prayer houses for deliverance."[16] Even groups at an elevated risk of TB infection, including people living with HIV/AIDS, appear to lack information about TB. For example, a recent series of social mobilization workshops among HIV/AIDS activists in **Brazil**—where TB is one of the leading causes of death by infectious disease for people with HIV/AIDS—revealed that few participants knew even the basic facts about TB transmission and treatment.[17]

Lack of information can lead to delays in accessing treatment, increasing the potential for transmission of the disease. One recent study in Tanzania found that only 42 percent of TB patients visited a health facility within three months of the onset of symptoms; the median duration between onset of TB symptoms and visiting a health facility was about eight months.[18]

The low level of awareness extends to high-level political officials as well. The leader of one faith-based organization in **Thailand** remarked that "the general perception among

political leaders as well as in Thai society is that TB has been completely eradicated."[19] In **Tanzania**, where over 50 percent of people living with HIV/AIDS are coinfected with TB, many politicians and local government leaders believe that TB is a "disease of the past" that affects relatively few people and therefore do not consider TB a priority.

The scarcity of information and educational resources adapted for use at the community level is an obstacle to the initiation of awareness-raising efforts. And patients who do not understand the requirements of treatment are more likely to default, raising the risk of multidrug-resistant TB (MDR-TB), which few high-burden countries, including **Bangladesh**, **Nigeria**, **Tanzania**, and **Thailand**, have the capacity to detect and treat. **Brazil** has a strong system in place for treating its relatively few cases of MDR-TB but has undertaken a national investigation to determine whether high treatment default rates could be affecting national rates of drug resistance. A prominent TB doctor in Bangladesh expressed frustration that so little effort has been made to produce and disseminate culturally sensitive materials in the local language: "We are producing documents in English—for whom? For the donors! [We need TB materials] in Bangla, Bangla and more Bangla. And we have to remember that only one in three people can even read Bangla."[20] Researcher Jamillah Mwanjisi reported that available information on TB in **Tanzania** is overly technical and jargonistic, especially in comparison to resources on HIV/AIDS, and that TB officials make little attempt to communicate the basic, essential information that people need in language they can understand. "There is quite a lot of room for social mobilization around TB—for activists to get involved," she said. "The problem is that TB is so closed to [everyone except] the experts."[21]

People from the communities most affected by TB and TB/HIV must be involved in the creation of materials about TB that are accurate and sensitive to local social and cultural contexts. Direct support to community activists and leaders would help them develop and use such materials to promote TB awareness in their communities.

Media involvement

> *[World TB Day is like] a flash of the camera, and then it's gone.*
> *—Somsak Akksilp, director, Office of Disease Prevention and Control, Thailand*[22]

Except for official statements on World TB Day, the NTPs in all five countries have made little attempt to communicate important information about TB through newspapers, television or radio outlets on a systematic and continuous basis. NTPs generally lack strong communication strategies and staff has little experience working with the media.

Mirroring the situation within the general population, most journalists know little about TB. **Nigerian** researcher Olayide Akanni—a journalist herself—found that journalists are reluctant to report on TB because they are not sufficiently aware of the issues. "The

majority of journalists," she said, "do not even know that TB is an issue."[23] At one recent meeting organized by Akanni's organization, Journalists Against AIDS, a group of health correspondents from major Nigerian media outlets acknowledged that they had limited knowledge about the seriousness of the TB epidemic, how TB is spread, the linkage between TB and HIV, and other related issues.[24] "Journalists are not able to write articles about [TB], because we lack information," a **Bangladeshi** journalist said. "We don't receive information from TB experts and programs in a way that we can use it."[25] Editors and media owners in **Nigeria**, **Tanzania**, and **Thailand** are reportedly reluctant to cover TB and other health topics because they do not believe these "softer" issues will generate enough public interest. Few government or donor-supported media training programs have focused on TB and TB/HIV.

In the absence of a well-articulated NTP communications strategy, few government TB officials have received media training or support in obtaining the necessary skills for working with the press. Journalists in **Nigeria** and **Tanzania** have found that the primary sources of information on TB—public health officials and health care workers—are reluctant to grant interviews. According to Akanni, to reach Nigerian public health officials, "there are bureaucracies you have to overcome, and you have to book an interview about two weeks in advance."[26] Mwanjisi added that in Tanzania, "When you go to interview [TB officials], they'll tell you a string of expert jargon, and when you ask, 'Can you please explain it to me?' they say, 'Oh, you would not be able to understand it.' That kind of attitude puts off a lot of journalists."[27]

The fact that few civil society organizations are dealing with TB further limits potential sources of information for journalists. Mwanjisi commented that "even HIV support groups, who are referring people living with HIV to TB services, do not know anything about what is happening with the national TB program."[28]

Stigma and discrimination

> *Stigma is frustrating access to TB treatment especially for people living with HIV . . . [and] the hostile attitude of health care officials . . .is responsible for this. Nobody would want to go to a place where he or she is likely going to be treated like an outcast. No matter how effective the treatment becomes, at the end of the day, you will simply avoid such places. If that is the only place where such treatment exists, so be it; some individuals would rather die than go there.*
>
> *—Yinka Jegede-Ekpe, coordinator, Nigerian Community of Women Living with HIV*[29]

Lack of public awareness contributes to an environment in which people living with TB are more likely to feel shame and to face stigmatization and discrimination, even from health care workers, reinforcing their reluctance to seek treatment and care. Women, migrants, and members of other at-risk groups are particularly stigmatized. In areas of high HIV prevalence, people with TB are often assumed to have HIV as well, intensifying the level of stigmatization they experience.

Without an understanding of how TB is spread and that it can be cured, an atmosphere of suspicion, fear, and hostility toward people with TB can easily develop. In **Bangladesh**, BRAC research has shown that "common people would not like to associate with TB patients [for] fear of transmission," making people with TB reluctant to seek diagnosis and care.[30] Though TB prevalence is reportedly quite high in factories (particularly among garment workers and in Export Processing Zones) and on tea plantations in Bangladesh, BRAC reports that factory owners are reluctant to allow access to TB service providers, and workers are reluctant to be tested for fear of losing their jobs if they test positive for TB.[31] A **Nigerian** TB patient reported that many TB patients abandon their jobs due to stigmatization from fellow workers who fear infection as well as more blatant forms of discrimination, including being fired by their employers.[32]

Mwanjisi sees a direct link between lack of reliable information about TB and TB/HIV coinfection and the high level of stigma attached to TB in **Tanzania**: "As soon as it is suspected that someone might have TB, everybody thinks that he or she also has HIV. . . [and] this is because there is very limited information about TB—almost nothing—especially at the community level."[33] The fears and prejudices of some health workers also add to the stigmatization of people living with both diseases.

Public Health Watch research strongly suggests that women are particularly vulnerable to stigmatization and discrimination and may be more hesitant to seek diagnostic and treatment services as a result. For example, research in Kanchanburi, **Thailand**, uncovered a common belief that TB is a "male" disease, associated with a high-risk lifestyle and "unfeminine" behaviors, so for women the onset of TB symptoms is accompanied by intense feelings of shame and loss of esteem.[34] In many communities in **Bangladesh**, women with TB face social disapproval for displaying physical symptoms such as coughing in public as well as a greater prospect of rejection by their husbands (or by prospective husbands if they are unmarried). As a result, Bangladeshi women are more likely than men to attempt to hide or deny TB infection, trying home and traditional remedies first and seeking professional services only as a last resort.[35]

Gender-related stigma is exacerbated by the fact that women typically face greater barriers in accessing health care than men. Women often have more restricted access to private income to cover the hidden costs of treatment such as nutritional supplements and transportation. In both **Bangladesh** and **Tanzania**, women cited cost as a significant

barrier; reportedly, **Tanzanian** women often have to "choose between traveling [to a clinic] and getting their medications or buying food for the family"[36]—and often opt against accessing TB care.

There are strong indications that TB is a serious health threat among migrants to **Thailand** from neighboring Burma, Laos, and Cambodia. Unable to read or speak Thai, lacking official documentation, and fearing deportation if they come into contact with public authorities, many are hesitant to seek treatment. Those who do seek treatment move so frequently that their treatment is often interrupted, raising serious concerns about MDR-TB.

TB is having a devastating impact on other vulnerable groups as well, including prisoners, refugees, and minority groups. Yet some NTPs have failed either to conduct the necessary monitoring and data analysis themselves or to support the collaborative research with academic institutions and NGOs that would allow them to identify vulnerabilities and to develop appropriately targeted programs and services. For example, in **Brazil**, since Brazilians of African descent are overrepresented among the poor, it seems likely that Afro-Brazilians—and particularly Afro-Brazilian women—also suffer higher rates of TB, yet there has been little research on this issue.[37] Where such data exists, as with regard to prisoners in **Thailand**, the government has been able to design and implement effective outreach programs.

TB and poverty

There is abundant evidence that poverty increases vulnerability to TB. The malnutrition, overcrowding, poor air circulation, and unhygienic sanitation facilities commonly experienced by the poor all increase the probability of TB infection. People living in poor communities are also harder hit by the hidden costs of diagnosis and treatment and are therefore less likely to access TB services. One recent government study in Bangladesh found that 70 percent of patients at DOTS centers were below the poverty line.[38] TB prevalence and mortality rates in Brazil reflect broader socioeconomic patterns, with poor and disadvantaged communities suffering most.

TB, in turn, can make patients more vulnerable to poverty. TB treatment and associated costs are relatively higher for poor people. TB decreases an individual's mental and physical capacity to work, further adding to the financial burden of treatment and multiplying the extent and impact of poverty. As 90 percent of **Bangladeshi** TB patients are in the most economically productive age group (15–54 years), the economic and social burden to their families is massive. According to a document prepared by the Bangladeshi government, the economic impact associated with TB and TB coping strategies is credited with pushing 30 percent of nonpoor patients below the poverty line.[39]

The hidden costs of treatment

> *It is true that we receive free diagnosis and treatment, but [TB] drugs are very powerful, and they need to be taken with sufficient food. A majority of us [patients] are from poor families and we have only one meal per day. So sometimes we are forced to skip the drugs.*
>
> *—TB patient, Dar es Salaam, Tanzania*[40]

Adhering to the six-month TB treatment regimen is a challenge, particularly for patients who are malnourished, taking antiretroviral drugs, grappling with other illnesses, or poor. Strict compliance with treatment requires a serious investment of patients' time, energy, and household resources. Reports from all five countries revealed that even though TB treatment is free, patients are often confronted with significant "hidden costs," including outlays for diagnostic tests, transportation to health facilities, nutritional supplements (since patients require an adequate diet to take their medications), and time away from work. In Tanzania, patients from rural areas in particular may spend several hours traveling to and from health facilities and one to six hours in the clinic waiting to receive medications—every day for the first two months of treatment. Similarly, in Nigeria, research revealed that states in the north, which are typically poorer, have far fewer TB centers available per capita, meaning that patients have to travel much farther for treatment. For example, as of January 2005, Zamfara State in the north had only 10 DOTS centers for a population of 3.6 million people, while Ogun State in the south had 116 DOTS centers for 2.3 million people.[41] For many patients, who also have to think about earning a livelihood and familial responsibilities, traveling such a long distance for TB care is simply untenable.

Yet despite the clear connection between TB and socioeconomic factors, governments continue to deal with the disease primarily as a public health problem rather than as a broader development issue. TB is usually left to the "experts," a small circle of medical and health professionals working within or connected to the Ministry of Health. For example, while maternal and child health, infant mortality, and HIV/AIDS are highlighted in **Thai** poverty reduction schemes, TB is not mentioned. The **Brazilian** government has long acknowledged that providing "incentives" such as nutritional supplements and transportation subsidies to TB patients is necessary to ensure treatment adherence. Yet under Brazil's decentralized system, individual states and municipalities have the responsibility to budget for the incentives, and thus their availability in practice varies greatly from state to state and within states.

Patterns of TB prevalence and the crippling hidden costs of treatment may help to explain why there has not been more civil society involvement around TB. People living in poverty, women, and members of other vulnerable groups are not generally well

represented in policymaking processes; these groups are most likely to lack higher education, political access, and allies in policymaking circles. People struggling to stick to a demanding treatment regimen are more likely to be focused on survival (while they are ill) and putting the experience behind them (after they are cured) rather than policy debates. Yet involving people living in the communities most affected by TB—especially those who have successfully completed treatment—is crucial to the development of more effective public outreach programs and to improving the quality and accessibility of services overall. Given the marginalization often faced by the people and communities most affected by TB, governments and international donors must take an active role in encouraging and supporting partnerships with community-based organizations to reach these groups more effectively.

Public-private collaboration

> *Management of TB patients in private practice is not of acceptable quality. . . . [D]ifferent anti-TB regimens are prescribed depending on the experience of the private provider and on the patient's purchasing power.*
> *—Report of Third Joint International TB DOTS/ HIV/AIDS Monitoring Mission to Nigeria*[42]

Many people with TB symptoms turn first to private practitioners in their communities, even in areas theoretically "covered" by governmental DOTS programs. People seek services from private providers because they lack knowledge about or sufficient access to free treatment, or because they are looking for better service than they expect to receive at publicly managed clinics. TB treatment regimens in private facilities are often based upon an individual's purchasing power rather than on national guidelines for TB treatment. In Nigeria, for example, rather than relying solely on smear tests, private providers use chest x-rays to diagnose TB in people who can pay for this service. Widespread reliance on private providers who are not collaborating with the government also has a negative impact on the accuracy of official TB case recording and reporting and the likelihood of treatment default.

While those who can afford it often seek treatment from licensed private medical doctors, large numbers of TB patients seek treatment from a range of other, less qualified private providers, including traditional healers, pharmacists, and unlicensed doctors, few of whom can be counted on to follow NTP guidelines. A recent study in **Bangladesh** found that up to 70 percent of poor TB patients had consulted traditional healers, homeopathic providers, or allopathic doctors before seeking out DOTS services;[43] because these private providers charge fees for TB services, patients are more likely to appear for treatment only when they have enough money to buy drugs, or drop out entirely when their money runs out. Defaulting on treatment increases patients' risk of developing (and spreading) MDR-TB.

Few private providers in **Bangladesh**, **Nigeria**, **Tanzania**, and **Thailand** systematically refer TB patients to public health clinics or report on the outcomes of the cases they treat. In **Brazil**, although most public health care providers also "moonlight" as private doctors to compensate for low public sector salaries, most TB patients access free treatment through the public health system. Private and public providers alike often view official case recording and reporting requirements as complicated and time-consuming, especially if no incentives to encourage compliance are in place.

Building incentives into public-private partnership agreements can have a positive impact. TB reporting from private hospitals in Bangkok, **Thailand**, improved significantly when the city's Metropolitan Authority introduced a user-friendly computerized case recording and reporting system as well as concrete incentives such as free x-ray and sputum testing services, training, and TB education materials.[44] By contrast, similar public-private pilot projects have yielded less promising results in **Bangladesh** and **Nigeria**. As one Bangladeshi expert noted, "It's very easy to say 'public-private partnership,' but it's very hard to implement. . . . We have no dearth of policies; the question is how to implement them—that is the real challenge."[45] Careful study is needed to assess why some pilot projects have succeeded and others have failed.

The practicability of DOTS

> *People living with HIV/AIDS become actively involved [in their own treatment]: they do home visit projects; they join committees at hospitals; they have a role in encouraging and supporting their fellow people living with HIV/AIDS to stick to treatment. This is the crucial role local communities have played in making AIDS programs successful [and] this . . . story could be replicated for TB patients.*
>
> *—Rev. Sanan Wutti, The Church of Christ in Thailand*[46]

Quality-assured TB sputum microscopy and access to "directly observed treatment" (DOT) are two of the principal components of the WHO-recommended DOTS TB control strategy. Public Health Watch research suggests that financial and human resource constraints pose serious obstacles to guaranteeing DOT by public health care workers in many high-burden countries, and that ensuring strong community participation in TB control efforts can both help fill this gap and enhance public awareness and engagement around TB and TB/HIV. The emergence of the HIV/AIDS epidemic has highlighted the inadequacy of current TB diagnostic tools, even where these are available.

In many parts of the world, NTPs have interpreted DOT to mean that trained health care workers should supervise and observe patients on a daily basis in taking their

daily medication. This is one response to the acknowledged challenge of assuring treatment completion. However, in **Thailand** and **Bangladesh**, TB programs have recognized that it is simply not feasible for health care workers to observe all TB patients on a daily basis. For example, statistics from one TB treatment center in Chiang Mai, Thailand, indicate that fully 42 percent of patients self-administer treatment.[47] According to the director of a health facility in Bangkok, "The government and . . . the international community . . . say that people must receive DOT in every single case, . . . [b]ut . . . we can't do this 100 percent. . . . Nurses have a lot of duties and many diseases to take care of—so no, they don't get to everyone. We try to utilize community workers. . . . But [without] financial support, this won't be sustainable."[48] TB clinics in the **Brazilian** city of Rio de Janeiro offer patients the option of traveling back and forth to the clinic every day (or three times a week) to receive DOT, but many decline and choose to take responsibility for treatment themselves, often due to work responsibilities or a wish to avoid being identified publicly as a TB patient.[49]

In fact, a shortage of trained health care personnel and, particularly, of dedicated TB staff, affects the practicability of offering DOT in all five countries. In **Nigeria**, national debt and restrictions on public spending imposed by the World Bank and the International Monetary Fund (IMF) have historically placed major limitations on health sector allocations and spending, including on securing and retaining personnel.

The challenges for TB control are even greater in areas of high HIV prevalence, as many TB clinics are not equipped to meet the added challenge of diagnosing coinfected patients. According to reports from **Brazil**, **Nigeria**, **Tanzania**, and **Thailand**, many HIV-positive patients die from TB without ever being diagnosed or treated. As a staff member from the National Reference Laboratory in **Nigeria** said, "Sputum tests alone [often do] not give the right diagnoses of TB, especially if the patient is HIV-positive. . . . We no longer refer TB patients to DOTS centers because they are often lost [seldom diagnosed or treated]."[50]

Though the WHO has issued an Interim Policy on Collaborative TB/HIV Activities[51] to help countries frame a coordinated response to the challenges of diagnosing and treating coinfected patients, few countries—even those with high HIV prevalence such as **Nigeria** and **Tanzania**—have progressed beyond the planning and "pilot project" phase.

Though the importance of close supervision of TB treatment by trained medical experts is not debated, "top-down" efforts to ensure compliance need to be balanced with consideration for the importance of patient autonomy and the value of enlisting community-based support, as the WHO has increasingly recognized.[52] Still, Abdul-Mayeed Chowdhury, the executive director of BRAC, noted that within the current TB control paradigm, "Ordinary people are treated as the recipients of the services that are being delivered to them, rather than as equal partners in their treatment."[53] Many TB advocates urge TB policymakers to draw upon examples of community-based ARV distribution among people living with HIV/AIDS as a useful model for developing community-based DOTS programs.

Community-based DOTS

TB should not be seen as an 'experts-only' disease; it affects everyone and everyone has a role to play.

—Jamillah Mwanjisi, Public Health Watch researcher and director of Media Bank, Tanzania[54]

National TB programs in Bangladesh, Tanzania, and Thailand have sought to make TB treatment more accessible and affordable by initiating community-based TB programs, often in collaboration with NGOs. Though many of these programs have shown impressive results at relatively low cost, few have attracted sufficient investment and support for scale-up, either from domestic sources or international donors.

In response to lack of government capacity to administer DOT through health care workers in every community, BRAC and other NGOs provide community-based TB services in over two-thirds of **Bangladesh**. The BRAC approach—the most widely used model of its kind in the country—revolves around the *shastho shebika*, or female community health worker. *Shastho shebikas* are trained to identify TB symptoms and refer patients to TB diagnostic centers in the communities in which they live. Once a community member is diagnosed with TB, *shastho shebikas* obtain free TB drugs, administer DOT at the household level, and record and report relevant data to BRAC and to the NTP. *Shastho shebikas* receive significant support from BRAC in the form of regular training and refresher courses as well as the opportunity to earn income: they are permitted to sell pharmaceutical supplies in their communities, and for each TB patient cured, they receive a small fee of Tk 125 (approximately $1.90). Many reportedly gain personal satisfaction and prestige from their jobs as well. As one *shastho shebika* noted in a recent interview, "I enjoy my work because it has gained me respect in my community."[55]

The BRAC model of community-based care has achieved impressive results: treatment success rates at or above the global target of 85 percent,[56] at a cost of 50 percent less than the equivalent services in areas covered by the NTP.[57] BRAC's community-based DOTS program has also reaped impressive social dividends. *Shastho shebikas* distribute information and raise awareness not only about TB, but about a range of health issues, and not just to people with TB symptoms, but to the entire community, thus defusing stigma. *Shastho shebikas* report that people who have recovered from TB are often their greatest allies in encouraging others to report symptoms and seek treatment. And the fact that BRAC's TB services are implemented in collaboration with the Bangladeshi government, which provides free drugs, monitoring, and supervision, reinforces governmental capacity and leadership on TB control.

Pilot community-based DOTS programs have also demonstrated positive treatment outcomes at relatively low cost in the Kilombero and Temeke districts of **Tanzania**.

Following the initiation of the program, the cure rate in Kilombero jumped from 48 to 78 percent.[58] One district representative commented that the program was able to maintain a high quality of treatment services at a fraction of the cost to patients because travel costs had been eliminated.[59] One patient from the Temeke district of Dar es Salaam described the program as a "savior," especially for communities far from health facilities or where roads are impassable during rainy seasons.[60] In Temeke, too, the program both maintained quality of services and improved cost effectiveness by 37 percent.[61] However, both pilot projects have now been terminated due to lack of funding. Community health workers continue to implement some community-based TB services on an ad hoc basis,[62] but without financial support for transportation or training from district health management teams these efforts have remained limited in scope.

In **Thailand**, village health volunteers and family members assist health workers in the provision of health services, including the distribution of TB drugs and the administration of DOT. However, there are some indications that the government has not devoted sufficient attention and resources to providing training and support for these volunteers. In addition to administering DOT, village health volunteers provide a wide range of primary health services, including TB education, in return for free medical care. Family volunteers do not receive even this level of compensation. Some village health volunteers report that they find their jobs unappealing,[63] and others report that the responsibility of providing community and patient education is too great to be left to volunteers.[64] Many Thai health administrators agree that volunteer workers "need to be supported and salaried. We can't make them work for free all the time."[65]

Community-based DOTS programs provide a promising model for extending the capacity of government TB programs and engaging affected communities and individuals in becoming actively engaged in TB control efforts. However, Public Health Watch research suggests that NTP participation and leadership, particularly in providing infrastructural and technical support and training, may be important if the "scaling-up" and long-term sustainability of such programs is to be considered.

Civil society engagement in TB policymaking

> *Public pressure is still not felt by the National TB Programme; it's still a specialist program, and we're still telling the public what to do—that we know best. We need to show that the right belongs to the people [and the] provision of TB services has . . . to be seen as an obligation. Until we do this, [TB control] is not sustainable, and we won't reach the targets.*
>
> *—Afsan Chowdhury, Public Health Watch researcher and director of advocacy, BRAC, Bangladesh*[66]

Civil society engagement in the design, implementation, and evaluation of TB policies at the national and international levels has been minimal. Though the importance of community involvement in addressing many of the issues raised in Public Health Watch reports is increasingly acknowledged at the rhetorical level, there are still far too few mechanisms and opportunities for meaningful participation. NGOs working in the field of health are still seen primarily as service providers; their role in promoting and demanding greater governmental accountability for delivering effective TB policies and services is not widely recognized.

At the national level, TB officials are not accustomed to receiving scrutiny from civil society actors. In **Nigeria** and **Tanzania**, Public Health Watch researchers found that TB officials were resistant to the idea that "nonexperts" could have a role to play in assessing quality of services or in helping to design and implement community-based and patient-centered programs. "The attitudes of some government health workers—maybe they have to change," a health activist in **Thailand** said. "It seems like [TB experts] think they know everything. They are very knowledgeable, but they don't trust that NGOs can work on these issues . . . because we have not been formally trained."[67] In other countries, there are initial signs of increasing support for civil society engagement in TB policymaking. For example, BRAC's impact on the development and implementation of TB policy in **Bangladesh** and beyond is widely acknowledged. And since 2003 the **Brazilian** NTP has indicated greater receptivity to community sector involvement in monitoring implementation of its policies; in 2004, the Ministry of Health announced its support for a new "Brazilian Partnership Against TB," a visible sign of renewed support for a multisectoral TB control effort.

At the same time, civil society engagement at the international TB policymaking level has been minimal, though there are signs that this situation too may be changing with the increasing involvement of experienced HIV/AIDS activists and former TB patients in the Stop TB Partnership and other international bodies. To date, WHO officials have insisted that the primarily statistical and epidemiological nature of its annual *Global Tuberculosis Control* report must be preserved. As such, NGOs have not generally been invited to

participate in the preparation or review of government reports submitted to the WHO. There is currently no mechanism for civil society groups to provide independent assessments or recommendations during preparation of the *Global Tuberculosis Control* report on what could be done to improve the effectiveness of TB policies and services.

While the WHO's international case detection and treatment success targets are seen as helpful in motivating governments to demonstrate progress from year to year, without a transparent data collection and reporting system that allows for public review and feedback there is a strong incentive for governments to report greater progress than is actually being achieved. For example, a number of **Brazilian** officials and researchers have asserted that data gathered for WHO reports are not widely available at the national level;[68] that Brazilian experts are unaware of the methodology by which data are collected; and that there are significant discrepancies between the information reported to the WHO and national data with regard to DOTS coverage in particular, creating an inaccurate picture of the situation on the ground.[69] As long as governments see the Amsterdam Declaration and other regional and international commitments as a useful way of attracting international funding without incurring domestic responsibility, these commitments will not spur the desired broad public mobilization that is widely acknowledged to be a prerequisite for an effective, sustained TB control effort.

TB policymakers have noted the importance—and the absence—of a strong social mobilization component in TB control efforts to date.[70] There have been some incipient attempts to stimulate greater activity in this area. For example, in 2004 the Stop TB Partnership formed the Advocacy, Communications and Social Mobilization Working Group. The WHO Stop TB Department has begun to collect information on advocacy efforts in high-burden countries and has promised to establish a working group that includes community participation to develop indicators for more detailed reporting on communications and social mobilization activities as well. The Stop TB Partnership has also welcomed several community-led initiatives such as the creation of a community task force to ensure representation of people living with HIV/AIDS and/or TB in all of its decision-making structures.[71] In Round Five, the Global Fund awarded substantial grants to support TB advocacy, communications, and social mobilization activities in a number of high-burden countries. Perhaps most significantly, the new *Global Plan to Stop TB* (2006–2015), published in March 2006, identifies the following as one of its six key elements: "Engage people with TB and affected communities to demand, and contribute to, effective care, [involving] scaling up community TB care, creating demand through context-specific advocacy, communication and social mobilization; and supporting development of a patient's charter for the tuberculosis community."[72] However, the promise of these nascent structures and declarations of intent has yet to be fulfilled; the level of social mobilization around TB and community participation in TB policymaking processes is still inadequate.

Community mobilization and participation have proven essential in advocating for research, development of new tools, and the increased resources for the fight against HIV/AIDS. But many of those directly affected by TB lack resources and opportunities to engage in policy processes. Others may wish to distance themselves from the disease—and the stigma attached to it—once they have been cured. Ezio T. Santos Filho, a long-time HIV/AIDS activist in **Brazil**, asserts that waiting for the kind of "bottom-up" engagement and activism that was undertaken by the well-educated and politically connected constituencies first affected by AIDS in countries such as Brazil and the United States may not be realistic when so many of those affected by TB are from the poorest and most marginalized communities in their countries.[73] Greater social mobilization around TB and TB/HIV will be necessary to eradicate TB, but this will not occur without a concerted and sustained effort on the part of donors, policymakers, and community activists.

–Public Health Watch

Notes

1. For all five national reports please see www.publichealthwatch.info or contact Public Health Watch at: phwinfo@sorosny.org.
2. The DOTS strategy has five principal components: sustained political commitment; access to quality-assured TB sputum microscopy; standardized therapy under proper case management conditions; uninterrupted supply of quality-assured drugs; and systematic recording and reporting of TB cases. Available at www.who.int/tb/dots/whatisdots/en/index.html (accessed May 17, 2006).
3. See Amsterdam Declaration to Stop TB, adopted at the Ministerial Conference on Tuberculosis & Sustainable Development on March 24, 2000, Amsterdam, The Netherlands, available at www.stoptb.org/stop_tb_initiative/amsterdam_conference/documents/decla.pdf (accessed May 16, 2006).
4. Executive director of the National Primary Health Care Development Agency (NPHCDA), *The Guardian*, May 30, 2005.
5. BRAC staff confirm a pressing need for more quality microscopes at the field level. Interview with Faruque Ahmed, director of health programs, BRAC, Dhaka, March/April 2005.
6. Comment by Afsan Chowdhury, Public Health Watch researcher and director of advocacy, BRAC, December 12, 2005.
7. NTBLCP/NASCAP Power Point presentation, Graph 5: Trend of HIV seroprevalence in TB patients—1991–2001, NASCAP, 2001 Sentinel Survey Report.
8. "Table 1: NTLP funding and expenditure for 2003" in MoH, *NTLP Annual Report* (Dar es Salaam, 2003), p. 4.
9. Interview with health care provider, Ogun State, February 16, 2005.
10. Comment by Akramul Islam, Public Health Watch researcher and manager of the health and nutrition program, BRAC, December 14, 2005.
11. Comment by Afsan Chowdhury, director of advocacy, BRAC, Dhaka, December 11, 2005.
12. "TB Overview," Global Health Reporting, available at www.globalhealthreporting.org/tb.asp (accessed May 25, 2006).
13. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 1.
14. Comment by Ezio T. Santos Filho, Public Health Watch researcher, Public Health Watch roundtable meeting, São Paolo, March 30, 2006.
15. Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?" BRAC Research and Evaluation Division, September 2003, p. 6.
16. Interview with C.O. Nwakonobi, Imo State TB and leprosy coordinating officer, Imo State, April 11, 2005.
17. Ezio T. Santos Filho, Public Health Watch researcher, observations from social mobilization workshops, Rio de Janeiro, 2003.
18. Study by Healthscope Tanzania and the NTLP, reported in MoH, *NTLP Annual Report* (Dar es Salaam, 2003), p. 5.
19. Comments by Rev. Sanan Wutti, The Church of Christ in Thailand, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
20. Comment by Zafrullah Chowdhury, project coordinator, Gono Shahsthya Nagar Hospital (GK), *Daily Star* roundtable meeting, Dhaka, December 13, 2005.
21. Presentation by Jamillah Mwanjisi, Public Health Watch researcher and director of Media Bank, Global Health Council panel discussion, Washington, D.C., March 2006.
22. Comment by Somsak Akksilp, director, Office of Disease Prevention and Control Region Seven, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

23. Presentation by Olayide Akanni, Public Health watch researcher and senior programme officer, Journalists Against AIDS (JAAIDS), Global Health Council panel discussion, Washington D.C., March 2006.

24. Journalists Against AIDS (JAAIDS), "TB/HIV, Confronting a Dual Epidemic," JAAIDS media roundtable meeting, Lagos, March 16, 2005.

25. Comment by Razu Ahmed, *Daily Amar Desh* (daily Bangla language newspaper), BRAC/Public Health Watch roundtable meeting, Dhaka, December 12, 2005.

26. Presentation by Olayide Akanni, Public Health watch researcher and senior programme officer, Journalists Against AIDS (JAAIDS), Global Health Council panel discussion, Washington D.C., March 2006.

27. Presentation by Jamillah Mwanjisi, Public Health Watch researcher and director of Media Bank, Global Health Council panel discussion, Washington D.C., March 2006.

28. Presentation by Jamillah Mwanjisi, Public Health Watch researcher and director of Media Bank, Global Health Council panel discussion, Washington D.C., March 2006.

29. Comment by Yinka Jegede-Ekpe, coordinator, Nigerian Community of Women Living with HIV (NCW+), JAAIDS media roundtable meeting, Lagos, March 16, 2005.

30. Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?" p. 6.

31. Observations on basis of BRAC's experience at a DOTS treatment center in Chittagong. See also Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?," p. 5, noting reports of people losing their jobs after receiving a TB diagnosis.

32. Interview with TB patient, Broad Street Chest Clinic, Lagos, February 10, 2005.

33. Presentation by Jamillah Mwanjisi, Public Health Watch researcher and director of Media Bank, Global Health Council panel discussion, Washington, D.C., March 2006.

34. Soonthorndhada et al., *Community Perceptions and Experiences of TB in Kanchanaburi, Thailand: A Gender Equity Analysis*. Institute for Population and Social Research. Mahidol University, 2003, Publication No. 287.

35. Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?," pp. 28–29.

36. Presentation by Jamillah Mwanjisi, Public Health Watch researcher and director of Media Bank, International Union Against Lung Disease and TB Annual Conference, Paris, France, October 21, 2005.

37. Statement by Lucia Maria Xavier de Castro, coordinator of *Grupo Crioula* (the Brazilian Association of Black Women), Brazilian CCM meeting, Brasilia, April 2005.

38. Ministry of Health and Family Welfare, *Study on Tuberculosis and Poor* (Dhaka: Government of Bangladesh, June 2002).

39. WHO/IUATLD, Global Project on Anti-tuberculosis Drug Resistance Surveillance, cited in WHO 2005 and Country Coordination Mechanism, *Application Form for Proposals to the Global Fund* (Dhaka: Ministry of Health and Family Welfare, 2003), pp. 26–27, 112.

40. Interview with TB patient, Dar es Salaam, February 2005.

41. NTLP, "Comprehensive list of health facilities providing DOTS nationwide," January 2005.

42. *Report of Third Joint International TB DOTS/ HIV/AIDS Monitoring Mission to Nigeria*, March 2004, p. 21.

43. Ministry of Health and Family Welfare, *Study on Tuberculosis and Poor* (Dhaka: Government of Bangladesh, June 2002).

44. Comment by Pruthi Israngkul Na Ayudya, director, BMA Health Center 21, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

45. Comment by Salehuddin Ahmed, BRAC University, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.
46. Comment by Rev. Sanan Wutti, The Church of Christ in Thailand, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
47. Interview with Attapon Cheepsattayakorn, director, 10th Zonal TB and Chest Disease Center, December 8, 2005.
48. Comment by Pruthi Israngkul Na Ayudya, director, Health Center 21, Bangkok, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
49. Interviews with TB patients and clinic staff in Rio de Janeiro, São Paulo, Porto Alegre, and Brasilia, November 2005–March 2006.
50. Comment by Rosemary Adu, National Reference Laboratory, Nigerian Institute of Medical Research (NIMR), JAAIDS media roundtable meeting, Lagos, March 19, 2005.
51. Available at www.who.int/hiv/pub/tb/tbhiv/en/ (accessed May 25, 2006).
52. "To enable them to adhere to treatment, TB patients need support and care that is sensitive to their needs. In practice it means providing a treatment partner or supporter acceptable to patients to reinforce their motivation to continue treatment and counter the tendency of some to interrupt treatment." WHO, "The Five Elements of DOTS," available at www.who.int/tb/dots/whatisdots/en/index2.html (accessed on May 17, 2006).
53. Abdul-Muyeed Chowdhury, executive director, BRAC, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.
54. Presentation by Jamillah Mwanjisi, Public Health Watch researcher and director of Mediabank, Global Health Council panel discussion, Washington D.C., March 2006.
55. Interview with *shastho shebika* in the Dhamrai region, December 14, 2005.
56. A Mustaque, R Chowdhury, Sadia Chowdhury, Akramul Islam et al, "Control of Tuberculosis by Community Health Workers in Bangladesh," *The Lancet*, Vol. 350, July 19, 1997, pp.169–72. BRAC's 2004 annual report notes a treatment success rate for new patients of 89 percent. *BRAC Annual Report*, 2004, p. 49.
57. Md. Akramul Islam, AMR Chowdhury, J. Patrick Vaughan et al, "Cost-effectiveness of Community Health Workers in Tuberculosis Control in Bangladesh," *Bulletin of WHO*, 2002; 80 (6) pp. 445–450.
58. Interview with assistant district TB and leprosy coordinator, Kilombero, February 2005.
59. Interview with assistant district TB and leprosy coordinator, Kilombero, February 2005.
60. Interview with male TB patient, Kilombero, February 2005.
61. E. Wandwalo, B. Robberstad, and O. Morkve, "Cost and Cost-effectiveness of Community-based and Health Facility Based Directly Observed Treatment of Tuberculosis in Dar es Salaam, Tanzania," *Cost Effectiveness and Resource Allocation*, 2005.
62. Interview with health workers, Ifakara, February 2005.
63. Interview with NTP consultant to the Bureau of AIDS, TB and STIs, October 3, 2005.
64. Group discussion with village health volunteers in Mae Sod District, Tak province, January 26, 2005.
65. Comment by Sumalee Amarinsangpen, Office of Disease Prevention and Control Region 10, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2006.
66. Comment by Afsan Chowdhury, Public Health Watch researcher and director of advocacy, BRAC/Public Health Watch roundtable meeting, December 12, 2005.
67. Comment by Jutatip Chaisakul, Health Development Networks, roundtable meeting, Chiang Mai, December 9, 2005.
68. Comments by participants in Public Health Watch roundtable meetings, Rio de Janeiro, São Paulo, and Brasilia, March 28, 30, and 31, 2006.

69. According to the most recent statistics released by the WHO, 52 percent of the Brazilian population was covered by the DOTS strategy in 2004, a figure many Brazilian experts believe to be significantly overestimated. See WHO, *Global Tuberculosis Control: Surveillance, Planning Financing* (Geneva: WHO, 2006), p. 79.

70. See, e.g. Stop TB Partnership, *Report on the Meeting of the Second ad hoc Committee on the TB Epidemic: Recommendations to Stop TB Partners*, WHO, 2004, p. 15.

71. See "Call To Action for TB and HIV Community Activists and Advocates To Stop Tuberculosis (TB)," at www.aidsinfonyc.org/tag/tbhiv/wtbd2005.html (accessed June 19, 2006).

72. Stop TB Partnership, *Global Plan to Stop TB 2006–2015* (Geneva: World Health Organization, 2006). See www.stoptb.org/globalplan/assets/documents/GlobalPlanFinal.pdf (accessed May 25, 2006).

73. Meeting on March 9, 2006 between representatives from USAID and Public Health Watch staff and researchers, Washington, D.C.

II.
TB Policy in Bangladesh

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Executive Summary

Tuberculosis is a leading cause of adult mortality and preventable death in Bangladesh. An estimated 70,000 individuals die from TB each year: one death every 10 minutes. TB hits the poor and the most economically productive age group hardest, wreaking devastating economic and social impact. Yet many Bangladeshis are unaware of the fact that TB is curable and that treatment is available at public health facilities free of charge.

Given such high-risk behaviors as low condom use, rising HIV rates among high-risk groups (including drug users), and the fact that approximately half of the population is infected with the TB bacillus (raising the risk of progression to active infection), there is concern about the potential for a sharp rise in the rate of TB/HIV coinfection. Bangladeshi TB experts also express concern that official rates of multidrug-resistant TB (MDR-TB) underestimate the scale of the problem. The government has expressed its commitment to TB control by establishing the National Tuberculosis Control Programme (NTP), which has formally adopted the internationally recommended DOTS strategy and global TB control targets of 70 percent case detection rate and 85 percent treatment success rate. As of late 2005, the treatment success target had been achieved for the country overall, but some areas lagged behind. According to the NTP, case detection improved to 61 percent, still short of the global target. Detection is particularly problematic among urban poor women and the large numbers of TB patients who seek treatment from private providers. Most private sector doctors, traditional healers, village doctors, and other private providers do not follow NTP guidelines, with implications for the quality of TB services received by patients, the accuracy of NTP statistics on the TB situation, and increased potential for drug-resistant TB.

The levels of government spending on health in general and TB in particular are inadequate and have declined in recent years, which is reflected by inadequate accessibility and quality of public health services, including TB services. To compensate, the NTP has forged successful partnerships with nongovernmental organizations (NGOs) and international donors to expand its capacity to offer TB treatment services. With support from the Global Fund to Fight AIDS, Tuberculosis and Malaria in particular, NGOs are now offering TB services in two-thirds of the country, demonstrating a model of community-based DOTS that delivers high-quality TB services effectively and cheaply. The NTP's heavy reliance on NGO partnerships and external donor support has greatly enhanced access to TB treatment services, but also raises some concerns about sustainability.

Many Bangladeshi TB experts contend that effective implementation of a comprehensive and multifaceted advocacy and social mobilization strategy is a prerequisite for a successful government TB control policy. A comprehensive strategy would address the need for:

- High-level political advocacy and awareness-raising efforts among government and parliamentary officials to win broader political support for more attention and resources for TB;
- Continuous use of the mass media (not just on World TB Day) to disseminate information on TB symptoms, how TB is spread, the fact that TB is curable, the availability of free treatment, and the importance of completing treatment through peak-time public service programming on television and radio and accessible printed materials in Bangla as well as English;
- Outreach activities and materials to increase public awareness among communities that do not have consistent access to mass media outlets, including through targeted efforts to reach particularly vulnerable groups such as the urban poor and women;
- Enhanced partnerships with communities and community-led organizations to promote ownership of the response to TB, and to ensure that behavior, change, and communication materials are sensitive to contextual and cultural issues;
- Articulation of clear indicators for measuring the impact and success of behavior, change, and communication strategies over time.

Bangladeshi NGOs must take up the responsibility to form effective partnerships with affected communities for coordinated advocacy and social mobilization efforts that emphasize access to TB treatment services as a right, and delivery of those services as a government obligation.

International organizations and donors should take clear and visible steps to ensure that all funding support and technical assistance programming reinforces and expands national and local capacity to sustain TB control efforts in the long term.

Background

Most of us test positive for TB; we are a tuberculous nation.

—Medical doctor, Dhaka[1]

The persistence and severity of the TB epidemic in Bangladesh must be understood within a broader socioeconomic context. The country has posted impressive development gains in recent decades in terms of decreasing poverty,[2] increased life expectancy,[3] reduced maternal[4] and infant mortality,[5] and reduced rates of child malnutrition. Despite these gains, Bangladesh is still ranked 138 out of 157 countries on the United Nations Development Programme's Human Development Index,[6] and low TB detection rates may be putting a brake on further progress in these and other areas.

At the same time, as TB hits the poor and the most economically productive age group (ages 15–54) hardest,[7] the epidemic has a devastating economic as well as social impact.[8] In addition to the human suffering it causes, TB-related illness and death impede the integration of a significant, marginalized section of the population into the labor force. In short, the social and economic costs of *not* developing effective and comprehensive TB policies are high.

Baseline statistics

With more than 300,000 new cases of TB annually among a total estimated population of 137 million, Bangladesh ranks fifth in the World Health Organization's (WHO) list of TB high-burden countries.[9] TB was a leading cause of adult mortality and preventable death in 2005. The National Tuberculosis Control Programme (NTP) estimates that 70,000 individuals die of TB each year,[10] and one study estimated that uninfected individuals have greater than a 2 percent chance of becoming infected with TB in any given one-year period.[11]

The true incidence of TB in Bangladesh is uncertain. Current epidemiological estimates are based on the results of two national surveys conducted in 1964–66 and 1987–88. However, the government plans to use part of its 2005 grant from the Global Fund to Fight AIDS, Tuberculosis and Malaria to conduct a national prevalence survey in 2006. The survey is expected to provide a more accurate basis for policy planning and implementation, and a solid baseline for monitoring Bangladesh's progress in meeting its TB control targets.

TB/HIV

Bangladesh's first case of HIV was recorded in 1989. HIV prevalence in the adult population is low, as is the proportion of HIV-positive patients among adult TB patients (0.1 percent).[12] Recent estimates put the total number of HIV-positive cases at approximately 13,000.[13]

HIV prevalence among high-risk groups is rising. Among injection drug users in central Bangladesh, for example, it was reported to be 4 percent in 2004 compared to 1.4 percent in 2000.[14] Given the high incidence of latent TB infection in the country, there is serious concern about the potential for an increase in TB/HIV coinfection rates throughout the population. Behavioral surveillance has revealed low condom use, alarming rates of sexually transmitted infections (STIs), and low levels of risk perception.[15] Additional risk factors include a large clientele for sex workers, low levels of knowledge about HIV/AIDS, extensive needle sharing among drug users, and high levels of illegal migration from neighboring India and Burma, countries with significantly higher HIV prevalence rates.

Multidrug-resistant tuberculosis (MDR-TB)

The level of resistance to first-line TB drugs has not been evaluated on a national scale.[16] Official estimates indicate that 1.4 percent of previously untreated TB patients had MDR-TB in 2004[17]—an estimate that is widely considered credible in light of high treatment success rates. However, Bangladeshi experts express concern that if patients who did not complete treatment successfully in the first instance and the large number of patients who pursue TB treatment through private practitioners were to be counted the rate could rise to 10 percent or even higher.[18]

Health sector expenditure

> *Donor support is not here to stay, but TB will be our problem for at least another five decades. We're not going to get rid of poverty. We need to develop our human resources and capacity. . . . We need systems installation, improvement, and maintenance . . . and I feel that there is very little effort in that regard.*
>
> *—Sadia Dilshad Parveen, NGO Service Delivery Program*[19]

> *To generate sustained political commitment, . . . [the] pressure has to come firstly from within, from internal partners. The sustainability of the TB service delivery program requires an increased feeling of ownership by the government.*
>
> *—WHO representative*[20]

Despite the public health burden of TB and other diseases, as well as the potential threat of HIV/AIDS, the level of government spending on health is inadequate[21] and has declined in recent years: health expenditure as a percentage of total public expenditure dropped from 7.1 percent in 2001 to 5.6 percent in 2003.[22] Nearly two-thirds of health care spending is financed privately, mostly through out-of-pocket household spending, often on health care services of dubious quality provided by a range of private practitioners. Twenty-three percent of people approach pharmacists first for health care; 10 percent use traditional healers; and 35 percent see private doctors, an unknown percentage of whom are informally or poorly trained.[23]

At the same time, the level of external assistance for HIV/AIDS and TB control activities has increased significantly. External assistance covered 10.5 percent of total health expenditures in 1996–97, and 13.3 percent in 2001–02.[24] Though increased external funding has undoubtedly enhanced the quality and scope of NTP activities, it has also raised some concerns about sustainability, donor dependence, and whether sufficient attention is being devoted to the long-term development of Bangladesh's health infrastructure.

Health sector reforms

Health sector reforms enacted in 1998 and 2003 ushered in the Health Nutrition and Population Sector Program (HNPSP). The HNPSP embodies a sector-wide approach (SWAp) to health care, which aims to serve broadly defined poverty reduction goals by minimizing duplication of services, improving efficiency in resource allocation and service delivery, decentralizing the administration of health services, and pooling multilateral, bilateral, and local resources. A range of international organizations and donors, led by the World Bank's International Development Association, have promoted this approach in Bangladesh.

The HNPSP defined an "essential services package" to maximize cost-effective treatment and services for those diseases (including TB) that place the greatest burden on the public health system; DOTS is included among the essential HNPSP services.[25] The HNPSP has overseen delivery of this essential package of services through community-level health facilities, primarily in rural areas and with an emphasis on reaching the poor.[26]

The Ministry of Health and Family Welfare[27] has acknowledged the HNPSP is confronted with a number of difficulties, including the following:

- Continuing problems in the coordination of its strategies with other government sectors
- Inability to effectively monitor the practical impact of the HNPSP on poverty reduction and health inequalities due to the lack of clearly defined indicators

- Failure to sufficiently take into account barriers faced by the poor, including stigmatizing or otherwise inappropriate behavior by health care providers
- Insufficient allocation from the government budget to fully fund the HNPSP's ambitious agenda *and* inability of the HNPSP to spend even those funds at its disposal
- Ineffectively centralized procurement for all health programs, leading to delays in the provision of drugs and other medical supplies[28]

As an HNPSP program, the NTP has also struggled to maintain its equilibrium through the course of health sector reform. Resources for TB control activities have been shifted from the central to the district level, resulting in enhanced accessibility of NTP services. At the same time, the Ministry of Health has devoted less attention to strengthening the NTP's administrative and managerial capacity. According to the NTP Review and Strategic Plan, more effort is needed in precisely this area, to ensure more effective NTP coordination, planning, and ultimately service delivery. "To provide DOTS," the review stated, "the NTP needs a sharp mind at the central level, and capable hands for TB diagnosis and treatment [on the ground]. All of this has been undermined during the initial transition [to a new health system]."[29]

Political commitment

> *If you measure political commitment in terms of resource mobilization —if you see this as a measure of the extent to which TB is on the political agenda—it's low, there's not much.*
>
> *—Afsan Chowdhury, director of advocacy, BRAC*[30]

The government has demonstrated a high level of rhetorical commitment to TB control through its support for the Millennium Development Goals (MDGs), the Amsterdam Declaration to Stop TB, and the Washington Commitment.[31] By publicly adopting these commitments, the government has set specific TB control targets, acknowledged the linkage between TB and HIV/AIDS, and embraced the conclusion that reducing poverty and advancing development will require a concerted effort to control TB and other diseases. The NTP has articulated a clear TB control policy and guidelines for implementation, and

has expressed its determination to expand collaboration with both local and international nongovernmental organizations.

Many observers have pointed out that these expressions of political commitment have not been matched by sufficient budgetary allocations to ensure effective implementation of NTP policy.[32] However, it is also clear that the level of government funding needed for a decisive step forward on TB control will require both the support of a coalition of political forces (including various departments and actors within the Ministry of Health, other ministries, and members of parliament) and increased internal pressure from civil society and the public. As one TB activist said, "We need a broad cross-section of actors involved to have an effective TB control policy. We need advocates *around* the Minister of Health. We need to make TB activists out of politicians. And TB needs to be pushed onto the political agenda, not only of the health ministry, but also the ministries of finance and planning."[33]

Public mobilization

> *Advocacy efforts need to target the many different levels and strata of our society. Different messages have to be developed for different groups. When we advocate, we must tell people where to go and whom to turn to. . . [and we] need to involve a broad range of actors in doing this, such as teachers, bus drivers, local political commissioners, religious leaders who work in poor areas. Different socioeconomic strata and cultural strata have to be "captured" through different strategies.*
>
> *—Shakhawat Hossain, NATAB*[34]

> *There is a big shortage of advocacy at all levels. Government support and ownership is lacking. There should be support for advocacy from the government, and the government should feel ownership for its advocacy efforts.*
>
> *—Khurshid Alam Hyder, national consultant to the WHO*[35]

There is broad agreement among TB policymakers, including NTP officials, that public mobilization is crucial for an effective TB control policy. Insufficient attention has been devoted to the design, implementation, and evaluation of this component of national TB policy, and the level of public awareness and social mobilization around TB in Bangladesh is unacceptably low.[36] Too many people, including people living with TB and their families,

are still uninformed about how TB is transmitted[37] and unaware that TB is curable and treatment is available free of charge.[38]

In the absence of information, stigmatization of TB patients is common. BRAC has reported on these problems: "[C]ommon people would not like to associate with TB patients [for] fear of transmission. . . . None would like to develop marital relations with TB patients. . . . If [a positive TB diagnosis] become[s] known, people might hate TB patients and would [be] less likely to mix with them. [To avoid] such adverse consequences, TB patients would like to hide their problem."[39]

Some Bangladeshi experts contend that without social mobilization to fuel public demand for improved access to quality TB services, the government's TB targets can not possibly be met.[40]

The NTP identifies "behavior, change, and communication" activities as a key component of its overall strategy. The NTP has funded the development and dissemination of national TB control guidelines in English (and an abridged version in Bangla) to encourage awareness of NTP objectives and targets and stakeholder monitoring of NTP outcomes and policies. It has produced and distributed a TB-specific educational poster and flip-chart for use in health facilities. Where available, these materials facilitate the identification of TB cases and the provision of quality TB services;[41] however, many health centers still do not have access to them,[42] and even fewer health professionals have received follow-up training on why, when, and how to use them. Moreover, NTP guidelines are not generally accessible to the broader public. To increase their effectiveness, behavior, change, and communication materials should be designed in close collaboration with the people and communities most affected by TB (and the NGOs that work with them) to ensure that they are culturally appropriate and accessible, widely disseminated (including through community channels), and accompanied by training and other forms of guidance and encouragement.

"People have varying levels of knowledge," one expert said. "A lot of [policymakers] do not even know how to pronounce *mycobacterium tuberculosis*, never mind people in the communities. How much do they understand? The message that goes down to them has to be much simpler than the messages we're talking about now. It has to be done within the community, by people within the community."[43] Another added, "We are producing documents in English for whom? For the donors! [We need materials] in Bangla, Bangla, and more Bangla. And we have to remember that only one in three people can even read Bangla."[44]

Scant resources at the central level have precluded the allocation of sufficient NTP staff, resources, and attention to the development and implementation of public mobilization and advocacy activities.[45] NTP-led advocacy has been limited largely to the organization of events on World TB Day, and since 2003 government support for even these activities has been suspended, apparently "due to other priorities by top level decision makers."[46]

From 2003 to 2005, NGOs such as the Chest and Heart Association filled this gap by organizing independent public information campaigns on World TB Day, but nevertheless the withdrawal of NTP funding and support has had a negative impact on the quality, scope, and media coverage of events.[47] "We can not heap every responsibility on the NGOs," one doctor said. "The government can not forget its responsibility, but must implement a better program, with the people."[48]

NGOs also complement NTP activities by carrying out awareness-raising, education, and outreach programs of their own, often in close consultation with the NTP. For example, BRAC systematically promotes TB awareness through its extensive network of *shastho shebikas* (female community health workers), who routinely conduct TB case-finding and referrals, administer directly observed treatment (DOT), and encourage the involvement of cured TB patients in these activities.[49] BRAC has also developed TV and radio spots featuring popular personalities and produced supplementary TB information and education materials. The organization is also conducting a pilot project in three *upazilas* (subdistricts) with the aim of demonstrating how service delivery can be strengthened through direct community support.[50] Some individual health care providers also provide public information about the importance of early TB diagnosis and treatment, but these efforts are fragmented and limited in scope.

Many TB policy advocates insist that observance of World TB Day, distribution of behavior, change, and communication materials, and isolated activities by NGOs, though important, are not enough; they must be embedded within a broader NTP advocacy and outreach strategy, which recognizes and responds to the fact that TB is not merely a public health problem, but a broader socioeconomic issue. According to some observers, this broader strategy should also involve high-level political advocacy to "put TB on the table" of decision makers and policymakers, and to win cooperation, support, and involvement from other government sectors, including finance, education, planning, and youth, as well as with a range of NGOs, including civic organizations of the poor and the media.[51]

At the same time, TB advocates argue that both policymakers and NGOs must adopt a more effective partnership approach to social mobilization activities—an approach that takes public participation as a fundamental principle, frames access to TB treatment as a right and provision of treatment as an obligation, and reaches out more aggressively to the poor, who are at once most affected by TB and least able to access treatment.

Experts on TB expressed their concerns about the lack of public participation:

> *Partnership is still weak. Ordinary people are treated as the recipients of the services that are being delivered to them, rather than as equal partners in their treatment.*
>
> *—Abdul-Muyeed Chowdhury, executive director of BRAC*[52]

Most of the benefits of communication and advocacy work are reaching the upper 50 percent of the population. In TB, we need to reach precisely the bottom 50 percent. This is a challenge. If we really mean business, we have to find ways and means and strategies for reaching the poor.

—Salehuddin Ahmed, BRAC University[53]

We [TB policymakers] still see ourselves as gatekeepers, who somehow allow the public to participate. Public pressure is still not felt by the NTP; it's still a specialist program, and we're still telling the public what to do—that we know best. We need to show that the right belongs to the people. Provision of TB services has to come to be seen as an obligation. We have to serve the public; we have an obligation to them. Until we make this change, [our efforts are] not sustainable, and we won't reach the targets. We need to look into how we can actually involve the consumers of TB services.

—Afsan Chowdhury, director of advocacy and communications, BRAC[54]

Bangladesh's Fifth Round application to the Global Fund has secured $6.4 million (approximately Tk 456 million) for advocacy and social mobilization activities alone. Planned activities include workshops, meetings with high-level policymakers, media outreach, and development of partnerships.[55] NTP leadership should assign dedicated and well-trained NTP staff to ensure that implementation of this component of the grant draws upon and further develops local advocacy capacity and experience in planning and executing a broad-based, multifaceted, and sustained advocacy campaign. As one prominent and long-time TB policymaker observed, "advocacy has to be *continuous*; one short advocacy campaign will not do."[56]

Media coverage of TB

TB is not given much attention in the media. There is more attention to other diseases which are much less prevalent in Bangladesh. I do not see any patients suffering from SARS or bird flu, but these issues get a lot of coverage, [while] in our country every two minutes a person is infected [with TB], and every 10 minutes someone is dying.

—Mustafizur Rahman, director of National Institute of Diseases of Chest and Hospital[57]

The NTP has not conducted any major media awareness campaigns within the last few years. World TB Day events have received some attention from the national print and elec-

tronic media, but coverage of TB and the government's TB control efforts has not been sustained throughout the year.[58] There are some signs that this situation has started to change with the increasing amount of domestic attention to and international funding for TB.

When media outlets have covered TB issues, the quality of coverage has been good, with presentation of accurate information on substantive issues such as national statistics, TB transmission and symptoms, availability of treatment, problematic issues such as the impact of gender inequalities on access to TB treatment for women[59] and the lack of capacity to diagnose TB in children, and the role of cured patients in TB control activities in their communities.[60] However, some journalists contend that TB experts and policymakers should be more active in consistently providing them with information for stories and articles. As one journalist put it, "Journalists are not able to write articles about [TB] because we lack information. We don't receive information from TB experts and programs in a way that we can use it."[61]

The Daily Star, an English-language daily newspaper widely read in the elite policymaking community, has provided perhaps the best and most consistent coverage on TB.[62] However, these stories—and newspapers in general—reach a limited audience.[63] The NTP and NGO advocates should jointly explore creative ways of encouraging more continuous, high-quality media coverage of TB issues by organizing media information sessions and preparing accessible and compelling materials for print, radio, and television journalists. These materials should be available in English and Bangla and should include information on the location of clinics where patients can receive free TB treatment.

Government Program for TB and TB/HIV control

Program content

The NTP, established in 1993, created a strategic plan for 2006–2010 that includes the following activities:

- Implement all five elements of the WHO-recommended DOTS strategy (political commitment, directly observed therapy, laboratory testing, uninterrupted supply of quality medicines, and standard monitoring and reporting)
- Embrace the global TB control targets of 70 percent case detection and 85 percent treatment success
- Explicitly aim to improve health and family welfare among the most vulnerable women, children, and the poor

There has been significant progress toward achieving these goals. As of late 2005, the NTP reported that DOTS coverage had been extended throughout the country; the treatment success rate had reached the global target of 85 percent; and the case detection rate had risen to 61 percent by 2005—a marked improvement on previous years, though still well short of the global target of 70 percent.[64] (However, the latest WHO data, compiled for 2004, report a case detection rate of only 44 percent.)[65]

NTP guidelines

The NTP has published and distributed regularly updated guidelines to support implementation of its TB control policy to strengthen DOTS implementation, and to develop "beyond DOTS" pilot initiatives.[66] According to a scientist at the International Center for Diarrhoeal Diseases and Research (ICDDR), the guidelines are one of the NTP's strong points.[67]

The NTP is also planning to produce additional sets of guidelines to encourage adherence to DOTS among private practitioners and in the workplace—two areas in which adherence with NTP guidelines has been poor. A great number of TB patients seek treatment from private providers, who often attempt to treat these cases themselves rather than referring them immediately to a DOTS center.[68] TB prevalence is reportedly quite high in factories (particularly among garment workers and in the "Export Processing Zones"

—special government-sponsored areas "where potential investors [can] find a congenial investment climate, free from cumbersome procedures"[69]) and "tea gardens" (or tea plantations),[70] but many workers are reluctant to be tested for fear of losing their jobs if they test positive for TB.[71]

DOTS expansion

> *We have free diagnosis and treatment—but still we are lagging behind in case-finding. This is not only a medical problem; [it involves] social awareness, reaching the poorest of the poor—those people who have no access to media or to health education programs, [and who] don't know that TB treatment is available.*
>
> *—Abdul Hamid Salim, Damien Foundation*[72]

The NTP 2001–2005 strategy aimed to expand the involvement of hospitals, private practitioners, and NGOs in DOTS expansion efforts, particularly through provision of community-based services.[73] Effective partnerships with NGOs in particular have been a key element of the NTP's successes in achieving 100 percent DOTS coverage and 85 percent treatment success. Bolstered by an infusion of resources from the Global Fund starting in 2004,[74] NGOs are now administering two-thirds of the DOTS program.[75] However, a number of challenges remain. Though DOTS administrative coverage is now reported to be close to 100 percent, in many areas practical access to TB services such as microscopy centers and high-quality smear testing is still problematic.

As noted above, the large number of Bangladeshis who go to private practitioners for primary health care services are neither assured of receiving DOT services, nor referred to official treatment centers within the NTP network. Family welfare centers and union-level subcenters, both of which offer primary health care services at the community level, often fail to refer TB patients to DOTS treatment centers as well.[76]

Case detection is a bigger challenge. Though it has risen considerably, the case detection rate is still well short of the global target of 70 percent, and the rate varies considerably by region, from a high of more than 80 percent in the Habiganj region to a low of just under 15 percent in the Chittagong region. "Our main problem is to increase case detection," a BRAC researcher said. "This is as important as the cure of the detected cases. If you don't detect the cases, then you still have scope for transmission."[77]

There is also growing concern that detection only of smear-positive cases is not sufficient,[78] as Bangladeshi experts agree that at least 30 percent of TB cases nationwide are smear-negative.[79] "We have to think about the total burden—not only about smear-positive

cases," another activist said. "If we want to reduce the main burden, we have got to address the smear-negative cases."[80]

Finally, there are concerns about the NTP's capacity to ensure access to TB services at the necessary level on a sustained basis. As noted above, the level of success achieved by the NTP to date owes much to the collaborative work of NGOs. The NTP itself has struggled to win sufficient funding to implement its strategic plan,[81] and on occasion the NTP has been compelled to postpone planned DOTS expansion activities to cover basic expenses such as TB drugs. The NTP should spearhead efforts to expand the capacity of the public health infrastructure to support DOTS expansion, including through infrastructural improvements, such as additional microscopy and x-ray facilities and support for human resource development.

TB/HIV coinfection

> *We should take HIV seriously. There are concentrated epidemics in Bangladesh that give cause for serious concern.*
>
> *—M. Amanullah, member of parliament and the Standing Committee on Health*[82]

NTP officials acknowledge that the potential for an escalating HIV/AIDS epidemic presents an important challenge for TB control.[84] Despite this recognized concern, strong links between the National AIDS/STD Programme (NASP) and the NTP have not yet been established, and the budget for implementing such links has been minimal.[84] There is no system in place to encourage NGOs working in the field of HIV testing, counseling, and care to refer TB suspects to TB treatment centers or to ensure HIV treatment regimens are coordinated with TB treatment.

There is a clear need for dissemination of information to raise awareness about the threat of TB/HIV coinfection, to ensure that the NTP and NASP take effective and coordinated preventive action. Given the country context, it is crucial that the government as well as its NGO partners provide outreach to HIV/AIDS workers to ensure rapid referral of symptomatic patients to TB testing centers. In the longer term, the government and NGOs should work toward establishing one-stop service centers for patients who are living with both TB and HIV.

MDR-TB

> *If the result [of DOTS expansion] is that people follow DOTS treatment half-heartedly, we are just building a factory, producing MDR-TB. We have to explain to patients in clear language that if they don't follow treatment correctly they will get MDR, which will kill them. Until we do that, we are multiplying the MDR problem [with DOTS].*
>
> —*Participant,* Daily Star *roundtable meeting, Dhaka*[85]

Many Bangladeshi experts express serious concern about the possibility that MDR-TB rates are higher than official statistics suggest,[86] particularly in light of low levels of public awareness about the importance of treatment adherence, financial obstacles to completing treatment for the poor, and widespread reliance on private practitioners who do not follow NTP treatment guidelines.[87] "Transportation is costly," one expert said, "so instead of coming to official chest clinics, people just go to the pharmacists or local doctors. This leads to problems of treatment compliance. Treatment compliance may be lower among patients who seek care in the private sector because they can't afford to continue treatment. MDR-TB is three to four times higher in urban settings than in rural settings."[88] As another expert pointed out, "The majority of people do not know about the need for strict compliance to the TB treatment regimen. The moment a patient starts to feel good, they stop treatment."[89]

Though the NTP is well aware of the need for careful surveillance of MDR-TB rates and comprehensive treatment for diagnosed cases, it has so far lacked the resources and capacity to develop and implement a policy to track and treat MDR-TB.[90]

Most laboratories are not equipped to perform culture sensitivity testing and most treatment facilities are not able to offer the second-line drugs necessary to treat MDR-TB.[91] Treatment for MDR-TB is much more expensive than treatment for standard cases.[92] With limited resources at its disposal, until very recently NTP management has placed top priority on expanding and improving the quality of basic DOTS services. "MDR-TB is a burning issue," an expert said. "It is there, but because of resource constraints the NTP hasn't been able to handle it."[93] With support from the Global Fund, the NTP is expected to be able to improve its capacity to deal with MDR-TB in the near future.

The NTP has sought to address MDR-TB by building partnerships with nongovernmental institutions and organizations such as the Damien Foundation and the National Institute of Diseases of Chest and Hospital (NIDCH), both of which provide treatment for MDR-TB patients (though according to slightly different treatment regimens).[94] The NIDCH is able to provide MDR-TB services free of charge, using resources obtained through private fundraising efforts; the Damien Foundation has received some support for its MDR-TB activities from the NTP.[95] Both have reported relatively high failure rates, due to

the extremely complicated cases they take on with limited infrastructure and facilities. The NIDCH's TB culture and drug susceptibility testing services should be upgraded to improve national capacity to manage MDR-TB.[96]

The recently approved Global Fund application included a proposal for development and implementation of a DOTS-Plus program,[97] which is also expected to greatly enhance NTP capacity to manage MDR-TB, including through access to reduced-price, quality-assured second-line TB drugs.

Case recording and reporting

NTP and NTP-affiliated TB facilities throughout Bangladesh follow the standardized system of recording and reporting recommended by the WHO and the International Union Against TB and Lung Disease (IUATLD).[98] However, the large number of private practitioners providing TB treatment services, as well as military facilities, rural hospitals, and traditional healers and others, do not keep records or report results through official NTP channels.

Though there have been a number of pilot projects to promote the integration of private practitioners into the official DOTS recording and reporting system, these are still operating on a very small scale compared to the estimated number of patients involved. To ensure accuracy of reporting on the TB situation in Bangladesh, it will be necessary to capture data on the patients being treated by private practitioners.

Further improvements to NTP recording and reporting could be achieved by improving training for district and national level staff, adopting improved computer software, and encouraging the organization of regular monitoring meetings at the district and subdistrict levels to assess national trends.

Targeting vulnerable populations

The NTP's strategic plan for 2001–2005 identified a need to develop targeted activities to reach populations particularly vulnerable to TB infection, including women, children, and the poor. However, it is clear that intensified NTP efforts (including through expanded partnerships with NGOs working in urban areas) will be necessary to reach the urban poor effectively, particularly people living in slums, factory and tea plantation workers, and prisoners. Sociocultural factors continue to hamper early diagnosis and treatment of TB among women, and lack of appropriate diagnostic tools is a barrier to positive identification of TB in children.

The DOTS divide

We're now looking at the "DOTS divide"—at who is included in TB treatment services, by economic status, social status, and gender. This is not well understood. Smears are coming in from the poor rural communities, but we're still missing the urban poor, and this population is growing.

—Akramul Islam, manager of the health and nutrition program, BRAC[99]

Improvement of economic issues such as housing, sanitation, the environment, and working conditions is one of the best ways to improve the TB situation. I think our problem is here—poverty.

—M. Amanullah, member of parliament and the Standing Committee on Health[100]

The linkage between poverty and TB is well established: malnutrition, overcrowding, poor air circulation, and unhygienic sanitation facilities commonly experienced by the poor all increase the probability of TB infection. One recent government study found that 70 percent of patients at DOTS centers were below the poverty line.[101] Poor people are also relatively less likely to seek diagnosis and to complete treatment due to a variety of concerns, including lack of information about TB, the added expenses associated with lost work and travel, stigma, and passivity in the face of disease.

TB treatment and associated costs are relatively higher for poor people. Although diagnosis and treatment at most of the more than 600 NTP and NTP-affiliated DOTS centers are free, private practitioners charge for consultations, diagnostic tests, and drugs. Up to 70 percent of poor TB patients have consulted traditional healers, homeopathic providers, or allopathic doctors before seeking out DOTS services.[102] There are also indirect costs associated with TB treatment, such as nutritional supplements since patients require an adequate diet. According to one estimate, the costs of TB treatment can be broken down as follows: 29 percent for diagnostic tests, 14 percent for travel, 11 percent for drugs, 6 percent for doctors' fees, 32 percent for food, and 8 percent for other miscellaneous costs.[103]

Finally, there are costs related to lost productivity. TB decreases an individual's mental and physical capacity to work, further adding to the financial burden of treatment and multiplying the extent and impact of poverty. As 90 percent of TB patients are in the most economically productive age group (15 to 54 years), the economic and social burden to their families is massive. In fact, the economic impact associated with TB and TB-coping strategies is credited with pushing 30 percent of nonpoor patients below the poverty line.[104]

The NTP's successful partnerships with NGOs have greatly expanded its capacity to provide home-based care in many areas of the country, minimizing direct and indirect costs for these patients. However, in urban areas the NTP lacks an operational structure and relies heavily on the Urban Primary Health Care Project (a government-sponsored program) for TB service delivery. Additional efforts are required to target slums and poor urban areas more effectively through, among other things, expanded partnerships with NGOs and reinvigorated advocacy, communication, and social mobilization activities.[105]

"We have very little communication with the people who live in slums," an expert said. "We see them, but they are not really present. We have launched some advocacy efforts. We are sending mobile advocacy teams into the slum areas to try to motivate shopkeepers in the slums to post signboards with information on TB and on where to go for treatment. But this kind of isolated advocacy from one project is not sufficient to address what is really a national issue for us."[106]

Women

In addition to the poor, women are especially vulnerable to TB. Due to a range of sociocultural factors, fewer women than men report TB symptoms at public health clinics, undergo sputum smear examinations, and are diagnosed as smear-positive,[107] with the result that official TB data may significantly underestimate both overall TB prevalence and prevalence among women.[108] To control TB among the population as a whole, the NTP should develop initiatives that take gender-specific barriers to TB treatment access into account. Improving TB services for women is also likely to have a positive impact on other health indicators such as maternal mortality.[109]

A recent BRAC research initiative identified some of the specific factors that contribute both to greater vulnerability to TB and a marked reluctance to seek out public health services among women. Though in conditions of poverty both women and men suffer from malnutrition and insufficient food supplies, women are at an added disadvantage due to unequal distribution of food within the family; according to one respondent in the study, "most females eat less—whatever remains after serving all the family members."[110]

Both men and women experience and fear social stigmatization around TB infection. However, women also face social disapproval for displaying physical symptoms such as coughing in public; more intense feelings of shame and loss of esteem; and greater prospect of rejection by their husbands (or by prospective husbands if they are unmarried). In many instances, wives who are diagnosed with TB are returned to their parents' homes.

One woman in a BRAC research survey described her experience this way:

> *My husband is scared of me. . . . He does not appreciate me as before. In fact, my pride, dignity, and honor have decreased to a large extent because of this disease. Nobody associates with me as before. . . . Whenever my nephews come close to me, my mother-in-law takes them away. She . . . keeps on saying that she will arrange another marriage for my husband. My husband also labels TB as a big disease, and he often [tells] me to commit suicide with poison. At this, I get shocked and ask him to buy poison for me. Thus, I am really in a state of mental torture.*
>
> —*Respondent in BRAC research survey*[111]

In addition to these factors, in many communities women must be accompanied by male relatives to visit health centers, which can be difficult to arrange. With more limited financial resources, women also face added difficulties in covering the "hidden costs" of TB treatment, such as transportation. As a result, women are more likely to attempt to hide or deny TB infection, trying home and traditional remedies first, and seeking professional services only as a last resort.[112]

The NTP should take immediate measures to address gender inequalities in access to TB treatment and to increase case detection among women, including development of behavior, change, and communication materials targeting women and private providers consulted by women to increase familiarity with TB symptoms and referral to TB treatment centers; sensitivity training for DOT providers on barriers to treatment for women; introduction of "female-friendly" TB services that are attentive to the need for anonymity, confidentiality, and trust; arrangement of volunteer escort services for female patients; and programs to encourage inclusive family education and involvement in identification of TB symptoms, diagnosis, and treatment.[113]

Children

Given that TB in children often goes undiagnosed in Bangladesh, it is likely that national NTP statistics do not reflect the numbers of children infected with TB.[114] There is a need for additional research on the prevalence of pediatric TB and for the development of systems, including expanded facilities with culture and drug susceptibility testing services, which would increase diagnostic capacity.

Prisoners

Prison conditions, including overcrowding and poor ventilation, contribute to higher rates of TB transmission and disease, and indeed the NTP reports that the incidence of TB in prisons is alarming: 400 cases per 100,000 people, compared to 98–99/100,000 in the general population.[115] The NTP has a comprehensive plan to ensure access to effective TB diagnosis and treatment in prisons, but this plan has not yet been implemented.[116]

Program management

Administration

The NTP program manager oversees DOTS implementation through a network of offices and staff in all 64 districts and in 99 percent of the 464 subdistricts and metropolitan areas. Specialized diagnostic, treatment, and referral services are provided by chest disease clinics in 44 of the district capitals and metropolitan cities.[117] All of these facilities are integrated within the general public health infrastructure. However, NTP services have not been integrated into the health systems of metropolitan areas. Within the limits of this structure, NTP administration generally appears to function smoothly.[118]

Yet, the scale of the TB epidemic clearly outmatches the NTP's administrative capacity, and NTP management has not proven successful in advocating for allocation of the necessary level of resources from the government budget. In 2003, the NTP identified a funding gap of approximately $2.3 million (Tk 163 million) for provision of DOTS services,[119] despite significant contributions from international organizations and domestic NGOs.

The NTP has also struggled to effectively coordinate the substantial TB control activities undertaken by NGO partners, particularly in urban areas. According to the WHO, overlapping areas of responsibility among public and NGO service providers, high staff turnover, insufficient training, poor systems for recording and reporting, and inadequate supervision have compromised the quality of TB services in cities.[120] Still, recent progress toward the achievement of global TB targets owes much to assistance from NGOs and external donors; as one prominent TB expert recently commented, "without BRAC's 283 *upazila* TB program, the case detection rate would be much lower."[121]

The government should consider establishing an independent oversight mechanism to ensure periodic reviews of NTP administration, and to issue and follow up on clear recommendations for specific steps that could be taken to improve the NTP's capacity to effectively manage and guide the implementation of TB policy.

Staffing

> *We need more manpower, political commitment, and dynamic leadership in the TB program in terms of quality human resource allocation; this is very important.*
>
> *—Faruque Ahmed, director of the health and nutrition program, BRAC*[122]

Human resource constraints represent a serious concern for the NTP. With an insufficient number of adequately skilled and trained staff at both the central and field levels, and few incentives on offer to attract new staff, the NTP's capacity to oversee the management and delivery of TB services is severely limited.[123] Stopgap measures such as the temporary use of WHO staff and reliance on NGOs for assistance have been effective in achieving rapid improvements to and expansion of TB control efforts. However, the NTP and donors should place a high priority on measures that would improve the capacity of NTP management, field staff, and laboratory technicians—measures such as enhanced incentive packages, a system for recognizing and rewarding outstanding performance, and regular in-service training and support.

Ensuring adequate training to and supervision of NTP staff has been complicated by the high rate of staff turnover,[124] which in turn is related to low pay, lack of performance-based incentives,[125] and the general absence of a strong program of continuing education and in-service training. The NTP does provide some training for district- and city-level TB managers, mid-level and field-level supervisors, medical assistants, laboratory personnel, medical students, and community activists such as religious leaders.[126] However, the number of courses the NTP is able to offer is insufficient; the WHO recently reported that at least one-half of medical technologists surveyed who were involved in TB control had not been trained by the NTP. The WHO recommends that district-level supervisors provide clinical support to health assistants at the subdistrict level on a weekly basis for training and verification of proper administration of drugs. In practice, however, many DOTS laboratories are poorly supervised.[127] Reportedly, district-level supervisors (and public sector workers in general) earn so little that many see private patients after working hours[128] and may be reluctant to carry out supervisory duties that would take time away from their private practices.

Trained lab technicians have been assigned to 200 rural TB centers in large subdistricts.[129] As there are 464 subdistrict-level public health complexes nationwide, this means that more than one-half still lack trained community workers to deliver DOT and trained personnel to ensure high-quality microscopy services. Few public health facilities have enough staff to carry out their own behavior, change, and communication activities, and must rely on volunteer, NGO, and other community resources to disseminate information on TB and TB services.[130]

The shortage of well-trained NTP staff is exacerbated by the absence of a pool of graduating medical students with specialized TB training. Despite the prevalence of TB in Bangladesh, national medical schools offer very little instruction on TB. Student doctors receive less then 10 hours of lectures on TB, and nurses and paramedics none at all.[131]

Complementary NGO staffing for DOTS service delivery

NGOs have played an important role in the DOTS expansion effort by supplementing inadequate NTP staffing levels. NGO staff members receive regular and systematic training on TB and relevant aspects of TB control policy.

For example, BRAC is providing community-level TB care through *shastho shebikas* (female community health workers) in almost two-thirds of the country. BRAC provides its community health workers with initial training on a range of health issues, including TB, as well as monthly refresher courses to share information, discuss performance and problems, and distribute drugs. *Shastho shebikas* disseminate accurate information about TB and other health issues in their immediate communities, usually consisting of about 300 households. They are able to identify TB symptoms, refer suspects to diagnostic centers, administer DOT, and ensure follow-up with patients who do not come for their medications. Because they provide a wide array of health information and services, *shastho shebikas* are not seen exclusively as "TB workers," which helps to reduce TB-related stigma. BRAC also provides a financial incentive to community health workers for each TB patient cured: TB patients sign a contract with BRAC and pay a bond of Tk 200 (approximately $3); when they complete treatment, patients receive their money back, and the *shastho shebika* receives a small fee of Tk 125 (about $1.90). Finally, some *shastho shebikas* report that they gain a great deal of personal satisfaction by providing these services. In a recent interview, a *shastho shebika* said, "I enjoy my work because it has gained me respect in my community."[132]

In the areas where it is working, the Damien Foundation has established "TB clubs," which engage cured TB patients and patients under treatment in active TB case-finding efforts. The foundation also provides training to "village doctors" (community doctors lacking formal medical training), who are often the first point of contact for many poor TB patients, given their greater accessibility and relatively low fees. Trained village doctors are able to identify TB symptoms, refer patients to diagnostic centers, and deliver DOT. This work is not financially compensated, but reportedly brings participating village doctors regard and esteem within their communities.[133]

The NTP's TB Control Steering Committee established a Working Group on Training, which held its first meeting at the end of 2005. The working group should meet on a regular basis to support the NTP in developing and overseeing implementation of a

comprehensive plan and budget to strengthen NTP supervision in rural and urban areas; enhance the DOTS delivery skills of NTP staff at the union, subdistrict, and district levels; integrate behavior, change, and communication activities into the portfolios of NTP field staff, adding staff where necessary; and build the capacity of NTP laboratory personnel at peripheral and subdistrict levels.[134] The working group should also make and follow through on recommendations in areas in which consultants and health managers could be utilized to strengthen NTP management capacity at the central level.

Monitoring and evaluation

> *There is no mechanism to register the TB patients of private practitioners, and this is very essential. The stats that have been supplied are only related to patients coming to NTP clinics, but we all know that a considerable portion is being treated outside by private practitioners.*
>
> *—AKM Shamsul Haq, former president of the Chest and Heart Association*[135]

A recent comprehensive review of the NTP's recording, reporting and monitoring, and evaluation procedures concluded that the monitoring and evaluation system appears to be functioning in a satisfactory manner. The NTP maintains a national TB reference laboratory and patient registry. DOTS units generally have well-functioning recording procedures, and the majority of units provide quarterly reports to district NTP offices as required.[136] An estimated 10 percent of DOTS facilities do not report, delay reporting, or send incomplete reports.

Some Bangladeshi experts maintain that greater efforts should be devoted to strengthening monitoring and evaluation capacity at the district and subdistrict level, including through more frequent interaction with central NTP staff and expert consultants.[137] The fact that the NTP monitoring and evaluation system does not capture data on the large number of TB patients treated by private practitioners is also a serious deficiency.

The NTP should redouble its efforts to provide training and supervision on monitoring and data analysis to public sector staff at the district and subdistrict levels, in particular to ensure quality-control, prompt follow-up, and corrective measures when reports are not submitted.[138] And the NTP needs to undertake a massive effort to persuade private practitioners of the importance and necessity of recording and reporting all TB cases to the NTP.

Infrastructure, drugs, and research

Primary health care system

There are general concerns about the condition of the public health infrastructure and thus about the quality of health services. Many public health facilities lack proper equipment and waste disposal systems and are unable to ensure adequate services and conditions for preventing transmission of infection, with obvious implications for the quality of DOTS services. Conditions are even worse in many private facilities.

There are an insufficient number of microscopy centers to support NTP policy implementation. The population of one subdistrict, with an average population of 270,000, is served by one microscopy center at the subdistrict health complex. The WHO recommends one center per 100,000 persons.[139] The lack of quality equipment in those laboratories is also of particular concern. While all laboratories have microscopes, only about two-thirds perform high-quality smear tests.[140] Laboratory rooms in some subdistricts are small and poorly ventilated, creating health risks for staff. Though noting recent improvement in external quality assurance measures for microscopy services,[141] the WHO evaluation in 2004 observed that smear tests were often inadequate.[142] Chest x-rays are available in some facilities (e.g., chest disease clinics and hospitals, district and medical college hospitals) for diagnosis of smear-negative and more complicated cases.[143]

As the NTP does not maintain a central inventory of laboratory equipment, identifying a countrywide assessment of specific existing needs among DOTS laboratory facilities has proven challenging. The NTP should carry out a comprehensive needs assessment to identify which facilities still lack necessary equipment and infrastructure, and put a system in place to maintain records on when equipment has been purchased, repaired, maintained, and replaced.

Drug distribution systems

NTP partners have identified the provision of an uninterrupted supply of quality medicines as a priority for increasing access to DOTS;[144] recommendations included establishment of a community health workers' network to ensure "uninterrupted drug supply and to disseminate information."[145] A recent review of NTP implementation confirmed the need for an improved system to ensure organized drug procurement and drug management at the central level.[146]

Since DOTS is part of the "essential services package" under the HNPSP, the NTP works in coordination with the Ministry of Health to ensure an adequate supply of TB drugs.

Fifty percent of TB drugs are provided free of cost from the Global Drug Facility (GDF); 25 percent are purchased by the government; and 25 percent are purchased with funding provided by the Global Fund.[14] The NTP maintains a one-year buffer stock of drugs, and reviews inventory annually, with support from the GDF and the WHO. As noted above, second-line drugs for MDR-TB treatment are not widely available.

Education and research

> *We need to think about research that can be done more easily—smaller-scale studies . . . [that] would tell us more about successful approaches that could be replicable.*
>
> —*Ubaidur Rob, Population Council*[148]

The NTP supports a significant amount of operational research with a range of nongovernmental and international partners to inform and improve DOTS programs.[149] However, establishing a consensus on national research priorities for TB has proven to be a difficult task because of the different research agendas among the government, NGOs, and academic institutions.[150]

In 2001, the NTP conducted a Health System and Services Research Review to build consensus around national TB research priorities. The review resulted in the endorsement of the Charter of Self-Regulation on TB Research, which provides ethical guidelines and calls for joint planning of TB research by the NTP and its partners. The priorities identified through the research process included: 1) human resource development in the NTP at the national level, 2) impact assessment of behavior, change, and communication programs, 3) fee-based services and incentives for NTP providers, 4) health services in the corporate sector and involvement of private practitioners, 5) drug resistance surveillance, 6) DOTS-Plus projects, 7) TB in children, and 8) TB and poverty.

More thorough analysis of NTP case data would help to identify localized causes of the poor TB detection rates and treatment outcomes recorded in specific regions. Researchers should also give attention to the practical issues and problems identified by district-level health practitioners at their regular planning meetings as a basis for identifying future research priorities.[151]

Partnerships

Collaboration with NGOs

> *Without the involvement of community volunteers, DOTS would not be possible. The NTP has been working on DOTS implementation since 1993, and we've seen that it is not possible for patients to come to the health facility every day to swallow the drugs. We have to work through partners, who find the volunteers for providing DOT.*
>
> *—Vikarunnessa Begum, program manager, NTP*[152]

The strong partnerships between the NTP and NGOs for the provision of TB services are virtually unique, and can be credited for the rapid expansion of DOTS services.[153] NGOs have initiated the integration of community-based services into the NTP policy, and have done much to ensure that the response to TB is framed as a comprehensive response to a complex social and economic phenomenon, rather than an initiative of the health sector alone.

The government began to develop partnerships with NGOs soon after the NTP was established in 1993. It sets the terms of these partnerships through regularly updated memoranda of understanding, which assign NGOs providing DOTS services to specific areas (districts, subdistricts, and metropolitan areas) and assure government support in the form of guidelines, drugs, diagnostic tools and laboratory equipment, stationery and office supplies, training, and behavior, change, and communication materials.[154] Thus, some NTP partner NGOs have now been involved in TB control for more than a decade; many are demonstrably stable and self-sustaining, independently generating funds from donors and from their own resources to expand and maintain high-quality activities. Some of the challenges faced by these NGOs include: finding sufficient funding to cover staffing costs; training and retaining staff; ensuring adequate supervision of staff; and fundraising in a context of constantly shifting priorities among donors.

Generally speaking, NGOs providing TB services possess a strong technical skills base and achieve highly satisfactory results both in terms of output achieved and cost effectiveness, particularly in rural areas.[155] For example, BRAC, which is the single largest NTP contractor for community-based DOTS services,[156] has consistently achieved a treatment success rate at or above the global treatment success target of 85 percent.[157] One recent study found that BRAC's TB programs cost less than the government's; the cost per patient cured was $64 (or approximately Tk 4,212) in the BRAC area compared to $96 (or approximately Tk 6,318) in the government area.[158] The Damien Foundation has been providing DOTS

services since 1994, relying on referrals from village doctors to detect about 10 percent of its cases, and to provide DOT to 45 percent of patients in the areas it covers.[159]

According to Faruque Ahmed, director of health programs for BRAC, NGOs possess broader experience and closer contact with poor communities than is possible for the government, placing them in a better position to provide TB services as part of a broader set of poverty reduction activities. He went on to assert that the greater flexibility of NGOs enables them to respond more effectively to the requirements and demands of international donors, to receive and respond to input from consultants offering technical assistance, and to move more quickly in solving problems that arise in connection with DOTS expansion, such as the need for additional program personnel. At the government level, adjustment of programmatic priorities takes more time due to bureaucratic requirements.[160]

Some civil society leaders argue that the extent of NGO partnership on NTP implementation has afforded them a high level of access and the ability to affect the development of government TB policy.[161] For example, NGOs have seats on the mixed PR-NGO Steering Committee, which meets four times annually to review national progress around TB control and to make necessary revisions to the work plan.[162] However, others contend that such close partnership has compromised these NGOs' ability to play the role of independent critic—that because they are so closely identified with the government policy, they are no longer able to view it critically.[163] A structured mechanism for independent civil society review of NTP implementation could play an important role in generating critical discussion and debate around ways in which the national TB policy could be further refined and improved.

Private sector involvement in TB control

It's very easy to say "public-private partnership," but it's very hard to implement. . . . We have no dearth of policies; the question is how to implement them—that is the real challenge.

—Salehuddin Ahmed, BRAC University[164]

Private practitioners are not integrated within the NTP reporting system. In 2005, pilot projects to promote reporting from private practitioners pulled in only about 100 cases in all.

—Akramul Islam, manager of the health and nutrition program, BRAC[165]

NTP officials acknowledge that integration of private practitioners will be essential to reach the 70 percent case detection target,[166] and they have articulated the need to develop a more effective strategy to do so.[167] Initial efforts to deal with this issue, including pilot projects and mapping exercises, have had limited impact to date.

As noted previously, a majority of TB patients seeking treatment turn first to some kind of private practitioner—from specialists (many of whom may hold public sector positions as well) to druggists, pharmacists, traditional healers, and unqualified doctors. Private practitioners are not bound by any law or by a set of regulations requiring them to comply with NTP guidelines, so all of these actors must be persuaded either to do so or to refer TB patients to NTP-affiliated clinics. However, many private practitioners may perceive a conflict of interest in taking the latter course of action, as this could mean a loss of business and income.

To assuage these concerns, it would be important for the NTP to offer some practical incentives for collaboration, such as specialized DOTS training, an effective system to guarantee provision of necessary equipment and supplies, assistance with required case recording and reporting, and mechanisms to facilitate referral of patients to NTP or NTP-affiliated TB treatment centers.

"In general, private practitioners are not directly involved in the TB control program," one doctor said. "They do not follow the DOTS regimen. Record keeping is a big problem. Provision of incentives or support for record keeping and maintain[ing] linkages with local TB control centers [would] bring good results."[168]

Even professional private sector doctors still have reservations about the efficacy of NTP policy; for example, collaboration has not been established between the NTP and the Bangladesh Medical Association in many parts of the country. The NTP recently made some progress on this front: As of 2004, 18 medical colleges and teaching institutes accepted the DOTS strategy as the best way to combat TB.

Collaboration with multilateral organizations and bilateral donors

> *Before the Global Fund, NGOs always had to find all their [own] resources. Now more NGOs are working on TB control, thanks to the Global Fund, but not all of them have long-term missions. . . . Most international cooperation is project based. But we're trying to do long-term thinking. Many international organizations think they will come here and transfer knowledge—but how can you just transfer knowledge and then wash your hands?*
> *—Akramul Islam, manager of the health and nutrition program, BRAC*[169]

There is extensive collaboration between the NTP (and its NGO partners) and a range of international organizations and donors.[170] Recent increases in support from the Global Fund in particular have had a dramatic impact in terms of increased NTP capacity, NGO involvement, and improved rates of DOTS coverage, case detection, and treatment success.

Some Bangaldeshi TB experts strike a cautionary note about the sudden influx of new funding, and emphasize the importance of long-term support for TB control efforts such as that provided by the WHO and the Japanese government.

The Global Fund

The NTP and a consortium of NGOs led by BRAC submitted a joint proposal to the Global Fund in 2003.[171] The proposal was developed on the basis of a collaborative process that included a participatory planning meeting of all NTP partners in 2003. The following priority activities were identified as a result of this process: to strengthen NTP management; to intensify effective NTP partnership and collaboration; to expand diagnostic and treatment services; to plan and implement quality assessment; to adjust existing behavior, change, and communication strategies and implement them; and to strengthen monitoring and evaluation.[172]

A five-year grant of $42.5 million (approximately Tk 3.02 billion) was awarded in 2004. One-third went to the Ministry of Health for program coordination, management, and guidelines for human resource development; behavior, change, and communication strategies; procurement and distribution of drug and laboratory supplies; and monitoring and evaluation. Two-thirds went to the NGO consortium, with BRAC as the principal recipient, for responsibility for implementation of most grant activities.[173] Implementation began in August 2004.

A Global Fund interim progress review concluded that the partnerships between the NTP and NGOs are working well, though it also noted that NTP management capacity is still weak and that government bureaucracy has slowed implementation.[174] One independent observer noted that "[with regard to] money distributed through the government, as a way of promoting government ownership, . . . there is a definite problem of absorption capacity—there's a lot of bureaucracy, corruption and waste."[175] A comprehensive WHO review of NTP programs in 2004 recommended that Bangladesh should be included in the second round of the WHO's new Intensified Support and Action Countries (ISAC) program. This would enable Bangladesh to qualify for increased WHO technical assistance to develop government capacity to effectively spend Global Fund and other major donor grants.

A second grant of approximately $46 million (approximately Tk 3.27 billion) was awarded in 2005 to support, strengthen, and scale up activities initiated with help from the first grant, as well as to implement four broad sets of priority DOTS expansion activities for the period from 2006–2011: increasing access to laboratory services; strengthening DOTS in both urban and rural areas to sustain high cure rates; upgrading chest disease clinics and hospitals; and addressing human resource constraints, particularly in the field of ongoing training and retraining of health staff as well as managerial-level staff and community volunteers.[176] Grant implementation is scheduled to begin in 2006.

The Country Coordinating Mechanism

The Global Fund's Country Coordinating Mechanism (CCM) brings together representatives of the government, NGOs and civil society organizations, religious groups, patient associations, and international organizations for periodic reviews of progress on TB control in general and Global Fund grant implementation in particular.[177] The CCM has three technical subcommittees on HIV/AIDS, TB, and Malaria. The CCM has provided the first national forum to address TB and HIV/AIDS in a coordinated manner.

Some independent observers assert that the CCM has not been very effective in practice, particularly with regard to performance of its oversight function.[178] The fact that senior government officials from different sectors are represented presents a positive opportunity for interaction between the NTP and other governmental departments such as the Ministry of Finance, the Ministry of Education, and the Ministry of Youth and Sports.[179] However, it also means that there are very different levels of knowledge and engagement on the part of CCM members. The Global Fund should either articulate guidelines that would allow the CCM to conduct more in-depth review and evaluation of grant implementation, or consider developing or supporting other mechanisms to ensure systematic, independent review of government and NGO performance on Global Fund grant implementation.

Recommendations

The government of Bangladesh and the NTP should:

- **Explicitly acknowledge the socioeconomic context of the TB epidemic** by:
  - adopting a "pro-poor bias" in all TB strategy and project documents;
  - integrating socioeconomic performance indicators into NTP policy;
  - ensuring effective linkages between the NTP and all government departments and ministries responsible for achieving overall health sector objectives;
  - supporting additional operational research on TB's impact on the poor.

- **Demonstrate greater political commitment** to TB control by:
  - substantially increasing the annual budgetary allocations to the NTP in particular and the health sector in general;
  - recruiting adequate numbers of experienced and trained staff to ensure effective NTP supervision and management at the central level.

- **Expand NTP human resource capacity** by developing and overseeing implementation of a comprehensive plan to:
  - enhance DOTS delivery skills of NTP staff at the union, subdistrict, and district levels;
  - attract highly qualified NTP field staff by offering enhanced incentive packages, a system for recognition of outstanding performance, and regular in-service training and support;
  - strengthen NTP supervision of NTP staff performance in rural and urban areas;
  - integrate behavior, change, and communication activities into the portfolios of NTP field staff, adding staff where necessary;
  - build capacity of NTP laboratory personnel at peripheral and subdistrict levels.

- **Promote transparency and accountability** by making NTP reports more accessible to the public.

- **Articulate and implement a comprehensive behavior, change, and communication strategy**, which addresses the need for:

  – advocacy and awareness-raising among government and parliamentary officials to win broader political support for more attention and resources for TB;

  – continuous use of the mass media (not just on World TB Day) to disseminate public service messages with information on TB symptoms, how TB is spread, the fact that TB is curable, the availability of free treatment, and the importance of completing treatment, through peak-time programming on television and radio, and printed materials in Bangla as well as English;

  – outreach activities and materials to increase public awareness also among communities that do not have consistent access to mass media outlets;

  – differentiated strategies and materials for reaching vulnerable groups such as women;

  – development of effective partnerships with communities to promote ownership of the response to TB among affected communities;

  – indicators for measuring the success of behavior, change, and communication strategies over time.

- **Improve access to TB treatment among the poor**, including through:

  – targeted measures to minimize the "hidden" costs incurred by TB patients;

  – government support for the expansion of community-based DOTS services, particularly in urban areas.

- **Address barriers to TB treatment access for women and children**, including through:

  – gender-sensitivity training for DOTS providers;

  – introduction of "female-friendly" DOTS services;

  – arrangement of volunteer escort services for female patients;

  - programs to encourage inclusive family education and involvement in identification of TB symptoms, diagnosis, and treatment;
  - support for operational research on childhood TB.

- **Encourage collaboration between the NTP and the National AIDS/STD Program**, including by:
  - providing guidelines for NGOs working in the field of HIV/AIDS testing, counseling, and care to increase awareness about TB diagnosis and management;
  - creating mechanisms to encourage referral of suspected TB cases from HIV/AIDS testing centers to NTP and NTP-affiliated TB treatment facilities;
  - drawing up plans for the eventual establishment of one-stop service centers for HIV-positive TB patients.

- **Promote collaboration between the NTP and private health practitioners**, including through:
  - elaboration of a national strategy with guidelines, clear targets, and performance indicators to achieve better collaboration in all aspects of NTP policy implementation from private practitioners;
  - providing support and incentives to private providers, including specialized DOTS training, access to quality laboratory services, effective delivery of appropriate drugs, assistance with case recording and reporting, and mechanisms to facilitate referral of patients to NTP and NTP-affiliated TB treatment centers;
  - evaluation of pilot public-private mix projects and scaling-up of those that have proven successful.

- **Encourage provision of TB diagnostic and treatment services in the corporate sector**, including by issuing workplace guidelines and considering establishment of a regulatory mechanism with compliance incentives as well as measures to discourage dismissal of employees upon diagnosis of TB.

- **Progressively upgrade laboratory facilities and services**, including by
  - conducting a comprehensive needs assessment of conditions in laboratories to map immediate needs and to provide a baseline for future upgrades and repair as well as gradual improvements in ventilation, lighting, etc.;

- articulating minimum requirements for laboratories and a mechanism for ensuring regular maintenance;
- ensuring distribution of microscopy equipment necessary for acid-fast bacilli testing to laboratories throughout the country;
- expanding and enhancing facilities equipped to carry out the diagnosis and treatment of MDR-TB and TB among children.

Nongovernmental and community organizations should:

- **Step-up coordinated advocacy efforts** to articulate public demand for greater political commitment from the government, increased budgetary allocations to health and TB, and reinvigorated pro-poor policies.

- **Encourage, promote, and articulate independent civil society–led review, critique, and evaluation of NTP policies and services** as a way of promoting greater transparency and accountability.

- **Build upon the success of community-based DOTS** by expanding the geographical scope of these programs in partnership with the NTP while continuously improving and maintaining attention to quality of services.

- **Expand human resource capacity and a more participatory, rights-based approach to TB control**, including by:
  - forming partnerships with TB-affected communities;
  - establishing and supporting TB patients' associations;
  - integrating people who have recovered from TB into TB control efforts, including case-finding, DOT provision, and behavior, change, and communication activities.

- **Reinforce behavior, change, and communication efforts** to ensure that vital messages for TB control are communicated in an effective and culturally sensitive manner.

- **Take active measures to confront and reduce stigmatization of TB patients.**

- **Regularly reexamine** strategies and services to ensure that activities and services are attentive to and effective in meeting the needs of the poor, women, and other vulnerable populations.

- **Advocate with medical schools** to encourage greater attention to TB and TB treatment in the curriculum.

- **Help ensure the dissemination of information** about the NTP policy, activities, and report.

The international community should:

- **Maintain or increase levels of support for TB control efforts** to ensure achievement of global TB targets and the development of sufficient government capacity so that TB control efforts can be sustained in the long-term.

- **Provide necessary technical assistance to the government of Bangladesh**, particularly to:
  - enhance NTP management capacity;
  - improve supervision and monitoring skills;
  - establish a system to ensure external quality assurance;
  - develop appropriate TB/HIV collaborative activities.

- **Provide technical assistance and funding to NGOs** for the development and implementation of more effective strategies to reach the poor and other vulnerable populations.

- **Provide resources and assistance for the development and implementation of a range of country-specific behavior, change, and communication tools and activities.**

- **Support civil society advocacy for greater political commitment to TB control and independent assessment and review of NTP performance.**

- **Encourage and provide models for enhanced public-private partnership efforts** between NGOs and other partners, including corporate actors, private providers, the government, and UN agencies.

- **Support operational research**, particularly on:
  - TB and poverty;
  - TB/HIV;
  - DOTS-Plus projects and services;
  - surveillance of drug resistance;
  - models for public-private partnership;
  - advocacy strategies and techniques.

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BRAC organized two roundtable meetings in Dhaka, Bangladesh, the first on December 12, 2005, and the second on December 13, 2005, cohosted with *The Daily Star* newspaper. Public Health Watch would like to thank *The Daily Star* and all the roundtable participants, whose comments and suggestions were invaluable in finalizing this report.

Notes

1. Comment by medical doctor, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.
2. See *Unlocking the Potential: National Strategy for Accelerated Poverty Reduction*, Dhaka Planning Commission, Government of Bangladesh, December 2004, p. 13.
3. Life expectancy rose from 58.7 years in 1995 to 61.1 in 2002. Bangladesh Bureau of Statistics (BBS), Government of Bangladesh, 1997, 2002.
4. Maternal mortality decreased from 4.4 to 3.15 per 1,000 live births from 1996 to 2001. Bangladesh Bureau of Statistics, 2002, pp. 38–39.
5. The infant mortality rate dropped from 153 deaths to 62 deaths per 1,000 live births from the mid-1970s to 2000. Economic Relations Division, *A National Strategy for Economic Growth, Poverty Reduction and Social Development* (Ministry of Finance, Government of Bangladesh, Dhaka, 2003), p. 12.
6. United Nations Development Programme, *Human Development Report 2004*, p. 141.
7. NTP, *Tuberculosis in Bangladesh Annual Report—2003*, Dhaka, 2003, p. 22.
8. NTP, *Annual Report 2003*, Government of Bangladesh (on file with BRAC).
9. Presentation by Vikarunnessa Begum, program manager, NTP, *Daily Star* roundtable meeting, December 13, 2005.
10. Presentation by Vikarunnessa Begum, program manager, NTP, *Daily Star* roundtable meeting, December 13, 2005.
11. K. Weyer, *Tuberculosis in Bangladesh,* 1996 (WHO, October 1997).
12. The most recent World Health Organization (WHO) figures indicated HIV prevalence of 0.1 percent among adult TB patients. WHO, *Global Tuberculosis Control Surveillance, Planning, Financing* (WHO, Geneva 2006), p. 74. See also http://www.unaids.org/en/geographical+area/by+country/bangladesh.asp (accessed on January 22, 2006).
13. See UNAIDS figures at: web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/BANGLADESHEXTN/0,,menuPK:295769~pagePK:141132~piPK:141107~theSitePK:295760,00.html (accessed on January 22, 2006).
14. National AIDS/STD Program (NASP), Ministry of Health and Family Welfare (MOHFW), *National Strategic Plan for HIV/AIDS 2004–2010*, 2005 pp. 1–3.
15. National AIDS/STD Program (NASP), Ministry of Health and Family Welfare (MOHFW), *National Strategic Plan for HIV/AIDS 2004–2010*, 2005 pp. 1–3.
16. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), pp. 21, 75.
17. WHO/IUATLD Global Project on Anti-tuberculosis Drug Resistance Surveillance, cited in WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), and Country Coordination Mechanism (CCM), *Application Form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), pp. 26–27.
18. Interview with AKM Mushfiqur Rahaman Faruque, officer in charge of the NTP at Shyamoly, Dhaka, 2005. One study conducted by the Damien Foundation reported a high rate of MDR-TB cases among previously treated TB cases.
19. Comment by Sadia Dilshad Parveen, NGO Service Delivery Program, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.
20. Comment by WHO representative, BRAC roundtable meeting, Dhaka, December 12, 2005.
21. Government health sector spending is approximately 1 percent of Gross Domestic Product (GDP). *Unlocking the Potential: National Strategy for Accelerated Poverty Reduction* (Dhaka Planning Commission, Government of Bangladesh, December 2004), p. 129.

22. *Unlocking the Potential: National Strategy for Accelerated Poverty Reduction* (Dhaka Planning Commission, Government of Bangladesh, December 2004), p. 128.
23. Bangladesh Bureau of Statistics, 2002, and CCM, *Application form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), p. 26.
24. Bangladesh Bureau of Statistics, 2002.
25. CCM, *Application form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), p. 33
26. Over 65 percent of public health spending is channeled through the essential services package, and over 55 percent of those using district and subdistrict-level health facilities are from the two poorest income quintiles. Economic Relations Division, *A National Strategy for Economic Growth, Poverty Reduction and Social Development* (Ministry of Finance, Government of Bangladesh, Dhaka, 2003), p. 100.
27. The Ministry of Health and Family Welfare is hereafter referred to as the Ministry of Health.
28. MOHFW, *Health, Nutrition and Population Program* (Government of Bangladesh, Dhaka, January 2005), p. 1.
29. *NTP Review and Strategic Plan 2001–2005* (MOHFW, Dhaka, 2001), on file with BRAC.
30. Comment by Afsan Chowdhury, director of advocacy, BRAC, Dhaka, December 12, 2005.
31. Government support for the global targets on TB control has been expressed and reinforced in numerous policy documents. See, e.g., CCM, *Application form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), p. 30.
32. Comments by participants at BRAC and *Daily Star* roundtable meetings, Dhaka, December 12 and 13.
33. Comment by Afsan Chowdhury, director of advocacy, BRAC, Dhaka, December 11, 2005.
34. Comment by Shakhawat Hossain, NATAB, BRAC roundtable meeting, Dhaka, December 12, 2005.
35. Comment by Khurshid Alam Hyder, national consultant to the WHO, BRAC roundtable meeting, Dhaka, December 12, 2005.
36. Interviews with Vikarunessa Begum, NTP program manager; Jalaluddin Ahmed, former deputy director of communicable disease control, Directorate General of Health Services (DGHS); and AKM Mushfiqur Rahman Faruque, officer in charge of the NTP, Dhaka, March/April 2005.
37. See, e.g., Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?" BRAC Research and Evaluation Division, September 2003, p. 6, noting that "some females expressed that TB also could occur from torn sandals (slippers)."
38. "Half of All Bangladeshi Adults Carry TB Bacteria," *The Daily Star*, February 1, 2006. Also, comment by Sadia Dilshad Parveen, Quality Assurance Project of University Research Corporation, BRAC roundtable meeting, Dhaka, December 12, 2005.
39. Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?" BRAC Research and Evaluation Division, September 2003, p. 6.
40. Comment by Afsan Chowdhury, director of advocacy, BRAC, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.
41. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (WHO, Geneva 2005), pp. 63–66. This finding was also supported by research and observation conducted for this report by BRAC in 2005.
42. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (WHO, Geneva 2005), pp. 63–66.
43. Comment by representative of the "NGO Service Delivery Program" of USAID, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.
44. Comment by Zafrullah Chowdhury, project coordinator, Gono Shahsthya Nagar Hospital (GK), *Daily Star* roundtable meeting, Dhaka, December 13, 2005.
45. According to the NTP program manager, a recent grant from the Canadian International Development Agency (CIDA) to support advocacy activities had to be reallocated to buy necessary TB drugs. *Daily Star* roundtable meeting, Dhaka, December 13, 2005. See also CCM, *Application form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), pp. 44–45.

46. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (WHO, Geneva 2005), pp. 63–66.

47. Comment by Asif Mujtaba Mahmud, associate professor, National Institute of Diseases of Chest and Hospital (NIDCH), *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

48. Comment by Zafrullah Chowhury, project coordinator, Gono Shahsthya Nagar Hospital (GK), *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

49. Interviews with *shastho shebikas* in two communities, Dhamrai region, December 14, 2005.

50. Social communication program document, BRAC Advocacy Unit, 2005 (on file with BRAC).

51. Comments by Akramul Islam, program manager of BRAC Health and Nutrition Program, BRAC roundtable meeting, Dhaka, December 12, 2005 and Asif Mujtaba Mahmud, associate professor, National Institute of Diseases of Chest and Hospital (NIDCH), *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

52. Comment by Abdul-Muyeed Chowdhury, executive director of BRAC, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

53. Comment by Salehuddin Ahmed, BRAC University, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

54. Comment by Afsan Chowdhury, director of advocacy and communications, BRAC, Dhaka, December 12, 2005.

55. *Proposal to the Global Fund Against AIDS, Tuberculosis and Malaria*, Fifth Round, 2005 available at: www.theglobalfund.org/search/docs/5BANT_955_0_full.pdf.

56. Comment by Ahsan Ali, former NTP director, BRAC roundtable meeting, Dhaka, December 12, 2005.

57. Mustafizur Rahman, director of National Institute of Diseases of Chest and Hospital (NIDCH), BRAC roundtable meeting, Dhaka, December 12, 2005.

58. BRAC review of major press outlets (both Bangla and English), September 2003 to September 2004.

59. "Gender Barriers to TB Control in Bangladesh," *Daily Star*, April 25, 2004.

60. See, e.g., "TB Kills One, Catches Five Every Ten Minutes," *Daily Star*, March 25, 2004; "Fact Sheet on Tuberculosis," *Daily Ittefaq*, March 21, 2004; and "Tuberculosis of the Lungs," *Daily Ittefaq*, June 13, 2005.

61. Comment by Razu Ahmed, *Daily Amar Desh* (daily Bangla language newspaper), comments by participants at BRAC roundtable meeting, Dhaka, December 12, 2005.

62. For a representative sample of recent *Daily Star* reporting on TB, see www.thedailystar.net/2006/02/01/d60201060172.htm; www.thedailystar.net/2005/12/14/d5121401097.htm; www.thedailystar.net/magazine/2003/10/04/coverstory.htm (accessed February 2, 2006).

63. Recent estimates indicate a literacy rate of 41.1 percent. UNESCO Institute for Statistics, July 2002, cited in *Human Development Reports Country Sheet on Bangladesh*, hdr.undp.org/statistics/data/ (accessed February 2, 2005).

64. Presentation by Vikarunnessa Begum, NTP program manager, at BRAC roundtable meeting, Dhaka, December 12, 2005.

65. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (WHO, Geneva 2006).

66. NTP, *National Guidelines and Operational Manual for Tuberculosis Control,* Third Edition, July 2004, and *Laboratory Manual on Smear Microscopy and Tuberculosis and its Quality Control*, Third Edition, 2003.

67. Interview with K. Zaman, scientist, International Center for Diarrhoeal Disease Research, Dhaka, March/April 2005.

68. Comments by Mirza Hiron, NIDCH, BRAC roundtable meeting, Dhaka, December 12, 2005 and A.K. Ahsan Ali, former director of NTP and IUATLD board member, *Daily Star* roundtable meeting, December 13, 2005. See also *Study on Tuberculosis and the Poor*, Government of Bangladesh, Dhaka, June 2002.

69. See www.epzbangladesh.org.bd/Prologue.php?=eae1717e29de32b46a288afb60d6ac26 (accessed May 23, 2006).

70. Comments by Tahmina Aziz, line director, TB & Leprosy Control Program, *Daily Star* roundtable meeting, Dhaka, December 13, 2005, and interview with Akramul Islam, manager of the health and nutrition program, BRAC, Dhaka, December 14, 2005.

71. Observations on basis of BRAC's experience at a DOTS treatment center in Chittagong. See also Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?", BRAC Research and Evaluation Division, September 2003, p. 5, noting reports of people losing their jobs after receiving a TB diagnosis.

72. Comment by Abdul Hamid Salim, Damien Foundation, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

73. This recommendation was echoed in a NTP planning meeting with NTP partners (CCM, *Application Form for Proposals to the Global Fund*, MOHFW, Dhaka, 2003, p. 9).

74. BRAC was awarded a grant of $11,172,846 for TB activities aimed at "increasing access to DOTS and improving the quality of services" in the Global Fund's Third Round in 2003. Grant implementation began in August 2004. See www.aidspan.org/grants/bangladesh_tuberculosis_(ban-304-g02-t).htm (accessed February 4, 2006).

75. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 23.

76. Comments by Hamid Selim, Damien Foundation, BRAC roundtable meeting, Dhaka, December 12, 2005.

77. Comment by Fazlul Karim, BRAC Research and Evaluation Division, BRAC roundtable meeting, Dhaka, December 12, 2005.

78. Comments by representatives of the Chest and Heart Association and the Office of the Directorate General of Health Services, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

79. Comments at BRAC roundtable and *Daily Star* roundtable meetings, Dhaka, December 12 and 13, 2005.

80. Comment by representative of the Bangladeshi Chest and Heart Association, BRAC roundtable meeting, Dhaka, December 13, 2005.

81. The WHO estimated a budget shortfall of $1 million (or approximately Tk 65.8 million) in FY 2003 for DOTS expansion initiatives, and estimated an even greater shortfall of $1.25 million (or approximately Tk 82.3 million) in 2005. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), pp. 25–26.

82. Comment by M. Amanullah, member of parliament and the Standing Committee on Health, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

83. For example, the NTP's annual report for 2003 devoted significant space to TB/HIV coinfection issues, and made recommendations for increased collaboration between the NTP and NASP. NTP, *Tuberculosis in Bangladesh Annual Report—2003* (Dhaka, 2003), pp. 23–24.

84. The NTP budgets for 2003 and 2004 did not include any allocation for TB/HIV activities and the estimated budget for 2005 was $80,000 (approximately Tk 5,266,400). *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 25.

85. Comment by participant, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

86. Comments by participants, *Daily Star* roundtable meeting, Dhaka, December 13, 2005. Comment by Afsan Chowdhury, director of advocacy, BRAC, Dhaka, December 11, 2005.

87. According to the WHO representative in Bangladesh, a substantial number of MDR cases show resistance to medications commonly prescribed by private practitioners. Comments at BRAC roundtable meeting, Dhaka, December 12, 2005.

88. Comment by Akramul Islam, manager of the health and nutrition program, BRAC, Dhaka, December 14, 2005.

89. Comment by Sadia Dilshad Parveen, Quality Assurance Project of University Research Corporation, BRAC roundtable meeting, Dhaka, December 12, 2005.

90. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (WHO, Geneva 2005), pp. 63–66. Confirmed in interview with AKM Mushfiqur Rahaman Faruque, NTP, Dhaka, March/April 2005.

91. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 75.

92. The government reports spending Tk 900 (or approximately $13.67) to cure each TB patient, but would have to spend many times this amount to re-treat patients who have been ineffectively or incompletely treated previously. *NTP Annual Report 2004*, p. 6

93. Comment by Asif Mujtaba Mahmud, associate professor, the National Institute of Diseases of Chest and Hospital, BRAC roundtable meeting, Dhaka, December 12, 2005.

94. The Damien Foundation follows a 15-month regimen, and only hospitalizes patients during the intensive phase of treatment. The NIDCH follows a slightly longer 18- to 24-month treatment regimen, with hospitalization for longer periods.

95. The 2004 NTP budget allocated $75,000 for purchase of the second-line TB drugs used to treat MDR-TB. However, only $5,000 was spent by BRAC and the Damien Foundation, leaving a funding gap of $70,000 (approximately Tk 4,608,100). WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), pp. 25–27.

96. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), on file with BRAC.

97. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 82.

98. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), pp. 21, 54. Confirmed by Akramul Islam, manager of the health and nutrition program, BRAC, Dhaka, December 11, 2005.

99. Comment by Akramul Islam, manager of the health and nutrition program, BRAC, Dhaka, December 14, 2005.

100. Comment by M. Amanullah, member of parliament and the Standing Committee on Health, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

101. MOHFW, *Study on Tuberculosis and Poor* (Government of Bangladesh, Dhaka, June 2002).

102. MOHFW, *Study on Tuberculosis and Poor* (Government of Bangladesh, Dhaka, June 2002).

103. CCM, *Application Form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), p. 112.

104. CCM, *Application Form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), p. 112.

105. For example, the *Fidelis* program is supporting BRAC to develop innovative approaches to improving case detection in areas that are not currently being reached. Comment by Shaila Rodrigues, secondary secretary for development, Canadian High Commission, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

106. Comment by Muhammed Iqbal, project director, Urban Primary Health Care Project (UPHCP), *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

107. Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?" BRAC Research and Evaluation Division, September 2003, pp. 28–29. See also CCM, *Application Form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), p. 27.

108. The male-to-female ratio of new smear-positive patients was 1: 0.44 in 2001, *Millennium Development Goals: Bangladesh Progress Report* (Government of Bangladesh and the UN Country Team in Bangladesh, February 2005), p. 43.

109. "Increased detection and cure of females will have a considerable impact on maternal mortality as TB has been found to be the major cause of maternal death in high TB burden, low income countries." *Millennium Development Goals: Bangladesh Progress Report* (Government of Bangladesh and the UN Country Team in Bangladesh, February 2005), p. 43.

110. Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?" BRAC Research and Evaluation Division, September 2003, p. 7.

111. Respondent in BRAC research survey, cited in Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?" BRAC Research and Evaluation Division, September 2003, pp. 24–25.

112. Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?" BRAC Research and Evaluation Division, September 2003, pp. 28–29.

113. For expanded set of recommendations, see Fazlul Karim, Insana Begum, Akramul Islam, and AMR Chowdhury, "Gender Barriers to TB Control: Fade-out or In?" BRAC Research and Evaluation Division, September 2003.

114. Tahmeed Ahmed, ICDDRB, cited in *The Daily Star*, March 24, 2004.

115. Presentation by Vikarunnessa Begum, NTP program manager, roundtable meeting, Dhaka, December 12, 2005.

116. *NTP Annual Report 2003*, p. 23.

117. For example, more complicated cases in need of hospitalization are referred to the National Institute of Diseases of Chest and Hospital and other tertiary care hospitals. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 22.

118. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), confirmed by public officials and NGO representatives interviewed by BRAC for this report in 2005.

119. CCM, *Application Form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), p. 44.

120. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 31.

121. Comment by Zafrullah Chowdhury, project coordinator, Gono Shahsthya Nagar Hospital (GK), *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

122. Comment by Faruque Ahmed, director of health and nutrition program, BRAC, Dhaka, December 2005.

123. Interview with Mahbubur Rahman, line director for Primary Health Care (PHC), 2005, noting that the skill level of DOTS service providers, including laboratory technicians, is "not sufficient," and that "more training should be arranged for skill development."

124. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 33.

125. Confirmed in BRAC interviews with Vikarunnessa Begum, NTP program manager, and Fazlul Kabir Rumi, medical officer for TB control in the Dhaka Civil Surgeon's Office, Dhaka, 2005.

126. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 58.

127. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 37.

128. Comments by Afsan Chowdhury, director of advocacy and communications, BRAC, Dhaka, December 11, 2005.

129. Interview with Vikarunnessa Begum, program manager, NTP, Dhaka, 2005.

130. CCM, *Application Form for Proposals to the Global Fund*, MOHFW, Dhaka, 2003, p. 44.

131. Comment by Zafrullah Chowhury, project coordinator, Gono Shahsthya Nagar Hospital (GK), *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

132. Interview with *shastho shebika* in Dhamrai region, December 14, 2005.

133. Response from Damien Foundation to a survey sent out in 2001 by RPM Plus, Stop TB, WHO, and the World Bank, available at: www.msh.org/projects/rpmplus/pdf/tb/CountryPage/F40_BangladeshDamien Foundation.pdf (accessed February 5, 2005).

134. The development of this plan should be facilitated by receipt of Global Fund Grant resources in 2004, including funding for human resources development. See CCM, *Application Form for Proposals to the Global Fund*, MOHFW, Dhaka, 2003, p. 113.

135. Comments by AKM Shamsul Haq, former president of the Chest and Heart Association, professor of chest diseases, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

136. A comprehensive review of NTP programs was conducted by a joint WHO/NTP team in September 2004. The review team visited four different regions, assessing TB control services in selected chest disease clinics, chest disease hospitals, subdistrict health complexes, medical college hospitals, and NGO facilities. The review was published in 2005. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), pp. 8–10; pp. 55–58.

137. Comments by Akramul Islam, manager of the health and nutrition program, BRAC, and AKM Shamsul Haq, former president of the Chest and Heart Association, professor of chest diseases, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

138. CCM, *Application Form for Proposals to the Global Fund,* MOHFW, Dhaka, 2003, pp. 123–124.

139. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 32.

140. BRAC staff confirm a pressing need for more quality microscopes at the field level. Interview with Faruque Ahmed, director of health programs for BRAC, Dhaka, March/April 2005.

141. "The progress of the microscopy network and EQA has been impressive. Essential equipment is present in more centers, stain preparation has been centralized and is better controlled and EQA by rechecking is now covering most of the microscopy centers." WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 33. See also CCM, *Application Form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), p. 9.

142. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 33.

143. CCM, *Application Form for Proposals to the Global Fund*, MOHFW, Dhaka, 2003, pp. 30, 34.

144. Participatory planning meeting among NTP partners, March 2003.

145. NTP partners' meeting, March 2003, cited in CCM, *Application Form for Proposals to the Global Fund* (MOHFW, Dhaka, 2003), p. 9.

146. WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), pp. 51–53.

147. Information provided by Vikarunnessa Begum, NTP program manager, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

148. Comment by Ubaidur Rob, Population Council, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

149. The NTP's partners on operational research projects have included local and international research institutions, including the International Institute for Health, the University of Leeds, BRAC, the Damien Foundation, the ICDDR, and the Research Institute for Tuberculosis. WHO, *Global Tuberculosis Control Surveillance, Planning, Financing* (WHO, Geneva 2005), pp. 64–66.

150. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (WHO, Geneva 2005), pp. 64–66.

151. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (WHO, Geneva 2005), pp. 64–66.

152. Comment by Vikarunnessa Begum, program manager, NTP, *Daily Star* roundtable meeting, Dhaka, December 13, 2005.

153. MOHFW, Directorate General of Health Services, assisted by the WHO, August 9, 2001, pp. 1–2.

154. As of 2004/2005, the government held memoranda of understanding with: The Leprosy and TB Coordination Committee (a coalition of nine NGOs including the Damien Foundation), BRAC, NATAB, The Urban Primary Health Care Project (implemented in partnership with various local NGOs), the NGO Service Delivery Programme (implemented in partnership with various local NGOs), ICDDRB, HIV/AIDS Network (a coalition of NGOs), Bangladesh Buddhists Association, and Sandhani (the medical students' organization), WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), p. 29. The Global Fund proposal also listed memoranda of understanding

with the U.S.-based University Research Corporation and the UK-based University of Leeds. *Proposal to the Global Fund Against AIDS, Tuberculosis and Malaria*, Fifth Round, 2005, p. 119, available at: www.theglobalfund.org/search/docs/5BANT_955_0_full.pdf.

155. NGOs "have shown high cure rates and a positive trend in case detection across most sites where they are implementing DOTS. Quality-assured sputum microscopy services are available in most NGO areas, drug interruptions have hardly occurred in the last twelve months, recording and reporting have been strengthened and referral systems are being developed." WHO, *Report of the Third Review of the NTP in Bangladesh—September 2004* (WHO, February 2005), pp. 30–31.

156. As of 2004, BRAC reported that its TB program reaches a population of approximately 82 million (two-thirds of the entire country's population). *BRAC Annual Health Report 2004*, p. 19.

157. A. Mustaque, R. Chowdhury, Sadia Chowdhury, Akramul Islam, et al., "Control of Tuberculosis by Community Health Workers in Bangladesh," *The Lancet*, Vol. 350, July 19, 1997, pp. 169–72. BRAC's 2004 annual report notes a treatment success rate for new patients of 89 percent. *BRAC Annual Report 2004*, p. 49.

158. Akramul Islam, AMR Chowdhury, J. Patrick Vaughan, et al., "Cost-effectiveness of Community Health Workers in Tuberculosis Control in Bangladesh," *Bulletin of WHO 2002*, 80 (6) pp. 445–450.

159. From website of the World Lung Foundation, http://www.worldlungfoundation.org/map_bangladesh.html.

160. Comments by Faruque Ahmed, director of health programs, BRAC, Dhaka, 2005.

161. Comment by Faruque Ahmed, director of health programs, BRAC, Dhaka, December 14, 2005.

162. The Steering Committee's working members include two representatives from the Lung and Tuberculosis Coordination Committee (LTCC), two BRAC representatives, a UPHCP representative, a NATAB representative, a ICDDRB representative, a WHO representative, the NTP Program Manager, the MBDC Director, the TB-Leprosy Program line director, and the Directorate General of Health Services (DGHS). The Global Fund management coordinator is a nonvoting member.

163. Comment by Afsan Chowdhury, director of advocacy, BRAC, Dhaka, December 14, 2005.

164. Comment by Salehuddin Ahmed, BRAC University, *Daily Star* roundtable meeting, December 13, 2005.

165. Comment by Akramul Islam, manager of the health and nutrition program, BRAC, Dhaka, December 14, 2005.

166. Presentation by Vikarunnessa Begum, program manager, NTP, BRAC roundtable meeting, Dhaka, December 12, 2005.

167. CCM, *Application Form for Proposals to the Global Fund*, MOHFW, Dhaka, 2003, p. 9.

168. Interview with Jalaluddin Ahmed, deputy director of the National Institute of Ophthalmology, 2005.

169. Comment by Akramul Islam, manager of the health and nutrition program, BRAC, Dhaka, December 14, 2005.

170. Japan Resource Institute, Leeds University (UK), WHO, Stop TB, IUATLD, KNCV, CDC, World Bank.

171. The BRAC-led consortium includes 10 NGO partners: ICDDRB, National Anti-Tuberculosis Association of Bangladesh, Damien Foundation, Urban Primary Health Care Project, RDRS, Lepra Bangaldesh, Danish Bangladesh Leprosy Mission, HEED Bangladesh, Lamb Hospital, and Salvation Army. *Annual Health Report 2004*, BRAC, p. 21. According to BRAC, NGO partners were selected on the basis of several criteria, including demonstration of previous commitment (years of experience working on TB); record of strong performance; and previous inclusion among the list of NGO signatories to the NTP's Memorandum of Understanding. Comment by Akramul Islam, manager of the health and nutrition program, BRAC, Dhaka, December 14, 2005.

172. See *Grant Performance Report*, September 6, 2005, available at: www.theglobalfund.org/search/docs/3BANT_594_263_gpr.pdf (accessed February 6, 2006).

173. Executive Summary, *Bangladesh HIV/AIDS, TB and Malaria Proposal to the Global Fund*, available at: www.theglobalfund.org/search/docs/3BANT_594_0_summary.pdf (accessed February 6, 2006).

174. *Grant Performance Report*, September 6, 2005, available at: www.theglobalfund.org/search/docs/3BANT_594_263_gpr.pdf (accessed February 6, 2006).

175. Comments by NGO representative (anonymity requested), Dhaka, December 2005.

176. *Proposal to the Global Fund Against AIDS, Tuberculosis and Malaria*, Fifth Round, 2005, p. 66, available at: www.theglobalfund.org/search/docs/5BANT_955_0_full.pdf.

177. The CCM is chaired by the secretary of the MOHFW. Members include several other MOHFW representatives, as well as representatives from the Directorate of Health Services, the Ministry of Finance, and other relevant ministries, and the WHO and the World Bank. The CCM also includes representatives from the LTCC, the Nari Unnayan Shakti, NATAB, BRAC, the Bangladesh Private Medical Practitioner Association, the Bangladesh Association of Pharmaceutical Industries, a former TB patient, a person living with HIV/AIDS, Sandhani, the Scouts and Girl Guides, and faith-based groups.

178. Comment by Afsan Chowdhury, director of advocacy and communications, BRAC, Dhaka, December 14, 2005.

179. CCM, *Application Form for Proposals to the Global Fund*, MOHFW, Dhaka, 2003, pp. 15–16.

III.
TB Policy in Brazil

Contents

Executive Summary

After over a decade of weak, poorly coordinated policies, the Brazilian government has made a commitment to improve Brazil's shameful position of 16th on the World Health Organization (WHO) list of 22 TB high-burden countries. As a middle-income country with a proud record of offering universal access to health care and high-quality HIV/AIDS services, Brazil should be able to reach this goal, but only time will tell.

Many Brazilian health experts have suggested that the country's poor record on TB is the result of increasing poverty and deteriorating socioeconomic conditions. This report asserts that the Brazilian government's failure to control TB decisively is due to years of limited public engagement and insufficient political commitment to fighting TB as well as uneven application of TB control policy across the country.

Brazil's highly decentralized health care system grants significant autonomy to state and municipal authorities in the implementation of federal policies. The system functions relatively efficiently for some health programs, such as the National Program for Sexually Transmitted Diseases and AIDS (NSAP). However, until quite recently the federal government was not willing to implement its own TB policy. Many state and municipal authorities were unable and sometimes unwilling to put that policy into practice. Lacking sustained financial and technical support from the federal level, state and municipal governments developed and implemented independent TB policies without coordinating these policies either with each other or with the National TB Control Program (NTCP).

This lack of coordination on TB control efforts is perhaps best illustrated by the record of implementation of the WHO-recommended DOTS TB control strategy. The Ministry of Health (MoH) first recommended the adoption of DOTS as a national policy in 1996, and the NTCP subsequently affirmed DOTS as its recommended strategy in 1999. However, protracted academic debates about the relative merits of alternative approaches to TB control and strong opposition to the strategy from certain factions within the NTCP delayed the initiation of DOTS implementation countrywide until 2004.

Long-term neglect of the TB program is clearly reflected in national data. DOTS coverage in Brazil is still low, both in absolute terms and relative to other high-burden countries, though it should be borne in mind that expansion of services in a country the size of Brazil presents significant challenges. TB prevalence and mortality rates reflect broader socioeconomic patterns, with poor and disadvantaged communities suffering the greatest impact. State and municipal TB authorities have failed to respond to these demographic realities by designing and financing programs to minimize the hidden costs of accessing public TB services that are otherwise free of charge.

TB/HIV coinfection is a growing problem, and though official figures reflect success in treating cases of multidrug-resistant TB (MDR-TB), high rates of default on TB

treatment give cause for concern about a possible rise in levels of drug resistance. Generally speaking, the national infectious diseases surveillance system is weak: states with stronger institutional infrastructures have established relatively strong systems for monitoring TB rates, but it is likely that states with fewer resources are failing to diagnose and treat a significant number of TB cases.

Brazilian public health professionals are underpaid, and a lack of investment in human resources has led to difficulties in recruiting highly skilled staff, to low staff morale, and to deterioration in job performance. Many dedicated TB workers continue to serve even under these difficult circumstances, but there is an urgent need for a structural review of Brazil's human resource policies as a preliminary step to the development of long-term solutions.

From a civil society standpoint, the Brazilian government has simply not been held accountable for effective implementation of its stated TB policy, perhaps due in part to the absence of mechanisms to allow for public scrutiny of government efforts in this area, including by the people and communities most directly affected by TB. Public awareness of TB is low, even among groups at high risk of infection, such as people living with HIV/AIDS. Yet until quite recently, there were few efforts to harness the powerful social mobilization around AIDS to promote civil society engagement in TB policymaking processes, and the NTCP resisted community-led proposals to integrate TB and HIV policies.

However, this scenario is rapidly changing. There have been recent signs of renewed political commitment to TB control. First, the NTCP's adoption of clear policy guidelines and targets in 2004 has offered much-needed leadership and technical support to state and municipal authorities. Second, the initiation of regular regional meetings between national policymakers and state and municipal TB managers has led to visible improvements in communication and coordination. Third, the MoH has fostered the creation of a new Brazilian Partnership against TB, a clear sign of its support for renewed, integrated, and multisectoral TB control efforts. And finally, the federal government has called for increased collaboration on TB control among key international partners, different sectors of government and other MoH programs, including the NSAP and the Family Health Program (Programa Saúde da Família, or PSF).

The Brazilian government should reaffirm its willingness to be held accountable for ensuring that its national TB policy delivers positive outcomes and high-quality services for the people and communities affected by TB. It can do so by encouraging and supporting civil society groups to be substantively involved in designing and implementing a long-term strategy to raise public awareness about TB and TB/HIV; assisting with programs to encourage adherence to treatment by ensuring proper care and support for TB patients; and regular monitoring and review of TB policies at the federal, state, and municipal levels, including operational research to gauge user satisfaction with TB services over time.

Background

Patients arrive at the emergency room, dying of TB without ever having accessed diagnostic services.

—Margareth Dalcolmo, coordinator of the Outpatient Clinic, Centro de Referência Professor Helio Fraga, and president, TB Commission of the Brazilian Thoracic Society[1]

Despite a universal health care system and world-renowned health programs in a number of areas, Brazil records an unacceptably high number of new TB cases and deaths from TB annually. Moreover, official statistics may underestimate the problem, since many TB patients die without ever being formally diagnosed.

Baseline statistics

The Federal Republic of Brazil is the largest and most populous country in Latin America. As of 2006, Brazil's population was roughly 186 million,[2] with 81 percent living in urban areas.[3] According to the Pan-American Health Organization (PAHO), Peru and Brazil together are responsible for 50 percent of all TB cases in Latin America.[4] The MoH estimated that approximately 50 million Brazilians were infected with TB as of 2004,[5] placing the country 16th on the WHO's list of 22 TB high-burden countries.[6]

There are sometimes discrepancies between MoH figures and the figures reported in the WHO's annual *Global Tuberculosis Control* report. For example, the WHO report of March 2004 reported TB incidence to be 62 per 100,000 population, compared to MoH figures of 47.2 per 100,000 population for the same period.[7] Since the WHO relies on national ministries of health for data on TB, a difference of this magnitude is puzzling and merits explanation.

Brazilian MoH data indicates that TB incidence has declined significantly since 1982, though the decline has slowed in the past few years.[8] According to the WHO, prevalence has also declined, but is still high at 77 per 100,000 population.[9] TB is the fourth largest infectious cause of death in the country, accounting for more than 5,000 deaths every year.[10] It is notable that the slight decrease in treatment success rate (to approximately 75.2 percent)[11] has taken place in the context of rising case detection rates.[12] At the same time, approximately 9.5 percent of TB patients default on treatment[13] and a significant number of patients complete treatment without evidence of smear conversion. The MoH has

acknowledged its dissatisfaction with these figures.[14] Furthermore, some Brazilian experts have suggested that a concurrent growth in population and the decline in the quality of the TB surveillance system may be contributing to inaccuracies in current TB statistics.[15]

Official figures reveal significant regional disparities in the prevalence of TB. In the state of Rio de Janeiro, for example, prevalence is significantly higher than the national average at 99 per 100,000 population, with 17,000 new cases registered in 2004; the state's mortality rate reached 5.7 per 100,000 in 2003, which was twice the national average for that year.[16] Moreover, there are strong indications that many TB patients die without ever being formally diagnosed.[17] For example, the Rio de Janeiro state TB program estimates that "20 percent of patients are not diagnosed at an early stage, fueling transmission; many cases are only diagnosed in the hospital or after death."[18]

Regional disparities reflect broader socioeconomic patterns, with poor populations and regions suffering higher TB prevalence. There is an increased vulnerability to infection among certain groups, including Brazilians of African descent, who represent nearly 70 percent of those living in the greatest poverty and confront a history of discrimination and restricted access to health care.[19]

TB/HIV coinfection is an increasingly serious problem, particularly in those regions with high TB prevalence. Coinfection rates range from 25.9 percent in Porto Alegre, to 8.1 percent in Rio de Janeiro, and 2.5 percent in São Luiz.[20] According to official statistics, the incidence of MDR-TB is low: approximately 0.9 percent of all TB cases are HIV-positive. Some officials from the National TB Reference Center believe that an ongoing national assessment (the "National Inquiry on MDR-TB") may reveal that the incidence of coinfection is even lower than previously thought.[21] However, the high treatment default rate cited above gives cause for concern about a rise in rates of resistance to first-line TB drugs.

Brazilian health care system: universal access and decentralization

In 1990, Brazil adopted a universal health care system, the Sistema Único de Saúde (SUS), which is based on principles of universality, integrity, equity, and decentralization of health services.[22] The SUS is federally mandated and regulated, and implemented at the federal, state, and municipal levels through both public and private health services. Specific regulations guide the allocation of authority and financing for different health programs.[23] TB diagnostic and treatment services, including laboratory tests and drugs, are considered part of the basic public health care package in all regions and are provided free of charge to patients throughout the country.[24]

The quality of SUS services varies among different states and municipalities. Uniformity in service provision depends on the strength of a particular program's admin-

istrative structures and guidelines.[25] For example, the NSAP and the national cancer and heart disease programs have developed a strong administrative structure and clear operating guidelines and have been successful both in ensuring a consistently high quality of service and in winning prestige for their performance. NTCP administrative structures and guidelines have been weak. Thus the program has found it more difficult to ensure either consistency in the quality of TB service delivery across the country or implementation of federal policies such as DOTS. One researcher at the Federal University of Rio de Janeiro (UFRJ) noted that weak supervision from the NTCP in the context of Brazil's decentralized system has led to incoherence in TB control efforts and a lack of incentives for individual TB managers to coordinate their activities with other municipal and state authorities.[26] The adoption of clear federal TB policy guidelines in 2004 provides a strong basis for dramatic improvements in this area.

Many Brazilian experts agree that decentralization of TB services should be calibrated to the conditions prevailing in each state and municipality so that a "full decentralization at any cost" approach can be avoided.[27] In fact, the number of primary health care units offering TB services is determined in part by the level of decentralization in each state. For example, in São Paulo municipality, 350 of 390 primary health units offer basic TB diagnostic and treatment services, including sputum collection and provision of TB drugs.[28] However, the case of São Paulo is exceptional; in other municipalities such as Porto Alegre, TB services are available in "reference centers" (large health units) or hospitals, rather than in primary health units.[29] TB authorities in the state of Rio Grande do Sul have also decided to concentrate efforts to expand TB services in the 24 municipalities (out of 496) that carry 75 percent of the state TB burden; 232 other municipalities with much smaller populations offer TB services through designated reference centers.[30] In some cases, TB programs can utilize the infrastructure of other health programs such as the Family Health Program (PSF) to deliver TB services, but this is not an option in all states. In states and municipalities where TB services are more centralized, DOTS expansion and implementation is more difficult to achieve.[31]

Political commitment

> *The problems with the TB control policy will not be satisfactorily resolved if they are dealt with exclusively from a technical-normative perspective. On the contrary, [dealing with these problems] depends on a political solution, involving various state and social actors . . . the prioritization of TB in the SUS . . . [as well as] the development of mechanisms for inter-sectoral integration."*
> *—Antonio Ruffino-Netto, coordinator of epidemiology, and Tereza Cristina Scatena Villa, coordinator of operational studies, TB Network (Rede TB)*[32]

Brazil's position as a TB high-burden country is primarily the result of a general absence of governmental accountability on TB policy. And this situation can be attributed largely to lack of engagement in the development, implementation, and evaluation of TB policy by the people and communities most directly affected by the disease. However, this scenario is rapidly changing. Recent developments offer favorable evidence of renewed political commitment to TB control and augur well for the future.

Political commitment at the federal level

The MoH first recommended DOTS in 1996 with the launch of the Emergency Plan for TB Control.[33] Under the leadership of its manager at the time, the MoH formally adopted the DOTS strategy in 1999.[34] However, factions within the MoH as well as other Brazilian TB experts continued to regard DOTS as a "heresy" and actively opposed implementation of the strategy until 2003.[35] Moreover, until quite recently the NTCP did not encourage community engagement in TB service delivery or in monitoring TB policy implementation. The NTCP also actively opposed community-led proposals to harness the powerful social mobilization to combat AIDS in order to promote TB control and collaborative TB and HIV policies.[36]

In 2004, this situation changed abruptly as a result of growing domestic and external pressure on the federal government. First, international actors such as the WHO, PAHO, the U.S. Agency for International Development (USAID), the U.S. Centers for Disease Control and Prevention (CDC), and members of the global Stop TB Partnership and the International Union against Tuberculosis and Lung Disease (IUATLD) had become increasingly critical of the Brazilian TB situation. Secondly, both state government officials and community organizations expressed growing frustration with the absence of accountability for a federal TB policy that was not delivering positive outcomes, especially in the states of Rio de Janeiro and São Paulo. Thirdly, the federal government was reportedly embarrassed by the difference in performance between the NSAP and the NTCP. Finally, a number of

municipal and state-level initiatives supported by PAHO, USAID, and other international health institutions were clearly performing better than the NTCP and attracting considerable recognition and support.

In February 2004, the MoH responded to these pressures by adopting a new policy for the NTCP with clear guidelines and targets.[37] The 2004 policy represents a radical shift in the government's approach to TB control. It not only reaffirms the government's commitment to DOTS as stated in the 1999 policy, but also highlights the need for enhanced collaboration between the NTCP and the NSAP and the value and importance of community engagement. The 2004 policy also calls for regular meetings between national-level policymakers and state and municipal TB managers to encourage more coordinated implementation of TB control efforts.

This new NTCP policy and the shift in attitude it represents have already produced a number of encouraging results. Regional meetings of TB programs are now taking place regularly, with high-level participation from the NTCP, the MoH, the NSAP, and international organizations such as PAHO. These meetings are encouraging local TB managers to adopt DOTS and to work in a more collaborative manner with the NTP, producing a much-needed shift in attitudes and approaches to dealing with the disease.[38]

In November 2004, the minister of health officially announced the creation of the Brazilian Partnership against TB (the national equivalent of the global Stop TB Partnership);[39] since then, members of the Brazilian Partnership have also participated in regional coordination meetings.[40] The Partnership provides a mechanism for dialogue and cooperation among a broader group of key policy actors, including other federal programs (such as the NSAP) as well as international partners and domestic NGOs and networks. The formation of the Partnership represents a public acknowledgement of the government's intention to change its way of doing business and its support for a renewed multisectoral TB control effort.

Since 2004, TB has become a more common topic in the public statements of major political figures. For example, on November 6, 2005, President Luiz Inacio Lula da Silva made a joint statement with U.S. President George W. Bush in Brasilia on the need for enhanced international cooperation on TB, AIDS, and malaria control.[41] Such expressions of high-level political support have helped to effect changes in public perceptions of the disease and have given a new momentum to NTCP activities. Recent statements by MoH officials at public meetings and events suggest that higher priority is being placed on TB control activities than in the past.

While government health officials do not cite the Amsterdam Declaration to Stop TB, the Declaration's main points are reflected in NTCP policies and official statements. For example, the current federal NTCP manager has made reference to DOTS and other interna-

tional TB commitments in recent speeches at regional meetings of state NTCP managers.[42] The national secretary of health surveillance deserves particular credit for his candor in speaking about the current TB situation: "With the tools we have in Brazil, we could have gone farther than we actually have. This is why the Ministry of Health of this Administration has chosen [TB] as one of its top priorities."[43]

Political commitment at the state level

Brazil's decentralized political system coupled with the absence of a strong federal TB policy to date has led to considerable variations in levels of commitment to TB control among different states and municipalities and thus to variability in the effectiveness of state and municipal TB programs. Even where state and municipal officials are personally invested in the issue, they may face political and financial constraints to implementing effective TB control measures.

For example, TB control officials in the state and municipality of São Paulo have succeeded in securing political support despite the considerable challenges of dealing with the epidemic in such a large and densely populated area. With clear political support, more consistent levels of funding, and better infrastructure than many other states and municipalities, the São Paulo state and municipal TB program operates relatively efficiently; it is well integrated with other municipal programs and services, such as the São Paulo state AIDS program, and has achieved good results, with approximately 85 percent of its municipal health units offering TB services.[44] The state of São Paulo's strong TB infrastructure has facilitated DOTS expansion, though directly supervised treatment (DOT) is still not a realistic option for many working people. With limited financial and human resources at their disposal, São Paulo municipal authorities have focused their efforts on providing DOT to groups of people who are at higher risk of defaulting on treatment, including alcoholics and homeless people.

In other states, where political support for TB control has been less consistent, there is a clear gap between policy and practice. For example, although the current governor of the state of Rio de Janeiro[45] identified TB and leprosy as the state's top disease concerns during her election campaign, she transferred hundreds of millions of dollars from the state health budget into its *Cheque-cidadão* program (a social welfare program). This move generated tremendous controversy, serious clashes between the legislative and executive branches of the state government, and significant media coverage. One component of the state's program stipulated payment of a monthly stipend to poor TB and leprosy patients to help them cover basic needs, but TB patients were never able to access the promised assistance, as a state act to regulate and provide for this program has never been signed.[46] The governor's

measures in reducing the health budget to provide welfare aid proved ineffective and led to significant delays in implementation of the state of Rio de Janeiro's TB control program (PCT-RJ).[47] In addition to these funding cuts, delays in receipt of international funding have contributed to a severe budgetary crisis for the state TB program.[48] Still, Lísia Freitas, head of the PCT-RJ, points out that "the program has continued to receive political support from the state authorities" and has registered progress on DOTS expansion through direct cooperation with municipal coordinators and the expansion of case detection services to prisons and hospital emergency rooms, despite all the difficulties.[49] It should be highlighted that during the same period the municipality of Rio de Janeiro made clear progress on DOTS implementation, with clear political support from the municipal government and a strong boost from international partnerships to fund operational research.[50]

In Rio Grande do Sul, though the head of the state TB program has expressed support for decentralization, municipal TB officers have put up strong resistance due to reduced personnel and administrative and financial constraints.[51] As a result, TB services are concentrated in the 24 municipalities that carry 75 percent of the state TB burden. In Rio Grande do Sul and many other states, the constraints faced by municipal officials, together with widespread belief in the efficacy of self-administrated treatment, lead to a clear resistance to the DOTS implementation.[52]

Public mobilization

> *People find it very strange when I speak openly about having TB—they feel ashamed of having the disease.*
>
> *—Ezio T. dos Santos Filho, Public Health Watch researcher*[53]

Many Brazilians, including those most vulnerable to TB infection, are unaware that TB is still a problem in their country. Stigmatization—and self-stigmatization—of TB patients is common. People commonly react with incredulity to a diagnosis of what is considered a disease of the past. TB is associated with poverty and poor sanitary conditions, and the country's long history of treating the disease in sanatoria is still alive in people's memories. Low awareness and stigmatization are the main reasons for the absence of social mobilization around TB and the lack of a strongly articulated demand for improved TB service delivery.

Public awareness of the threat posed by TB and TB/HIV is extremely low, even among groups most at risk of infection such as people living with HIV/AIDS. A series of social mobilization workshops for HIV/AIDS activists in Rio de Janeiro in 2003 revealed

a lack of awareness of even basic issues such as how TB is spread and the fact that the disease is curable; the majority of workshop participants had never heard of MDR-TB.[54] Awareness is even lower among the poor and marginalized populations that are hardest hit by TB. There is, at both the state and municipal levels, a general scarcity of information and educational materials that communicate the basic facts about TB and TB/HIV in clear, accessible, and nonscientific terms for the general public. As one activist noted, "we still need to take the scientific data and translate it into the language of civil society so it can be read, understood and acted upon."[55]

Rather than harboring particularly positive or negative attitudes about TB and TB patients, most Brazilians are ignorant of the fact that TB is an urgent current issue, rather than a problem of the past. At the same time, people who have been infected with TB often feel ashamed of their condition and actively seek to avoid being identified as a TB patient. For example, patients in the Federal District (Brasilia and surrounding cities) often choose to receive treatment at clinics farther from their homes to avoid letting people in their neighborhood find out that they have TB.[56]

In 2002, the Rio de Janeiro and the São Paulo state TB programs began to invest in social mobilization efforts with the objectives of promoting greater awareness of TB and TB/HIV, stimulating public demand for better TB services, and encouraging civil society monitoring of TB policy.[57] These important state-led initiatives have led to several of the most significant advances in awareness-raising and public mobilization over the past few years, most notably the establishment of the Forum of NGOs Fighting TB in the state of Rio de Janeiro and the Network for Social Control of Tuberculosis in the state of São Paulo. The Brazilian Country Coordinating Mechanism's (CCM's) successful Fifth Round proposal to the Global Fund to Fight AIDS, Tuberculosis and Malaria outlines plans to expand these efforts to other parts of the country, inspired by these examples.[58]

Stigma, low awareness, and the demographic profile of TB patients are all obstacles that will make spontaneous social mobilization, such as occurred with the effort to eradicate TB in the late 19th century and with the fight against AIDS in the 1980s, all but impossible. In this situation, the NTCP as well as state- and municipal-level officials have a special responsibility to encourage and support the participation of community organizations and people affected by TB in TB control efforts. Rather than seeing this as an additional financial obligation, the federal, state, and municipal governments should acknowledge that actively supporting social mobilization is the best way to promote civic monitoring of and public demand for improved TB services.

Communications policy

There is nothing more than a poster on the wall
in health facilities to promote awareness.
—Ezio T. dos Santos Filho, Public Health Watch researcher[59]

Prior to 2004, the federal government did not consider communications to be a necessary component of its TB strategy, and thus there was no national TB communications policy. There was little attention to TB as a serious and current public health issue in the Brazilian media. State and municipal governments implemented TB communications efforts in an ad hoc manner, mostly in health care facilities, if at all.[60] The Ministry of Health has not maintained an updated, systematic record of these activities or their impact, and the CRPHF (Centro de Referência Professor Helio Fraga or Brazilian National TB Reference Center) seems to be the only health institution with archives of TB campaigns from previous decades.[61]

The NTCP still lacks a strategic plan to help guide a sustained public mobilization and awareness-raising effort in states and municipalities throughout the country. The 2004 national TB policy does include a communications component, the implementation of which is overseen by a dedicated MoH official.[62] On the basis of this policy, the NTCP sponsored a national TB awareness campaign in 2004, involving TV and radio spots as well as advertisements in newspapers and magazines, in which a famous actor encouraged people with TB symptoms to be tested. Media coverage of TB has increased somewhat, but still tends to focus on World TB Day, special events such as the establishment of the National Partnership to Stop TB, or crises, like the interruption of TB services at the Raphael de Paula Souza municipal hospital in Curicica, Rio de Janeiro. However, there has been little follow-up to the 2004 campaign.

In 2005, a partnership involving the MoH, the Ataulpho de Paiva Foundation, and other institutions launched a new campaign, with production support from the British Broadcasting Corporation (BBC), this time with impact evaluation. Again, this latest initiative does not appear to be linked to a broader communications strategy that would require government planning and budgeting. The CCM's Fifth Round proposal to the Global Fund included a communications strategy component, which is to be developed over the next few years. For now, however, there is still no sign of a sustained and comprehensive communications effort that would integrate the ongoing participation of officials from the NTCP, its partners in the government sector, and civil society, rather than one-off campaigns as in 2004 and 2005.

Government program for TB and TB/HIV control

Historical development of TB control policy in Brazil

> *What you today call 'DOTS' was used long ago; we nurses . . . used to provide directly observed treatment for patients down in Picos, Piauí State, in the mid-1960s. We referred to it as 'supervised treatment.' Patients—men and women—received their medication on their way to do field work, very early in the morning. That was a comprehensive approach to treatment, which involved the family and attained very high cure rates.*
>
> *—Elsa Ramos Paim, former SESP nurse*[63]

To understand the current TB situation in Brazil, it is necessary to understand the historical process by which a highly effective national TB policy—which was the genuine product of a mass social mobilization movement—lost political and public support.

Brazil has a long history of both governmental and civic TB control efforts. At the turn of the 20th century, TB was the leading cause of death in Rio de Janeiro. In response, a coalition of influential medical, legal, and business professionals formed the League Against Tuberculosis to "implement in the country treatment and prophylaxis for tuberculosis, based on modern science."[64] In 1945, the government established the National Campaign Against Tuberculosis,[65] which quickly became a key public health program.[66] Throughout the late 1940s and the 1950s, the National Campaign managed an extensive network of public TB sanatoria with approximately 12,000 hospital beds for TB in-patients by 1950. In 1956, it introduced the daily "triple-scheme" therapy[67] to encourage out-patient treatment. The National Campaign received a significant portion of its budget from the National Health Department (over half for a period during the 1950s). Although criticized for being too centralized and government-driven and for focusing exclusively on the most affected areas while neglecting other areas, the campaign achieved a spectacular reduction of TB rates in the major cities, and enormously decreased the number of hospitalized TB patients.

One of the pioneering elements of the campaign was its partnership with the Special Service on Public Health Program (SESP),[68] which promoted greater involvement of nurses and nutritionists in TB control efforts. The SESP not only utilized "visiting nurses"—

a method that had been used since the 1920s—but also incorporated "assisted" or "observed" treatment by "health visitors."[69]

The SESP's investment in the recruitment and remuneration of highly qualified public health professionals is widely admired today. For example, the former head of the state of Rio de Janeiro's TB control program noted:

> *Fundação SESP used to be the institution of excellence for public health. Professionals were of the highest level and received the best remuneration among the health institutions in the country. That was a good example of what can be done in health—when you invest in good health professionals and support their professional development.*[70]

The military coup of 1964 ushered in major changes to the public health system, including a shift toward privatization and decentralization of health services. From 1966 on, successive reforms to the health system led to the introduction of a contributive or social welfare approach (*previdenciario*) and a progressive decline in the Ministry of Health's budget.[71] Brazilian TB officials made courageous and creative attempts to respond to the dilemma posed by the drastic reduction in TB facilities and services which ensued.[72] Most notably, Germano Gerhard Filho, the director of the NTCP from 1979 to 1983,[73] introduced several revolutionary innovations. The most important of these was the six-month, short-course therapy that included rifampicin, a new and very expensive drug that would increase the cost of treatment 20-fold.[74] Gerhard Filho also initiated the combination of two drugs in the same capsule[75] and the creation of unified TB treatment guidelines in 1982. These bold steps are widely credited for the continued decline in TB incidence during this period. According to the current NTCP manager, "the short-course scheme broke with the paradigm of the in-patient and was an important tool for the reintegration of the TB patient into society and the labor market."[76]

A number of important structural changes also took place during this period, which coincided with that of Brazil's final military administration, that of President General João Baptista de Oliveira Figueiredo, which lasted from 1979 to 1985.[77] First, the budgets of the Ministry of Welfare and the Ministry of Health were merged. Second, while the new treatment scheme was 20 times more expensive,[78] it nonetheless helped significantly to reduce in-patient expenditures[79] since fewer patients had to be hospitalized. Third, several important aspects of NTCP management[80] were transferred from Brasilia to Rio de Janeiro,[81] which was seen as an effort to improve the efficiency of NTCP operations. However, the establishment of this separate "cabinet" location later led to conflicts between the NTCP in Brasilia and the CRPHF.

An unintended side effect of the new treatment regimen's success was a growing belief that TB should no longer be seen as a major public health issue, and the budget for TB control activities decreased steadily throughout the 1970s and early 1980s. In the context of decreasing remuneration, the prestige and high status previously attached to the public health profession continued to decline—a process that had started in the mid-1960s. During the 1980s, the public health community was focused on debates over whether to maintain a contributive social security system or to adopt a universal access approach. The adoption of a new constitution in 1988 signaled that the universal access model would prevail, and this in fact occurred with the initiation of SUS in 1990.

Also in 1990, President Fernando Affonso Collor de Mello declared publicly that TB was no longer a major public health problem in Brazil. Some observers believe his statement reflected general overconfidence at the successful transition from sanatoria-based TB services to ambulatory TB services. However, Margareth Dalcolmo notes that the TB situation at that time did not justify such confidence:

> *TB incidence was still at least 50 cases per 100,000 inhabitants [in 1990]. In other words, [TB was still] a public health problem of great magnitude, affecting people in their 20s and 30s, their most productive phase. [President Collor's misjudgment] led to the arbitrary decision to end the National TB Campaign and ignored all the knowledge that had been acquired over decades of work.*[82]

The timing of the president's statement could not have been more unfortunate for TB control efforts. Even as TB services were being reduced to the bare bone, HIV/AIDS was reaching epidemic proportions. In 1992, Brazil recorded the second-largest number of AIDS cases in the Americas,[83] and ultimately HIV/AIDS contributed to a resurgence in TB rates in the 1990s.

From the mid-1990s to the early years of the 21st century, the paths of the NTCP and NSAP diverged considerably. The NTCP continued to grow significantly weaker in terms of financial resources and strategic leadership, and Brazil eventually won the dubious honor of its current place among TB high-burden countries. By contrast, from 1992 the NSAP began to receive increased attention and funding, most notably from the World Bank in 1993, and went on to win global acclaim for its aggressive and effective response to HIV/AIDS.[84]

Program content

The 2004 national TB policy explicitly addresses all five elements of the DOTS strategy, adopts the global targets of 70 percent case detection and 85 percent treatment success, and includes policy implementation guidelines for regional and municipal officials. In addition, the Brazilian Society for TB and Lung Diseases (the Brazilian Thoracic Society) and the National TB Reference Center have developed and disseminated treatment guidelines.[85]

At the federal level, President Lula's "Fome-Zero" Program (a social welfare program) formally recognizes the need for a linkage between health programs and social welfare programs. Though very controversial in the early period of President Lula's administration, the program has shown some impressive results in the past few years, according to the *O Globo* newspaper.[86] Likewise, the Brazilian government has long recognized that it is necessary to provide incentives to encourage treatment adherence among the overwhelming majority of TB patients who are poor. For example, in 2002, the National Health Conference issued a general recommendation that health programs should provide funding for nutritional support as an important tool for promoting health.[87]

In some municipalities, including Rio de Janeiro and São Paulo, TB patients are eligible to receive monthly food baskets as well as food coupons and transportation subsidies, but this is not the case in many other areas of the country. Many health professionals and health managers are hesitant to adopt social assistance policies for fear of being associated with what some Brazilians consider to be populist measures. However, greater attention to the links between TB and poverty is crucial in order to improve national treatment success rates.

DOTS expansion

The 2004 national TB policy clearly embraces the DOTS strategy, setting a target to expand DOTS services by 2007 to 315 priority municipalities that carry over 80 percent of the national TB burden.[88] According to the WHO, DOTS coverage reached 52 percent in 2004, representing a rapid increase from 34 percent in 2003 and 3 percent in 1998.[89] The latest MoH data confirm this trend, recording an estimated DOTS coverage of 63.8 percent for 2005, and 76.4 percent by the end of 2006.[90]

This rapid increase in national DOTS coverage over the past few years can be attributed in part to the expansion of DOTS services, beginning in 1997, in Rio de Janeiro and São Paulo states (including both capital cities) as well as in six cities in the states of Paraíba[91] and Recife[92] (in the northwestern region) and in the mid-western region.[93] However, some

Brazilian experts maintain that MoH and WHO statistics do not present an accurate picture of the situation on the ground.

In practice, capacity to implement DOTS varies considerably among and within states and municipalities, and full DOTS services (including DOT) are not always available even in areas considered to be "covered" by DOTS. Consultation with the NTCP revealed that "DOTS coverage" figures refer to the number of health clinics in the 315 priority municipalities that offer supervised treatment (DOT),[94] or full DOTS services. In other words, although 63.8 percent of municipal health units in the 315 priority municipalities already offer DOT, the entire population of these municipalities is not in fact "covered."[95] Moreover, as Afrânio Kritski of the Federal University of Rio de Janeiro commented, "There are several Brazils. . . . DOTS in one region may have nothing in common with DOTS in another region."[96] Finally, many TB officials assert that even if they support the DOTS strategy in principle, providing DOT to all patients is not feasible given the financial and human resources at their disposal. They argue that comprehensive implementation would require significant new funding to hire additional staff and to provide treatment incentives for TB patients.[97]

DOTS expansion would require a complete change in not only the current health system but also the mentality of health care providers. According to the head of the TB Division of the Sao Paulo State Health Department, Vera Galesi, "DOTS implementation is synonymous with a fully functioning health system." She went on to explain that if the health system is able to provide diagnostic sputum tests to all patients with respiratory symptoms of TB, offer directly observed short-course therapy, ensure a regular supply of medications, register the progress of each case in full, and guarantee political commitment to TB control, "then you have a system that is working well, and then you can ensure DOTS."[98]

There is broad consensus among Brazilian TB experts that effective expansion of access to TB services including DOT cannot be sustained unless additional resources are invested in strengthening health management capacity, improving the situation for health workers, and providing treatment support to TB patients.[99] At present, however, most TB facilities are still short on both staff and resources. Even where patients have the option of traveling back and forth to the health unit every day (or three times a week) to receive DOT, staff can ensure direct supervision only for the most "complicated" patients, including those with TB/HIV coinfection, homeless people, alcoholics, and others. Many patients choose to take responsibility for treatment themselves due to their work schedules or a wish to avoid being identified publicly as a TB patient.[100]

Still, anecdotal evidence suggests that the number of patients taking advantage of DOT increases when clear incentives are available. For example, one clinic in Rio de Janeiro provides TB patients who opt for DOT with supplementary medical services as well as food baskets and transportation subsidies; at that clinic, an estimated 88 percent of TB patients

have chosen to receive DOT.[101] The federal government has already begun to provide funding for DOTS expansion activities, and levels of support are due to increase dramatically with the recent award of a Fifth Round Global Fund grant.[102] Interviews with state TB control managers suggest that these resources will greatly enhance their capacity to implement DOTS fully.[103]

Even with increased resources, more work is still needed to win the hearts and minds of TB administrators and workers with regard to DOTS implementation. Many health workers and administrators, who have observed the response to the HIV/AIDS epidemic, point to the fact that complex antiretroviral (ARV) treatment regimens are largely self-administered as a justification for leaving TB treatment in the hands of TB patients. The NTCP should step up its efforts to develop and communicate clear and persuasive arguments for the importance of direct supervision in ensuring treatment compliance, reducing default rates and preventing the emergence of drug resistance. Doing so could have important implications for the NSAP as well, since ARV resistance is an increasingly important issue that has received insufficient attention to date.

The Brazilian scientific community provided an important source of support to the MoH's DOTS expansion efforts with the 2004 publication of its *TB Guidelines* (second edition).[104] Although the guidelines underline that "there is not enough scientific evidence to indicate supervised treatment as a universal regimen in the treatment of tuberculosis," they attach importance to DOTS expansion efforts and acknowledge positive outcomes, including improved management of TB services, greater adherence to treatment, and lower default rates in the states of Paraíba and São Paulo and the municipality of Rio de Janeiro.[105]

Finally, the current NTCP administration has demonstrated its capacity to implement the MoH policies published in 1999 and to accelerate DOTS implementation by avoiding the internal conflict and opposition to the strategy that plagued earlier administrations. Support for DOTS expansion from PAHO and USAID has also proven invaluable.

TB/HIV coinfection

> *At present, only an individual with good connections and access to top-quality medical assistance (including rapid TB diagnostic tests) can survive a complex TB/HIV coinfection in Brazil.*
>
> *—Ezio T. dos Santos Filho, Public Health Watch researcher*[106]

Managing TB/HIV coinfection presents a major challenge to the Brazilian health system. Prior to 2004, there was little communication or cooperation between the NTCP and the NSAP. However, the 2004 NTCP policy includes a strong TB/HIV component which stipu-

lates specific collaborative activities and affirms the NTCP's interest in learning from the NSAP's successful social mobilization efforts.

An estimated 10 percent of people living with TB are HIV-positive and an estimated 20 percent of people living with HIV/AIDS have pulmonary TB.[107] People living with both diseases face a significantly higher risk of death. For example, while the mortality rate for both TB patients and AIDS patients on ARVs is at or below 5 percent, coinfected persons who are diagnosed with TB at a later stage of infection (often in hospitals) tend to die within 30 days of diagnosis if they do not receive treatment. In these cases, according to Valéria Rolla, a research coordinator for lung diseases at IPEC-FIOCRUZ, "health professionals have to hold their breath and control their anxiety to treat the patient well." She emphasized that both the TB and HIV/AIDS guidelines recommend treating TB first, before initiating ARV treatment, in order to avoid "confusing side-effects, allergy and high toxicity, which can lead to hepatitis and other complications." She added: "[W]e treat many difficult cases of coinfection, but we see that initiating TB treatment first has a positive impact on both infections, even reducing the patient's viral load. Approximately 15 days after initiating TB treatment we check the patient's condition and start with ARV treatment about 30 days later." Rolla noted that enormous progress has been made in the last 15 years; if coinfected patients tended to die within a year from diagnosis in the early 1990s, "now they can survive much longer. It is very hard to estimate how long a patient can live, but less than 10 percent die, if treated."[108] Still, despite the overall decrease in the number of TB cases in the last 20 years, for people living with HIV/AIDS, TB is one of the top three causes of death from an infectious disease nationwide and the leading cause of death in the state of Rio de Janeiro.[109]

Integrated TB/HIV services are already available in some areas. For example, in the Federal District, HIV tests are routinely offered to any patient with respiratory symptoms of TB, and lung examinations are carried out for all 1,500 registered AIDS patients at least once a year.[110] The Federal University of Espírito Santo (UFES) has initiated production of rapid HIV testing kits and the MoH plans to introduce rapid HIV testing for TB patients at TB units throughout the country by the end of 2006. However, access to integrated services is still limited in most parts of the country.

The 2004 policy is already producing positive results in that it is encouraging joint planning as well as practical collaboration between the NTCP and the NSAP at the federal, state, and municipal levels. For example, the two programs have joined efforts to reconstitute a "TB/HIV Advisory Committee;" articulated plans for joint social mobilization activities (which have received support from the Global Fund's Fifth Round and the MoH); identified liaisons between programs at the state level; and taken steps to unify their respective strategies and guidelines on coinfection.

The Brazilian Thoracic Society's *2004 TB Guidelines* include clear recommendations on TB treatment and prophylaxis for HIV patients, and TB prophylaxis is generally available, though interruptions in drug supplies are not uncommon. NSAP treatment guidelines have included indications regarding TB prophylaxis since the early 1990s.[111] Of course, the effectiveness of these guidelines greatly depends on the extent to which they are applied by health workers.

Both the NSAP and the NTCP have also taken independent steps to promote TB/HIV collaborative policies. For example, the NSAP has appointed Fabio Moherdaui to act as a liaison officer in its headquarters office in Brasilia to ensure regular communication with the NTCP. According to Moherdaui, the NSAP has adopted the goals of integrating TB and HIV services in health units, improving case detection among contact persons with respiratory TB symptoms, and enhancing coordination and sharing of NTCP and NSAP surveillance data.[112] Moherdaui's appointment has led to strong NSAP participation in NTCP regional meetings and meetings of the Brazilian Stop TB Partnership, where he has been a strong proponent of community mobilization efforts, particularly the participation of community representatives in TB policy discussions. As recently as June 2003, the CRPHF decisively rejected community proposals to increase collaboration with the NSAP on social mobilization, but it has since revised this position. The CRPHF now publicly welcomes and supports social mobilization initiatives[113] and has in fact provided funding for several activities of the Forum of NGOs Fighting TB in the state of Rio de Janeiro.

MDR-TB

Official statistics suggest that MDR-TB is not currently a serious problem, with an incidence of 0.4 percent, or 400 new cases a year (which is below the WHO estimate of 0.9 percent). CRPHF epidemiological surveillance of MDR-TB, which was initiated in 2000, recorded a total of 2,350 MDR-TB cases between March 2000 and March 2006. Forty-two percent of these cases were from the state of Rio de Janeiro, confirming historical trends in the epidemiological profile of TB in this region.[114] According to some experts, Brazil's currently low MDR-TB rates can be attributed to several factors, particularly the combination therapy introduced in the 1980s.

Both the CRPHF and the NTCP are justifiably proud of Brazil's comprehensive and well-maintained MDR-TB database,[115] which facilitates close and accurate tracking of the notification, progress of treatment, and outcomes of all reported MDR-TB cases. However, weaknesses in the national disease surveillance system increase the likelihood that some MDR cases are being missed, especially in light of high treatment default rates. The National Reference Laboratory at the CRPHF is also responsible for performing quality control of

all cultures and drug-sensitivity tests, which are carried out by the Central Laboratories of Public Health (LACEN) at the state level.[116]

Standardized, high-quality treatment and supervision are available free of charge to all patients diagnosed with drug-resistant strains of TB, despite the high cost (an average of U.S.$2,000 per patient for an 18-month course of treatment). The CRPHF sends the necessary medications directly to the health unit where the patient is being treated, and treatment is monitored by state and municipal-level reference units.

According to Margareth Dalcolmo of the CRPHF, Brazil's high treatment default rates give some cause for concern about the potential for an increase in the number of MDR cases in the future. Most MDR-TB patients tracked by the CRPHF have acquired (secondary) resistance, which results from ineffective or incomplete treatment of TB in the past. Rates of drug resistance are higher among certain groups, including hospitalized patients and confined populations such as prisoners. The CRPHF is currently conducting a comprehensive surveillance of MDR-TB nationwide[117] and expects to report its results in 2007. Preliminary findings suggest that MDR-TB incidence may be even lower than the current official rate.[118]

Case registration and surveillance

As noted above, the CRPHF closely monitors the diagnosis, treatment, and outcome of all MDR-TB cases throughout the country, resulting in successful treatment of the great majority of patients and a default rate of only 3 percent among out-patients treated in the CRPHF ambulatory facility.[119] This record compares favorably with treatment success and default rates for "regular" TB cases in the rest of the country, especially when one considers the complexity of MDR cases.

However, the system for surveillance of infectious diseases in general is weak, and the TB surveillance system has grown weaker under the past decade of decentralization. Some states, such as São Paulo, have established relatively strong TB surveillance systems, thanks to a robust institutional infrastructure. Thus, the fact that the state of Rio de Janeiro reports more cases of TB may not mean that this is the most affected area of the country, but rather that the system is recording a greater percentage of cases; TB may be an equally serious problem in other parts of the country, such as the Amazon Region, but poor surveillance makes it more likely that a significant number of TB cases—possibly including cases of MDR-TB—are not being diagnosed, treated, or reported.

Vulnerable populations

There is little information available on the impact of TB on specific vulnerable groups, though anecdotal evidence suggests higher rates among ethnic minority groups and in certain regions of the country. The prevalence of TB in some prisons is extremely high.

The NTCP has acknowledged that TB is a serious issue in tribal areas, where crowded living conditions are the norm, and it has developed special programs to reach these populations in these areas. Some activists in the Afro-Brazilian community assert that the Afro-Brazilian population, and especially Afro-Brazilian women, suffers a higher incidence of TB, because they are overrepresented among the poor and sometimes face discrimination in accessing health services.[120] However, little data is available on these issues and more research is needed to identify and quantify such regional and demographic disparities so they can be used as a basis for developing policies that will be more responsive to vulnerable populations. In fact, Brazil's successful Fifth Round Global Fund proposal includes provisions for more operational research to evaluate the impact of TB on women in particular, as well as other minorities and vulnerable populations.

There is strong evidence that TB prevalence in some prisons is many times higher than among the general population. For example, one recent study among county jail prisoners in the western sector of the municipality of São Paulo revealed a prevalence rate of around 70 times higher than among the Brazilian population as a whole and 79 times higher than in the rest of the municipality. Of these prisoners infected with TB, 9.5 percent were resistant to isoniazid and rifampicin, and 4.8 percent were resistant to these two drugs as well as pyrazinamide.[121] The Ministry of Justice is responsible for providing TB services to prison populations.

Program management

Management of TB control responsibilities is divided between the NTCP and the CRPHF, and this has led to serious conflicts over authority and competency with negative consequences for coherent development and implementation of the national TB policy.

The NTCP headquarters office and administration is based in Brasilia and oversees the development of national policy, surveillance, and communications efforts. The CRPHF, which is headquartered in Rio de Janeiro, has the responsibility of managing clinical research, developing and disseminating treatment guidelines, handling MDR-TB cases, and overseeing purchase and distribution of medications, all under the supervision of the MoH. The division of tasks and responsibilities between these two institutions was

intended to facilitate TB control efforts, but in practice has led to lack of clarity over respective areas of competency and protracted conflict over various policy issues, most notably DOTS implementation.

Confusion at the central level has seriously hampered TB control efforts. According to Betina Durovni, the head of the Transmissible Diseases Section of the Rio de Janeiro Municipal Health Division, the key problem in articulating TB control policies in Brazil is the "existence of two TB programs: one in Brasília and another in Rio."[122] This interpretation is confirmed by the author's own experience and comments from numerous TB control experts, managers, and researchers throughout the country. Without clear and consistent guidance on policy implementation, state- and municipal-level officials become disoriented, and the efficiency of programs and services for people with TB suffers.

According to some TB professionals, managers, and health care workers, the CRPHF is somewhat isolated from other research institutions,[123] which is reflected in the low visibility of CRPHF activities and limited circulation of its principal publication, *The Brazilian Lung Diseases Newsletter*.[124] The CRPHF would be in a better position to claim its rightful role as a leader in TB control research by disseminating its work through scientific publications and at conferences.

Administration

The NTCP is implemented through Brazil's 27 federal units (26 states and the Federal District) and 5,507 municipalities.[125] Each federal unit has its own TB program, as do the larger municipalities. Many of the municipalities that are not large enough to maintain their own TB programs appoint a dedicated municipal official to oversee health issues including TB, STDs, and HIV/AIDS.

In line with Brazil's broader decentralization policy, the role of the federal government is to encourage and support the national TB control policy, which is now aligned with the internationally recommended DOTS strategy. States are responsible for planning, programming, evaluating, and monitoring policy implementation; municipalities are responsible for actual delivery of TB services. Administrative systems vary from state to state. For example, in the state of São Paulo, state and municipal health authorities enjoy strong and consistent support from the state government. On the other hand, in the state of Rio Grande do Sul, the health administration has maintained strong centralized control over the TB program, devolving less authority to municipal health authorities.

NTCP officials are generally well respected, but have lacked sufficient resources to implement national TB policy effectively, as reflected in the low salaries and incentive structures for public health professionals working within state and municipal TB programs.

This is a structural issue rather than simply a question of resources, and as such requires attention from the federal government.

Staffing[126]

Brazilian health professionals face extremely difficult working conditions, impeding the implementation of TB control policy and making heroes out of the doctors, nurses, and other medical staff who persist in their efforts regardless. Significant political and administrative barriers have so far prevented the health policy reforms that are necessary to improve the situation.

Applicants for the public health civil service pass a general written examination, and are then assigned to work in a particular health program. In most areas of the health system, civil servants are poorly paid, have few to no incentives to improve job performance, face significant and inadequately addressed safety concerns, and do not enjoy recognition or high prestige for their work. For instance, a high-level medical doctor or nurse who works in the public health system in the state of Rio de Janeiro makes approximately R$1,200 (approximately $585) a month, which does not compare favorably with similar level positions in the private sector. The salary situation is similar in most other states. As a result, many health professionals—even high-level public health officials—work two, three, or more jobs to pay their bills. This situation is so widespread that it is considered normal and, therefore, difficult to change; to increase the salaries of health care professionals working on TB would require broader reform of the payment structure utilized by the Brazilian civil service. However, improving the situation for health workers would have a tremendously beneficial impact on the quality of health services, including TB services.

This point is borne out by a comparison of the situation of health staff at the NSAP and NTCP. Health workers employed by the NSAP at all levels generally earn much higher salaries and enjoy greater prestige than those employed by other health programs. This is striking in light of the fact that in the early 1990s health workers commonly considered jobs in the AIDS sector to be undesirable and dangerous. However, it is important to note that many health professionals employed by the NSAP are not in fact civil servants, but consultants hired directly by multilateral agencies, with World Bank funding, to support NSAP implementation. The situation has led to some dissatisfaction and resentment among civil servants in other areas of the health sector. Also, it is not clear how AIDS programming activities will be maintained if and when the funding for these consultancy positions is discontinued or runs out.

State and municipal TB officials recognize the importance of this issue. Some states, such as Rio de Janeiro, held multiple meetings on how to address the situation in 2003 and 2004. The 2004 national TB policy includes plans to provide financial incentives

from the federal budget to state and municipal TB programs that are performing effectively; these programs could use the additional funds to recognize the performance of outstanding health care workers. However, the funding available for this purpose is still quite limited and only a few states and municipalities have benefited to date. To bring about meaningful, long-term changes, there is a need for federal, state, and municipal policies to be matched with budgetary allocations to recognize and reward the work of civil servants in the health care sector, including TB workers.

Budgeting and expenditures

Information on health budgets in general and TB budgets and spending in particular is not easily accessible to the public. Federal, state, and municipal health budgets are not disease-specific. Though certain line-items, such as the purchase of TB diagnostic kits and drugs, are easily identifiable, other significant funding streams, such as salaries for health care workers and maintenance of health units and laboratories, are not accounted for in a TB-specific budget. As a result, it is not possible to obtain a clear and comprehensive picture of overall spending on TB at the federal, state or municipal level.

Funding from international donors plays a critical role in TB control policy in Brazil, but it is not easy to obtain financial and budgetary information on their programs, particularly for NGOs. This makes it more difficult for NGOs to monitor effective utilization of donor funding by state and municipal TB programs. In fact, international donor funding has sometimes been delayed or misused due to complicated bureaucratic requirements and opaque budgetary processes.

Generally speaking, NGO staff lack the training and knowledge to conduct budget tracking and monitoring. Again, it is useful to contrast the TB situation with that of HIV/AIDS. During the 1990s, AIDS NGOs and activists became engaged in following budgetary processes, and as a result they were successful in winning sizable allocations to HIV/AIDS programs and services. To ensure greater public attention and additional resources for TB, NGOs should devote time and attention to learning more about how budgetary processes work to place themselves in a better position to engage with policymakers around these issues.

Monitoring and evaluation

The NTCP prepares regular progress reports on TB program implementation for the MoH. However, these reports are not published or widely publicized as a matter of course. There is sometimes a discrepancy between the detailed figures supplied to international bodies and information generated for internal reporting processes, suggesting that policymakers

may feel more accountable to international partners than to the Brazilian government and taxpayers.

For example, the process by which data is gathered for the Brazil chapter of the WHO's annual *Global Tuberculosis Control* report is not transparent or open to review by a broad range of Brazilian TB experts and civil society groups. As noted above, many Brazilian TB professionals have questioned the accuracy of the statistics on DOTS coverage presented in the report and the methodology for gathering the underlying data, by which an urban area is considered to be "covered" by DOTS even if only a few health units in a given municipality are applying the strategy.[127] By overstating progress, the WHO runs the risk of rewarding weak policies and undermining rather than reinforcing policymakers' motivation and commitment to improve performance. At a recent meeting in Geneva, one WHO TB official acknowledged these potential shortcomings of the methodology for calculating DOTS coverage, but there are no signs that the methodology will change.[128] There is currently no mechanism to allow for systematic input on this or other issues from country-level civil society organizations on the data submitted by the Brazilian government for the *Global Tuberculosis Control* report.

Infrastructure, drugs, and research

Primary health care systems

TB services are provided through primary health care centers throughout the country, the majority of which are municipally owned and operated and generally managed by a nurse.[129] Most do not offer DOT and there is little demand for this service from patients, who are largely unaware of what this would entail. In order to improve the quality of TB services and accelerate DOTS expansion, it is essential to persuade municipal authorities to expand their current approach to work with a broader spectrum of public service providers, including social services, the Family Health Programs, and the NSAP.

Laboratories

Though Brazil possesses a sophisticated network of public health laboratories, the number of TB diagnostic tests performed is low and the system for ensuring quality control is weak and poorly implemented.

Brazil's network of laboratories, SISLAB, forms part of the SUS universal health care system, and as such SISLAB is integrated into the broader decentralized network of health care services.[130] The complex network of SISLAB laboratories is divided into many subnetworks with different missions. For TB, there are three principal subnetworks: local laboratories, state laboratories (LACEN), and the National Reference Laboratory (LNR). Theoretically, municipal reference laboratories should operate at an intermediary level between local laboratories and LACENs, but these do not exist in all municipalities.

The MoH has adopted the DOTS target of diagnosing 70 percent of all pulmonary cases through bacillary TB diagnostic tests (sputum smear tests). Local laboratories, which are operated by private providers or municipalities, perform sputum tests, but cover only 1.6 TB patients per 100,000 inhabitants,[131] a relatively low figure. According to MoH data, 1,042,732 sputum tests were conducted in 2005;[132] the estimated required number of such tests is 3,700,000 annually.[133]

Given the importance of accurate sputum testing, effective quality control is essential. However, MoH officials interviewed for this report estimated that state laboratories are only able to perform 36 percent of the surveillance measures necessary to ensure quality control in local laboratories.[134] According to these officials, LACENs do not have the capacity or resources to carry out their quality control responsibilities effectively, and local laboratories do not send samples to their respective LACENs for review and analysis on a regular basis.[135] According to the head of the Transmissible Diseases Department of the Rio de Janeiro Municipal Health Secretariat, Betina Durovni: "Reference laboratories are light years away from being effective, and there is no quality control policy."[136]

There are also problems with culture and sensitivity testing for TB medications. Culture testing is necessary to certify the negative result of a bacillary diagnostic test; it is also highly important for diagnosis of nonpulmonary TB cases (which can also be confirmed through histopathology). Sensitivity tests are also important for follow-up on cases that have not responded to treatment administered according to national guidelines. MoH officials state that only since 2005 have all 27 federal units started to employ culture and sensitivity testing. Only 62 percent of the laboratories in the LACEN network are equipped to perform culture tests, and there are only one or two such laboratories in each state capital. This gives a clear picture of the bottleneck at the state level with regard to culture and sensitivity testing.

Rio de Janeiro State provides a snapshot of how this problem manifests itself at the state level. According to Rossana C. Britto, culture testing is recommended for TB/HIV cases (roughly 10 percent of all TB cases), extrapulmonary cases (between 10 and 15 percent), MDR-TB cases, and symptomatic cases that are not confirmed through sputum testing. In Rio state, which registered 17,000 new TB cases in 2004 and in which an estimated

20 percent of all cases are not registered,[137] this would mean "initial" as well as "follow-up" culture testing for 5,000 patients annually.[138] In fact, according to PCT-RJ, the Rio state LACEN performs 4,000 cultures a year; one municipal official commented that the Rio LACEN is simply unable to keep up with the demand for sensitivity testing, leading to serious delays in responses to requests for lab tests.[139] By comparison, one major hospital, the UFRJ's Hospital Universitário Clementino Fraga Filho, performs 5,500 cultures a year for its own in-patients, as well as an average of 150 TB patients a year who are registered through the hospital's public outreach services to surrounding districts of the city and university research initiatives. Considering that in-patients require a greater number of follow-up visits and confirmation cultures, and that around 20 percent of TB cases are diagnosed in public hospitals, many of which do not offer necessary laboratory testing services,[140] these figures illustrate the severity of laboratory capacity problems at the state level.

LACENs should also be subjected to close quality control by the National Reference Laboratory (LNR), which is located in the facilities of the CRPHF in Rio de Janeiro. In addition to its quality control responsibilities, the LNR is supposed to provide support to the NTCP in developing its strategy on laboratory diagnostics, to collaborate with the Epidemiological Surveillance Department on the articulation of laboratory guidelines, to review all nonconclusive samples from the state level, provide capacity building and training support for laboratories, to conduct diagnostics research and studies in partnership with state laboratories, and to oversee the production and supply of reagents, culture kits, and biological products necessary for TB diagnostics. The LNR also provides testing for the MDR-TB cases it follows in its own out-patient clinic and for the neighboring municipal hospital, Raphael de Paula Souza—a total of approximately 300 patients annually.[141]

According to the CRPHF 2005 report, the LNR achieved its 2004 objective to produce and distribute 1,000 culture kits and 200 TB drug sensitivity tests.[142] However, these figures are far from reflecting actual needs. The report goes on to state that "3,080 high complexity exams, including diagnostics for multi-resistance and mycobacterium" were performed,[143] but it fails to identify or even estimate how many of these exams were requested or required. It asserts that "370 [sensitivity] tests each containing six tubes with culture kits to the states . . . and 1,100 culture kits for routine tests were provided to the Instituto de Infectologia São Sebastião in Rio de Janeiro," but does not specify how many quality control tests the LNR is performing in the rest of the country. Participants at the Public Health Watch roundtable in Rio de Janeiro affirmed that the LNR takes "up to four months to give results back to the other labs,"[144] and is unable to provide effective quality control services to the LACEN in Rio itself.

The federal government has taken some steps to respond to the shortage of resources and qualified personnel within Brazil's laboratory network.[145] For example,

in 2004 the NTCP trained 400 LACEN laboratory professionals, including representatives of units from all 27 states and 315 priority municipalities. Moreover, the MoH purchased microscopes and other essential laboratory equipment in 2005.[146]

Drug distribution systems

The federal government is responsible for providing TB drugs to state governments.[147] TB drugs are available free of charge through the public health system and cannot be obtained at regular pharmacies. Under the supervision of the MoH, the CRPHF oversees purchase and distribution of all TB drugs (including for MDR-TB) to states and municipalities. States can purchase medications directly only in emergency situations, if they experience a sudden shortage; this is sometimes necessary because there are sometimes problems with the supply of drugs from the federal government.[148]

The responsibility for purchasing HIV/AIDS prophylaxis and for AIDS treatment (including treatment of AIDS-related opportunistic infections) is divided among the federal, state, and municipal governments.[149] The federal government is responsible for purchase of ARVs, while state governments are supposed to ensure prevention and treatment of opportunistic infections, according to the terms of the "Tripartite Agreement."[150] In this sense, TB prophylaxis for HIV/AIDS patients (isoniazid) is generally accessible in the same public health unit pharmacies, either through the NTCP or the NSAP.

The quality and steady supply of TB drugs has been an issue, which may be a factor contributing to low national treatment success rates. ANVISA, the supervisory body with competence to oversee regular quality control inspections of drug supplies, lacks sufficient resources to perform its responsibilities consistently throughout the country. In response, and with support from USAID and Management Sciences for Health (MSH), the CRPHF initiated quality testing of the TB medications produced by and distributed among public laboratories in Brazil. The investigation led to the identification and elimination of a number of medications that were shown not to be working effectively.[151] However, the issue of ensuring sufficient domestic capacity to monitor drug quality on an ongoing basis has not yet been addressed.

Education and research

TB does not receive adequate attention in Brazil's medical school curriculum, and clinical and operational research on TB has been lacking. Increased public investment in academic study and operational and health systems research could help generate a more comprehensive, multisectoral response to TB.

According to some observers, lack of investment in TB research has led to diminished academic and public engagement on TB. This in turn limits the possibilities for developing innovative clinical approaches to TB control. It also means that NTCP policy planning is not accompanied by adequate evaluation and assessment, raising the risk that ineffective approaches will be duplicated over time without sufficient regard to outcomes and that valuable and limited public resources will be misspent or mismanaged.[152]

There has been little research on bio-safety issues related to treatment of infectious diseases in hospital environments and little attempt to monitor implementation of existing rules and regulations for the protection of health professionals.[153] Research has also been lacking on socioeconomic and cultural issues, such as patients' perspectives on the effectiveness of different approaches to TB treatment, user satisfaction with TB services, and the role of TB awareness and treatment literacy in boosting treatment adherence.[154]

Moreover, TB policy planning tends to occur without extensive participation from other sectors of the government, though the TB epidemic is widely acknowledged to be the product of a complex range of socioeconomic factors. The MoH should pursue partnerships with other ministries to cosponsor TB research efforts. Engaging other actors, such as the Ministry of Science and Technology, to which a number of important research institutions are linked,[155] would have the dual benefit of promoting a more multisectoral approach to TB control and of increasing overall levels of investment in clinical and operational research on TB.[156]

In the context of insufficient public investment in TB control, several private institutions have played an extremely important role. For example, the Scientific League Against TB[157] sponsors a range of efforts to encourage medical students and physicians to become involved in TB research and treatment and care, including awareness-raising activities, fundraising for clinical research and grant making to support academic research, attendance at international conferences such as the International Union Against Tuberculosis and Lung Disease (IUATLD), and publication of articles in magazines and scientific journals. The Scientific League is comprised mostly of physicians, researchers, and medical students, many of whom are students or graduates of private universities, and thus from middle- or lower-income backgrounds—a possible reflection of the demographics of TB in Brazil, where the most prominent and well-financed universities are public. In light of the lack of attention to TB in the medical school curriculum, Scientific League activities are particularly important. Despite the very limited resources at its disposal, the Scientific League has played an indispensable role in maintaining attention to TB within and beyond the scientific community.

More recently, in 2001, the establishment of the Brazilian Network for TB Research (Instituto Milênio Rede TB—Rede Brasileira de Pesquisas em Tuberculose) at the USP Medical School of Ribeirão Preto and at the UFRJ campus has begun to spark renewed

interest in TB. The network promotes interdisciplinary research and provides support to organizations and institutions as well as to individual researchers and managers. It has also designed a series of courses and research activities to encourage the development of a cadre of professionals who are committed to fighting TB over the long term. Finally, the network has sought international partnerships, of which the International Clinical, Operational, and Health Services Research Training Award for AIDS and Tuberculosis (ICOHRTA) is a notable example. ICOHRTA is funded by the U.S. National Institutes of Health (NIH) and encourages partnership on TB and AIDS research between Brazilian and U.S. universities, notably Johns Hopkins University, the University of California at Berkeley, and Cornell University in New York.[158]

The MoH and NTCP stand to benefit from making an increased public investment in academic research on various aspects of TB control, in partnership with other government departments and ministries whenever possible. Greater exposure to systematic review and informed critique of its policies and services by academics, patients, and other actors would help the NTCP determine which approaches are working and which are not.

Partnerships

Collaboration with the private sector

When patients are diagnosed with TB by a health professional employed in the private sector, they are immediately referred to the public health care system for treatment. The majority of TB medications cannot be obtained in private pharmacies, but only through the public health care system. In practice, the majority of physicians in Brazil are both public servants and private health care providers. Thus, they can easily "switch hats" to provide TB care, and TB diagnosis, treatment, and reporting by private providers is seamlessly integrated into the public health care system.

Private sector practitioners do not widely consider DOTS to be the reigning paradigm for TB treatment, though all Brazilian health professionals are supposed to follow TB treatment guidelines. Private clinicians commonly believe that patients are capable of following the TB treatment regimen without supervision. As noted above, even public health units may offer DOTS, but most do not consider compliance with all aspects of the strategy mandatory and instead allow patients to decide whether they consider it necessary to come to the clinic for directly observed treatment.[159]

Still, TB control efforts are focused exclusively on the public health care system; the fact that private practitioners also provide services to TB patients is not factored into public debate.

Collaboration with NGOs and community organizations

Community activism on TB has been limited to date, especially when compared with the level of activism around HIV/AIDS. However, with increasing encouragement and support from a range of international and domestic sources since 2002, and with the initiative of both the Rio de Janeiro and the São Paulo state TB programs to encourage social mobilization, a diverse group of civil society representatives is becoming more engaged in the development and implementation of TB control policy.

As noted above, the heads of the TB programs in the states of Rio de Janeiro and São Paulo independently decided to initiate support for efforts to promote greater social

mobilization around TB through workshops and meetings with community organizations. As a result, the Rio de Janeiro State Forum of NGOs Fighting TB was created in August 2003, and it has since been able to raise the political profile of TB issues by networking both at national and international forums. The São Paulo State Forum of AIDS NGOs, which includes 180 community-based organizations that have been engaged in fighting HIV/AIDS since 1996, has shown leadership in placing TB and TB/HIV high on its agenda.[160] More recently, the creation of the Network for Social Control of TB in the state of São Paulo has launched a number of TB activities. Together, these initiatives have had an enormous impact on the visibility of TB issues in Brazil. They have articulated a strong demand for community participation in TB events and have already succeeding in making this a *sine qua non* of TB policymaking forums.

Officials from these states say their decision to engage with NGOs on TB stems from their perception that civil society participation is essential for effective TB control, and that the shortcomings of Brazilian TB control efforts have been due to the absence of effective social mobilization on TB until 2002.[161] These initiatives are taking active steps to engage and educate the broader public about TB and the relationship between HIV and TB.

A number of other groups have also begun to integrate TB awareness efforts into their existing activities, including well-established NGOs such as Bem-Estar Familiar (BEMFAM),[162] faith-based groups such as the National Bishop's Conference (CNBB) and Pastoral da Saúde, and trade unions such as the Serviço Social da Indústria (SESI)[163] and the Conferência Nacional da Indústria (CNI).[164] However, public mobilization efforts around TB outside of Rio de Janeiro and Sao Paulo have been minimal.

As noted in previous sections of this report, government support for community involvement in TB control prior to 2002 was extremely limited. However, the adoption of the national TB policy has been followed by concrete action, most notably the establishment of the Brazilian Stop TB Partnership, which currently includes the NTCP, the NSAP, the Rio de Janeiro Forum of TB NGOs and several international NGOs and private agencies among its members and aims to expand its membership to engage as many actors as possible in the fight against TB.

A particular aim of the Partnership is to increase the levels of involvement and investment in TB control from wealthy Brazilian companies and international companies based in Brazil, though it has not achieved notable success in doing so to date. A number of companies have sought to associate themselves with the fight against AIDS for public relations purposes, but they have so far not invested significant resources in supporting the activities of the many NGO-led service and care initiatives around either AIDS or TB. For example, when the managers of the Buddy Brazil Network, a community-based care project that provides treatment support to over 600 AIDS patients throughout the coun-

try, approached private companies for financial contributions, they were repeatedly told that that these activities should be funded by the government or carried out at no cost by volunteers.

Collaboration with HIV/AIDS NGOs

The NSAP has developed a significant degree of institutional independence, primarily thanks to an extremely successful fundraising strategy with the World Bank.[165] As a result, collaboration with other programs, such as the NTCP, is not strictly necessary and therefore not a priority. This does not mean that AIDS organizations and policymakers are unwilling to take on TB issues or to work with others; rather, they are simply focused on accomplishing their own goals, and on ensuring that they have sufficient resources to continue their activities.

Prior to 2003, the NSAP supported several meetings to promote comprehensive mobilization strategies around TB/HIV, but it did not receive full support for these efforts from the NTCP.[166] As detailed in previous sections, the policymaking environment has changed considerably since 2003, and a number of organizations dedicated to the fight against HIV/AIDS, such as those involved in the Rio de Janeiro and São Paulo forums of AIDS NGOs, have provided invaluable support to emerging TB community mobilization initiatives in their states, including by developing coordinated interstate activities. Expanding and intensifying the involvement of these and other organizations that have experience with HIV/AIDS will be key to the development of strategies to engage communities and the broader public in TB control efforts.

Collaboration with multilateral organizations and bilateral donors

Brazilian TB control efforts have received considerable financial and technical support from a range of international partners and bilateral donors, only some of which can be named here. The Global Fund's requirement for community participation as part of its application process has galvanized civil society involvement in TB policymaking, and groups that were involved in developing Brazil's successful Fifth Round proposal plan to press for continued involvement during the course of grant implementation.

USAID and CDC have provided considerable support to state TB programs in Rio de Janeiro and São Paulo for a number of initiatives, most recently to promote coordination among municipal TB managers and encourage the introduction and expansion of the DOTS strategy. USAID in particular provided critical support to the NTCP and its DOTS expansion efforts by funding the employment of PAHO/WHO consultants in Brasilia, who in turn helped develop Brazil's successful Fifth Round proposal to the Global Fund.

As noted above, TB research has also received an important boost from international partners, including the NIH, USAID, and CDC as well as private foundations such as the Consortium to Respond Effectively to the AIDS/TB Epidemic (CREATE), which has supported research on TB/HIV coinfection through the "THRio" project.

Brazil's application to the Global Fund's Fourth Round was not approved, partly due to a failure to demonstrate sufficient community representation on the Country Coordinating Mechanism (CCM). In fact, many community groups claim they were completely unaware of the fact that the government had developed and submitted a proposal. In an attempt to respond to this issue, the NTCP invited the participation of several community groups, including the Rio de Janeiro State Forum of NGOs Fighting TB in the preparation of its Fifth Round application. As the invitation came only at a relatively advanced stage of planning, many groups initially expressed dissatisfaction at the extent to which they were able to influence the content of the proposal. However, through regular participation in the CCM, NGOs have proven their capacity to influence the direction of the grant process. The Global Fund approved Brazil's Fifth Round proposal in September 2005, and major new funding for TB and TB/HIV activities is expected in mid-2006. Brazilian NGOs have been encouraged by the Global Fund's innovative requirement for multisectoral participation, and they welcome the opportunity to be integrally involved in the next chapter of TB control efforts in Brazil.

Recommendations

To improve TB control efforts, the government of Brazil and the NTCP should:

- **Publicly maintain commitment to a national TB policy** and to strong and coordinated implementation of that policy as a fundamental and ongoing responsibility of the federal government.
- **Support NTCP leadership** on official TB control efforts and encourage adherence to NTCP policy by relevant health sector departments and authorities as well as by international and national partner organizations.
- **Engage other governmental sectors and ministries, such as the Ministry of Science and Technology, in TB control efforts**.
- **Promote and develop effective mechanisms to encourage better coordination** among federal, state, and municipal health councils.
- **Redouble efforts to raise public awareness** about the magnitude of the TB problem and to publicize the availability of TB services.
- **Create incentives for closer linkages between state and municipal TB control programs** and for the integration of their strategies and activities, especially with regard to DOTS implementation.
- **Strongly encourage municipal and state health councils to set aside funding to help poor and otherwise disadvantaged TB patients cover the hidden costs of TB treatment.**
- **Initiate the structural and institutional changes necessary to attract and support qualified public health care workers** with increased salaries, benefit packages, performance-based incentives and other forms of compensation.
- **Improve laboratory services and quality control mechanisms** to assure proper coverage of national TB testing needs.
- **Support operational research** to:
  - **identify and quantify regional and demographic disparities in TB prevalence** and use this information as the basis for developing policies to ensure the most-affected populations greater access to TB services;

- **articulate the application of bio-safety regulations** and measures to prevent transmission of diseases in hospital and day clinic (out-patient) environments;
- **measure levels of satisfaction with service delivery among TB patients** throughout the country on an ongoing basis;
- **identify the most effective and efficient approaches** to TB service delivery.

- **Ensure opportunities and mechanisms for communities and people affected by TB to become substantively involved in TB policy development and implementation**.
- **Empower and support community leadership** to take advantage of these opportunities by providing appropriate technical support and training for community groups.

To complement the government's TB control activities, civil society organizations should:

- **Step up engagement in TB policymaking processes** by:
  - deepening their own knowledge about TB, TB treatment regimens, the interaction between TB and HIV/AIDS, and other technical aspects of the disease and its treatment;
  - intensifying activities to encourage greater community and public awareness about the risks of TB, the availability of treatment, and the importance of treatment compliance, particularly among the poor and other vulnerable groups;
  - adapting advocacy approaches and techniques that have proven to be effective in other areas of health policy, such as HIV/AIDS, to the area of TB control;
  - building skills to monitor TB policy development, including skills to track the federal budget process;
  - fostering relationships with municipal councils of health to encourage greater awareness and budgetary allocations in support of a sustained and strategic response to TB and TB/HIV;
- **Ensure that efforts to monitor and critique government TB control policy are complemented by constructive recommendations for positive change.**

To support TB control efforts in Brazil, international organizations should:

- **Support initiatives by Brazilian civil society organizations to promote TB and TB/HIV awareness and treatment literacy**, particularly those already engaged in similar activities on HIV/AIDS and other health issues.
- **Support programming to build capacity among Brazilian civil society and community-based organizations to conduct monitoring and advocacy on TB**, to encourage greater public demand for improved TB control policies and services and as a critical complement to international efforts to promote government accountability.

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Roundtable meetings were organized in Rio de Janeiro, São Paulo, and Brasilia in March 2006 to invite critical feedback and input on a first draft of this report. The final report has been amended significantly to reflect the feedback and suggestions of roundtable participants. We would like to thank all roundtable participants as well as those who shared their comments by telephone or email.

For the lists of participants in the roundtable meetings, interviewees, and others who contributed to this report, please see the appendix on the following page.

Appendix

Participants in roundtable meetings, principal interviewees, and contributors

Ricardo Gadelha de Abreu, Assistant, Department of Epidemiological Surveillance, SVS-MoH[***]
Ademir de Albuquerque Gomes, MD, Consultant, PAHO
William Amaral, President, Grupo Pela VIDDA-RJ; RJ Forum of TB NGOs[*]
Denise Arduini, TB Nurse CMS Pindaro de Carvalho Rodrigues, Gávea, Rio, RJ
Susana Ayres, Nurse with TB Program, Basic Health Unit, Jardim Guanabara, SP

Carlos Basília, IBISS, Forum of TB NGOs RJ, Secretary of Brazilian Stop-TB Partnership
Marcia Bello, MD, PCT-RJ, Scientific League Against Tuberculosis
Ana Luiza Parentone Bittencourt, Assessor in Dermatology, SES-RJ
Rossana Coimbra Brito, MD, PCT-RJ, Scientific League Againt Tuberculosis

Arachu Castro, Assistant Professor, Harvard Medical School, and Director of the Institute for Health and Social Justice, Partners In Health
Ingrid Carvalho, Legal Department, Grupo Pela VIDDA-RJ
Solange Cavalcanti, MD, Head, PCT, SMS-RJ
Rodolfo Rodríguez Cruz, Consultant for TB, PAHO, Brasília

Margareth Pretti Dalcolmo, MD, Coordinator, Outpatient Clinic, CRPHF; Pres, TB Comm., SBPT[*]
Renaldo Dietze, Professor, UFES; Coordinator of Clinical Research Rede-TB
Betina Durovni, MD, Coordinator, Transmissible Diseases Division, SMS—Rio[*]

César Espina, MD, Coordinator, PCT-RS

André Falcão, Communication Department, Health Surveillance Secretariat, MoH
Nadja A. Faraone, São Paulo State Network for Social Monitoring on Tuberculosis[**]
Sumie Matai de Figueiredo, Supervisor, Data bank, Municipal PCT-SP
Germano Gerhardt Filho, MD, President, Ataulpho de Paiva Foundation, Rio de Janeiro
Lísia de Freitas, Coordinator, MD, PCT-RJ

Vera M. N. Galesi, MD, Coordinator, Tuberculosis Division, SES-SP[**]
Claudio Galvez-Kovacic, Director, SOIS Institute: Innovation and Development in Health[**]
Denise Garrett, MD, Consultant, CDC; IUATLD; to the Brazilian PNCT
Ana Glória, BEMFAM, Rio de Janeiro[*]
Necha Goldgrub, CVE; CCD, São Paulo[**]

Ildinei, Nurse responsible for the TB program Unidade Mista, Brasília, D.F.
Eri Ishimoto, CCD-TB, SMS-SP[**]

Célia Kamita, Nurses Director, Municipal Emergency Hospital 21 de Junho, SP, SP
Naomi Kawaoka Komatsu, MD, CCD-TB; Head, PCT-SMS-SP[**]
Joël Keravec, Project Director, MSH, at CRPHF
Marcio Koshaka, Grupo Estruturação, Brasília
Mônica Kramer, MD, Researcher, UFRJ; member of the TB Network[*]
Afrânio Kritski, Professor, MD, UFRJ; Diagnostics Section, TB Network*

Regina Lemos, CCD-TB, SMS-SP[**]
Expedito Luna, MD, Director, Department of Epidemiological Surveillance, SVS–MoH[***]

Rosália Maia, Technical Advisor, CGLAB, SVS—MoH
Renato Marin, Grupo Pela VIDDA-SP[**]
Amandio Matias, MD, Pediatrician Basic Health Unit Saúde Jardim Guanabara, SP, SP
Mariliana M.R. de Mattos, MD, Coordinator, Basic Health Unit Jardim Guanabara, SP, SP
Alexia Meurer, GAPA-RS
Fabio Moherdaui, MD, Focal Point for Coinfections, PN-DST/Aids, Brasília
Murilo Mota, Transformarte, Rio de Janeiro[*]

José Marcos Oliveira, RNP+ Sorocaba, SP Forum of AIDS-NGOs, National Health Council

Elsa Ramos Paim, former SESP Nurse; ENSP
Patricia Paine, Technical Advisor for Tuberculosis, USAID, Brasília[***]
Claudia Paz, IBISS, Rio de Janeiro[*]
Maria Josefa Penon, CVE-SES-SP[**]
Maraci Marques Pereira, Coordinator, Quality Control, LACEN Rio de Janeiro
Sandra Perin, GAPA-RS
Mario A.V. Pessolani, MD, Unidade Mista, Brasília, D.F.

Jaime Rojas, USAID, Brasília[***]
Valéria Rolla, MD, Researcher and Coordinator of Lung Diseases, IPEC-FIOCRUZ
Antônio Ruffino-Netto, MD, Epidemiology Coordinator, TB Network; EMRP-USP

Maria Conceição Santana, IBISS, MORHAN, RJ TB-NGOs Forum
Joseney dos Santos, MD, Coordinator, PNCT[***]
Laedi A. Rodrigues Santos, CVE-SES-SP[**]
Maria Alice Santos, Nurse support, Basic Health Unit Jardim Guanabara, SP, SP
Mario Scheffer, Journalist, Reg. Medical Council, São Paulo, Grupo Pela VIDDA-SP
Lia Selig, former Coordinator, MD, PCT-RJ; Scientific League Against Tuberculosis[*]
Enrico de Sena Furtado, Insituto DIET, RNP+ São Paulo[**]
Rosangela G. Kachel Serigheli, Nurse PCT-DF[***]
Valdir de Souza Pinto, PNCT Task Force in São Paulo[**]

Anete Trajman, MD, UGF, PCT-RJ, Scientific League Against TB[*]

Fabiana S. Vasques, Nurse, Guarulhos, SP
José Carlos Veloso, GAPA-SP[**]
Tereza Cristina Scatena Villa, Coordinator of Operational Research, TB Network; EMRP-USP

Members of the AIDS-NGOs Forum of São Paulo state
Members of the AIDS-NGOs Forum of Rio de Janeiro state
Members of the Forum of NGOs Fighting Tuberculosis in Rio de Janeiro state
. . . And the many other patients and health professionals who were interviewed for this report.

[*] Participant, Public Health Watch Roundtable, Rio de Janeiro, March 28, 2006
[**] Participant, Public Health Watch Roundtable, March 30, 2006
[***] Participant, Public Health Watch Roundtable, March 31, 2006

Maria Helena Falcão prepared the Portuguese translation of the report, and **Zaïra Machado dos Santos Gomes** assisted with editing and revision.

Please see www.publichealthwatch.info to obtain the report in Portuguese.

Notes

1. Telephone interview with Margareth Dalcolmo, coordinator of the Outpatient Clinic, National Reference Center Professor Helio Fraga (CRPHF), and president, TB Commission of the Brazilian Thoracic Society, June 24, 2006.
2. UNAIDS/WHO Epidemiological Fact Sheet–2004 Update, Brazil, p. 3. www.unaids.org/EN/Geographical+Area/by+country/brazil.asp
3. Instituto Brasileiro de Geografia e Estatística (IBGE), www.ibge.gov.br (accessed June 20, 2006).
4. OPAS-OMS, Comunicación social en el control de la tuberculosis—Las Américas 2005, Regional Tuberculosis Program slide presentation by Rodolfo Rodríguez, in Santa Cruz de la Sierra, Bolivia, May 31, 2005.
5. See dtr2001.saude.gov.br/svs/epi/Tuberculose/tuberculose_00.htm (accessed June 12, 2006).
6. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 77.
7. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2004), p. 58; Ministério da Saúde, *Programa Nacional para o Controle da Tuberculose,* Brasília, February, 2004 (Word document on file with author).
8. In 1982, the incidence rate was 90.3 percent; in 1993, 54 percent; and in 2002, 44.5 percent. See dtr2001.saude.gov.br/svs/epi/Tuberculose/INCIDENCIA.xls (accessed June 12, 2006).
9. Compare with prevalence rates in 1990 (221,034/100,000) and 2002 (141,115/100,000), WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), pp. 77, 166.
10. See dtr2001.saude.gov.br/svs/epi/Tuberculose/Mortalidade.xls (accessed June 12, 2006).
11. Ministério da Saúde, SVS/SINAN, slide presentation by Joseney dos Santos, head of the NTCP, June 6, 2006.
12. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 77.
13. Ministério da Saúde, SVS/SINAN, slide presentation by Joseney dos Santos, head of the NTCP, June 6, 2006.
14. Statement by head of the National TB program, meeting of the Country Coordinating Mechanism (CCM), Brasilia, November 22, 2005.
15. Interviews with TB officials in Brasilia, Rio de Janeiro, and Porto Alegre, March 31–July 5, 2005.
16. See www.saude.rj.gov.br/Acoes/tuberculose.shtml (accessed June 13, 2006).
17. Interview with Lia Selig, former director of the Rio de Janeiro State TB Control Program and member of the Scientific League Against Tuberculosis, in reference to her PhD study on TB death records (on file with the author).
18. See http://www.saude.rj.gov.br/Tuberculose/oque_e.shtml (accessed June 13, 2006).
19. CCM Proposal to Global Fund, "Strengthening of the DOTS Strategy in Large Urban Centers with High Tuberculosis Burden in Brazil," June 2005, p. 5.
20. CCM Proposal to Global Fund, "Strengthening of the DOTS Strategy in Large Urban Centers with High Tuberculosis Burden in Brazil," June 2005, p. 38.
21. Interview with Margareth Dalcolmo, CRPHF, July 5, 2005.
22. Sistema Único de Saúde, Federal Act nr. 8,080 of 1990, previewed in the Federal Constitution of 1988.
23. Federal Act 8,142 of Dec. 28, 1990.
24. Ministry of Health, *Guia de Vigilância Epidemiológica* (Brasília: FUNASA, 2002), p. 58, Item 4.4 ("Atribuições das Instâncias").
25. Federal Act 8,142 of Dec.28, 1990, describing the devolution of authority under SUS to states and municipalities to establish their administration guidelines.

26. Interview with Mônica Kramer, UFRJ researcher, Rio de Janeiro, May 24, 2006.

27. Interview with Vera Galesi, head of the Tuberculosis Division, São Paulo State Department for Health, July 8, 2005.

28. Interviews with managers of the municipal TB control program, health officials, health unit managers, doctors, nurses, and patients in four municipal health units, Municipal Program for TB Control, Municipality of São Paulo, July 8, 2005.

29. Visits to reference centers in Porto Alegre, March 31 and April 1, 2005.

30. Interview with César Espina, head of the TB Control Program for the state of Rio Grande do Sul, Porto Alegre, March 31, 2005.

31. A. Ruffino-Netto and T.C. Scatena-Villa, *Tuberculose—Implantação do DOTS em algumas regiões do Brasil—Histórico e peculiaridades regionais* (São Paulo: Instituto do Milênio Rede TB, 2006), p. 200.

32. A. Ruffino-Netto and T.C. Scatena-Villa, *Tuberculose—Implantação do DOTS em algumas regiões do Brasil—Histórico e peculiaridades regionais* (São Paulo: Instituto do Milênio Rede TB, 2006), p. 43.

33. See http://dtr2001.saude.gov.br/svs/epi/Tuberculose/tuberculose_00.htm (accessed June 20, 2006).

34. Ministry of Health, Plano Nacional de Controle da Tuberculose, Secretaria de Políticas de Saúde; Departamento de Gestão de Políticas Estratégicas de Saúde. Coordenação Nacional de Pneumologia Sanitária; Fundação Nacional de Saúde; Centro Nacional de Epidemiologia; Centro de Referência Hélio Fraga. Brasília, 1999, pp. 6–31.

35. Email message, Ruffino Netto, March 28, 2006. For Ruffino-Netto's description of efforts to introduce the DOTS strategy and resistance to these efforts from within the NTCP, see minutes of the 119th ordinary meeting of the National Health Board, May 8–9, 2002, p. 9 (copy on file with the author).

36. Author's personal experience presenting a proposal for TB/HIV mobilization activities involving the NSAP and CRPHF (represented by then Director Miguel Aiub Hijjar and Training Manager Maria José Procópio), June 11, 2003.

37. Ministry of Health, Programa Nacional de Controle da Tuberculose, Secretaria de Vigilância em Saúde; Departamento de Vigilância Epidemiológica; Coordenação Geral de Doenças Endêmicas; Área Técnica de Pneumologia Sanitária, Brasilia, February 2004 (word document on file with the author).

38. These comments are based on the author's participation in some of these regional meetings on invitation of the NTCP throughout 2005, which allowed for direct observation of implementation of the new policy and multiple interviews with state and municipal officials.

39. For details, see http://dtr2001.saude.gov.br/svs/destaques/tb_forum.htm (accessed June 20, 2006).

40. See http://dtr2001.saude.gov.br/svs/destaques/tb_forum.htm (accessed June 20, 2006).

41. See Brazilian Department of State (Foreign Office, Palácio do Itamaraty) website at www.mre.gov.br/portugues/politica_externa/discursos/discurso_detalhe.asp?ID_DISCURSO=2719 (accessed June 24, 2006).

42. Speeches by Joseney dos Santos, head of the NTCP, Regional Meeting of TB Program Managers of the Southern Region, in Porto Alegre, RS, March 31, 2005.

43. Statement by Jarbas Barbosa, national secretary of health surveillance, during launch of the Brazilian Stop-TB Partnership, November 2004, Brasilia.

44. Interviews in São Paulo and Ribeirão Preto, April 4, July 7–8, 2006; interviews in São Paulo included officials of the State TB Division and the Municipal TB Control Program, health professionals, and patients at a number of different health units.

45. Rosângela Rosinha Garotinho Barros Assed Matheus de Oliveira has served as governor since January, 2003.

46. Statement by Ana Luiza Bittencourt, Rio de Janeiro state Leprosy Program, meeting of the Forum of NGO fighting TB in the State of Rio de Janeiro, October 2005, confirmed by phone on June 28, 2006.

47. Secretaria de Estado de Saúde do Rio de Janeiro, Plano Estratégico para o Controle da Tuberculose no Estado do Rio de Janeiro, 2003 a 2005, Rio de Janeiro: Programa para o Controle da Tuberculose, 2003 (also known as (*Força Total)*.

48. Personal observations by the author while working as a consultant to the state TB program throughout 2003.

49. Email message, Lísia Freitas, coordinator, Rio de Janeiro State Tuberculosis Control Program, April 25, 2006, attaching "Main targets attained—USAID Agreement, 2004–2005," Rio de Janeiro, 2005 (word document on file with the author).

50. These have included partnerships with Johns Hopkins University, supported by funding from the U.S. National Institutes of Health (NIH) as well as the "THRio" project, which focuses on TB/HIV coinfection as part of the Consortium to Respond Effectively to the AIDS TB Epidemic (CREATE), with funding from the Bill and Melinda Gates Foundation.

51. Interview with César Espina, head of the Rio Grande do Sul State TB Program, in Porto Alegre, March 31, 2005.

52. A. Ruffino-Netto and T.C. Scatena-Villa, *Tuberculose—Implantação do DOTS em algumas regiões do Brasil—Histórico e peculiaridades regionais* (São Paulo: Instituto do Milênio Rede TB, 2006), pp. 199–200.

53. Statement by Ezio T. dos Santos Filho, Public Health Watch researcher.

54. Author's personal observations at social mobilization workshops, organized by him in Rio de Janeiro in 2003. These workshops culminated with the creation of the Forum for NGO fighting TB in the Rio de Janeiro State, in August 2003.

55. Comment by roundtable participant, Public Health Watch roundtable meeting, São Paulo, March 30, 2006.

56. Interviews with Mario A.V. Pessolani, a doctor, and nurse Ildinei, as well as TB patients, administrators, and other health workers in the Unidade Mista, Brasilia, D.F, April 7, 2005.

57. The author was a consultant on social mobilization for the PCT-RJ in 2002–2003, as part of a project of Management Sciences for Health (MSH) in Rio de Janeiro, with funding from USAID. The author also worked as a consultant for the TB Division at the São Paulo State Health Department in early 2004.

58. CCM Proposal to Global Fund, "Strengthening of the DOTS Strategy in Large Urban Centers with High Tuberculosis Burden in Brazil," Objective 2, Service Area 1: "Activities for social mobilization and behavior change," June 2005.

59. Comment by Ezio T. dos Santos Filho, Public Health Watch researcher, roundtable meeting, Sao Paulo, March 30, 2006.

60. Interviews with several health care professionals and AIDS activists in different parts of Brazil: Sandra Perin and Alexia Meurer, GAPA-RS; José Marcos Oliveira, RNP+ Sorocaba, São Paulo State NGO Forum to Fight Aids; Marcio Koshaka, Estruturação Group, Brasília; and various members of the Rio de Janeiro State NGO Forum to Fight TB, between March 31 and July 5, 2005.

61. The author was unable to obtain records on communications campaigns in recent years, telephone and email communications with the MoH, Brasilia, 2005.

62. Interview with André Falcão, communications officer, Brazilian Ministry of Health, during Communication and Social Mobilization Workshop on TB by PAHO in Santa Cruz de la Sierra, Boliva, May 31, 2005.

63. Piauí State is located in the northeastern region, and is the poorest state in Brazil. Interview with Elsa Ramos Paim, former SESP nurse, Rio de Janeiro, August, 2005.

64. Dilene Raimundo Nascimento, Fundação Ataulpho de Paiva—Liga Brasileira contra a tuberculose—Um século de luta. Rio de Janeiro: FAPERJ; Quadratim, 2002, p. 30.

65. Government of Brazil, Decree 9,387/45, 1945.

66. Ieda de Alencar Barreira, *A enfermeira Ananéri no país do futuro: a aventura da luta contra a tuberculose*, (Rio de Janeiro: Universidade Federal do Rio de Janeiro, 1993), PhD dissertation, first part.

67. Ieda de Alencar Barreira, *A enfermeira Ananéri no país do futuro: a aventura da luta contra a tuberculose*, (Rio de Janeiro: Universidade Federal do Rio de Janeiro, 1993), PhD dissertation, p. 100. The therapy, known also as "the Crofton scheme" was composed of the new drugs isoniazid (IZH, 1952), para-amino-salicilic acid (PAS, 1948), and streptomycin (SM, 1946) and indicated a year-long initial treatment to all patients to avoid primary resistance, which was already occurring under mono-therapy.

68. Serviço Especial de Saúde Pública, later transformed into a foundation, Fundação SESP. The foundation was assimilated by the FUNASA, Fundação Nacional de Saúde, created in the 1980s.

69. "Visitadoras Sanitárias" were trained health care support workers, generally women, who delivered home supervised TB treatment. Interview with Elsa Ramos Paim, Rio de Janeiro, June 10, 2006. See also Ieda de Alencar Barreira, *A enfermeira Ananéri no país do futuro: a aventura da luta contra a tuberculose* (Rio de Janeiro: Universidade Federal do Rio de Janeiro, 1993), PhD dissertation.

70. Telephone interview with Lia Selig, June, 2005 and informal conversation with Joseney dos Santos, MD, current head of the NTCP, Brasília, December, 2005.

71. Ieda de Alencar Barreira, *A enfermeira Ananéri no país do futuro: a aventura da luta contra a tuberculose* (Rio de Janeiro: Universidade Federal do Rio de Janeiro, 1993), PhD dissertation, p. 110.

72. The number of hospital beds for TB was reduced from 23,000 to less than 3,000. Partly because of this, TB case notifications rose from 47,000 in 1974 to 88,000 in 1984. Ieda de Alencar Barreira, *A enfermeira Ananéri no país do futuro: a aventura da luta contra a tuberculose* (Rio de Janeiro: Universidade Federal do Rio de Janeiro, 1993), PhD dissertation, p. 160.

73. Germano Gerhard Filho was head of the NTCP from 1979 to 1983 and currently serves as president of the Fundação Ataulpho de Paiva. Ieda de Alencar Barreira, *A enfermeira Ananéri no país do futuro: a aventura da luta contra a tuberculose* (Rio de Janeiro: Universidade Federal do Rio de Janeiro, 1993), PhD dissertation, p. 155.

74. This treatment scheme became popularly known as the RIP scheme: rifampicin, isoniazid and pirazinamid. The addition of rifampicin rendered the scheme much more effective. It is interesting to note that Gerhard Filho was sharply criticized both nationally and internationally for introducing the use of such an expensive new drug among the entire population.

75. The MoH began contracting for production of these capsules from two laboratories (Lepetit and Cyba-Geiger, both of which have since closed) in 1979 with Rifampicin 300mg + Isoniazid 200mg for adults and 150mg+100mg for children and underweight adults. Interview with Germano Gerhardt Filho at the Ataulpho de Paiva Foundation in Rio de Janeiro, May 25, 2006.

76. Interviews in Porto Alegre on March 31, 2005 and during the CCM meeting on June 1, 2005 in Brasilia.

77. See The Planalto Presidential Palace website at https://www.planalto.gov.br/ (accessed on June 25, 2006)

78. Ieda de Alencar Barreira, *A Enfermeira Ananéri no país do futuro: a aventura da luta contra a tuberculose*, (Rio de Janeiro: Universidade Federal do Rio de Janeiro, 1993), PhD dissertation, p. 154.

79. Germano Gerhardt Filho affirmed that 90 percent of the annual budget of the NTCP during this period was expended on drug acquisition and in-patients. The new scheme reduced in-patient expenses and thus expenses on TB overall. Interview with Germano Gerhardt Filho, Ataulpho de Paiva Foundation, Rio de Janeiro, May 25, 2006.

80. At that time, the NTCP was under the National Division for Lung Diseases (Divisão Nacional de Pneumologia Sanitária or DNPS), which in 1976 assumed the position of the previous DNT (National Division of Tuberculosis or Divisão Nacioanal de Tuberculose) and the National Campaign against Tuberculosis (Campanha Nacional Contra a Tuberculose or CNCT). A number of other administrative reforms have been carried out among these TB institutions over the past decades. See Ieda de Alencar Barreira, *A Enfermeira Ananéri no país do futuro: a aventura da luta contra a tuberculose,* (Rio de Janeiro: Universidade Federal do Rio de Janeiro, 1993), PhD dissertation, pp. 142–171.

81. Ieda de Alencar Barreira, *A Enfermeira Ananéri no país do futuro: a aventura da luta contra a tuberculose,* (Rio de Janeiro: Universidade Federal do Rio de Janeiro, 1993), PhD dissertation, pp. 154–155.

82. Interview with Margareth Dalcolmo, MD, CRPHF, July 5, 2005.

83. The World Bank, *Staff Appraisal Report—Brazil—AIDS and STD Control Project—October 8, 1993*, Report no. 11734-BR. Doc in Word. Internal Document, Annex B, page 47. Brazil had 24,704 reported AIDS cases up to March 31, 1992, compared to 218,301 U.S. cases.

84. Ezio Távora dos Santos Filho, *Out of the Shadow: the Brazilian Social Movement in the Loan by the World Bank to the Brazilian National AIDS Program*, master's dissertation, Institute of International Relations, Pontifical Catholic University of Rio de Janeiro, Rio de Janeiro, 2002.

85. SBPT; CRPHF, M.P. Dalcolmo (Ed.), *II Diretrizes Brasileiras para Tuberculose—2004*, *Jornal Brasileiro de Pneumologia*, Vol. 30, supplement 1, June, 2004.

86. *O Globo*, Primeiro caderno, Section "Opinião," "Nova pesquisa do IBGE reafirma e redime o Fome Zero," (New research by IBGE reaffirms and redeems Fome Zero program), June 22, 2006, p. 7.

87. Item 93 of the *12th National Conference on Health Report*. Brasília: Ministério da Saúde, 2003, p. 96, available at: http://www.ensp.fiocruz.br/radis/web/relatoriofinal12.pdf. Email message from Mario Scheffer, journalist, São Paulo Regional Medical Council and former member of the National Councils of Health, June 27, 2006.

88. CCM Proposal to Global Fund, "Strengthening of the DOTS Strategy in Large Urban Centers with High Tuberculosis Burden in Brazil" June 2005, p. 9.

89. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 79. See also A. Ruffino-Netto and T.C. Scatena-Villa, *Tuberculose—Implantação do DOTS em algumas regiões do Brasil—Histórico e peculiaridades regionais* (São Paulo: Instituto do Milênio Rede TB, 2006), pp. 40, 51, confirming increasing DOTS coverage from 3 percent in 1998 to present rates, and recording the initiation of DOTS implementation in 1997 in mid-western Brazil.

90. Ministério da Saúde. Secretaria de Vigilância em Saúde, "Avaliação e Monitoramento da Tuberculose 2006,".slide presentation by Joseney dos Santos, head of the NTCP, June 2006, Slide 11. See also A. Ruffino-Netto and T.C. Scatena-Villa, *Tuberculose—Implantação do DOTS em algumas regiões do Brasil—Histórico e peculiaridades regionais* (São Paulo: Instituto do Milênio Rede TB, 2006), p. 40.

91. A. Ruffino-Netto and T.C. Scatena-Villa, *Tuberculose—Implantação do DOTS em algumas regiões do Brasil—Histórico e peculiaridades regionais* (São Paulo: Instituto do Milênio Rede TB, 2006), pp. 141–165.

92. A. Ruffino-Netto and T.C. Scatena-Villa, *Tuberculose—Implantação do DOTS em algumas regiões do Brasil—Histórico e peculiaridades regionais* (São Paulo: Instituto do Milênio Rede TB, 2006), pp. 167–179.

93. A. Ruffino-Netto and T.C. Scatena-Villa, *Tuberculose—Implantação do DOTS em algumas regiões do Brasil—Histórico e peculiaridades regionais* (São Paulo: Instituto do Milênio Rede TB, 2006), pp. 49–72. Interviews with Ademir de Albuquerque Gomes at PAHO and with health professionals in Brasília, April 7, 2005.

94. Ministério da Saúde, Secretaria de Vigilância em Saúde, *Programa Nacional de Controle da Tuberculose* (Brasilia: MoH, February 2004), p. 4 (word document on file with author). The document defines supervised treatment as administration of drugs under direct observation for the first two months of treatment, and two observations a week for the following four months of treatment.

95. Email message from Joseney dos Santos, head of the NTCP, June 26, 2006.

96. Comment by Afrânio Kritski, Federal University of Rio de Janeiro/TB Network, Public Health Watch roundtable meeting, Rio de Janeiro, March 28, 2006.

97. See generally A. Ruffino-Netto and T.C. Scatena-Villa, (Org.), *Tuberculose—Implantação do DOTS em algumas regiões do Brasil—Histórico e peculiaridades regionais* (São Paulo: Instituto do Milênio Rede TB, 2006).

98. Interview with Vera Galesi, head of the TB Division of the São Paulo State Health Department, São Paulo , July 8, 2005.

99. A. Ruffino-Netto and T.C. Scatena-Villa, *Tuberculose—Implantação do DOTS em algumas regiões do Brasil—Histórico e peculiaridades regionais* (São Paulo: Instituto do Milênio Rede TB, 2006), pp. 42–44.

100. Interviews with TB patients and clinic staff in Rio de Janeiro, Sao Paulo, Porto Alegre, and Brasilia, March 31–July 8, 2005 and with a former nurse in Bahia state, São Paulo, December 2005.

101. Interview with a health care worker at TB service in the Gávea Municipal Health Center, Rio de Janeiro municipality, March 2006.

102. The Global Fund grant will cover DOTS expansion activities in a total of 57 municipalities in 10 metropolitan regions and the municipality of Manaus, which together encompass 30 percent of the Brazilian population and 43 percent of the national TB burden. See CCM Proposal to the Global Fund, "Strengthening of the DOTS Strategy in Large Urban Centers with High Tuberculosis Burden in Brazil" Brasilia, June 2005, p. 11. www.theglobalfund.org/programs/grantdetails.aspx?compid=964&lang=en&CountryId=BRA (accessed June 14, 2006).

103. Meeting of the Brazilian CCM with representatives of the 57 municipalities schedule to receiving funding under the Global Fund grant, Hotel Gloria, Rio de Janeiro, March 29, 2006.

104. *Jornal Brasileiro de Pneumologia*, Volume 30, Suplemento 1, June 2004, p. 35. The *Brazilian Journal of Lung Diseases* is an official publication of the Brazilian Thoracic Society (Sociedade Brasileira de Pneumologia e Tisiologia), edited by Margareth Pretti Dalcomo, president of the Scientific Commission of TB of the Brazilian Thoracic Society.

105. Interview with officials of the Scientific League, Hospital da Santa Casa da Misericórdia, Rio de Janeiro, March 14, 2005.

106. Statement by Ezio T. dos Santos Filho, Public Health Watch researcher.

107. Ministry of Health, Co-infecção TB/HIV, slide presentation by Fabio Moherdaui. Brasília, PN-DST/Aids (MoH), April, 2005.

108. Telephone interview with Valéria Rolla, researcher and coordinator for lung diseases at IPEC-FIOCRUZ, Rio de Janeiro, July, 2005 and June 26, 2006.

109. Telephone interview with Fabio Moherdaui, focal point for coinfections, NSAP Brasília, June 26, 2006. This data is derived from information from the System for Mortality Information (Sistema de Informações em Mortalidade or SIM) and the National System for Diseases and Case Registration (Sistema Nacional de Agravos e Notificações or SINAN).

110. Interview with Mario A.V. Pessolani and nurse Ildinei, in charge of the TB program at the Brasília Mixed Unit, Federal District Government, April 7, 2005.

111. The inclusion of TB prophylaxis in the STD/AIDS treatment guidelines in the early 1990s was largely due to the efforts of M. Dalcolmo, CRPHF.

112. Ministry of Health, *Co-infecção TB/HIV*, PowerPoint presentation at NTCP regional meetings with state TB managers, presented by Fabio Moherdaui, NSAP liaison officer, Brasília, PN-DST/Aids (MoH), April, 2005.

113. Personal observation by the author, southeastern region meeting of state TB managers and the NTCP, Hotel Gloria, Rio de Janeiro, March 27-28, 2006.

114. Interview with Margareth Dalcolmo, CRPHF, Rio de Janeiro, July 5, 2005 and confirmed by an email message on May 29, 2006.

115. Site visit to the CRPHF, Rio de Janeiro, July 5, 2005.

116. CCM proposal to the Global Fund, "Strengthening of the DOTS Strategy in Large Urban Centers with High Tuberculosis Burden in Brazil" June 2005, p. 40.

117. The "National Inquiry on MDR-TB (*Inquérito Nacional para TBMR*), conducted with the support of MSH, funded by USAID.

118. Interview with Margareth Dalcomo, CRPHF, July 5, 2005.

119. Interview with Margareth Dalcolmo, CRPHF, July 5, 2005.

120. Lucia Maria Xavier de Castro, coordinator of Grupo Crioula, Brazilian Association of Black Women, Brazilian CCM Meeting, Brasilia, April 2005.

121. R.M. Abrahao, P.A. Nogueira, and M.I. Malucelli, "Tuberculosis in County Jail Prisoners in the Western Sector of the City of Sao Paulo, Brazil," *International Journal of Tuberculosis and Lung Disease*, vol. 10, No 2, February 2006, pp. 203–208.

122. Comment by Betina Durovni, head of the Transmissible Diseases Section of the Rio de Janeiro Municipal Health Division, Public Health Watch roundtable meeting, Rio de Janeiro, March 28, 2006.

123. Interviews with TB professionals, managers, and health care workers, Rio de Janeiro, São Paulo, and Brasília, 2005 and 2006.

124. CRPHF, *Boletim de Pneumologia Sanitária*, v. 13, n. 1, 2005.

125. Instituto Brasileiro de Geografia e Estatística (IBGE), Brazilian National Census, 2000. See www.ibge.gov.br/ (accessed June 26, 2006).

126. The information in this section reflects the author's extensive contacts with health care workers during his years of treatment for HIV/AIDS and TB.

127. Multiple Brazilian health professionals participating in Public Health Watch roundtable meetings in Rio de Janeiro, Brasilia, and Sao Paulo, March 2006.

128. Meeting between the Community Advisory Committee to the Open Society Institute/Treatment Action Group TB/HIV Monitoring and Advocacy Project and WHO officials, Geneva, March 2006.

129. Observation on site visits to primary health care units in Porto Alegre, Brasilia, and Sao Paulo throughout 2005.

130. For more details about Brazil's laboratory network, see "Strengthening of the DOTS Strategy in Large Urban Centers with High Tuberculosis Burden in Brazil" June 2005, pp. 39–42, available at www.theglobalfund.org/programs/grantdetails.aspx?compid=964&lang=en&CountryId=BRA (accessed June 14, 2006).

131. CCM proposal to the Global Fund, June 2006, p. 42.

132. Data from the MoH DATASUS database on out-patient services (*Produção Ambulatorial*), (www.datasus.gov.br, accessed on June 27, 2006). Information provided by technician in Brasilia on May 2006.

133. This figure is based upon the estimated number of patients with respiratory TB symptoms (1 percent of the population of roughly 186 million) and two sputum tests a year for each patient. This figure does not compare favorable with Peru's estimated 1,400,000 sputum tests annually among a population of 23 million. A. Ruffino-Netto, Impacto da reforma do setor saúde sobre os serviços de tuberculose no Brasil. Boletim de Pneumologia Sanitária, v. 7, n. 1, jan/jun 1999.

134. Interviews with MoH officials, Rio de Janeiro and Brasília in May 2006.

135. Phone interview with Maraci Marques Pereira, coordinator of quality control of the LACEN Rio de Janeiro, on June 29, 2006.

136. Comment by Betina Durovni, head of the Transmissible Diseases Sector of the Rio de Janeiro Municipal Health Division, Public Health Watch roundtable meeting, Rio de Janeiro, March 28, 2006.

137. See www.saude.rj.gov.br/Acoes/tuberculose.shtml.

138. "Cultura de entrada" and "cultura de acompanhamento," terminology employed in telephone inteview with Rossana Coimbra Brito, PCT-RJ, June 27, 2006.

139. Comment by municipal TB official, Public Health Watch roundtable meeting, Rio de Janeiro, March 28, 2006.

140. A.L. Kritski, M.B. Conde, G.R. Muzy de Souza, *Tuberculose. Do Ambulatório a Enfermaria* (São Paulo: Editora Atheneu, 2005—3a edition), p. 259

141. Information received during local visit to CRPHF on July 5, 2005.

142. CRPHF, *Boletim de Pneumologia Sanitária*, v. 13, n. 1, Rio de Janeiro, 2005, p.42.

143. CRPHF, *Boletim de Pneumologia Sanitária*, v. 13, n. 1, Rio de Janeiro, 2005, pp. 44–45.

144. Public Health Watch roundtable meeting, Rio de Janeiro, March 28, 2006.

145. CCM Brazil proposal to the Global Fund in the Fifth Round, "Strengthening of the DOTS Strategy in Large Urban Centers with High Tuberculosis Burden in Brazil," June 2005, available at www.theglobalfund.org/programs/grantdetails.aspx?compid=964&lang=en&CountryId=BRA (accessed June 14, 2006).

146. Information obtained at a CCM meeting from laboratory technicians at the Ministry of Health, May, 2006.

147. Ministry of Health, *Guia de Vigilância Epidemiológica*, Estrutura Organizacional do Programa Nacional de TB; Atribuições das Instâncias (Brasília: FUNASA, 2002), p. 58.

148. Comment by Margareth Dalcomo, director of CRPHF, Public Health Watch roundtable meeting, Rio de Janeiro, March 28, 2006.

149. Ministry of Health, ANEXO 04 da Norma Técnica—Incentivo HIV/Aids e outras DST—Nffl 01/2002 Portaria (Ministerial Decree) Nffl 2314, de 20 de Dezembro de 2002.

150. This agreement was the result of the meeting of the Inter-manager Commission of the MoH (Comissão Inter-Gestores), which is comprised of the MoH Technical Group, members of National Council of State Health Secretaries and representatives of the National Council of Municipal Secretaries of Health, Brasilia, July 1998. Telephone interview with Ingrid Carvalho, attorney, head of the Legal Department of Grupo Pela VIDDA-RJ, June 26, 2006.

151. Interview with J. Keravec, project director, MSH, at the CRPHF, Rio de Janeiro, July 5, 2005.

152. Comments by Afrânio Kritski, Federal University of Rio de Janeiro and member of the TB Network, Public Health Watch roundtable meeting, Rio de Janeiro, March 28, 2006. Information confirmed by email on June 28, 2006.

153. Comment by Lia Selig, former head of the PCT-RJ, during Public Health Watch roundtable meeting, Rio de Janeiro, March 2006.

154. Email message from Fabiana S. Vasques, nurse, Guarulhos, SP, sent on May 1st, 2006 by Enrico Sena from Brazilian Network of People Living with HIV and AIDS (RNP+) and participant at the Public Health Watch roundtable meetingin São Paulo, March 30, 2006.

155. Research institutions linked to the Ministry of Science and Technology include the National Council for Scientific and Technological Development (CNPq) and Funding for Studies and Projects (FINEP). See http://www.mct.gov.br/index.php/content/view/778.html (accessed on June 26, 2006)

156. Comments by Afrânio Kritski, Federal University of Rio de Janeiro and member of the TB Network, Public Health Watch roundtable meeting, Rio de Janeiro, March 28, 2006.

157. Interview with the Scientific League physicians and researchers Lia Selig, Marcia Bello, Anete Trajman, Rossana Brito, at the Hospital da Santa Casa da Misericórdia do Rio de Janeiro, March 14, 2005.

158. ICOHRTA partners in Brazil include the Adolfo Lutz Institute in São Paulo and the Infectious Diseases Unit of the Federal University of Espírito Santo as well as the USP and UFRJ.

159. Personal experience of author when receiving TB treatment, Copacabana Municipal Health Care Center (one of the largest TB treatment clinics in Brazil), Rio de Janeiro, 2004–2005.

160. Since 2003, the representative from the São Paulo Forum of AIDS NGO and the Brazilian Network of People Living with HIV/AIDS (RNP+) at the National Council of Health, José Marcos Oliveira, has acted as the key contact person for TB-HIV issues.

161. Personal observations of the author on the basis of his experience as a community mobilization consultant to PCT-RJ in 2003–2004. The project was funded by USAID, with technical assistance from MSH.

164. Bem-Estar Familiar no Brasil focuses primarily on family and reproductive health and is based in Rio de Janeiro. See www.bemfam.org.br (accessed June 20, 2006).

163. *Serviço Social da Indústria*, a powerful social and health institution of the Brazilian industrial association, established in 1946, with 2,285 units in 1,565 Brazilian municipalities. See www.sesi.org.br.

164. Conferência Nacional da Indústria, the largest industrial membership organization in Brazil, established in 1938. See www.cni.org.br (accessed June 20, 2006).

165. See Ezio T. dos Santos Filho, *Out of the Shadow: the Brazilian Social Movement in the Loan by the World Bank to the Brazilian National AIDS Program*, master's dissertation, Institute of International Relations, Pontifical Catholic University of Rio de Janeiro, Rio de Janeiro, 2002.

166. Author's personal experience as a consultant for the PCT-RJ between 2002 and 2003.

IV.
TB Policy in Nigeria

Contents

Executive Summary

Nigeria ranks fourth on the World Health Organization's list of TB high-burden countries. HIV is fuelling the TB epidemic, leading to a 6 percent annual increase[1] in the number of TB cases and a four-fold increase in HIV rates among people living with TB between 1991 and 2001. TB/HIV coinfection has made detection and treatment of TB even more challenging. Despite these alarming facts, TB awareness among political officials and health workers as well as the public at large is low, and this contributes to widespread misconceptions about TB and stigmatization of the people who have the disease.

The Nigerian government formally launched its National TB and Leprosy Control Programme (NTBLCP) in 1991 and adopted the World Health Organization (WHO)–recommended DOTS strategy in 1993. Although detection of smear-positive TB cases has tripled over the past eight years, the overall case detection rate of 27 percent[2] is far short of the WHO target of 70 percent. And while the treatment success rate hovered between 71 and 74 percent from 1996 to 2002—slightly below the global target of 85 percent—the latest annual treatment success rate was only 59 percent.[3]

Despite expressions of political will to control TB and a clearly articulated national TB policy, implementation has been severely hampered by a lack of funding. A recent grant from the Global Fund to Fight AIDS, Tuberculosis and Malaria is expected to help close the government's budgetary gap by providing new resources for TB control. However, government delays in disbursing even the limited funding that has been allocated to TB control are still widespread. Insufficient domestic budgetary allocations have also made it more difficult to attract additional support from the Global Fund in the past. Although there is some evidence of increasing government support, additional domestic funding is still required to guarantee that Nigeria will be able to ensure implementation of essential TB control activities across the country in the long term.

The NTBLCP provides technical and strategic support for TB control activities to Nigeria's 36 autonomous states, and this includes effective and systematic data collection. However, planning and implementation of TB services is largely decentralized to highly autonomous State TB and Leprosy Control Officers (STBLCOs) and Regional National TB Professional Officers. NTBLP efforts to raise awareness about TB and the requirements of the DOTS strategy and to increase political commitment to high-quality TB control programming must therefore focus on the state level as much as on the federal government.

Due to past patterns of donor involvement, states in the north still have far fewer TB services than those in the south. Donors, the NTBLCP, and regional and state officials must devote particular attention to expanding TB control activities in the northern states. In addition, states must develop targeted services to address the higher concentrations of TB

among vulnerable groups, including the urban poor, people living in remote areas, prisoners, migrant laborers, and people living with HIV.

The NTBLCP identifies the use of "strategic information/education and communication" as a key strategy for reducing TB prevalence. However, national and state-level efforts to publicize DOTS services are mainly one-time events organized around World TB Day. The NTBLCP, National AIDS and STIs Control Programme (NASCAP), and nongovernmental organizations (NGOs) must all increase their awareness-raising efforts, placing special emphasis on the curability of TB. The NTBLCP should seek opportunities to involve former patients who have completed treatment in campaigns to increase community- and patient-driven demands for improved TB and integrated TB/HIV services.

Particularly when contrasted with media coverage of HIV/AIDS, TB media coverage has been very sparse. NGOs should sensitize and mobilize reporters and editors of print, electronic, and broadcast media about the impact of TB on society. Media training should focus on basic knowledge about TB; assessment of government TB policy, budgets, and spending; and the government's success or failure in upholding international health commitments. NTBLCP and donor support for NGO activities in this area could increase media attention to TB and provide a much-needed boost to the level of community involvement in TB control efforts simultaneously.

Although the government provides TB treatment and diagnostic services free of charge, up to 60 percent of health services are provided through the private sector, which includes for-profit providers, local NGOs, faith-based mission hospitals, and traditional healers. Yet collaboration between the NTBLCP and private practitioners is very limited. Private facilities are not required to report data to the NTBLCP. Quality assurance of private services is not regulated, and many private practitioners do not provide TB treatment according to DOTS strategy. Patients often commence treatment with private practitioners, but run out of money before completing treatment and either switch to a public DOTS clinic or abandon treatment altogether. Action to encourage greater participation in DOTS strategy implementation by private providers should be an NTBLCP priority, especially given the rising threat of multidrug-resistant TB (MDR-TB).

Through bilateral assistance, the WHO, and international NGOs, the international community provides significant support to the NTBLCP. The recent push for scaling up of HIV/AIDS antiretroviral (ARV) drugs represents an opportunity for simultaneous expansion of integrated TB/HIV services and for renewed efforts to address the health worker shortage and gaps in the health infrastructure. While the media, the private sector, and NGOs can all play an important, supplementary role in TB control, the Nigerian government must demonstrate increased political will at all levels to support TB control efforts that will be sustainable in the long-term.

Background

Nigeria is one of the most populous[4] and resource-rich countries[5] in Africa, but it ranks among the poorest countries in the world.[6] About 66 percent of Nigerians subsist on less than one U.S. dollar per day. The country faces severe socioeconomic disparities, with a small number of wealthy families living in highly desirable housing districts, and a much larger number of poor families residing in overcrowded areas. Poverty levels are also higher in rural areas, where incomes are 30 percent lower than in urban areas.[7]

Until recently, Nigeria's economy has been severely strained by foreign debt. At the end of 2004, the country was indebted by over $30 billion (NGN 4.0 trillion). Rising debt—coupled with restrictions on public spending imposed by the World Bank and the International Monetary Fund (IMF)—placed major limitations on health sector funding allocations and spending, including the ability of public health programs such as the NTBLCP to secure and retain personnel. Per capita expenditure on health decreased by 75 percent between 1980 and 1987.[8] In October 2005, the Paris Club agreed to cancel $18 billion (NGN 2.4 trillion) of Nigeria's debt.[9] The federal government has announced its intention to channel NGN 100 billion ($816 million) of the annual savings from the debt relief gain into pro-poor programs that will assist the country in achieving the Millennium Development Goals. In the 2006 government budget, the health and education sectors were to receive the highest percentage (21 percent each) of the stated NGN 100 billion ($816 million).[10] Of this amount, the federal government has allocated NGN 4.4 billion ($35.9 million) for interventions on HIV/AIDS[11] and NGN 65 million ($530,000) for interventions to track patient treatment and manage TB and HIV/AIDS treatment adherence.[12]

Between 1994 and 1997, government health spending represented only 4.5 percent of the entire government budget.[13] In the 2006 budget, only 7 percent is allocated to health,[14] a minor improvement from previous years, but still a far cry from the Abuja Declaration's recommended target of 15 percent.[15]

Baseline statistics

Many Nigerians die as a result of preventable diseases that are linked with poverty. As of the year 2000, the average life expectancy for males stood at 52 years and for females, 55 years.[16] The under-five mortality rate is 146 per 1,000; it is estimated that close to 15 percent of children do not survive to their fifth birthday.[17] Nigeria has one of the highest levels of maternal mortality in the world, with estimates ranging from 704[18] to 1,500[19] maternal deaths per 100,000 live births.[20]

Nigeria ranks fourth among the 22 WHO-designated high-burden countries and has the highest number of new TB cases in Africa.[21] An estimated 300,000 TB cases are recorded every year, resulting in more than 30,000 deaths annually.[22]

Detection of smear-positive cases tripled between 1996 and 2004.[23] Much of this increase can be attributed to expansion of DOTS services and increased donor support during this time period. Nevertheless, the percentage of cases detected—27 percent of all TB cases, according to the Ministry of Health[24]—is still far below the WHO target of 70 percent.[25] (According to the WHO, the case detection rate was 21 percent during the same period.[26]) And while the treatment success rate hovered between 71 and 74 percent from 1996 to 2002—slightly below the global target of 85 percent—the current annual treatment success rate is only 59 percent.[27]

HIV is fuelling the TB epidemic and has made TB case detection even more challenging. The National AIDS and STIs Control Programme (NASCAP) estimated that the HIV/AIDS epidemic has caused a 6 percent annual increase in the number of TB cases.[28] Nationally, HIV prevalence among TB patients increased more than four-fold between 1991 and 2001.[29] According to WHO estimates, 27 percent of adult TB patients in Nigeria are HIV-positive.[30] Results from a 2001 assessment of HIV prevalence among TB patients in 12 out of the 36 states showed an HIV prevalence ranging from less than 5 percent in Oyo State to as high as 35 percent in Benue State.[31] HIV/AIDS is not only fueling TB incidence by compromising people's immune systems; it is also making TB harder to diagnose. The estimated percentage of smear-negative cases among total TB cases detected rose from approximately one-third in 1997 to nearly two-thirds in 2001, which is consistent with the increase in TB/HIV coinfection during that period.[32]

Political commitment

The federal government formally launched the National TB and Leprosy Control Programme (NTBLCP) in 1991 and adopted the WHO-recommended DOTS strategy in 1993. President Olusegun Obasanjo has also demonstrated his political commitment to TB control through his active participation in high-level meetings of the Stop TB Partnership, African heads of state, the African Union, and the World Economic Forum. However, public awareness of government-sponsored TB services at the federal, state, and local levels is still low.

The government affirmed its commitment to TB control in 2000 by adopting the Amsterdam Declaration. The Declaration has directly informed federal TB policy, most visibly in the development of the DOTS expansion plan.[33] This commitment was reinforced at the regional level when President Obasanjo hosted African heads of state at the Summit

on HIV/AIDS, TB and Malaria in Abuja in April 2001, resulting in the Abuja Declaration to Fight HIV/AIDS, Tuberculosis and Malaria.[34] President Obasanjo hosted the Abuja +5 Summit in May 2006, which resulted in new targets to extend universal access to prevention, care, support, and treatment for HIV-related services by 2010, including access to voluntary counseling and testing (VCT) and ARV services for all TB patients who are living with HIV.[35]

In January 2006, President Obasanjo helped to launch the WHO's Global Plan II with philanthropist Bill Gates and the UK Chancellor of the Exchequer, Gordon Brown, at the World Economic Forum in Davos, Switzerland. During the Forum, Obasanjo was quoted in a Stop TB Partnership press release:[36] "The Global Plan is fundamental for Africa, where tuberculosis was declared an emergency by 46 countries in 2005. . . . We hope the African Union will endorse this plan, and call upon African governments to commit their share of the resources needed to implement it."

Aside from these landmark meetings, key federal government officials have generally limited their political statements about TB to the occasion of World TB Day.

Unfortunately, the resolve reflected in these public statements has not been reflected in funding allocations, either in the federal[37] or state budgets.[38] TB awareness at the state and local level is low, although federally led DOTS expansion efforts have motivated some state government officials to become more involved in TB sensitization and advocacy activities.[39]

Where government commitment is lacking, religious and traditional leaders can sometimes play an influential role in advancing TB and HIV awareness, particularly at the community level. During the International Conference on AIDS and Sexually Transmitted Infections in Africa (ICASA) held in Abuja in 2005, both Muslim and Christian leaders highlighted the important role of religious leaders in the response to HIV/AIDS. For the most part, however, TB has not garnered such support, primarily because religious leaders are not sufficiently aware of the magnitude of the problem in Nigeria.[40] The Kano State TB program manager recalled one notable exception in which the Emir of Kano spoke extensively about both HIV/AIDS and TB in his Sallah message, urging Muslims to be tested for both diseases.

To win greater political commitment to TB control programming and support for increased resource allocation to TB control, state- and local-level officials need to be better informed about the burden of TB in their regions. The NTBLCP's awareness-raising efforts must target the state level as well as the federal government with accessible information detailing the facts about TB in Nigeria and the requirements of the DOTS strategy, and NTBLCP policies.

Public mobilization

The level of public awareness of TB and the TB/HIV coepidemic is generally low, and misconceptions about TB are widespread. Particularly when contrasted with media coverage of HIV/AIDS, TB coverage has been very sparse and has contributed little to raising awareness, countering stigmatization, or promoting greater government accountability on TB policy implementation. The media, nongovernmental organizations, and government all have a crucial role to play in increasing public awareness about TB and TB/HIV.

Media coverage

> *TB issues have not received much media coverage because TB is not considered a major issue.*
>
> *—Sola Ogundipe, senior editor and health correspondent, Vanguard Newspapers*[41]

Reporting on TB issues is mainly event-driven, with most stories appearing on or near World TB Day. Such stories generally focus on federal- and state-level spending on TB control and the availability of free TB treatment. Practical information such as the location and availability of TB services receives the least media attention.

With regard to TB, the media has not played a "watchdog" role. There has been little coverage of government performance *vis-à-vis* international commitments, and little investigative reporting on controversial matters such as the federal health budget, even though insufficient governmental contributions to TB programs resulted in the rejection of two Global Fund proposals.[42] Similarly, coverage of the role of international organizations generally provides information on donors' financial contributions or the conclusion of agreements with state governments, rather than evaluation of the impact of program implementation, or the role that international actors play in supporting the development and implementation of NTBLCP policy.

The poor quality of media coverage likely stems from the fact that journalists and editors have insufficient knowledge of TB. At one recent meeting, a group of health correspondents from major media houses said they had limited knowledge about the seriousness of the TB epidemic, how TB is spread, the linkage between TB and HIV, and other related issues.[43] In fact, some articles have presented inaccuracies about the nature of the TB epidemic in Nigeria, and in Africa more broadly.[44] Several organizations—including Journalists Against AIDS—have begun to address these gaps through training workshops for selected journalists, but such workshops need to occur on a more regular basis.[45]

This lack of knowledge is exacerbated by the fact that journalists face difficulties in obtaining information from persons involved in implementing TB programs, including government officials.[46] Government officials are often unwilling to grant press interviews without permission from a superior,[47] and they often hesitate to speak freely with the press for fear of being misquoted or misrepresenting the government agency.[48]

By contrast, reporters who write stories on HIV/AIDS tend to have access to a much wider range of information sources, including government officials as well as civil society groups, NGOs, and people living with HIV/AIDS. As a result, HIV/AIDS receives significant media coverage. The media itself has also mobilized around the need to highlight HIV/AIDS. Thanks in part to a greater number of media workshops, editors and media owners tend to see HIV/AIDS as a major development challenge and a "political" issue, while TB and other health topics are viewed as "soft" issues, which will not generate enough public interest.[49]

Targeted efforts to educate and mobilize media owners, editors, and journalists around the economic and social toll of the TB epidemic (in addition to the personal health risks) could pay big dividends in terms of increased media coverage and heightened public awareness with regard to TB and TB/HIV. Media training should focus on improving skills for investigative reporting; assessing government policy, budgets, and spending; encouraging ongoing dialogue with policymakers; and monitoring government policy vis-à-vis international commitments.

Government, civil society organizations, and health advocates should mount joint efforts to encourage a greater sense of responsibility among the media to fulfill a public education function with regard to TB. At the same time, TB program implementers should be more forthcoming with information on policy and programs, and should make an effort to forge more constructive partnerships with the media.

Public awareness of TB and TB/HIV

> *People may not be aware that a person has TB until he or she dries up and is almost at death's door.*
>
> *—Danjuma Adamu, coordinator, the Council of Positive People (COPOP)*[50]

Levels of public awareness vary depending on people's educational background, age, the strength of the TB control program in their region, and other factors. Even some health providers still lack knowledge about the relationship between TB and HIV/AIDS.[51] To date, no comprehensive, nationwide assessments of TB awareness have been conducted.

One of the few studies to assess public awareness about TB was conducted in Enugu State, where at least 60 percent of the population was found to know about TB prevention, transmission, and where to access TB treatment services.[52] By contrast, in the neighboring Imo State, also in the southeastern region, the State TB and Leprosy Control Officer (STBLCO) acknowledged that people are not as well informed about TB,[53] though some DOTS clinics provide patient education programs and conduct public outreach about TB control efforts in the state, including through opportunities such as the annual August meeting of Umuada, a gathering of women of Igbo origin. Imo State TB authorities also plan to work with the Ministry of Women's Affairs to broaden their community outreach efforts.[54] While both Enugu and Imo states have long-standing TB control programs, several factors may affect the varying levels of public awareness in the two states, including funding levels for TB control programs, prioritization of community education and mobilization, and literacy levels.

Public awareness about the linkage between HIV/AIDS and TB is generally low, even among people living with HIV. Although many support groups for people living with HIV—especially those based in urban centers—generally provide information and promote discussion on the symptoms of TB along with information on other opportunistic infections,[55] the general public and even members of these support groups often lack basic knowledge about TB such as the location of treatment centers. The national coordinator of the Network of People Living with HIV/AIDS in Nigeria (NEPWHAN) explained:

> *Even I don't know where to access anti-TB drugs. . . . NEPWHAN has 110 support groups*[56] *in all the states and we need to have a good understanding of the DOTS program. HIV treatment can benefit from DOTS; if compliance is a problem on ARVs and DOTS is successful on this, we can learn lessons on how to improve the ARV treatment program.*[57]

One recent study showed that only about 8 percent of 148 people living with HIV in Lagos and Kaduna had some knowledge of TB.[58] About 92 percent had heard about TB, but did not know how TB is transmitted and treated. Twelve percent were unaware that they had received treatment for TB-related infections and not just a persistent cough.[59]

The coordinator of the Council of Positive People, a support group for people living with HIV based in Kano, also noted that awareness of TB and its linkage to HIV/AIDS is low in his state. The Kano STBLCO asserted that the available information, education, and communication materials on TB provided in both *Hausa* (a local language) and English were still inadequate.[60]

As a result of a lack of knowledge about the importance of drug adherence, people with TB sometimes stop taking their medications as soon as they feel better. The FCT's TB programme manager noted that even though TB treatment is free, many patients do not adhere to treatment: "Patients need to help themselves, too. It can be quite frustrating when clients refuse to take treatment."[61] Treatment literacy activities are needed in order to help patients comply with treatment regimens.

Stigmatization and discrimination against TB patients

> *Most people [in Imo State] still think that TB patients have been poisoned. Some think it is a curse from the gods (especially when many family members get infected), and they go to fortune tellers and prayer houses for deliverance.*
>
> *— C.O. Nwakonobi, Imo STBLCO*[62]

Lack of information about the availability of effective TB treatment fuels stigmatization and negative attitudes about TB and TB patients. Before the advent of DOTS, it was commonly believed that TB treatment was expensive and life-long, and this fueled a widespread belief that TB could not be cured at all.[63] Even though the number of DOTS centers has increased since 2002, the general public[64] continues to harbor misconceptions about TB, including the belief that people with the disease have been "poisoned."[65] Former TB patients sometimes hold negative attitudes towards TB and TB patients, because they fear reinfection.[66]

Stigmatization can be a major obstacle to the implementation of effective TB control programs. According to the Oyo STBLCO, "[Setting up] TB clinics in most LGAs [Local Government Areas] is a Herculean task for us. Many people associate TB and leprosy together and normally kick against situating a TB clinic in their vicinity."[67] Stigmatization associated with TB colors the attitudes of public officials as well: the Oyo State TB Programme had to appeal to state-level officials to ensure cooperation from local governments.

Health care workers sometimes contribute to TB-related stigmatization, as the director of a support group for women living with HIV in Lagos reported:

> *Stigma is frustrating access to TB treatment especially for people living with HIV and this is increasing the problem of drug-resistant TB. The hostile attitude of health care officials to people living with HIV and TB patients is responsible for this. Nobody would want to go to a place where he or she is likely going to be treated like an outcast. No matter how*

effective the treatment becomes, at the end of the day, you will simply avoid such places. If that is the only place where such treatment exists, so be it; some individuals would rather die than go there.[68]

The chief environmental health officer at a TB clinic in Oyo State noted that some health workers prefer not to be posted to TB clinics for fear of infection. To address this issue, his clinic holds periodic "enlightenment" seminars and workshops for medical personnel on TB and TB treatment procedures.[69] "I have been working in the TB field for the past 10 years, and I am still hale and hearty," he added.[70]

Health care providers differ on the necessity of isolating hospitalized TB patients.[71] One NASCAP official defended the practice, explaining that it is not based on discrimination, but because of the infectious nature of the disease: "Care providers have the responsibility of safeguarding public health by ensuring that a TB client who is capable of infecting others does not do so." At the same time, he acknowledged that the isolation of TB patients in hospitals may hinder "free communication with [TB patients]." Other Nigerian experts and community members believe this type of isolation is medically unnecessary and contributes to the stigmatization.[72] A health care provider at the Nigerian Institute of Medical Research concluded that "officials at the DOTS centers should be trained on how to care for TB patients, especially on the need to show concern and love."[73]

Training and education can help ensure that health workers—both providers of TB services and administrative staff—receive accurate information about TB and develop greater sensitivity to the needs of TB patients.[74]

Effect of stigmatization and discrimination on TB patients' behavior

The discrimination and stigmatization that TB patients experience can affect patients' care-seeking habits, treatment compliance, job security, and personal relationships. The STBLCO in Imo State reported that stigmatization and discrimination dissuade many people from accessing the state's 41 TB treatment centers: treatment coverage is only 14 percent and the case detection rate is 27 percent.[75] The state TB programme manager in the FCT noted that stigma gets in the way of effective client follow-up in some communities in Abuja,[76] where clients sometimes provide fictitious addresses to avoid being traced to their homes. In some communities, patients have complained about the fact that the motorcycles used by TB health workers are easily recognized, and broadcast one's TB status to their families and communities. To work around these problems, some health workers encourage their clients to provide mobile phone numbers to facilitate communication. To avoid the danger that TB patients might suffer stigmatization simply because they visit DOTS clinics, some

STBLCOs recommend that TB services and other health services should be offered at the same sites, so that TB patients cannot be easily distinguished from people seeking treatment for other ailments.[77]

TB-related stigmatization and discrimination may also affect job security. One TB patient in Lagos State claimed that many TB workers have abandoned their jobs due to pressure from fellow workers concerned about becoming infected and that other TB patients have reported discrimination and even dismissal by supervisors after receiving a TB diagnosis.[78]

Government, donor, and NGO public outreach

> *There is [a] need for massive public enlightenment. We can fight stigma when senior government officials begin to support TB control, just like they have supported HIV control and the National Programme on Immunization.*
>
> *—C.O. Nwakonobi, Imo STBLCO*[79]

The NTBLCP identifies the use of "strategic information/education and communication" as a key strategy to reduce the prevalence of TB significantly.[80] However, national and state-level efforts to publicize DOTS services have consisted mainly of events or announcements on World TB Day. The low national case detection rate is widely seen as a result of "inadequate public awareness campaigns and involvement of communities in DOTS."[81] The NTBLCP and NASCAP must increase their awareness-raising efforts, working together and in partnership with NGOs—particularly those with experience in raising public awareness about HIV and AIDS—to place special emphasis on the curability of TB and to address TB- and HIV-related stigmatization in the Nigerian context.

The NTBLCP has implemented several well-designed outreach campaigns, but on a very limited scale. For example, in 2004, the NTBLCP funded a Pidgin-language radio show called "Oga Driver," which focused on raising awareness around TB transmission and treatment. The NTBLCP publicity campaign on World TB Day in 2004 emphasized three key messages: TB is curable; treatment is free; and treatment is available.[82] This publicity campaign also employed an effective theme: "DOTS cured me. . . . It can cure you, too." These campaigns should be intensified and expanded to target both youths and adults throughout the country, and throughout the year.

Some STBLCOs have initiated successful public awareness campaigns. For example, the Oyo State TB Programme organizes an annual public education campaign on World TB Day, including a mini carnival to sensitize people about TB and the link between TB

and HIV. In addition to organized events, the state program encourages current and cured patients to tell others about the importance of early TB diagnosis and treatment throughout the year. According to an STBLCO, these peer education activities have paid off: The number of patients attending DOTS clinics in Oyo State has doubled.[83]

In other states, STLBCOs have deliberately limited their communications activities on the basis of the WHO's recommendation that TB services should not be widely publicized until they are actually available.[84] Although the NTBLCP was officially launched in 1991, expansion of DOTS services only commenced in 2002 and did not reach all states until the end of 2003. The STBLCO in Kano State explained why information had not yet been disseminated to the media and the public:

> *We have not really disseminated any information about the State TB Programme to the media because the programme is still in the pilot phase. We do not want to publicize these centers because we are still studying them to see what we can learn from our mistakes and achievements.*[85]

Now that DOTS services are more widely available in most states, public awareness activities should be stepped up to increase awareness of the services they offer.

The lack of national and state-level activities to increase public awareness is largely due to the lack of NTBLCP funding for this purpose. With limited budgets and high advertising and media costs,[86] few state programs have developed their own communication strategies. In Imo State, the STBLCO noted that the state program has no budget to support public-awareness activities and that, in addition to increasing allocations to the state level, the federal government should subsidize state-owned media organizations, the private sector, and NGOs, especially those working on HIV/AIDS to design and implement TB awareness campaigns.[87]

Until recently, donors have not filled the budgetary gaps for awareness-raising activities; with few exceptions, donor support has focused on providing DOTS services. The Global Fund's Fifth Round five-year grant will devote approximately $15.9 million (NGN 2.1 billion) to advocacy, communication, and social mobilization (ACSM),[88] which could help to address this gap if allocated and spent as planned. The grant was awarded in October of 2005, but as of September 2006, the grant agreement had not been signed. The Global Fund stipulated that the Nigerian government restructure its Country Coordinating Mechanism (CCM), among other things, before the agreement could be finalized.

At the local level, DOTS centers can play an important educative role. For example, many DOTS clinics in Ibadan and the FCT provide ongoing "enlightenment" talks on TB and the relationship between TB and HIV, which has had a direct and positive impact on patients' level of awareness.[89] However, individuals interviewed outside of the vicinity of

the DOTS clinics in Ibadan seemed to be unaware of the basic facts about TB.[90] Federal and state-level governments should encourage outreach initiatives in these and other states, targeting populations who are not already attending DOTS facilities. The NTBLCP could provide support by designing and disseminating well-designed and accessible IEC materials, adapted for print, radio, and television.

Some NGOs have initiated their own TB awareness-raising projects. For example, the Ummah Support Group, a faith-based organization for people living with HIV, has taken steps to educate its members about TB, refer suspected TB cases to DOTS clinics, and provide treatment support to those who receive a positive diagnosis.[91] The NTBLCP should seek out opportunities to involve people living with HIV as well as TB patients who have completed treatment in campaigns to increase community- and patient-driven demands for improved TB and integrated TB/HIV services. NASCAP and the NTBLCP should also increase attention to the linkage between TB and HIV in their own communication interventions, including through expanded partnerships with support groups of people living with HIV.

Government Program for TB and TB/HIV Control

Program content

In principle, since 1993, the NTBLCP has embraced and adopted the WHO-recommended DOTS strategy to achieve its objective of "reducing the prevalence of TB to a level where it no longer constitutes a public health problem."[92] While the government's commitment to TB control has increased since the program's formal launch in 1991,[93] the realities on the ground reveal the NTBLCP faces numerous obstacles in effectively addressing the five elements of DOTS, especially in the areas of human resource capacity, laboratory infrastructure, and monitoring and reporting.

The government's commitment to TB is detailed in the NTBLCP's Strategic Plan[94] and the *Workers' Manual* and in the Federal Ministry of Health's (FMOH's) Health Sector Strategic Plan. Of these three documents, the *Workers' Manual* contains the most practical guidelines for TB and leprosy control activities and provides important technical and operational instructions for diagnostic and treatment procedures, as recommended by the WHO. Although the NTBLCP manager at the Central Unit in Abuja insisted that the most recent 2004 edition of the *Workers' Manual* has been distributed to all state programs,[95] the availability of the manual varies from center to center. In Oyo State, for example, the manual was readily located by doctors in the clinics visited.[96] The chief matron at the Lagos Mainland Hospital confirmed the manual was available both at that facility and at most other DOTS centers in the country.[97] However, a common trend with government policy guidelines in Nigeria is that even when such documents are available in a particular facility, the guidelines may not be readily accessible to all staff who need them. The Ogun STBLCO note, for example, that the manual was available on a limited basis in Ogun LGA facilities because it "contained typographical errors which were being corrected."[98]

A lack of funding has hampered the ability of the NTBLCP to implement these clearly articulated policies and plans—an issue that was underscored in a recent report by an international monitoring team.[99]

DOTS expansion

Through a rapid expansion program involving all donor partners, the NTBLCP had established DOTS programs in all 36 states and the FCT (and 548 out of the 774 LGAs) by December 2005, increasing access to DOTS from about 45 percent coverage in 2002 to about 70 percent by the end of 2005.[100] According to the NTBLCP, increased DOTS coverage has resulted in a near doubling of the case detection rate over the 2002–2004 period.[101] (The WHO attributed the rise in case detection for the period between 1994 and 2004 to increased TB incidence associated with the spread of HIV.[102])

Despite this dramatic expansion of DOTS, much of the population remains underserved by TB diagnostic and treatment services. The DOTS strategy is not always implemented according to the guidelines provided in the Strategic Plan and the *Workers' Manual*. In a number of centers visited in the FCT, for example, health workers noted that several of their clients came from neighboring states (such as Kogi and Nassarawa) because treatment centers were not available in their own LGAs. Even within a state, clients have been reported to travel a distance of about 40 kilometers every day to receive treatment,[103] which may be a contributing factor to relatively high rates of default on treatment; according to health workers interviewed in the FCT, some patients stop making the trip to the clinic as soon as they feel better.

Several state programs have made adjustments in their implementation of the *Workers' Manual* recommendations to increase treatment adherence and to improve efficiency. For example, while the *Workers' Manual* states that three sputum samples must be taken from TB patients for laboratory tests, only two samples are collected per patient in Lagos State.[104] State officials made the adjustment because of difficulties encountered by laboratory staff in providing diagnostic results for an increased patient volume in a timely basis. In order to produce results more efficiently, the Lagos State TB Programme also plans to provide florescent microscopes in 2006 with support from the International Union Against TB and Lung Disease (IUATLD).[105]

The DOTS center in the Asokoro General Hospital in Abuja has also adopted some programmatic changes to make treatment more convenient for clients and to improve overall efficiency. For clients in the first two months of treatment who are unable to come to the facility daily, the hospital packages drugs based on a weekly dosage.[106] Patients who take the weekly dosage must bring a designated family member who has agreed to watch the patient take his or her medications during the week. After two months, the clients can then receive a month's supply of drugs at a time to take home. These programmatic adjustments suggest that states and DOTS centers require some flexibility in order to improve case detection and treatment adherence.

With the additional support expected from the Global Fund's Fifth Round grant, the NTBLCP aims to increase the national case detection rate to 50 percent by 2008; increase

accessibility to TB diagnostic tests by establishing 900 additional laboratories in both the public and private sectors by 2010; and establish community-based DOTS programs in six states.[107]

Patient-centered approaches such as community-based DOTS represent a promising model for achieving better DOTS coverage in a country as vast as Nigeria, though implementation will have to be adapted to different regional contexts. Expanded partnerships with civil society organizations and volunteer programs could bring DOTS closer to patients' homes and help address the shortage of trained TB workers.

TB/HIV coinfection

> *Sputum tests alone [often do] not give the right diagnoses of TB, especially if the patient is HIV-positive. . . . We no longer refer TB/HIV coinfected patients to DOTS centers because they are often lost.*
>
> *—Rosemary Adu, a clinician, National Reference Laboratory*[108]

So far, there are only limited linkages between the NTBLCP and NASCAP, and these are primarily at the federal level. In July 2006, the FMOH established a National TB/HIV Working Committee and announced that DOTS would be instituted in all ART centers in the country.[109] (A time frame for this plan was not specified.) In addition, recent efforts to scale up access to ARVs represent a significant opportunity to expand collaborative TB/HIV services.

With technical support from the WHO and the U.S. Agency for International Development (USAID), the NASCP, NTBLCP, and National Action Committee on AIDS (NACA) endorsed a draft National TB/HIV Strategic Plan for 2006–2008. Based on this Strategic Plan, the FMOH plans to:[110]

- Establish the mechanisms for collaboration between TB and HIV/AIDS programs at the national level and in the 36 states and FCT by the end of 2007;
- Implement TB prevention (using isoniazid preventive therapy) in 36 states and in the FCT by the end of 2007;
- Expand HIV prevention and care in 36 states and the FCT by the end of 2007;
- Conduct TB/HIV pilot activities in six states.[111]

Some state and local TB control offices have already begun to implement these activities. For example, the NTBLCP and NASCAP have identified focal points to coordinate interagency activities[112] and the WHO plans to recruit a staff person to coordinate their

TB/HIV activities.[113] TB/HIV pilot activities are underway in the six states, with TB and HIV program managers from these states meeting regularly to develop and discuss progress on their collaborative TB/HIV strategies.[114] Some state AIDS control programs in southwestern states are setting up VCT services within DOTS centers,[115] and Asokoro Hospital in Abuja (which also houses a DOTS center) has begun to refer its TB clients for VCT services within the same facility. However, one hospital employee noted that "not all TB clients are interested in doing an HIV test."[116]

But there are still a number of barriers to establishing effective TB/HIV services. First, even though early diagnosis of TB among people living with HIV/AIDS is critical in the management and treatment of HIV to prevent rapid progression to AIDS, many TB clinics are not equipped to diagnose TB in TB/HIV coinfected patients.[117]

The Zankli Medical Center, a private medical and operational research facility in Abuja, is currently the only facility in Nigeria equipped to perform cultures for TB patients.[118] Obtaining the diagnostic equipment needed for early diagnosis of TB among people living with HIV, who are among those at greatest risk of contracting the disease, should be a top priority for the Nigerian government. Unlike TB tests, which are free, HIV tests sometimes have a fee attached. The NASCAP should make every effort to minimize or eliminate these fees.

Second, health care workers are often "territorial" and reluctant to collaborate with people working in other fields. Clinicians may also lack information about the reliability of existing tools such as smear tests in diagnosing coinfected patients in research-strapped settings.[119]

The NTBLCP should provide ongoing training on TB/HIV for health care providers, emphasizing the importance of collaboration in achieving early TB diagnosis among people living with HIV.[120] State governments also need to commit added resources and personnel to encourage more effective linkages between TB and HIV programs.[121]

National policy on HIV/AIDS

Both the National Strategic Framework (NSF) on HIV/AIDS (2005–2009) and the Health Sector Strategic Plan (HSSP) for HIV/AIDS include several references to TB/HIV. The National Policy on HIV/AIDS explicitly emphasizes the need to provide a comprehensive continuum of care for people living with HIV, including nationwide access to cost-effective drugs to treat "tuberculosis and all other opportunistic infections" and ongoing training on the management of opportunistic infections for all health care providers.[122] Despite this policy, some HIV/AIDS activists believe that insufficient attention is given to opportunistic infections. According to the coordinator of NEPWHAN, less than one-third of people living with HIV are in immediate need of ARVs; for those individuals, treatment for TB and opportunistic infections may be of greater urgency.[123]

Early in 2005, President Obasanjo mandated the federal minister of health to increase the number of people living with HIV on antiretroviral therapy (ART) from 30,000 to 250,000 by the end of 2006.[124] An effort of this magnitude represents a major opportunity to expand TB/HIV services. In fact, the Plan to Scale Up Antiretroviral Treatment for HIV or AIDS in Nigeria (2005–2009) includes several references to TB/HIV coinfection.[125] For example, the government is identifying DOTS centers for commencement of ARV provision, and plans to offer ART and TB services at a greater number of tertiary and secondary facilities.[126] However, additional planning will be required to achieve greater integration of TB into the ARV scale-up effort. Planning should include measures to ensure provision of VCT services at every DOTS center; TB diagnostic and treatment services (or at least referral mechanisms) at all VCT and HIV/AIDS treatment and support centers; and training for health care personnel on the administration of drugs to coinfected patients.

NGO and donor-led programs for integration of TB/HIV services

NGOs and donors such as USAID, CIDA, the International Federation of Anti-Leprosy Associations (ILEP), Médecins Sans Frontières (MSF), and Family Health International (FHI) have provided some level of support for TB/HIV integrated services. For example, the Global HIV/AIDS Initiative Nigeria (GHAIN) is partnering with the German Leprosy and Tuberculosis Relief Association (GLRA) to provide TB/HIV palliative care services and to strengthen drug storage and laboratory facilities for TB/HIV centers. The Fifth Round Global Fund grant includes approximately $6.8 million (NGN 908 million) for TB/HIV activities.[127] TB/HIV activities are also included in the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), which is supporting HIV/AIDS prevention, care, and support interventions in six states through an $84.4 million (NGN 11.3 billion) five-year grant.[128]

MDR-TB

The NTBLCP primarily focuses on ensuring basic DOTS coverage[129] and has no separate budget line for prevention or treatment of multidrug-resistant TB (MDR-TB).[130] Relatively few cases of MDR-TB have been recorded in Nigeria,[131] but this may be because most laboratories lack the capacity to monitor drug resistance.

Nigeria's treatment success rate of 59 percent is among the lowest for any high-burden country[132] and raises serious concerns about elevated risk of a serious MDR-TB problem developing and about the country's capacity to deal with the problem should it arise. According to one NIMR researcher, "because the pattern of drug resistance among TB strains circulating in Nigeria has not been studied, it is difficult to determine the ideal second-line drugs for our population."[133] A drug sensitivity study is now underway in Enugu State by the University of Nigeria Teaching Hospital, cosponsored by the WHO and GLRA.[134]

NTBLCP's protocol for management of MDR-TB seems unclear to some STBLCOs. For example, the Kano STBLCO noted that the Kano State government could request the second-line drugs used to treat MDR-TB from the NTBLCP.[135] However, the Ogun STBLCO and other experts stated that second-line drugs are not available through the NTBLCP.[136] Treatment programs for MDR-TB are virtually nonexistent at the state level. A few private hospitals offer second-line drugs at a cost of between $5,475 (NGN 731,000)[137] and $10,000 (NGN 1.3 million) per patient[138] annually, putting these drugs out of the reach of most Nigerians.

In order to apply for quality second-line drugs at a reduced price through the WHO's Green Light Committee, the government must first demonstrate the capacity to administer the first-line drugs effectively.[139] However, with support from the Fifth Round Global Fund grant, the NTBLCP plans to establish six reference zonal laboratories that will be equipped to conduct drug sensitivity testing; this will provide the infrastructure to support an application to the Green Light Committee.[140]

The NTBLCP should step up its support for NGOs and community-based organizations to conduct peer support and treatment literacy activities to promote treatment adherence. Doing so would bring the added benefit of relieving the burden on health care personnel, who otherwise struggle to ensure that sufficient counseling and support is provided to clients, patients' relatives, community groups, and support groups for people living with HIV.

Case recording and reporting

The NTBLCP has an effective, centrally coordinated system for collecting basic TB data.[141] However, the accuracy of the government's TB statistics is compromised by the fact that a significant percentage of the population seeks TB services from private practitioners, many of whom do not report to the NTBLCP.

The NTBLCP requires officially designated DOTS centers to record and report case data. And for the most part, state governments and public DOTS centers—including prisons[142] and armed services facilities[143]—are complying with NTBLCP requirements.[144] State and zonal data are compiled and reviewed at the central level on a quarterly basis,[145] with technical assistance from the WHO.[146] International NGOs supporting national TB control efforts are also partnering with state programs to provide such information, to the NTBLCP.[147]

However, a large number of people with TB symptoms seek treatment from a range of private providers, including private hospitals, "patent medicine stores" (where patients can purchase drugs without a prescription), nursing homes, and traditional healers, who

usually do not report case data to the NTBLCP.[148] Given the fact that these providers do not report their data to the NTBLCP, it is likely that national case statistics underestimate the total TB caseload.

In fact, the Joint International Monitoring Mission raised serious concerns about the accuracy of NTBLCP data, given that it does not reflect cases reported within the private sector.[149] Though some states, including Lagos, have made attempts to collect data from private hospitals and traditional healers as well as from public facilities,[150] their efforts have foundered, in part because private facilities are not required by law to comply. According to the WHO south west zonal coordinator, additional cases are lost because diagnostic procedures are inconsistent within facilities that are not practicing DOTS (private facilities often use chest x-rays to diagnose TB)[151] and because data reported by private facilities are not comparable to data from public facilities since their standards of diagnosis and treatment are different from those utilized by the NTBLCP.

To improve the accuracy of its national data, the NTBLCP should consider taking positive measures to encourage private practitioners to comply with its case recording and reporting guidelines. This could include developing a system to require and enforce DOTS implementation from all private practitioners who offer TB services or providing incentives to those who voluntarily participate, such as periodic training sessions on data collection and reporting.

TB/HIV data collection

Only a few public and private facilities collect data on TB/HIV coinfection on an ongoing basis.[152] For example, only one of the three facilities[153] providing integrated TB/HIV services visited for this report in Abuja was collecting such data. The few TB/HIV surveys that have been conducted suggest that coinfection could be on the rise in some parts of the country.

Several NGOs have conducted studies to estimate TB/HIV coinfection. For example, one GLRA study in Ebonyi State revealed that 18 percent of TB patients in one mission hospital were HIV-positive in 2003.[154] A Damien Foundation pilot study in two NGOs that offer free VCT tests in Osun and Oyo states found that 14 percent of TB patients were HIV-positive in 2005.[155]

The FMOH reported a marked increase in both TB and HIV between 1991 and 2000 based on data from a HIV sentinel survey, which included rates of TB, HIV, and STIs among antenatal clinic attendees in 12 states. The HIV rate among TB patients increased over the 10-year period. In 1991, approximately 2 percent of the antenatal clinic attendees surveyed had active TB and approximately 1.8 percent were HIV-positive.[156] By 2000, approximately 19 percent of antenatal clinic attendees had active TB and approximately

5.8 percent were HIV-positive.[157] By 2003, the rate of TB coinfection among people living with HIV was estimated to be 27 percent.[158]

However, rates of coinfection differ from state to state. In Imo State, for instance, the Federal Medical Centre (FMC) is the only government-run ARV center in the state, and one of the few facilities providing coordinated TB/HIV programs and collecting data on coinfection.[159] Of the 389 TB cases at the FMC's Chest Unit (TB ward) between October 2003 and March 2005, just four patients tested positive for HIV.[160] It is not clear whether the TB/HIV rate is significantly lower in Imo State, or whether this relatively low rate results from an under-diagnosis of coinfection despite the availability of integrated services.

According to the WHO national professional officer for HIV/AIDS, results of the sentinel surveys on HIV/AIDS and TB/HIV coinfection are only estimates.[161] Since 1991, seven sentinel surveys on HIV/AIDS have been conducted, but these only survey women attending antenatal clinics at public health facilities. Findings from this sample are then used to extrapolate the results for the general population. This excludes people who seek care at private facilities as well as many groups who are considered to be of higher risk for HIV, such as sex workers, prisoners, truck drivers who travel long distances, and men who have sex with men.

To obtain a better estimate of TB/HIV coinfection in the country, the government could conduct sentinel surveys more regularly, taking care to include a more representative sample of at-risk groups.[162] However, given the country's large population, this would be a very expensive undertaking. A proxy would be to incorporate indicators for TB/HIV coinfection in the National Demographic Health Survey (NDHS), which is conducted every five years. Findings from the NDHS, which provides information on a range of health issues, could then be compared with the standard sentinel survey.[163] In addition, the government should encourage clinics that do offer integrated TB/HIV services to record data on coinfection.

Targeting vulnerable populations

The NTBLCP's 2006–2010 Strategic Plan identifies "targeting vulnerable and underserved populations" as a strategy for promoting overall behavior change and client uptake of services[164] and for ensuring the availability and accessibility of TB services across the country. In practice, government and donor efforts to extend TB services to vulnerable groups have been inadequate. TB control efforts have failed to target groups at risk of HIV, including migrants, sex workers, men who have sex with men, orphans, vulnerable children, and injection drug users. People living in poor or remote areas and migrants are particularly vulnerable to TB infection and confront significant barriers to accessing information and treatment.

NTBLCP data are not disaggregated to detect patterns of TB infection among specific vulnerable groups or among different income levels. However, anecdotal evidence and recent research on TB and TB/HIV suggest that TB incidence is significantly higher among communities affected by poverty.[165] Poor housing conditions and overcrowding contribute to the high concentration of TB cases among poor communities, particularly in densely populated areas such as the city of Lagos,[166] and people living in these areas often lack access to basic information about TB and the link between TB and HIV.[167]

There are also significant regional disparities in access to TB treatment services. Northern states offer far fewer TB services than those in the south, due at least in part to the fact that southern states have received significant donor support from ILEP partners. As of January 2005, Zamfara State in the north had only 10 DOTS centers for a population of 3.6 million people, while Ogun State in the south had 116 DOTS centers for 2.3 million people.[168] The uneven distribution of diagnostic and treatment centers also affects the quality of NTBLCP case data; with an insufficient number of facilities to diagnose and track patients, state programs in the north are almost certainly underreporting the number of TB cases in their states to the NTBLCP.

The picture is gradually changing. Since 2002, new funding for DOTS expansion from the Canadian International Development Agency (CIDA), USAID, WHO and ILEP partners has helped to change the uneven distribution of DOTS services. However, disparities persist, and continued attention to TB control in the northern states is still warranted.

TB programs often fail to reach migrant laborers and patients who reside in remote areas. In some urban areas such as the FCT, the government has recently implemented a campaign to demolish the illegal dwellings that abound in poorer areas of the city. Folashade Momoh of the FCT TB and Leprosy Control Programme said that tracking patients who have been displaced from their homes in these areas is proving to be an uphill struggle: "[In the FCT], residents have been forced to relocate to distant satellite towns, or to locations where they can no longer be traced by TB health workers."[169]

To reach patients who live far from health facilities or who might be at risk for defaulting on treatment, the NTBLCP and donors sometimes equip TB supervisors with motorcycles or other vehicles to administer DOT in patients' homes and to track "defaulters."[170] In fact, many state programs have community health extension workers (CHEWs) who follow up with patients in their homes.

The government has made some progress in targeting prisoners. Following an outbreak of TB cases among the prison population, the NTBLCP's programs for prisoners have expanded over recent years[171] in Akwa-Ibom, Borno, Cross Rivers, Edo, Ebonyi, Enugu, Delta, FCT, Abia, Rivers, Akwa, Oyo, Ondo and Imo states.[172] In Oyo and Lagos states, prison facilities do not have in-house medical personnel, but state TB program officials visit to collect sputum samples and to administer DOT. Still, one government official from Prisons

Services in Lagos noted that the prisoners were being "neglected" in terms of access to TB treatment.[173]

Following the example of the HIV/AIDS program, the NTBLCP should support research to identify those populations and communities that are most vulnerable to new TB infection, as the basis for developing targeted services to reach these populations more effectively.

Program management

Administration

The FMOH formulates health policies and provides strategic guidance, coordination, supervision, monitoring, and evaluation. It is also responsible for the management of teaching hospitals and medical schools, disease surveillance, essential drugs supply, vaccine management, and the provision of specialized health care services at tertiary health institutions.

Each of the three levels of government (i.e., federal, state, and local) has a constitutional responsibility to finance health care and their specific roles and responsibilities are clearly defined within the Nigerian Constitution.[174] However, since states operate as autonomous entities, the FMOH cannot compel the state ministries of health to implement the health policies and programs it develops. All national health policies are approved by the National Council of Health, which comprises all state health commissioners and the Federal Minister of Health. There is often a large gap between policy formulation by the FMOH and state and LGA programs.[175]

The NTBLCP operates under the FMOH's Department of Public Health at the national level; at the state level, the STBLCP is situated under the office of the State Director of Public Health. The Central Unit of the NTBLCP provides technical and strategic support for TB control activities to the 36 states and the FCT. But planning and implementation of TB services is run by the STBLCOs, who, as state government officials, are not responsible to the NTBLCP. The STBLCPs in turn coordinate state-level TB activities and provide technical guidance and assistance to the LGA TB control offices. The *Workers' Manual* contains detailed job descriptions of key personnel involved in the vertical management of the NTBLCP as well as guidelines for reporting and communication procedures among personnel at the federal, state, and LGA levels.[176]

According to the *Workers' Manual*, at the national level, the NTBLCP director should "maintain active contact and cooperation with health-related ministries, departments,

organizations and research institutions with a view to promoting inter-sectoral and inter-disciplinary collaboration."[177] At the state level, such collaboration has been inconsistent. For example, the Ogun STBLCO reported that there are no institutional linkages between STBLCPs and colleagues in other governmental departments, and the Damien Foundation's medical adviser noted that such linkages are presently nonexistent in Oyo State.[178] However, the state program implementation team in Kano State does include individuals from different government ministries, the Council of Traditional Leaders, and the Council of Ulamas (religious leaders).

Staffing

Insufficient funding of the health sector over the past 20 years has contributed to "brain drain" and a crisis in the health sector's ability to recruit, adequately support, and retain key health care personnel, including TB workers. TB program implementers have acknowledged that more health personnel are needed to implement its ambitious DOTS expansion plans,[179] particularly in laboratories.[180]

Until recently, health sector spending caps imposed by the World Bank and the International Monetary Fund (IMF) placed major limitations on the recruitment of new personnel. In some regions, poor working conditions and nonpayment of staff benefits have led to the resignation of large numbers of doctors, nurses, and other health care workers, paralyzing service delivery.[181] Some of the best-qualified medical personnel have been "poached" by international donor agencies to staff and run their programs. In Lagos State, a WHO officer asserted that the state program is well staffed and hires and trains new personnel to support DOTS expansion as needed.[182] However, at one of the facilities in Lagos State visited for this report, only one nurse was available to attend to patients, suggesting that human resources at that facility may be insufficient.

All state- and LGA-level personnel recruited for implementation of the TB services are supposed to undergo comprehensive, performance-based training at the National Training Centre for TB and Leprosy in Zaria.[183] The NTBLCP provides regular staff training in most of the country. In Imo and Lagos states, the organization of ongoing training for TB control officers, supervisors, and laboratory scientists has been supported by partners such as the GLRA.[184] The Kano STBLCO noted that NTBLCP training is regularly provided to all staff on DOTS guidelines, and that extra training sessions have been arranged as new TB centers have opened.[185]

Interviews with TB officials in Imo and Ogun states suggested that TB personnel sometimes feel undervalued and insufficiently trained and supported. For example, the Imo STBLCO noted that financial incentives, recognition for good performance, and other forms of support from the state TB program are minimal.[186] Some TB personnel in Ogun State

also attested to an insufficient level of support: one lab scientist in Ogun noted that he had last attended a training session in 1999.[187]

It is still unclear what impact the Paris Club agreement will have on the hiring of additional health care workers. The federal government's plan to channel NGN 100 billion ($816 million) of the annual savings from the debt-relief gain into pro-poor programs could be spent on the recruitment of health personnel in theory, but there has been a downsizing of civil service personnel as part of government reform programs in recent years.

The NTBLCP's Human Resource Development Work Plan indicates that the NTBLCP aims to recruit and train additional trainers for staff development programs, to support the development of operational research capacity among program managers at all levels, and to update the curriculum at medical schools. These activities should be complemented by additional incentives for TB workers as well as opportunities to train and support NGO and volunteer workers in community-based DOTS programs. International agencies and donors could also play a valuable role by explicitly supporting the further development and implementation of the NTBLCP Human Resource Development Work Plan to help the NTBLCP recruit and retain skilled TB workers.

Budgeting and expenditures

Expressions of political will have not resulted in the allocation of sufficient financial support for the NTBLCP's TB control efforts at the national, regional, or local levels. According to the WHO, the NTBLCP budget for 2006 is $19 million (NGN 2.5 billion), up from $14 million (NGN 1.8 billion) in 2005, thanks in large part to the Fifth Round Global Fund grant[188] and over $5 million (NGN 667 million) in support from other international donors.[189] Although donor support will help fill critical funding gaps, long-term core funding from the Nigerian government and a higher level of commitment and financial accountability by state- and local-level authorities will be necessary to support a sustainable response, especially in light of the impact of the HIV/AIDS epidemic on the spread of TB.

On April 26, 2006, during a recent Stop TB Partnership meeting held in Abuja, a few members of the Stop TB Board visited President Obasanjo. The meeting provided a platform to highlight the impact of the TB epidemic in Nigeria and the urgent need for increased government support to TB control efforts. The president made a commitment to increase funding to the program, although no specific amount was stipulated.

Funding bottlenecks exist at every level of government. At the federal level, bureaucratic holdups—known colloquially as "due process"—are responsible for delays in the release of approved funding from the Ministry of Finance to the FMOH to the NTBLCP's Central Unit. An NTBLCP official noted that the newly appointed director of public health is working to "fast track" the process.[190]

Similar funding bottlenecks occur at the state- and local-government levels.[191] According to the Ogun STBLCO, "Even when money has been approved by the highest authority, it takes time before all the necessary officials, who are signatories to the account, eventually countersign it."[192] In Oyo State, for example, the state government had promised approximately $76,000 (NGN 10 million) for TB control in 2004, but only about 25 percent had been released one year later.[193]

LGAs and state governments also fail to pay their share of funding agreed upon in memoranda of understanding (MOUs) with donor organizations. For example, in the MOUs between ILEP partners and state governments, states are typically supposed to provide 30 percent of the budget while the ILEP partner provides 70 percent. It is widely known among ILEP partners that many state governments do not hold to this agreement, and that government agencies are not held accountable for their financial commitments.[194] For instance, in 2004, the Damien Foundation, Oyo State, and the state's LGAs had signed an MOU, but annual counterpart funding from the LGAs was still not available almost one year later.[195] As one health care provider in Ogun State said, "Remove the donor and everything would crash."[196]

The Global Fund grant of $68.3 million (NGN 9.1 billion) for 2006–2011 comes at a critical time to fill funding gaps for TB control activities. However, the government should not view this and other donor funding as an opportunity to absolve itself of financial responsibility in efforts to control TB. While international support has played a critical role in funding and in providing technical support to the NTBLCP, there are widespread concerns that the government remains too dependent on external support for the running of the TB control program. Donors should place more emphasis on tailoring donor support in ways to increase national capacity. The FMOH and NTBLCP must in turn accept greater financial responsibility and political commitment for TB control.

Few civil society organizations are involved in monitoring NTBLCP policies and spending or in efforts to advocate around the need for increased TB resources. ActionAid Nigeria, the Civil Society on HIV/AIDS (CiSHAN), and JAAIDS are actively tracking funding for HIV/AIDS control. Donors could make a valuable contribution by building the capacity of civil society organizations to monitor TB control efforts in Nigeria, including budget monitoring.[197]

Monitoring and evaluation

The NTBLCP has a functioning reporting system that could be effectively utilized to track progress on TB control from the Central Unit to the clinical level.[198] Although quarterly, annual, and zonal meetings facilitate regular monitoring and evaluation of TB services,[199]

supervision, monitoring, and evaluation are relatively weak at all levels.[200] Currently, the capacity at the central level for effective supervision is inadequate; resources for DOTS supervision at state and local government levels are insufficient.[201]

There is a need to increase capacity at the central-level NTP in planning, monitoring, and supervision as well as to improve communication with individual state programs.[202] This will help in achieving a key strategic objective of the 2006–2010 plan: to "strengthen M and E systems at all levels to ensure at least 95 percent consistency and timeliness of reporting."[203]

Infrastructure, drugs, and research

Primary health care infrastructure

> *Where [primary health care] services are available, the quality is such that people prefer to go elsewhere for the services.*
>
> *—Executive Director, the National Primary Health Care Development Agency*[204]

The national health system provides three tiers of health care: the primary, secondary, and tertiary levels, which are funded by the federal, state, and local governments, respectively. The public health sector accounts for about 40 percent of the health services provided in Nigeria, while NGOs and the private sector—including hospitals, donors, clinics, and pharmacies—account for the other 60 percent. The National Health Policy of 1988, which was revised in 2004, is based on the principles of social justice and equity, yet government analysis reveals that during the 1992–2003 period, out-of-pocket expenses accounted for over 60 percent of health spending, while federal, state, and local governments provided only 13 percent, 4 percent and 2 percent, respectively.[205]

Since 1979, primary health care has been considered the cornerstone of the health system. The government also provides a range of integrated, preventive, curative, and rehabilitative health care services (although such services are not always free of charge). The DOTS program is intended to utilize the infrastructure of the existing primary health care system, yet this is not the case in practice. In Imo State, for example, the state TB program is unable to utilize some of the primary health care (PHC) centers for DOTS because of the poor conditions of the infrastructure and the laboratory facilities there.[206] In order for TB services to be better integrated into primary health care services, TB diagnostic and treat-

ment services should be considered part of the federally defined "minimum package of health." PHC facilities also need to be upgraded to better serve the populace.

Laboratory infrastructure

> *[The NTBLCP should strengthen] supervision at all levels to improve sputum smear microscopy . . . access to TB services by expanding diagnostic coverage and reducing transport costs.*
>
> —*WHO,* Global Tuberculosis Control: Surveillance, Planning, Financing[207]

The NTBLCP recognizes that efficient laboratory diagnosis is critical for TB control, yet lack of quality assurance continues to be a major problem throughout Nigeria. In many states, there are simply too few laboratories to analyze the volume of samples collected. The NTBLCP set a target to establish 1,500 microscopy centers for TB diagnosis by the end of 2010. As of December 2005, only 592 centers, or one center per 230,000 people, had been established.[208] The NTBLCP urgently needs to implement systematic quality assurance of smear microscopy in all six zones and to increase the number of laboratories and personnel equipped to analyze sputum samples.[209]

One major infrastructural limitation observed at TB diagnostic centers at the PHC level is that these centers do not have well-equipped laboratories under the same roof. Such centers usually send sputum samples to laboratories at other facilities that have the requisite equipment and reagents to conduct smear testing. For example, of the several primary health care posts visited in Lagos, Imo, and Oyo states, none contained the basic infrastructure for laboratory testing.[210] Supervisors take sputum samples to the nearest general hospital or clinic when enough samples have been collected to justify the trip. The logistical challenges and the time delay associated with the transportation of samples raise concerns about the quality of test results obtained from these samples.

The WHO observed that "most primary health centers are in generally poor condition, lacking equipment and reagents for sputum microscopy."[211] The 2004 International TB Monitoring Mission conducted a number of site visits and interviews, and noted the following major challenges: absence of a national network for quality assurance for sputum microscopy; limited capacity to conduct cultures, including sensitivity testing;[212] weak capacity to diagnose extrapulmonary, smear-negative, and pediatric TB;[213] lack of communication between NTBLCP administrative offices and laboratories regarding numbers of patients examined and numbers of TB cases; and insufficient coordination between the National Reference Laboratory and the NTBLCP.[214]

To address some of these challenges, the 2006–2010 Strategic Plan has listed strengthening laboratory services as among the central activities for scale-up of TB control.[215] The NTBLCP aims to have 1,548 microscopy centers (almost triple the current number) by 2010.[216] With technical assistance from the WHO, the FMOH is working to provide quality assurance and more advanced equipment and qualified laboratory personnel.[217] A NTBLCP report notes that training workshops on TB diagnosis using sputum microscopy for laboratory technicians were conducted in 2004 and 2005 in 17 states.[218]

One-off training workshops are not sufficient; laboratory staff, STBLCOs, and supervisors must be trained on an ongoing basis to address common errors in smear reading, recording, and reporting in order to ensure effective supervision and diagnoses.[219] Regular training and monitoring of health and laboratory personnel will also help to ensure that logistical arrangements for transportation of sputum samples are as seamless as possible. In addition to building more laboratories, recruiting additional laboratory technicians will be necessary to conduct smear microscopy tests, which will allow patients to receive results more quickly.

There is also an urgent need for the National Reference Laboratory and the NTBLCP to strengthen laboratory supervision at all levels and to develop and implement a system to monitor laboratory stockpiles of supplies and reagents.

Drug distribution systems

Although drug shortages were a problem in the past, the supply of first-line drugs has been adequate since 2003[220] and no problems are anticipated, thanks to strong support from the Global Drug Facility and other donors.[221] STBLCOs in Oyo, Ogun, Kano, Lagos, and Imo states confirmed that drug supplies have been adequate and buffer stocks have been regularly available.[222] However, the International Monitoring Mission report stressed the need for the FMOH to improve arrangements for port clearance of the drugs as well as to facilitate domestic transportation of TB drugs to zonal and state levels to prevent any possible drug shortages.[223]

Education and research

There is a lack of operational research on TB and minimal government support for such activities. Zankli Medical Center, a private hospital in Abuja, is one of the few facilities in Nigeria that is conducting operational research to inform TB/HIV policy and programs. One recently published study compared sputum smear tests with cultures and found that "scanty" smear tests in high HIV and TB prevalence areas are "more likely to be true than

false-positives." In the absence of equipment to conduct cultures, the authors concluded that it makes sense to treat patients who have "scanty" smear tests with anti-TB medication: "This would be particularly useful in African countries with high TB prevalence (where the test would have a high predictive value), whose populations often have low access to services and whose diagnostic facilities are overburdened."[224] The Zankli Center is now in the final stages of a separate study looking at the effect of micronutrient consumption among TB patients.[225]

The government and donors should sponsor additional studies like these to promote the engagement of Nigerian researchers in TB control activities and to provide critical, context-specific input for the further development of NTBLCP policies.

Partnerships

Collaboration with private sector

> *TB is stigmatized for its association to HIV, hence patients will tend to seek private treatment to protect privacy and avoid stigma. Management of TB patients in private practice is not of acceptable quality. Diagnosis is often based on chest x-rays rather than sputum smear. Several different anti-TB regimens are prescribed depending on the experience of the private provider and on the patient's purchasing power.*
>
> *—Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*[226]

Private practitioners are estimated to provide up to 60 percent of Nigeria's health services.[227] There are several reasons for this: private providers are believed to offer higher quality services; more courteous treatment and shorter waiting times; and greater accessibility, especially since public facilities are known to experience frequent strikes by health workers protesting nonpayment of salaries and poor working conditions.

Yet few of these for-profit providers are collaborating with the NTBLCP in DOTS implementation. Because private providers do not operate under the auspices of the NTBLCP, quality assurance of the TB services they provide is an issue of concern. For example, most private providers involved in TB treatment in Imo State and other parts of the country are not practicing DOTS and some private providers administer streptomycin to clients instead of the NTBLCP's standard regimen.[228] Patients often begin treatment with private practitioners (including medical doctors, traditional healers, and prayer houses),[229] but switch to a public clinic or abandon treatment altogether when they run out of money. The profit motive prevents most private providers from referring patients to public facilities that treat clients free of charge.[230]

There is no specific forum for information sharing—including information about guidelines and case data—between private providers and the government program, but the NTBLCP reports having attempted to reach out to private medical practitioners through umbrella professional groups such as the Nigerian Medical Association and the Guild of Medical Directors.[231] Some private practitioners feel they are being sidelined by the NTBLCP and its partners in TB control efforts. At the same time, it is believed that donor restrictions that place more emphasis on public providers and free treatment may limit the government's incentives to address public-private collaboration.[232]

Some private providers assert that for a mixed, public-private DOTS program (PPM) to be effective, the NTBLCP should work in consultation with organizations of private practitioners (such as the Association of Medical Practitioners), provide education and training for private providers, offer incentives to private providers for referral of TB patients to public DOTS centers, and improve their access to national guidelines and IEC materials.[233]

The Gombe State TB Programme initiated a PPM DOTS program in 2004. As part of the program, seven private clinics and the state TB program signed an MOU. The state program provides free TB drugs to the private clinics and the clinics in turn are required to give the drugs free of charge to patients, but they are permitted to charge consultation fees. Clinical staff at private facilities also benefit from capacity-building programs, such as trainings on DOT and other forms of technical assistance. In exchange, the facilities are expected to report case data to the state TB program regularly. While the PPM concept seems promising, only 17 smear-positive cases were reported in 2005 by the seven clinics to the Gombe State Programme. However, a study conducted by the FMOH and World Bank showed that fewer people in northern states such as Gombe rely on health facilities in the private sector, so this low number of smear-positive cases may also be a reflection of the relatively small number of people who use health services in those seven clinics. The state program plans to expand the PPM program to include additional private facilities, but limited funding for supervision is currently available.[234] The GLRA is piloting a similarly modeled PPM program in Abia and Anambra states.

The Fund for Innovative DOTS Expansion through Local Initiatives to STOP TB (FIDELIS) is supporting the NTBLCP to implement a new PPM project in selected states (Enugu, Gombe, Lagos, Kano, Plateau, and River states).[235] The project is placing special emphasis on helping private practitioners to provide more accurate TB diagnostic services.

In addition, with the Global Fund grant, the NTBLCP will implement a PPM project with 350 private not-for-profit and 150 private for-profit care providers to engage in DOTS strategy by 2010. According to the Global Fund proposal, the project will actively seek to involve the Guild of Medical Directors in DOTS compliance. The NBLCP will also provide incentives to private providers involved such as diagnostic tools, drugs, and training programs for personnel. Facilities that have benefited from NTBLCP training will be expected to provide feedback on the program so the NTBLCP can learn from successes and mistakes.

This Global Fund PPM project could provide a promising basis for expanded engagement with private practitioners. Prior to implementation, the government should consult with the implementers of other PPM DOTS models such as the Gombe State TB Programme project and the FIDELIS model to learn from their experiences. Since such a large portion of the population relies on the private sector for medical support, there is a continued need to expand and scale up PPM models beyond the Global Fund project.

Collaboration with local NGOs/community organizations

In contrast to civil society engagement in HIV/AIDS control, there has been very limited participation in TB control efforts.[236] Over the past three years, a few civil society organizations have taken on the issue of TB and HIV/AIDS; clinics, support groups, and advocacy organizations have increasingly recognized the need to integrate TB into their definition of comprehensive HIV/AIDS care.

When the Country Coordinating Mechanism convened to prepare Nigeria's Global Fund proposals during the Fourth and Fifth Rounds, NGOs and community groups were invited to provide input.[237] This was a positive step to increase civil society engagement in TB issues. The Global Fund Fifth Round grant includes an ACSM component, which should be used to help to build capacity in and encourage civil society organizations—particularly advocacy organizations and networks of people living with HIV/AIDS—to increase their engagement around TB and TB/HIV.[238] Doing so could provide support to the NTBLCP in expanding its own capacity.

Civil society organizations—particularly those that are community-based—are often well positioned to understand community needs and to mobilize community members to seek diagnosis and comply with treatment. Organizations such as the Ummah Support Group,[239] a support group for people living with HIV based in Abuja, and the Living Hope Care Organization, in Illesa, Osun State,[240] have already begun to provide educational support and necessary adherence support to TB/HIV coinfected members. However, there is an urgent need for existing organizations of people living with HIV and civil society organizations to work jointly to promote TB/HIV advocacy efforts as well as to promote and support improved utilization and uptake of TB/HIV services.[241]

Given the inextricable link between TB and HIV, it is essential for HIV/AIDS groups to expand their commitment to TB control and to mainstream TB into their HIV/AIDS interventions, including in their efforts to expand treatment access. HIV/AIDS organizations—many of which have developed expertise in public mobilization and building awareness—can fill a critical void in the need for TB advocacy.

Recommendations

The government of Nigeria and the NTBLCP should:

- **Demonstrate political will at the federal, state, and LGA levels**, including by
  - — Providing technical assistance to state and local officials to stay better informed about the burden of TB in their regions;
  - — Ensuring more-effective distribution and spending of resources allocated to TB control activities at the federal, state, and local levels.
- **Increase government expenditure in health** to 15 percent of the national budget to meet the African heads of states' recommended target and the 2001 Abuja Declaration of Action, including by
  - — Fulfilling the federal government's promise to channel NGN 100 billion ($816 million) of the annual savings from the debt-relief gain into pro-poor programs;
  - — Devoting increased resources and attention to TB control in the northern states to correct past patterns of concentrated donor involvement in the southern states.
- **Expand DOTS services**, including by
  - — Reviewing models for patient-centered approaches, such as community-based DOTS, with a view to adapting these models for implementation in the Nigerian context;
  - — Building the capacity of DOTS centers to conduct awareness-raising and outreach activities to encourage greater uptake of TB patients;
  - — Building the capacity of primary health care providers (especially those involved in HIV/AIDS care) to administer TB services;
  - — Encouraging greater participation in provision of TB services by private providers, learning from pilot projects such as the Gombe State TB Programme project and the FIDELIS model;
  - — Expanding partnerships with civil society organizations to implement TB control activities.

- **Address higher concentrations of TB among vulnerable groups**, including by
  - — Supporting operational research to help identify which groups are not accessing TB services and why, as the basis for developing targeted services for these groups;
  - — Developing special outreach services for populations known to be at higher risk of TB, such as the urban poor, people living in remote areas, prisoners, migrant laborers, and people living with HIV/AIDS;
  - — Earmarking funds in the NTBLCP and state budgets for TB services that target specific vulnerable populations, as practiced in HIV/AIDS control activities.
- **Increase awareness about TB and DOTS**, emphasizing the curability of the disease, including by
  - — Allocating sufficient funding toward advocacy, communication, and social-mobilization activities;
  - — Seeking opportunities to involve people who have completed TB treatment in campaigns to increase community- and patient-driven demand for improved TB and TB/HIV services;
  - — Strengthening partnerships among the NTBLCP, NASCAP, and NGOs to promote treatment literacy;
  - — Ensuring that state and local governments are informed about the requirements of the DOTS strategy by, among other things, disseminating and providing ongoing training on the most recent *Workers' Manual* to all state and LGA TB program offices and DOTS facilities.
- **Facilitate media coverage of TB**, including by
  - — Encouraging TB program implementers to provide more public information on policy and programs;
  - — Providing communication and media relations training for TB program managers and encouraging them to forge constructive partnerships with the media and civil society organizations;
  - — Partnering with NGOs—especially those working on HIV/AIDS communication and mobilization—to conduct awareness-building campaigns;

— Funding civil society organizations (especially those with media experience dealing with HIV/AIDS) to engage journalists on TB and TB/HIV issues, to undertake outreach efforts and provide journalists training on TB and TB/HIV, and to create more information and resources for journalists to increase coverage of TB and TB/HIV issues;

— Working closely with community-based groups to design and disseminate accessible and compelling TB materials available in local languages for print, radio, and television reporters as part of their public information function.

- **Address the health worker shortage and gaps in the health infrastructure**, including by

  — Developing a strategy to recruit and retain adequate numbers of TB workers to staff existing and planned DOTS facilities;

  — Encouraging TB case recording and reporting among private practitioners and local NGOs; this might be accomplished by:

    – Designing public-private partnership programs in consultation with organizations of private practitioners (such as the Association of Medical Practitioners);

    – Supporting education and training for private providers by working with, among others, established groups such as the Guild of Medical Directors and the Nigerian Medical Association;

    – Providing TB drugs free to private clinics in exchange for full reporting of all TB cases;

    – Enhancing private providers' access to national guidelines and information, education, and communication (IEC) materials.

  — Providing ongoing training for laboratory staff, STBLCOs, and supervisors to address common errors in smear reading, recording, and reporting and ensure effective supervision and diagnoses;

  — Recruiting additional laboratory technicians to conduct smear microscopy tests, which will enable patients to receive results more quickly;

  — Mandating the National Reference Laboratory to strengthen laboratory supervision at all levels and developing and implementing a system to monitor laboratories' stockpiles of supplies and reagents.

- **Expand integrated TB/HIV services**, including by
  - — Taking full advantage of the scale up of HIV/AIDS ARV drugs to implement TB services at VCT and ARV centers and to integrate HIV testing and treatment into DOTS facilities;
  - — Providing ongoing training and forums for health care providers on methods for early diagnosis of TB among people living with HIV;
  - — Providing more sensitive diagnostic tools, including equipment to perform cultures;
  - — Encouraging state governments to commit resources and personnel to creating programmatic linkages between TB and HIV control efforts;
  - — Encouraging ongoing information-sharing among health care workers in both sectors to more effectively address TB and HIV/AIDS.
- **Address the threat of MDR-TB**, including by
  - — Gathering baseline data on MDR-TB;
  - — Increasing government capacity to provide second-line TB drugs;
  - — Ensuring that sufficient counseling is provided to clients, patients' relatives, community groups, and support groups of people living with HIV to promote treatment adherence;
  - — Working in partnership with NGOs to promote peer support for treatment adherence among TB patients;
  - — Offering incentives to private providers for referral of TB patients to public DOTS centers.
- **Address TB and TB/HIV related stigmatization**, including by
  - — Training and educating health workers on stigma-related issues;
  - — Integrating TB and HIV/AIDS services into primary health care services where appropriate, yet ensuring that quality of services is preserved.

Nongovernmental and community organizations should:

- **Establish—especially through existing HIV/AIDS organizations—community-based partnerships with government** to implement patient-centered TB services, including community-based DOTS.
- **Conduct treatment-literacy campaigns to educate HIV/AIDS workers and organizations about the threat of TB among people living with HIV.**
- **Sensitize and mobilize reporters, editors, and owners** of print, electronic and broadcast media about the impact of TB on society, including by
  - — Organizing training workshops with a focus on basic knowledge about TB, information about NTBLCP policy, budgets, and spending, and on the government's success or failure in upholding international health commitments;
  - — Highlighting the economic and social toll of the TB epidemic in addition to the personal health risks;
  - — Promoting greater and ongoing dialogue with policymakers.

International and bilateral donors should:

- **Ensure that their activities and programs support the government strategy and reinforce NTBLCP capacity**;
- **Support the NTBLCP in recruiting and retaining skilled workers** instead of recruiting competent government workers for their own agencies;
- **Sponsor in-country operational research** to better inform NTBLCP policy;
- **Provide direct support to civil society organizations—**particularly advocacy organizations and networks of people living with AIDS**—**to promote greater community engagement in TB control activities.

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JAAIDS hosted a roundtable meeting on January 25, 2006, to invite feedback and critique on a draft of this report; participants included representatives from the government, nongovernmental organizations, and international agencies. (See appendix for list of roundtable meeting participants). The final report has undergone revisions, based on valuable comments and suggestions from the roundtable participants, with additional input from other health experts.

Note on the research process

Nigeria is a massive country of about 130 million people living in 36 states and the Federal Capital Territory (FCT). Given the size of the country and limited period of the research, the author focused research on six different areas of the country: Lagos, Oyo, Ogun, Kano, and Imo states and the FCT. These six regions range in population density, but all have functioning DOTS and HIV/AIDS care and support programs.

Public Health Watch TB Monitoring Project

NIGERIAN ADVISORY GROUP

Edugie Abebe, former Director of Public Health, Federal Ministry of Health, Abuja
Mohammed Belhocine, Country Representative, World Health Organization (WHO), Abuja
Oni Idigbe, Director General, Nigerian Institute of Medical Research (NIMR), Lagos
Abigail Obeten, a person living with HIV and Coordinator of Fountain of Life Church HIV/AIDS Programme (FOLCHAP), Lagos
Olumuyiwa Odusanya, Consultant, Department of Community Health & Primary Care, Lagos State University College of Medicine, Lagos
John Osho, Medical Adviser, Damien Foundation, Ibadan, Oyo State
Nana Tanko, Executive Director, Open Society Initiative for West Africa, (OSIWA), Dakar, Senegal
Isaac Warnow, Department of Pediatrics, Federal Medical Centre, Gombe

Appendix

Public Health Watch/ JAAIDS Roundtable Meeting participants

January 25, 2006, Abuja

Chike Max Adia
Alliance Right Nigeria
maxdoxmax@yahoo.com

Nana Afadzinu
Open Society Institute for Western Africa (OSIWA)
Abuja
nafadzinu@osiwa.org

Olayide Akanni
Journalists Against AIDS (JAAIDS)
Abuja
olayide@nigeria-aids.org

E. Asadu
NASCP
Abuja
Ecasadu@yahoo.com

Emily Bell
Public Health Watch
Open Society Institute
New York, NY USA
ebell@sorosny.org

Joseph Chukwu
German Leprosy & TB Relief Association
Enugu
glra@phca.linkserve.com

Claire Ebegbare
Gede Foundation
eclaray@yahoo.com

Faith Edeme
Kapital FM, Radio House
faithedeme@yahoo.co.uk

Mallam Musa Emmanuel
Defence Health Club, Mogadisha Cantonment
Abuja
Autamaimasa@yahoo.com

Anao Faith
Abuja

Omololu Falobi
JAAIDS
Lagos
Omololu@nigeria-aids.org

Musa Jere
Umah Support Group National Mosque
Abuja
Jeremusa2000@yahoo.co.uk

Dare Odumuye
Alliance Rights Nigeria
All_aidsng@yahoo.co.uk

O. Odusanya
Lagos State University College of Medicine
Ikeja
oolumuyiwa@yahoo.com

Isiramen Olajide
Zanklin Medical Centre
Isiramena@yahoo.com

Taiwo Olubukola
Development Communications Network (DEVCOMS)
Lagos

Linda Omenka
Organisation for Positive Productivity (OPP)
Abuja
Ladycynthia2003@yahoo.com

A.F. Omoniyi
NTBLCP
Abuja
Omoniyifadare@yahoo.com

C.C. Onubogu and Idigbe
Nigerian Institute of Medical Research Yaba (TB Unit)
Cathyonugbogu@yahoo.co.uk

J.A. Osho
Damien Foundation Belgium
Iyeganku, Ibadan
Dfnig@skannet.com

Sunday Seu
Share Hope Organisation
Abuja
sharehopeng@nepwhan.com

Abiola Tubi
NTBLCP
Abuja
tubiabiola@yahoo.com

Theresa Ukpo
Organisation for Positive Productivity (OPP)
Abuja
tesperson@yahoo.com

Ekemini Yemi-Ladejobi
News Agency of Nigeria
Abuja
ekeminiituen@yahoo.co.uk

Alti Zwandor
UNAIDS
Alti.zwandor@undp.org

Notes

1. National Tuberculosis and Leprosy Control Programme (NTBLCP), *2005 National Tuberculosis Programme Progress Update* (Abuja: NTBLCP, 2005), p. 19.
2. National Tuberculosis and Leprosy Control Programme (NTBLCP), *2005 National Tuberculosis Programme Progress Update* (Abuja: NTBLCP, 2005).
3. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 107.
4. As of 2003, according to the National Population Commission, Nigeria's population was 126.2 million. National Population Commission, available at www.population.gov.ng/factsandfigures.htm (accessed on May 23, 2006).
5. Nigeria is the sixth largest oil producer in the world. The export of crude oil currently accounts for more than 80 percent of the total national revenue. Available at ww.cid.harvard.edu/cidtrade/gov/nigeriagov.html (accessed on May 23, 2006).
6. The Human Development Index in 2000 ranked Nigeria at 151 out of 174 countries and among the poorest 20 countries in the world. Available at http://hdr.undp.org/statistics/data/cty/cty_f_NGA.html (accessed May 23, 2006).
7. DFID, *Country Health Briefing Paper*, 2000, available at www.dfidhealthrc.org/shared/publications/Country_health/Nigeria.pdf (accessed May 23, 2006).
8. A. Colgan, "Hazardous to Health: The World Bank and IMF in Africa," *Africa Policy E-Journal*, *2002*, available at www.africaaction.org/docs02/sap0204b.htm (accessed April 20, 2006).
9. "Paris Club in Nigeria Debt Deal," BBC News, Oct. 20, 2005, available at http://news.bbc.co.uk/1/hi/business/4359286.stm (accessed May 23, 2006).
10. Ministry of Finance, Federal Government of Nigeria. An overview of the 2006 budget is available at www.fmf.gov.ng/news.php?id=66 (accessed April 24, 2006).
11. Budget Office of the Federation: www.budgetoffice.gov.ng—This figures have also been independently confimed by JAAIDS which is carrying out a monitoring study on health allocations in the 2006 budget.
12. Ministry of Finance, Federal Government of Nigeria. An overview of the 2006 budget is available at www.fmf.gov.ng/news.php?id=66.
13. Department of Public Information, United Nations, "Country in Focus: Nigeria: Deterioration in Education and Health Services," *Africa Recovery*, June 1999, 13 (1): 12. Available at www.un.org/ecosocdev/geninfo/afrec/vol13n01/health.htm (accessed May 23, 2006).
14. Ministry of Finance, Federal Government of Nigeria. An overview of the 2006 budget is available at www.fmf.gov.ng/news.php?id=66 (accessed April 24, 2006).
15. *Abuja Declaration on HIV/AIDS, Tuberculosis and Other Related Infections*, April 24–27 2001, paragraph 26, available at www.aegis.com/news/usis/2001/US010409.html (accessed May 23, 2006).
16. *World Bank Development Report*, 1999/2000
17. United Nations Children's Fund (UNICEF) and DFID Health Systems Resource Centre, 2000.
18. Federal Office of Statistics and UNICEF, 2000.
19. UN Population Fund, 2002.
20. *National HIV/AIDS & Reproductive Health Survey* (NARHS), 2003.
21. Available at www.stoptb.org/countries/ (accessed on April 24, 2006).
22. "Nigeria Records 300,000 TB Cases Yearly—Health Minister," *This Day*, March 25, 2005.
23. National Tuberculosis and Leprosy Control Programme (NTBLCP), *2005 National Tuberculosis Programme Progress Update* (Abuja: NTBLCP, 2005), p. 19.
24. National Tuberculosis and Leprosy Control Programme (NTBLCP), *2005 National Tuberculosis Programme Progress Update* (Abuja: NTBLCP, 2005).

25. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 107.
26. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 107.
27. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 107.
28. Quote by Emeka Asadu MD, TB/HIV focal point, NASCAP in article, "Nigeria Ranks 4th in the Spread of TB," *This Day*, Sept. 1, 2005.
29. Nasir Sani Gwarzo, former coordinator of the NTBLCP, "Nigerian Experience of TB/HIV Collaborative Activities," presentation at the Fourth Global TB/HIV Working Group Meeting, Addis Ababa, Ethiopia, September 2004.
30. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 107.
31. Nasir Sani Gwarzo, former coordinator of the NTBLCP, "Nigerian Experience of TB/HIV Collaborative Activities," presentation at the Fourth Global TB/HIV Working Group Meeting, Addis Ababa, Ethiopia, September 2004.
32. NTBLCP, *2005 National Tuberculosis Programme Progress Update* (Abuja: NTBLCP, 2005), p. 19.
33. Interview with Ayodele Awe, national professional officer for TB, WHO, Internews Media roundtable meeting, Abuja, March 21, 2005.
34. Available at www.aegis.com/news/usis/2001/US010409.html (accessed May 23, 2006).
35. JAAIDS, civil society press release, *Civil Society Organizations Applaud African Leaders on Abuja Commitments*, May 5, 2006.
36. Stop TB Partnership press release: "Obasanjo, Brown and Gates Call on World Leaders to Fund New Plan to Stop Tuberculosis," Jan. 27, 2006.
37. NTBLCP, *2004 National TB Programme Update; Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*, p. 16.
38. Interview with Nwakonobi, Imo STBLCO, Owerri, April 11, 2005.
39. Interview with Ayodele Awe, national professional officer for TB, WHO, Internews Media roundtable meeting, Abuja, March 21, 2005.
40. Interview with Abdullateef Adegbite, secretary general, Nigerian Supreme Council for Islamic Affairs, Abuja, Jan. 24, 2006.
41. Interview with Sola Ogundipe, senior editor and health correspondent, *Vanguard Newspapers*, March 9, 2005.
42. *Technical Review Panel Remarks on Round 4 _Nigeria TB Proposal*, pp. 404–409, May 8, 2004.
43. JAAIDS, *TB/HIV, Confronting a Dual Epidemic: Report of Journalists Against AIDS (JAAIDS)*, March 16, 2005.
44. For example, the following newspapers reported these varying levels of TB prevalence in Africa and Nigeria: *Daily Times*, "TB May Claim 0.5 Million Africans This Year," July 23, 2001, *Punch Newspapers*, "TB Kills 60,000 in Africa," May 26, 2002; *Daily Times*, "100,00 Cases of TB Occur Yearly," May 21, 2003, and *This Day*, "Nigeria Records 300,000 TB Cases Yearly," March 25, 2005.
45. JAAIDS with support from STOP Partnership, organized a two-day training for the media on coverage of TB in December 2005.
46. Interview with Austin Oghide, health promotion and information officer, WHO, March 9, 2005, Abuja, and comments by several participants of JAAIDS / Public Health Watch roundtable meeting, Abuja, January 25, 2006. Note: On Jan. 25, 2006, JAAIDS hosted a roundtable meeting to invite discussion and debate on TB and TB control policy in Nigeria. Participants included government and parliamentary officials, medical professionals, representatives of international organizations, media representatives, and representatives of nongovernmental organizations.
47. Interview with Austin Oghide, health promotion and information officer, WHO, Abuja, Feb. 14, 2005.
48. Comment by government official, JAAIDS/Public Health Watch roundtable meeting, Abuja, January 25, 2006.

49. Interviews with Austin Oghide, health promotion and information officer, WHO, Abuja, Feb. 14, 2005, and Sola Ogundipe, Health Editor, *Vanguard Newspapers,* Abuja, March 9, 2005.

50. Interview with Danjuma Adamu, coordinator, the Council of Positive People (COPOP), Kano, Feb. 9, 2005.

51. Comments by Rosemary Adu, clinician, Nigeria Institute of Medical Research (NIMR) and Yinka Jegede-Ekpe, executive director, Nigerian Community of Women Living with HIV (NCW+), JAAIDS media roundtable meeting, Lagos, March 16, 2005.

52. This GLRA study conducted in 2002 was mentioned in an interview with Ayodele Awe, national professional officer for TB, WHO, Abuja, March 21, 2005.

53. Interview with C.O. Nwakonobi, Imo STBLCO, Owerri, Imo State, April 11, 2005.

54. Interview with C.O. Nwakonobi, Imo STBLCO, Owerri, Imo State, April 11, 2005.

55. Interviews with Pat Matemilola, national coordinator, NEPHWAN, Abuja, Feb. 7, 2005; Doris Uko, Heal the Land Initiative Support Group, Akwa, Ibom State, Feb. 7, 2005; and John Ibekwe, Coordinator of the Save the World Support Group, Anambra State, Feb. 7, 2005.

56. At the time of this interview, NEPWHAN had over 110 support groups; but during an interview with the NEPWHAN coordinator in May 2006. Pat Matemilola, national coordinator, NEPHWAN, reported that the number of NEPWHAN support groups had grown to over 200.

57. Interview with Pat Matemilola, national coordinator, NEPHWAN, Abuja, Feb. 7, 2005. In contrast, in an interview, John Ibekwe (Feb. 7, 2005, Abuja), coordinator, Save the World Organization (SAWOR), noted that many of the people living with HIV/AIDS in Anambra State and in other surrounding south eastern states could easily locate the DOTS centers.

58. AIDS Alliance in Nigeria (AAN), "Abstract I-B3 Nigeria- Abstracts for Marketplace Presentations," 4th Global TBHIV Working Group Meeting of the STOP TB Partnership, Addis Ababa, Ethiopia, September 20–21, 2004.

59. AIDS Alliance in Nigeria (AAN), "Abstract I-B3 Nigeria—Abstracts for Marketplace Presentations," 4th Global TBHIV Working Group Meeting of the STOP TB Partnership, Addis Ababa, Ethiopia, Sept. 20–21, 2004.

60. Interview with Mohammed Mahmoud, Kano STBLCO, Kano, Feb. 10, 2005.

61. Comment by Folashade Momoh, FCT TB programme manager, Workshop on Upscaling Media Response to TB in Nigeria organized by JAAIDS with support from the STOP TB Partnership Secretariat, Abuja, December 9, 2005.

62. Interview with C.O. Nwakonobi, Imo STBLCO, Imo State, April 11, 2005.

63. Interview with Ayodele Awe, national professional officer for TB, WHO, Abuja, March 21, 2005.

64. Interview with NASCAP official (requested anonymity), Abuja, Feb. 8, 2005.

65. Interview with C.O. Nwakonobi, Imo STBLCO, Imo State, April 11, 2005 and Interview with Getrude Ekeogu, Imo STBLCO, Owerri Municipal Council, Owerri, Imo State, April 13, 2005.

66. Interview with Getrude Ekeogu, Imo STBLCO, Owerri Municipal Council LGA, Owerri, Imo State, April 13, 2005.

67. Interview with Oyewole Lawal, Oyo STLBCO, Ibadan, Oyo State, Feb. 9, 2005.

68. Comment by Yinka Jegede-Ekpe, executive director, Nigerian Community of Women Living with HIV (NCW+), JAAIDS media roundtable meeting, Lagos, March 16, 2005.

69. Interview with Gbola Agboluaje, chief environmental health officer/ TB programme officer, Iwo Road TB clinic, Ibadan, Oyo State, Feb. 9, 2005.

70. Interview with Gbola Agboluaje, chief environmental health officer/ TB programme officer, Iwo Road TB clinic, Ibadan, Oyo State Feb. 9, 2005.

71. Two people living with HIV/AIDS—Assumpta Reginald (in an interview, Abuja, Feb. 9, 2005) and Abigail Obeten, coordinator of Fountain of Life Church HIV/AIDS Programme (at the Public Health

Watch Nigeria Advisory Group meeting in January 2005)—Abigail noted that she was placed in an isolation ward at a government health facility when she had TB.

72. Interview with Assumpta Reginald, person living with HIV/AIDS, Abuja, Feb. 9, 2005.
73. Comment by Rosemary Adu, researcher, Nigerian Institute of Medical Research, JAAIDS media roundtable meeting, Lagos, March 16, 2005.
74. Interview with Festus Soyinka, Ogun STBLCO, Abeokuta, Ogun State, Feb. 16, 2005.
75. Interview with C.O. Nwakonobi, Imo STBLCO, Imo State, April 11, 2005.
76. Comment by Momoh, FCT TB Programme Manager, media briefing organized by Internews , Abuja, March 21, 2005.
77. Interview with Oyewole Lawal, Oyo STBLCO, Ibadan, Oyo State, Feb. 9, 2005.
78. Interview with TB patient, Broad Street Chest Clinic, Lagos, Feb. 10, 2005.
79. Interview with C.O. Nwakonobi, Imo STBLCO, Imo State, April 11, 2005.
80. NTBLCP, *Workers' Manual Fourth Edition,* Feb. 2004
81. *Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*, p. 7.
82. Interview with Ayodele Awe, national professional officer for TB, WHO, Abuja, March 21, 2005.
83. Interview with Oyewole Lawal, STBLCO, Ibadan, Feb. 9, 2005
84. Interview with Ayodele Awe, national professional officer for TB, WHO, Abuja, March 21, 2005
85. Interview with Mohammed Mahmoud, Kano STBLCO, Kano, Feb. 10, 2005. The State TB Control Programme commenced in February 2003 with a pilot project in five LGAs
86. For example, a one-minute advertisement on national television during the network news program in 2004 cost approximately N270,000 ($2,077). Interview with Ayodele Awe, national professional officer for TB, WHO Abuja, March 21, 2005.
87. Interview with C.O. Nwakonobi, Imo STBLCO, Owerri, April 11, 2005.
88. Approximately 23.4 percent of the five-year $68 million grant, or $15.9 million, will be devoted to ACSM activities. *Nigeria Round V Full Proposal*, p. 54. Available at www.theglobalfund.org (accessed April 26, 2006).
89. Interviews with four clients at DOTS center in Broad Street Chest Clinic, Lagos, Feb. 10, 2005, and with health worker from the Iwo Road Clinic, Oyo State, Feb. 9, 2005.
90. Informal conversations with several people on street in vicinity of Iwo Road Clinic, Oyo State, Feb. 9, 2005.
91. Interview with Ummah Support Group Staff, Abuja, Jan. 24, 2006.
92. NTBLCP, *Workers' Manual Fourth Edition*, Feb. 2004, p. 22.
93. The NTBLCP was established in 1989, but it was not formally launched until 1991. Comments by Nigerian experts, JAAIDS/Public Health Watch roundtable meeting, Jan. 25, 2006.
94. *National TB and Leprosy Control Programme: 2006–2010 Strategic Plan for TB Control*, pp. 16–32.
95. Interview with O. Chukwukezie, acting NTBLCP manager of the Central Unit, Abuja, March 8, 2005.
96. Site visits to clinics, Iwo Road and Egbeda, Oyo State, Feb. 9, 2005.
97. Interview with chief matron (requested anonymity), Chest Clinic General Hospital, Lagos, Feb. 10, 2005.
98. Interview with Festus Soyinka, Ogun STBLCO, Abeokuta, Ogun State, Feb. 16, 2005.
99. *Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria.*
100. By the end of 2005, it was estimated that 2,015 DOTS treatment centers and 548 TB diagnostic centers existed across the country. *Report of the 2005 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria,* p. 11.

101. According to the NTBLCP, the case detection rate was 16 percent in 2002 and 23 percent in 2004, which is equivalent to a 44 percent increase. NTBLCP, *2006–2010 Strategic Plan for TB Control in Nigeria*, p. 15

102. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2005), p. 110.

103. This client lives in Suleja and receives treatment in Maitama. Interview with Osita Amaneze, chief medical officer, Asokoro General Hospital , Feb. 9, 2005.

104. Interview with Margaret Williams, Lagos STBLCO, Lagos, Feb. 9, 2005.

105. Interview with Margaret Williams, Lagos STBLCO, Lagos, Feb. 9, 2005.

106. Interview with Osita Amaneze, chief medical officer, Asokoro General Hospital, Abuja, Feb. 9, 2005.

107. *Nigeria Round V Full Proposal*, p. 54. Available at www.theglobalfund.org (accessed April 26, 2006).

108. Comment by Rosemary Adu, clinician, National Reference Laboratory, Nigerian Institute of Medical Research (NIMR), JAAIDS media roundtable meeting, Lagos, March 19, 2005.

109. The NTBLCP programme officer representing Mansur Kabir, the national coordinator of the NTBLCP, made the announcement. Chioma Obinna, "FG Institutes DOTS in HIV Treatment Centers," *The Vanguard*, July 11, 2006. Avialable at www.vanguardngr.com/articles/2002/features/health/gh211072006.html (accessed Aug. 24, 2006).

110. FMOH, *Draft Strategic Plan for TB/HIV Collaborative Activities in Nigeria (2006-2008)*, pp. 3–8.

111. Those states include Akwa Ibom, Ebonyi, Kaduna, Oyo and Benue. TB/HIV pilot activities in these states are already underway.

112. Presentation by Amos Omoniyi, focal point, NTBLCP, at TB/HIV Consensus Building Meeting , Abuja, March 15, 2005.

113. Interview with Niyi Ogundiran, national professional officer for HIV, WHO, Feb. 14, 2005.

114. At a meeting in January 2005, STBLCOs discussed opportunities to integrate VCT services into DOTS centers and to expand other aspects of HIV/AIDS care within DOTS. Interview with Gani Alabi, south west zonal coordinator, WHO, Lagos, Feb. 8, 2005.

115. Interview with Gani Alabi, south west zonal coordinator, WHO, Lagos, Feb. 8, 2005.

116. Interview with Ikani Anibe, medical laboratory scientist, HIV Rapid Assay Laboratory, Asokoro General Hospital, Feb. 9, 2005.

117. Comments by representatives from Nigerian HIV/AIDS support groups and HIV/AIDS NGOs, JAAIDS/Public Health Watch roundtable meeting, Abuja, Jan. 25, 2006.

118. Interview with Isiramen Olajide, microbiologist, Zankli Medical Center, Abuja, Jan. 26, 2006.

119. L. Lawson, et al., "Comparison of Scanty AFB Smears against Culture in an Area with High HIV Prevalence," *International Journal of TB Lung Disease,* 2005 9(7): 933–935.

120. Dan Onwujekwe, senior research fellow, Nigerian Institute of Medical Research (NIMR) in Lagos, as quoted in *Access Alert*, a JAAIDS publication, March/April 2005 edition.

121. Interview with Festus Soyinka, Ogun STBLCO, Feb. 16, 2005.

122. Federal Government of Nigeria, *National Policy on HIV/AIDS*, 2003, p. 30.

123. Interview with Pat Matemilola, coordinator, NEPWHAN, Feb. 7, 2005.

124. Integrated Regional Information Networks (IRIN), "Nigeria: 250,000 on ARVs by mid-2006," March 1, 2005. Available at at www.globalhealth.org/news/article/5696 (accessed April 26, 2006) and Estelle Shirbon, "Nigeria to Double Free AIDS Treatment Centers," Reuters, Jan. 6, 2006. Available at http://today.reuters.com/news/newsArticleSearch.aspx?storyID=176273+06-Jan-2006+RTRS&srch=nigeria (accessed on Jan. 7, 2006).

125. *Plan to Scale Up Antiretroviral Treatment for HIV or AIDS in Nigeria (2005–2009)*, Section 4.5.5, p. 19.

126. Interview with Niyi Ogundiran, national professional officer for HIV, WHO, Feb. 14, 2005.

127. Approximately 10 percent of the five-year $68 million grant, or $6.8 million, will be devoted to TB/HIV activities. *Nigeria Round V Full Proposal*; available at www.theglobalfund.org (accessed April 26, 2006).

128. As of July 2005, implementation of the PEPFAR/GHAIN program had commenced in Anambra, Kano, Edo, FCT , Lagos, and Cross Rivers states. The program will also operate in Adamawa, Nassarawa, Niger, Rivers, and Bauchi states.

129. Interview with Ayodele Awe, national professional officer for TB, WHO, Abuja, March 21, 2005.

130. Comment by Ayodele Awe, national professional officer for TB, WHO, media briefing organized by Internews, Abuja, March 21, 2005; interview with John Osho, medical adviser, Damien Foundation, Oyo State, Feb. 8, 2005; interview with Mohammed Mahmoud, Kano STBLCO director, Kano, Feb. 10, 2005.

131. Comment by Ayodele Awe, national professional officer for TB, WHO, media briefing organized by Internews, Abuja, March 21, 2005, and interview with Mohammed Mahmoud , Kano STBLCO Director, Kano, Feb. 10, 2005.

132. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 107.

133. Dan Onwujekwe, senior research fellow, Nigerian Institute of Medical Research (NIMR) in Lagos, as quoted in *Access Alert*, a JAAIDS publication, March/April 2005 edition.

134. Interview with C.O. Nwakonobi, Imo STBLCO, Owerri, Imo State, April 11, 2005.

135. Interview with Mohammed Mahmoud, Kano STBLCO, Kano, Feb. 10, 2005.

136. Interview with Daniel Olusoji, community physician, Ogun State University Teaching Hospital (OSUTH), Ogun State, Feb. 16, 2005 ; Comments by Nigerian experts at JAAIDS/Public Health Watch roundtable meeting, Abuja, Jan. 25, 2006; Interview with Amos Omoniyi , TB/HIV focal point NTBLCP, Abuja, March 30, 2006.

137. Interview with Amos Omoniyi, TB/HIV focal point,, NTBLCP Abuja, March 30, 2006.

138. Interview with Daniel Olusoji, community physician, Ogun State University Teaching Hospital (OSUTH), Ogun State, Feb. 16, 2005.

139. Interview with Gani Alabi,MD, south west zonal coordinator for TB, WHO, Lagos, Feb. 8, 2005.

140. Interview with Amos Omoniyi, TB/HIV focal point, NTBLCP-Abuja, March 30, 2006.

141. Comment by Ayodele Awe, national professional officer for TB, WHO, media briefing organized by Internews, Abuja, March 21, 2005.

142. Interview with Margaret Williams, Lagos State TB programme coordinator (STBLCO) Lagos, Feb. 9, 2005.

143. Interviews with Mohammed Mahmoud, Kano STBLCO, Kano, Feb. 10, 2005; Oyewole Lawal, MD, Oyo STBLCO, Ibadan, Oyo State, Feb. 9, 2005.

144. Interviews with: Ayodele Awe, national professional officer for TB, WHO, Abuja, March 21, 2005; John Osho, medical adviser, Damien Foundation, Feb. 8, 2005, Oyo State; Mohammed Mahmoud, Kano STBLCO, Kano, Feb. 10, 2005, and *Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*, p. 21.

145. Interview with John Osho, medical adviser, Damien Foundation, Oyo State, Feb. 8, 2005.

146. Interview with Ayodele Awe, national professional officer for TB, WHO,Internews media roundtable meeting, Abuja, March 21, 2005 and interview with John Osho, medical adviser, Damien Foundation, Oyo State, Feb. 8, 2005.

147. Interview with John Osho, medical adviser, Damien Foundation, Feb. 8, 2005, Oyo State.

148. Interview with C.O. Nwakonobi, Owerri, Imo STLCO, Imo State, April 11, 2005.

149. *Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*, p. 21.

150. Interview with Gani Alabi, south west zonal coordinator, WHO, Lagos, Feb. 8, 2005.

151. Interview with Gani Alabi, south west zonal coordinator, WHO, Lagos, Feb. 8, 2005.

152. Interview with Margaret Williams, Lagos State TB programme coordinator, Lagos, Feb. 9, 2005. Williams noted that limited TB/HIV coinfection data is available in Lagos State. The Lagos Island General Hospital, with support from Médecins Sans Frontières (MSF), is collecting data on TB/HIV co-infection. MSF also runs a free ARV clinic which is housed within the General Hospital. Interview with Mary Ashie, adherence counselor, MSF, Lagos, Feb. 14, 2005.

153. Site visits to Zankli Hospital, Asokoro General Hospital, and Gwagwalada Specialist Hospital, Abuja, Feb./March 2005.

154. Part 2: annexes review, *Report to the NTBLCP on an Evaluation of the German Bank for Reconstruction and Development and the GLRA Support Project* (June 2004), pp. 16–18.

155. The study was conducted in collaboration with Living Hope Care Ilesha (LIHOC) and the Network on Ethics, Law and HIV/AIDS (NELA). Presentation by John Osho, medical adviser, Damien Foundation, at the TB/HIV Panel Discussion, 14th International Conference on AIDS and STIs in Africa (ICASA), Abuja, December 2005.

156. *FMOH/NASCAP: National HIV Seroprevalence Survey Reports 2003*, "Graph Depicting Trend of HIV Among PTB [pulmonary TB], ANC [antenatal clinic] and STD [sexually transmitted disease] Attendees 1991–2000."

157. *FMOH/NASCAP: National HIV Seroprevalence Survey Reports 2003*, "Graph Depicting Trend of HIV Among PTB, ANC and STD Attendees 1991–2000."

158. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2003).

159. Interview with Nwakonobi, Imo STBLCO, Owerri Municipal Council, Owerri, Imo State, April 13, 2005.

160. Admission and Discharge Register-Chest Unit (TB Ward), Federal Medical Centre, Owerri, Imo State.

161. Interview with Niyi Ogundiran, professional officer for HIV/AIDS, WHO, Abuja, Feb. 14, 2005.

162. Interview with Niyi Ogundiran, professional officer for HIV/AIDS, WHO, Abuja, Feb. 14, 2005.

163. Interview with Niyi Ogundiran, professional officer for HIV/AIDS, WHO, Abuja, Feb. 14, 2005.

164. NTBLCP, *2006–2010 Strategic Plan*, p. 26.

165. E.B. Bassey et al., *Public Health,* 2005, 119: 405–408 and F.N. Nwachokor and J.O. Thomas, "Tuberculosis in Ibadan, Nigeria—a 30 Year Review," *The Central African Journal of Medicine*, 2000, 46 (11): 287–292.

166. Interview with chief matron (preferred anonymity), Chest Clinic of the General Hospital, Broad Street, Lagos, Feb. 10, 2005.

167. Interview with chief matron (preferred anonymity), Chest Clinic of the General Hospital, Broad Street, Lagos, Feb. 10, 2005, and Danjuma Adamu, coordinator, Council of Positive People (COPOP), Kano, Feb. 9, 2005.

168. NTBLCP, Comprehensive List of Health Facilities Providing DOTS Nationwide by LGAs, January 2005.

169. Comment by Folashade Momoh, FCT TB programme manager, TB Reporting Media Workshop organized by JAAIDS with support from STOP TB Partnership, Abuja, Dec. 9, 2005.

170. Interview with C.O. Nwakonobi, Imo STBLCO, Imo State, April 11, 2005.

171. V. Ahiuma-Young, "Tuberculosis Outbreak Hits Lagos Prisons—56 in Intensive Care," *Vanguard*, Jan. 27, 2003 and Umeha Chioma, "Shocking Report: Prison, Breeding Ground for HIV/AIDS," *Daily Champion*, Aug. 1, 2004.

172. Interview with C.O. Nwakonobi, Imo STBLCO, Imo State, April 11, 2005 and NTBLCP, *Comprehensive List of Health Facilities Providing DOTS Nationwide by LGA* , Jan. 2005.

173. Interview with prison official at TB/HIV Consensus Building meeting, Abuja, March 15, 2005.

174. Constitution of the Federal Republic of Nigeria, 1999. Available at http://nigeriaworld.com/focus/constitution/chapter1.html (accessed Aug. 24, 2006).

175. Regional Office for Africa, WHO, *Country Cooperation Strategy: Federal Republic of Nigeria (2002–2007)*, available at www.who.int/countries/en/cooperation_strategy_nga_en.pdf (accessed May 23, 2006).

176. NTBLCP, *Workers' Manual Fourth Edition*, Feb. 2004, and interview with Mohammed Mahmoud, Kano STBLCO, Kano, Feb. 10, 2005.

177. NTBLCP, *Workers' Manual Fourth Edition*, Feb. 2004.

178. Interview with Festus Soyinka, Ogun STBLCO, Abeokuta, Ogun State, Feb. 16,2005 and interview with John Osho, medical adviser, Damien Foundation, Oyo State, Feb. 8, 2005.

179. Interview with Festus Soyinka, Ogun STBLCO, Abeokuta, Ogun State, Feb. 16, 2005.

180. Interview with Olatunji Osho, principal medical lab scientist, Ogun State University Teaching Hospital (OSUTH), Ogun, Feb. 15, 2005.

181. See Stillwell et al., "Managing Brain Drain and Brain Waste of Health Workers in Nigeria," *Bulletin of the World Health Organization*, 2004, available at www.who.int/bulletin/bulletin_board/82/stilwell1/en/ (accessed May 4, 2006) and Federation for American Immigration Reform, "Brain Drain: Federation for American Immigration Reform," available at www.fairus.org/site/PageServer?pagename=iic_immigrationissuecenterse514 (accessed May 6, 2006).

182. Interview with Gani Alabi, national TB professional officer for the south west zone, WHO, Lagos State, Feb. 8, 2005.

183. Interview with Olusegun Obasanya, former principal of the National TB and Leprosy Training School in Zaria, Abuja, March 16 2005 and NTBLCP, *2006–2010 Strategic Plan—Major Achievements*, p. 23.

184. Interview with C.O Nwakonobi, Imo STBLCO, Imo State, April 11, 2005 and Interview with Gani Alabi, Lagos State, Feb. 8, 2005.

185. Interview with Mohammed Mahmoud, Kano STBLCO, Kano, Feb. 10, 2005.

186. Interview with C.O Nwakonobi, Imo STBLCO, Imo State, April 11, 2005.

187. Interview with lab scientist (requested anonymity), Ogun State, Feb. 15, 2005.

188. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 109.

189. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 109.

190. Interview with Amos Omoniyi, TB/HIV focal point, NTBLCP, March 30 2006.

191. *Report to the NTBLCP on an Evaluation of the German Bank for Reconstruction and Development and the GLRA Support Project* (June 2004), pp. 26–28.

192. Interview with John Osho, medical adviser, Damien Foundation, Oyo State, Feb. 8, 2005.

193. Interview with Oyewole Lawal, Oyo STBLCO, Ibadan, Oyo State, Feb. 9, 2005.

194. Comment by donor from International Federation of Anti-Leprosy Associations (ILEP), JAAIDS/Public Health Watch roundtable meeting, Abuja, Jan. 25, 2006.

195. Interview with John Osho, medical adviser, Damien Foundation, Oyo State, Feb. 8, 2005.

196. Interview with health care provider, Ogun State, Feb, 16, 2005.

197. Comments by Nigerian experts, JAAIDS/Public Health Watch roundtable meeting, Abuja, Jan. 25, 2006.

198. Interview with John Osho, medical adviser, Damien Foundation, Oyo State, Feb. 8, 2005.

199. Interview with John Osho, medical adviser Damien Foundation, Oyo State, Feb. 8, 2005 and O. Chukwuekezie, medical officer, NTBLCP, presentation to the Joint TB Monitoring Mission, March 8, 2005, *2004 National TB Programme Update; Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*.

200. FMOH/NTBLCP, *2006–2010 Strategic Plan for TB control,* p. 24.

201. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 108.

202. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 108.

203. FMOH/NTBLCP, *2006–2010 Strategic Plan for TB control,* p. 25.

204. Executive director, the National Primary Health Care Development Agency (NPHCDA) in editorial, *The Guardian*, May 30, 2005.

205. FMOH/World Bank, *Nigeria: Health, Nutrition and Population Country Status Report*, pp. 30–38.

206. Interview with C.O. Nwakonobi, STBLCO, Owerri, Imo State, April 11 2005.

207. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 108.

208. By the end of 2005, microscopy centers existed in 592 out of the 774 LGAs. O. Chukwuekezie, MD, medical officer, NTBLCP, *2005 National TB Programme Progress Update; Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*, p. 20.

209. *Report of the 2005 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria.* The PEPFAR-supported Action/HIV project planned to provide laboratory support for the TB services in six states that have been designated for the TB/HIV pilot project.

210. Primary health care facilities of Saango, Agege and General Hospital in Isolo and Lagos, March 4, 2005; site visits to the Iwo Road Clinic in Oyo State, the Asokoro General Hospital (a public facility) in Abuja, the Gwagwalada Specialist Hospital in Abuja, and clinics in Imo State; and interview with Mahmoud Mohammed, Kano STBLCO director, Kano, Feb. 10, 2005.

211. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2004), p. 94.

212. This finding was confirmed in an interview with Isiramen Olajide, a microbiologist at the Zankli Medical Center, in Abuja on Jan. 26, 2006. In fact, Olajide said the Zankli Medical Center is the only facility in the country that is equipped to conduct TB cultures.

213. This finding was confirmed in an interview with J. O. Lawson, consultant pediatrician, Zankli Medical Center, Abuja, Jan. 26, 2006.

214. *Report of the 2003 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*, p. 8.

215. Samson Kefas, national professional officer for TB, WHO, and M. Kabir, national coordinator, NTBLCP, "The Nigerian DOTS Expansion Experience and the Challenges of meeting the Global targets for TB Control," Poster Presentation at the 36th Union World Conference, Oct. 18–22, 2005.

216. Samson Kefas, national professional officer for TB, WHO and M. Kabir, national coordinator, NTBLCP, "The Nigerian DOTS Expansion Experience and the Challenges of meeting the Global targets for TB Control," Poster Presentation at the 36th Union World Conference, Oct. 18–22, 2005; and, NTBLCP, *2005 National Tuberculosis Programme Update*, p. 20.

217. NTBLCP, *2004 National TB Programme Update; Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*.

218. NTBLCP, *2004 National TB Programme Update; Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*.

219. Comments by Daniel Kibuga, WHO-Afro, member, Joint International DOTS and TB/HIV Monitoring Mission, during site visits to DOTS facilities in Abuja, March 2005.

220. *Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria.*

221. Presentation by Ayodele Awe, national professional officer for TB, WHO, media roundtable meeting organized by Internews, Abuja, March 21, 2005.

222. Interviews with Olatunji Osho, principal medical laboratory scientist, Ogun State University Teaching Hospital (OSUTH), Ogun, Feb. 15, 2005; Mahmoud Mohammed, Kano STBLCO, Kano, Feb. 10, 2005; Festus Soyinka, Ogun STBLCO, Abeokuta, Ogun State, Feb. 16, 2005; Oyewole Lawal, Oyo STLBCO, Ibadan, Oyo State, Feb. 9, 2005.

223. *Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*, p. 2

224. L. Lawson, et al., "Comparison of Scanty AFB Smears against Culture in an Area with High HIV Prevalence," *International Journal of Tuberculosis and Lung Disease,* 2005 9(7): 933–935.

225. Interview with Isiramen Olajide,microbiologist, Zankli Medical Center, Abuja, Jan. 26, 2006.

226. *Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria* p. 21.

227. *Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria* p. 21. This point was also corroborated by those who attended the JAAIDS/Public Health Watch advisory group meeting in January 2005.

228. Interview with Getrude Ekeogu, Imo STBLCO, Owerri Municipal Council, Owerri, Imo State, April 13, 2005.

229. Interview with Nwokeji, medical officer in charge, TB Ward, Federal Medical Centre, Owerri, Imo State, April 20, 2005.

230. Comment by Olumide Odusanya, consultant, Department of Community Health and Primary Care, Lagos State University College of Medicine, Public Health Watch Advisory Group meeting, Lagos, Jan. 26, 2005.

231. NTBLCP, *Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria*

232. Interview with Daniel Olusoji, community physician, Ogun State University Teaching Hospital (OSUTH), Ogun State, Feb. 16, 2005

233. Comments by private providers at JAAIDS/Public Health Watch roundtable meeting, Abuja, Jan. 25, 2006.

234. Interview with Suraju Abdulkareem, Gombe STBLCO, Abuja, March 30, 2006.

235. *Report of the 2004 Joint International DOTS and TB/HIV Monitoring Mission to Nigeria* p. 21.

236. Interview with Professor Femi Soyinka, coordinator, Network on Ethics, Law and HIV/AIDS, Ibadan. Feb. 8, 2005.

237. Interview with Pat Matemilola, CCM member who represents the Network of People Living with HIV, Abuja, Feb. 7, 2005.

238. Comments by Nigerian experts, JAAIDS/Public Health Watch roundtable meeting, Jan. 25, 2006.

239. Interview with Ummah Support Group Staff, Abuja, Jan. 24, 2006.

240. Interview with Ibiyemi Fakande, coordinator, Living Hope Care, Ilesa, May 1, 2006.

241. PowerPoint Presentation, "Strategies for Collaborative TB/HIV Activities among Civil Societies in Africa," at the African Union Pre-Summit Consultation on TB/HIV in Africa convened by JAAIDS, Abuja, May 1, 2006.

V.
TB Policy in Tanzania

Contents

Executive Summary

Two decades ago, the Tanzanian National Tuberculosis and Leprosy Programme (NTLP) was regarded as one of the best performing disease-control programs in the world. However, HIV/AIDS has contributed to a marked resurgence of tuberculosis (TB) in recent years and placed a severe strain on the national health system, compromising the delivery of even basic services. The number of TB cases has increased six-fold since 1983, placing Tanzania 14th on the World Health Organization's (WHO's) list of high-burden countries. TB is now the leading cause of death among HIV-positive people. Yet public and political awareness of TB as one of Tanzania's most critical health problems is low.

The NTLP has affirmed its commitment to the WHO-recommended DOTS strategy and global TB targets of 70 percent case detection and 85 percent treatment success. Despite significant challenges, the NTLP has maintained a relatively high rate of treatment success (81 percent). However, the case detection rate is only 47 percent, largely due to a sharp increase in the number of smear-negative and extrapulmonary cases, which often result from TB/HIV coinfection and are harder to detect.

Lack of basic knowledge about TB and the interaction of TB and HIV is an issue among both policymakers and the broader public, and this contributes to the high levels of stigma surrounding the disease. Low levels of awareness that TB is a current threat and not a "disease of the past" have led to a low level of political commitment to TB control at the district as well as the national level, which stands in sharp contrast to the level of attention accorded to the HIV/AIDS epidemic. Political leaders should speak about TB whenever they speak of HIV/AIDS, since a coordinated response to these "twin diseases" is necessary to control both epidemics successfully. There is a clear need for the NTLP to undertake a sustained communications and awareness-raising initiative, which should target not just the general public, but also decision makers at the district and community levels.

There is little coordination between HIV/AIDS and TB programs. The NTLP, National AIDS Control Program (NACP), and Tanzania Commission for AIDS (TACAIDS) have reportedly drawn up initial plans to improve collaboration on TB/HIV policies at the national level. These plans should be shared widely before proceeding to implementation in order to draw upon the input and experience of nongovernmental organizations (especially faith-based groups) and private providers already delivering integrated TB and HIV/AIDS services. The NTLP should make further expansion of pilot TB/HIV programs a priority.

Similarly, there is limited coordination of TB control activities between public and private health providers. For the most part, the government remains almost the sole TB service provider, with little involvement in DOTS implementation from the private sector or

from nongovernmental organizations. By contrast, the government's partnership with the private sector in HIV/AIDS service provision is extensive and better defined.

Insufficient government funding for the health sector in general and for combating TB in particular has also led to insufficient budgetary allocations. The resulting deterioration in the quality of basic health care services across the country has created additional challenges for TB control programs, including drug shortages and a dearth of well-trained managers and health care workers.

TB is having a devastating impact on vulnerable groups, including people living in poverty (particularly in urban areas), prisoners, refugees, and mine workers, but the NTLP's progress in developing targeted programs and services for these groups has been slow. For example, though TB drugs are available free of charge, poor patients often find associated costs (including fees for consultation, initial costs for diagnostic services, and the cost of transportation to and from health clinics) a significant barrier to accessing treatment. To improve its overall performance, the NTLP will need to take steps to make treatment more affordable and accessible to the poor and to other vulnerable groups. Community-based DOTS programs have demonstrated positive treatment outcomes at relatively low cost and have made TB services more accessible and affordable to patients by bringing treatment closer to patients' homes. This model should be examined closely as a potentially sound basis for expanding access to TB services throughout the country.

International funding is making a major contribution to domestic TB and TB/HIV programming. For example, with support from the Global Fund to Fight AIDS, Tuberculosis and Malaria, the NTLP plans to expand its pilot TB/HIV program from 3 to 34 districts. However, the fact that external sources cover at least 65 percent of the NTLP's budget has raised concerns among program officials about "donor-dependence" and long-term sustainability. Greater political commitment to TB control must be reflected in increased allocation of domestic resources to core TB control activities; donors should take care to ensure that assistance programs reinforce NTLP leadership and contribute to strengthening the Tanzanian health system.

Background

Between 1977 and 1984, the National Tuberculosis and Leprosy Programme (NTLP) cut the number of tuberculosis (TB) cases by two-thirds, earning a reputation as one of the best performing disease-control programs in the world.[1] However, the emergence of the HIV/AIDS pandemic reversed this successful trend. Between 1983 and 2003, the number of TB cases increased by almost six-fold, from approximately 12,000 cases to 64,500;[2] in 2004, the government registered a total of 65,665 cases.

Today, TB is responsible for 17.5 percent of the total disease burden for people five years of age and older, ranking behind AIDS (approximately 50 percent) and AIDS-related conditions (32 percent). Most persons affected by TB are of reproductive age, which negatively affects economic growth and presents a barrier to poverty-reduction efforts. Many Tanzanian experts believe that multidrug-resistant TB (MDR-TB) is a growing problem and that government statistics on MDR-TB may underestimate the actual scale of the problem.

Baseline statistics

Tanzania has a notably young population:[3] Infants and children under five years of age constitute about 5 percent and 17 percent of the total population, respectively, and about 47 percent of the population is below 15 years of age. TB and HIV/AIDS are expected to have a dramatic demographic impact in coming years, as both diseases have the biggest impact on persons of working age (between 15 and 65 years old).[4]

The surge of TB and HIV/AIDS has occurred within a context of overall macroeconomic improvement during the past decade, although a recent World Bank study indicated that without policy actions, Gross Domestic Product (GDP) could be 15–20 percent lower by 2015 than it would be without the HIV/AIDS pandemic.[5] Poverty is still widespread. The number of people living below the national poverty line (on less than one U.S. dollar a day) has decreased since 1991,[6] but still stands at more than 35 percent of the population.[7] Urban-rural disparities exist, with a higher concentration of poverty among rural households, particularly those dependent on agriculture. Although approximately 77 percent of the mainland population still lives in rural areas, urbanization has increased over the past 25 years.[8] TB is especially prevalent in congested, urban areas like the capital city, Dar es Salaam, where 25 percent of the nation's TB cases were recorded in 2003[9] and where HIV/AIDS and TB are the leading causes of death for adults.[10]

Government statistics on the number of TB cases detected underestimate the severity of the epidemic in Tanzania. Although the number of TB diagnostic centers has increased in some cities such as Dar es Salaam and Mwanza, the NTLP's extremely low case-detection rate has declined even further in recent years.[11] The government detects only 47 percent of TB cases.[12] The NTLP acknowledges that the national prevalence estimate of 479 TB cases per 100,000 people[13] may be inaccurate and plans to conduct a new TB prevalence survey between 2006 and 2007.

Many people with TB symptoms go undiagnosed due to a lack of public awareness and the inaccessibility of diagnostic services in some areas of the country. In addition, the NTLP's low case-detection rate stems from an increase in smear-negative and extrapulmonary cases, which are harder to diagnose and therefore less likely to be treated. TB/HIV coinfection is largely responsible for the increase in these types of cases; the share of smear-negative and extrapulmonary cases has risen dramatically over the last 22 years, from 33 percent in 1979 to 54 percent in 2001.[14]

TB/HIV

As noted above, HIV is the most significant cause for the resurgence of TB. According to the NTLP, "60 percent of the increase in the incidence of TB in Tanzania can be attributed to HIV."[15] Fifty percent of all TB patients are estimated to be coinfected with HIV; this figure has been rising steadily in recent years.[16] TB is also the leading infectious cause of death among HIV-positive people. Individuals who are coinfected with TB and HIV are 20 to 30 times more at risk of developing active TB disease than those who are HIV-negative.[17] In Tanzania, HIV/AIDS and TB are referred to as "twin diseases."

Health sector reform

In 1985, a combination of domestic resolve and external donor pressure prompted the government to initiate a set of broad-ranging institutional and policy reforms to improve the efficiency and accessibility of health care services. In 1994, the government formally entrenched equity as the guiding principle in the provision of health services—a principle that has endured through subsequent phases of policy development and revision.[18]

These reforms have included the introduction of cost-sharing, the establishment of Community Health Funds, and the adoption of the sector-wide approach (SWAp) to finance health programs, which entails pooling government and donor resources into "common baskets" of funding for specific issues and a decentralization of health services and program management.[19] Reforms have also led to the formation of participatory structures such as

district-level Council Health Management Teams and Community Health Funds. These structures are designed to bring together various health professionals, including government health officers, civil society and faith-based organizations, as well as the private sector, to set priorities and plan health interventions at the community and district levels.[20]

As part of the health sector reforms, the NTLP is gradually attempting to "horizontalize" TB services by integrating them into the general health care delivery system. This effort—which has been largely influenced by donors—is intended to minimize duplication of efforts and promote a more rational distribution of scarce resources. However, in practice, reforms have resulted in the loss of the TB-specific focus that more traditional "vertical" programs provide and serious gaps in TB funding and services, particularly at the district level. Moreover, limited NTLP funding has meant that dedicated TB services available through other initiatives, such as the community-based DOTS program, have been limited in scope. Ongoing efforts to integrate TB treatment into the general health care delivery system should be more carefully planned to identify and minimize the impact of unintended consequences and to better serve health needs at the community level.

The establishment of a "common funding basket" for all health interventions, controlled by the Ministry of Finance, was intended to ensure that the Ministry of Health (MoH) would have sufficient resources to implement the activities identified in its strategic plan. However, the system has led to increased competition for limited resources between the NTLP and other MoH programs. When the NTLP's proposed programming and activities are not reflected in the MoH's list of priorities, as is currently the case, funding for TB control suffers.[21] In the early years of its existence, the NTLP received dedicated funding. Under the shared "basket" system, however, the NTLP has increasingly had to compete with other national priorities and health emergencies.

Decentralization of health services and program management has produced mixed results with regard to TB programming in particular. Ideally, decentralization can empower local authorities to make informed decisions on resource allocation for TB treatment, imparting a sense of ownership for TB control at the district and local levels. In some regions, decentralization has encouraged greater community involvement in setting health priorities and plans through district Council Health Management Teams. However, decentralization of authority has also raised a challenge for district health management teams because it has required increased resource mobilization at the local level and reallocation of essential TB staff.[22] There is already a serious shortage of health workers and an increased workload due to HIV/AIDS in most of the country's health facilities.

To counteract funding shortages at the local level, some communities have established Community Health Funds. Households may enroll in the fund by making an annual contribution of TZS 10,000 (or $10); the fund is then used to finance participants' primary health care. This scheme has been supported by some experts as an important complemen-

tary form of health care financing, especially for low-income and rural households.[23] In some districts, the Community Health Fund has been used to expand the number of trained DOTS staff and to purchase laboratory equipment for TB diagnostic services.[24] However, on a national scale, the lack of adequate human and financial resources still presents a major challenge for the NTLP, limiting its potential to expand programmatic services, including diagnostic and DOTS centers.

Political commitment

In 1995, Tanzania's former president, Benjamin Mkapa, designated HIV/AIDS as a "national disaster" and encouraged other political leaders to speak out about HIV/AIDS. But the increase in political will to control HIV/AIDS in recent years stands in sharp contrast to the relatively low level of political commitment for TB. Political leaders should raise the issue of TB whenever they talk about HIV/AIDS since these are "twin diseases" and dealing with them separately is ineffective.

Since the inception of the NTLP, one governmental action stands out as a landmark in the history of TB control in Tanzania. Since 1977, the government has ensured the provision of first-line drugs for TB treatment free of charge. Both health care workers and TB patients interviewed during this study viewed this policy as a clear manifestation of political will to eradicate TB. As further evidence of political will, the NTLP program officer highlighted the government's "substantial funding" for NTLP activities and provision of professional staff for TB control.[25] Other experts have pointed to the fact that TB and HIV have been included in the 2005 *National Strategy for Growth and Reduction of Poverty* (NSGRP) report, which, they suggest, is a sign of broad government commitment.[26]

But the current level of political commitment is not adequate. While the government provides treatment free of charge, consultation fees and initial costs for TB diagnostic tests are not always free, presenting a serious financial obstacle for many patients. The government's financial commitment to TB control is also insufficient. For instance, in 2003, the government contributed only TZS 1.1 billion ($983,943), or approximately 10 percent of the total annual NTLP budget. The rest of the NTLP budget came from external donors.[27]

Political commitment for national TB control activities has been compromised by competing health priorities, which have been heavily influenced by donor preferences. Most TB patients, activists, and some medical personnel interviewed for this report believe that the government and donors prioritize HIV/AIDS and malaria over TB.[28] Political commitment for national TB control activities has also been compromised by the strong focus on health sector reforms. Health workers interviewed believe that the large amount of funding

devoted to antiretroviral drugs (ARVs) and infrastructure for HIV/AIDS programs has displaced funding available for other health priorities, including non-ARV drugs and salaries for medical personnel working on other issues.[29]

Decentralization has meant that priority-setting has devolved to district-level health management teams; as a result, these teams' commitment to and capacity for implementing strong TB control programs have become more important. However, these teams are often not equipped with sufficient training, support, or resources to manage the increasing demand for TB services effectively. This may be due to the lack of clear, easily understood information about the immediate issues and concerns associated with TB diagnosis, treatment, and interaction with HIV at the community and district level. Even when district governments prioritize TB control, they often lack sufficient funding or delay disbursement of funds to health facilities.

Finally, the lack of political commitment stems to a great extent from many policymakers' lack of basic knowledge about TB and from stigma associated with the disease. Many politicians and local government leaders do not consider TB a priority because they still believe that TB is a disease of the past that affects relatively few people. Others find it politically risky to mention TB due to sensitivities surrounding TB's growing association with the HIV/AIDS epidemic; despite increased political commitment to HIV/AIDS control, HIV/AIDS is still a sensitive issue for some politicians. Therefore, public awareness campaigns should target not just the general public, but also decision makers at every level.

Public mobilization and public awareness

The media gives little coverage to TB in comparison to the attention given to HIV/AIDS. Similarly, domestic and international NGOs are relatively less mobilized to encourage greater public awareness and more extensive and substantive media coverage of TB. As a result, public awareness of the threat posed by the resurgence of TB is low. Policymakers and the broader public both lack basic knowledge about TB and the interaction between TB and HIV, which contributes to stigmatization of people living with the disease.

Media coverage

Media coverage of TB is generally limited to a story on World TB Day. In 2003, for instance, the United Nations Integrated Regional Information Network (IRIN) quoted the following statement from the minister of health, Anna Abdallah: "I know that many of my fellow Tanzanians are now afraid just to know that they have TB because they automatically assume that they also have HIV/AIDS. TB is curable, and we have proved this here in Tanzania. I want the press to tell people that, while there is a link between HIV/AIDS and TB, people should not be afraid to come forward. It is not true that every TB patient is HIV positive."[30]

Aside from World TB Day, a one-year review of media stories revealed that TB made major headlines only in December 2004, when the board of the Global Fund to Fight AIDS, Tuberculosis and Malaria held a high-level meeting in Arusha. At that time, there was also a special program on the Independent TV Network (ITV) focusing on TB. In general, however, there is far more television,[31] radio, and print coverage about the risks of HIV/AIDS than about TB.

The lack of media coverage about TB may be related to the absence of training and other forms of support for journalists. Professional institutes for journalism do not cover public health issues such as HIV/AIDS and TB as part of their standard curricula. To encourage quality coverage of HIV/AIDS, the National AIDS Control Program, Tanzania Commission for AIDS (TACAIDS), and domestic and international NGOs have supported a wide range of seminars and training sessions for journalists to publicize basic facts about HIV/AIDS transmission and how to avoid stigmatizing language in covering HIV/AIDS.[32] These efforts have produced results: Journalists are now increasingly including HIV/AIDS in their reporting agendas.

In contrast, most journalists lack proper information and training on TB, including MDR-TB and TB/HIV coinfection.[33] In recent years, the NTLP has not supported any workshops to train journalists on TB-related issues, although media workshops have been tentatively included in the NTLP's 2006 communications strategy.[34] Moreover, few NGOs or faith-based organizations have stepped up to fill this gap. More broadly, NGO engagement in community education campaigns on TB and on the relationship between HIV/AIDS and TB is extremely limited. No human rights organizations, traditional healers' associations, or patients' associations are working exclusively on TB information campaigns, although a few HIV/AIDS support groups are working to raise awareness about TB.

There is an urgent need for specialized training for journalists on TB, MDR-TB, and TB/HIV coinfection. At the same time, HIV/AIDS advocates should also be trained on diagnostic and treatment issues for coinfected individuals and encouraged to incorporate consideration of TB into their training curricula on HIV/AIDS.

Public awareness about TB

In light of the above, it is perhaps not surprising that most health care workers and patients interviewed for this report expressed the need for greater efforts to address the low level of public awareness about TB and TB/HIV.[35] Many people in the general population are unable to identify the symptoms of TB, or know where and how to access TB diagnostic and treatment services. Low levels of public awareness that TB is a current threat rather than a "disease of the past" also contribute to the lack of political commitment to TB control at the district as well as the national level. This, again, is in sharp contrast to the broad level of general awareness about and subsequent political commitment to the HIV/AIDS epidemic.

Low levels of public awareness and stigma have serious consequences. Lack of information results in delays in diagnosis and lower rates of treatment compliance, which increase the risk of MDR-TB and death. Lack of public awareness has also negatively affected public mobilization and activism around TB.

Those who do have access to information on TB tend to be people who have received TB treatment, although a study involving 296 TB patients in Mwanza indicated that basic knowledge was unexpectedly low even among TB patients.[36] Many participants in the study were illiterate and from a relatively low socioeconomic background compared to the general population. These factors must be taken into consideration in designing effective public education campaigns around TB. The study also revealed significant lack of treatment compliance among TB patients and posited that this was due to lack of knowledge about the importance of prolonged, uninterrupted treatment.[37]

Problems resulting from the lack of information are exacerbated by the existence of misinformation and stigma. Lacking knowledge about how TB is spread, individuals and communities are more likely to be swayed by superstition; according to one health care worker, some people believe that TB patients have been bewitched.[38] TB patients are often labeled as HIV-positive;[39] anyone with a dry cough is often jokingly advised to "go and visit ANGAZA" (the voluntary counseling and testing centers operated by the African Medical Research Foundation in many parts of the country). One study revealed that stigma and misconceptions about the cause of TB were major factors in widespread delays in seeking treatment. According to the study, less than 30 percent of people with TB visited a health facility within one month of the onset of symptoms and only 42 percent did so within three months; the median duration between onset of TB symptoms and visiting a health facility was about eight months.[40]

Public awareness about NTLP activities

> *The Ministry of Health is my nightmare. I remember there was a time I submitted my questions regarding malaria prevention. I went up and down the Ministry of Health for four weeks. My questions were not answered and I gave up.*
>
> *—Journalist, Independent Monitoring Group*[41]

The NTLP's activities are not well publicized at the regional and national levels, as compared with TACAIDS' activities on HIV/AIDS, for example. As a result, public awareness about NTLP policies and services is low.

Access to information from government ministries, especially from the MoH, presents a challenge. When requesting an interview, journalists are required to submit their questions in writing well in advance and often spend several weeks waiting for a response from or an appointment to interview the ministry's spokesperson. Over the years, this has discouraged journalists from seeking information from the MoH unless they are invited for a press conference or given a press release.

In an attempt to provide more information on its TB control efforts and to increase public awareness, the NTLP has drafted a new communications strategy to guide publicity and advocacy campaigns.[42] Once approved, the communications strategy will reportedly guide NTLP use of media, including radio and television programs, to publicize its activities and raise TB awareness. The strategy also reportedly identifies the need for the MoH to employ an information and communications officer to serve as a link between the media and the MoH. However, implementation of the communications strategy has not yet begun and is not publicly available. There is a clear need for the NTLP to implement a sustained communications and awareness-raising initiative, which should target not just the general public, but also decision makers at the district and community levels.

Government Program for TB and TB/HIV Control

Program content

The NTLP's approach to TB is part of a wider MoH effort to control communicable diseases according to the country's "disease burden priorities," which are calculated by the number of lives lost to a disease as a proportion of the total population. The vision of the NTLP as stated in its Strategic Plan for 2005–2009 is to control TB and leprosy to the point where "they are no longer a public heath problem in Tanzania" and to provide "quality and effective interventions to control TB and leprosy in Tanzania with a focus on gender mainstreaming, equity, accessibility and those most at risk." Specifically, the NTLP aims to reduce the incidence of TB through early diagnosis of as many TB patients as possible. To achieve these goals, the NTLP needs to address more aggressively the many barriers to treatment for TB patients living in poverty.

In the early years after its launch in 1977, the NTLP was hailed as one of the best performing TB control programs in Africa.[43] And despite the enormous challenge posed by the six-fold increase in TB prevalence between 1984 and 2001, the NTLP has made some progress. Through DOTS expansion, the government has increased the number of diagnostic and treatment centers and achieved an 81 percent treatment completion rate.[44] There are regional variations in treatment completion rates. For example, relatively low treatment rates (approximately 73 percent) were reported in the Kilimanjaro, Pwani, and Tabora regions, while Mtwara reached a cure rate of over 90 percent.[45] Regions with good geographical coverage of health facilities, such as Dar es Salaam, Kilimanjaro, and Arusha, do not always achieve higher treatment completion rates for reasons that include the high prevalence of HIV/AIDS and unmanageable caseloads in some DOTS clinics.

The low case-detection rate and high TB prevalence present serious challenges to the government's current TB control efforts. The national case-detection rate is only 47 percent, well below the 70 percent global target for 2005.[46] Through its DOTS expansion strategy, the NTLP aims to ensure that TB treatment is available in even the most rudimentary health clinics; but progress in reducing the epidemic in economically disadvantaged regions has been slow. The government's pilot community-based DOTS program represents one effort to ensure greater accessibility to TB treatment.

According to the NTLP, nationwide DOTS coverage was attained in 1986, in part facilitated by the integration of TB services into general health services. However, some TB

advocates point to the fact that patient demand for TB services exceeds the capacity of the DOTS facilities available. In the past few years, it appears that many health facilities have phased out their TB departments to devote more attention to HIV/AIDS.

People living in rural areas and those in poverty remain disadvantaged both in terms of service uptake and outcomes. As the National Strategy on Growth and Reduction of Poverty states, "Many poor people, children and women in particular, die without ever accessing a health facility."[47] The strategy also recognizes that the health sector is central to poverty reduction. Similarly, the 2002 National Health Policy seeks to use a greater proportion of the health budget to ensure that TB and HIV/AIDS services are available to low-income communities, particularly in rural areas, since these communities are hardest hit by these and many other communicable diseases.[48] Despite this formal recognition of the linkage between poverty and TB, the government should take additional measures to make the full range of TB services more truly affordable and accessible for people living in poverty by reducing the "hidden" costs associated with DOTS, both in terms of patients' time and money.

DOTS expansion

As part of its DOTS expansion strategy, the NTLP is supporting integration of TB services into the general public health system and has, over the past few years, increased the number of diagnostic centers.[49] In recognition of population growth, the inadequate number of DOTS centers to meet demand for services, and barriers to treatment that have a negative impact on access to treatment and completion rates, the NTLP has promoted community-based DOTS (CB-DOTS) and a patient-centered approach in some districts. These programs have posted promising results, but lack of funding calls their sustainability into question.

Barriers to DOTS expansion

> *It is true that we receive free diagnosis and treatment, but [TB] drugs are very powerful, and they need to be taken with sufficient food. A majority of us [patients] are from poor families and we have only one meal per day. So sometimes we are forced to skip the drugs.*
>
> *—TB patient*[50]

Efforts to expand DOTS to more health facilities have been hampered by scarce resources and understaffing.[51] As a result, many DOTS centers—especially those in urban areas—are overcrowded, and patients must spend hours waiting at the health facilities before receiving

care. In an article published in IRIN, a journalist noted that, at 7 a.m. on one day, at least 100 people were waiting in line at the Temeke District Hospital's TB clinic.[52] The implications are serious: Many of those affected by TB are not able to afford the time away from their jobs and families and forego or interrupt treatment as a result; some patients fail to initiate treatment following diagnosis; and, about 9 percent of those who initially seek treatment do not complete their treatment regimens.[53]

One patient who defaulted on TB treatment explained the difficulties associated with standard clinic-based TB services this way: "First of all, the treatment takes too long; eight months is too much. That's why when someone feels a little better they tend to stop the medication. Also, you need to come to the hospital to take medication for two months every day. You may be living far from the hospital, but also you need to do some other activities to get some money for the family and also for transport to the hospital."[54]

NTLP policy stipulates that health workers should monitor provision of free drugs to all TB patients during the first two months to ensure treatment adherence; in the remaining six months of treatment, patients generally receive drugs to take home on a monthly basis. The NTLP also emphasizes that patients who have previously received TB treatment must be under strict daily observation if possible during the entire period of treatment so as to prevent MDR-TB.[55]

Despite guaranteed access to free treatment, patients often shoulder a variety of extra costs associated with treatment, including consultation costs, initial costs for diagnostic tests and laboratory fees, and the cost of transportation to and from sometimes distant health facilities. One recent study in Dar es Salaam revealed that patients spent up to TZS 179,191 (or $145) in additional costs, which is equivalent to more than three times a patient's average monthly salary.[56] These additional costs may include medications that are outside of the standard regimen for TB treatment. "The government should not announce that curing TB is free while people actually have to contribute to buy some medicine[s] to cure other diseases connected with TB," a health worker in Kilombero said. "When you tell people [that] they need to buy even panadol [a painkiller medication] or injections [to administer medication], people refuse because they know it is not for free."[57]

Food insecurity also affects DOTS compliance; TB drugs often upset one's stomach unless medication is accompanied by adequate nourishment. One DOTS provider noted, "We have some defaulters in our hospital, but it is not because they do not want to finish [the] dosage, but rather [because of] the unreliable availability of food during dosage administration."[58]

Given these considerable "hidden costs," many patients—especially those who live far from treatment centers[59]—are completely dependent on family members or friends for support, financial and psychosocial assistance, and care.[60, 61] Patients who lack this social network are much less likely to overcome these obstacles to treatment on their own; those

who do not have enough money for transportation or are simply too weak to travel the distance to the health facility are likely to forego or discontinue treatment.

The quality of care provided at DOTS clinics also affects treatment completion rates. Many patients noted a variety of complaints, including unfriendly staff behavior, long waiting periods, and insufficiently trained health care providers.[62] Many patients claim that clinicians and nurses do not provide adequate instructions on treatment regimens, including the duration and frequency of treatment.[63] Even when patients receive complete instructions from the provider, they may receive contradictory information from friends and family once they return to their communities.[64]

The NTLP response: community-based DOTS (CB-DOTS)

In general, the NTLP is trying to streamline a patient-centered approach to TB services into its larger strategy. With the patient-centered approach, a relative or friend observes the patient taking his or her or medication every day; the goal of this approach is to reduce the number of visits patients must take to clinics, to make treatment easier for the patient, and, ultimately, to increase treatment compliance. In the CB-DOTS patient-centered model, TB outreach posts are established in communities that are far from large health facilities. From these community outreach posts (or "mobile clinics"), medical personnel train and provide support to community supervisors who are nominated by their communities. With this support, community supervisors are able to provide information, treatment, and support during scheduled visits to TB patients.

The NTLP piloted CB-DOTS in two districts—Kilombero (a rural setting) in 1995 and Temeke (an urban setting) in 2000—with the goal of increasing treatment compliance. In Kilombero, where the number of TB cases doubled between 1995 and 1999, the Kilombero Tuberculosis Research Project (KITUPA) worked with the district hospital to establish CB-DOTS. The project, cofunded by the NTLP and Spain's international development agency, aimed to tackle identified TB control problems in the district, including overcrowding in the hospital wards and high treatment default rates. There was also a high level of stigma associated with TB because of high HIV rates; as a result, patients sought other remedies besides DOTS, such as going to traditional healers. Before the CB-DOTS project, the cure rate in Kilombero was only 48 percent;[65] with the project, the treatment success rate jumped to 78 percent. The NTLP district representative (DTLC) from Kilombero noted that the quality of treatment was on par with clinic-based DOTS services and that CB-DOTS is less expensive for patients because travel costs are eliminated.[66]

The NTLP later piloted a CB-DOTS program in the Temeke District of Dar es Salaam. The increase in the number of patients accessing and completing treatment was as

impressive as it had been in Kilombero. One patient described the program as a "savior," especially for communities far from health facilities or where roads are impassable during rainy seasons.[67] A report on cost effectiveness of community-based versus health facility-based DOTS services also concluded that the CB-DOTS program both maintained quality of services and improved cost effectiveness by 37 percent.[68] Both the Kilombero and Temeke pilot projects have now terminated, although the community health workers in these and neighboring districts are implementing some community-based TB services on an ad hoc basis.[69] However, without financial support for transportation or added training from district health management teams, these efforts have remained limited in scope.

The NTLP is reportedly now working to scale up the CB-DOTS program across the country.[70] In its Strategic Plan for 2005–2009, the NTLP has included the introduction of CB-DOTS for districts with inadequate access to health facility-based DOTS services, and particularly for overcrowded squatter settlements in urban areas and isolated rural areas. The target is to implement CB-DOTS in 10 districts by 2009. Information was not available on how much government funding has been available for this purpose. Since inaccessibility of health care services has been identified repeatedly as one of the factors hindering TB treatment, many patients and health workers believe that scaling up CB-DOTS would be an effective and an important step towards achieving DOTS coverage targets.

This scale-up of CB-DOTS programs will require the MoH and the NTLP to allocate considerably more financial and human resources to ensure sustainability of current CB-DOTS programs as well as expansion to other areas.[71] To successfully expand CB-DOTS, the NTLP must also carefully consider additional implementation costs such as ongoing training and management of community supervisors and community mobilization. The above study found that these costs constituted approximately 53 percent of the provider costs. With the MoH's present funding gap, adequate resources for CB-DOTS expansion may not be available to the NTLP, even though the savings are likely to outweigh the costs in the long term.

Greater civil society involvement—especially through community-based organizations and more partnerships with the private sector—is also necessary to achieve the desired expansion of the CB-DOTS program. Community-based organizations have proven to be effective partners for the care and support of people affected by and infected with HIV/AIDS; they have established extensive home-based care, counseling, and income-generating programs at the community level. The NTLP could facilitate a similar approach to TB control by increasing its collaboration with community-based organizations both in raising awareness about TB and in supporting community-based DOTS.

In addition to these two CB-DOTS projects, the government has encouraged a number of private health care initiatives to increase the integration of TB diagnostic and supervised treatment services into existing health programs at the community level. The

government provides free TB medication, training for community health workers, and supervision to private health facilities that work in partnership with the MoH. The government also provides subsidies to the faith-based hospitals that are providing health care services (including TB treatment) to nearly one-half of the Tanzanian population.

Perhaps the most successful example of public-private partnership for community-based DOTS is the NTLP's collaboration with the Pastoral Activities and Services for PLWHA and the Dar es Salaam Archdiocese (PASADA) to provide an integrated TB/HIV community-based care program, which relies heavily on volunteers. PASADA contacted the NTLP in 2003 after the organization realized that many of their HIV-positive patients were dying of TB. This program incorporates a model of home-based care and targets poor areas in Dar es Salaam, relying on about 150 volunteers, 75 of whom have been trained by the NTLP specifically in TB management.

To improve its overall performance, the NTLP will need to take steps to make TB treatment more affordable and accessible to the poor and to other vulnerable groups. Pilot community-based DOTS programs have demonstrated positive treatment outcomes at relatively low cost and have made DOTS more accessible and affordable to patients. The NTLP, NGOs, and international donors should examine this model closely as a potentially sound and sustainable basis for expanding access to DOTS services throughout the country.

Controlling TB/HIV coinfection

> *[In Dar es Salaam,] even though the two [government] departments [TB and HIV] are separate, there is a mixture of activities and in many cases, TB and HIV/AIDS activities do overlap. Usually, TB patients are encouraged to test for HIV as well, and counseling is done by staff from the HIV/AIDS department.*
>
> *—Health care worker, Dar es Salaam*[72]

> *NGOs should have their attention on curable diseases like TB and not concentrate only on HIV/AIDS. All those NGOs involved in poverty alleviation and HIV should include TB because it is part and parcel of the pandemic.*
>
> *—Acting district TB and leprosy coordinator, Kilombero*[73]

The HIV/AIDS epidemic has created an enormous new challenge for TB control in Tanzania. Although the two diseases are inextricably linked, there is a lack of coordination between the government's TB and HIV/AIDS programs. The WHO has proposed a strategic framework of interventions to control TB and HIV/AIDS, including the establishment of coordinating

bodies for TB/HIV collaborative activities at all levels of government.[74] However, most of the health workers involved in provision of directly observed treatment (DOT) affirmed that the MoH has few TB/HIV policies in place.

The integrated TB/HIV programs that do exist have been implemented on an ad hoc basis. For example, the TB and HIV departments at the Temeke District Hospital are collaborating to treat coinfected patients and to encourage VCT and screening among TB patients.

At the Abuja +5 Summit in May 2006, African heads of state agreed to new targets for TB and HIV/AIDS control, including ensuring access to VCT and ARV services for all TB patients who are living with HIV by 2010.[75] This may be difficult to achieve in Tanzania since VCT services are still scarce in many parts of the country. The NTLP has also started to train HIV counselors around the country to include TB issues in their outreach efforts, but it is not clear how many HIV counselors have been trained.

The NTLP has also been operating pilot TB/HIV programs in three districts—Temeke, Iringa, and Korogwe—since 2003. In these three districts, the government is recommending all TB patients be tested through clinic-based, routine Diagnostic Counseling and Testing for HIV (DCT), which is part of a WHO-recommended strategy to provide "one-stop" testing for HIV and TB to encourage people with HIV to be tested for TB as early as possible. With funding from the Global Fund, the NTLP expects to expand its TB/HIV program to 34 additional districts in collaboration with the Program for Appropriate Technology in Health (PATH), Clinton Foundation, WHO, Italian government, and U.S. Centers for Disease Control (CDC).[76] This TB/HIV coordination features very strongly in the NTLP's Strategic Plan for 2005–2009, but these policies have yet to be implemented. According to the plan, the NTLP intends to establish collaborative mechanisms with the stakeholders involved in HIV/AIDS activities, including the National AIDS Control Program (NACP) and the Tanzania Commission for AIDS (TACAIDS). Reportedly, the policy will aim to reduce 1) the burden of HIV in TB patients by encouraging VCT services and 2) the burden of TB among people living with HIV/AIDS by screening for TB and by providing education on prevention and risk reduction strategies. It will also establish TB/HIV coordinating committees at the district, regional, and national levels. However, an official policy to manage the introduction of TB/HIV programs is still under development and the policy proposal has not yet been publicly released.

The absence of an official policy is an indication that few programs are actually offering integrated TB/HIV services beyond the ad hoc initiatives mentioned above. Some health workers believe it is critical for civil society organizations to incorporate TB into their existing activities and programs.

The government's plans to manage TB/HIV programs should be shared widely before proceeding to implementation in order to draw upon the input and experience of

those nongovernmental organizations and private providers of integrated TB and HIV/AIDS services. The MoH plans to expand the pilot TB/HIV programs to three districts with support from the Global Fund; implementation of these programs should be monitored carefully and with civil society participation to provide a firm basis for expansion to the rest of the country.

In addition to establishing linkages between TB and HIV programs, a comprehensive TB/HIV strategy must also address the fact that HIV/AIDS makes TB harder to detect in coinfected patients since coinfected patients are more likely to have smear-negative and extrapulmonary cases of TB. Nationally, the overall percentage of these types of cases has increased.[77] In 2004, for instance, the number of smear-positive TB cases reported increased by 3.7 percent and extrapulmonary cases by 2.8 percent, compared to the previous year. Many laboratories lack the equipment to perform cultures, making proper diagnosis of TB among people living with HIV/AIDS extremely difficult. As early detection of TB is critical to health outcomes, the NTLP should ensure clear and broadly disseminated public information on TB/HIV coinfection.

"One-stop" testing and treatment centers for TB and HIV should be provided throughout the country. Through the Global Fund and other donors, VCT and ARV centers have expanded throughout the country. DOTS—or at least stronger referral mechanisms to DOTS clinics—should be incorporated into those VCT and ARV sites. "One-stop" services also help to reduce stigma since patients have already established trust with one provider.

Similarly, the WHO-recommended treatment regimen for coinfected patients should be available to all ARV and DOTS providers. In February 2006, the NTLP introduced a new regimen for smear-negative and extrapulmonary TB patients, shortening the duration of treatment from eight to six months.[78] This policy could improve treatment adherence as a result of the significant reduction in the treatment duration *if* service providers are made aware of it and provided with proper training and support.[79]

MDR-TB

The government has resolved to deliver the WHO-recommended standard of TB care to all patients, including the small number diagnosed with multidrug-resistant TB (MDR-TB). However, the NTLP has maintained its emphasis on the basic DOTS program; the DOTS Plus component for treatment of MDR-TB supplements the NTLP's basic DOTS budget.[80]

According to available data, for the period from 1999 to 2003, the NTLP recorded an annual average of about 60 new cases of MDR-TB every year. Prior to 1999, an average of fewer than 30 MDR-TB cases had been treated per year. There is reason to believe the problem of MDR-TB is more pervasive, however. In 2003, for example, the NTLP recorded 378 cases of TB that failed to respond to treatment.

Poor management of MDR-TB was one of the critical issues mentioned in the review of the Medium Term Development Plan (MTDP) of 2001–2004. The new strategy for 2005–2009 notes: "Another dangerous prospect is the spread of multidrug-resistant TB, which threatens to reverse achievements so far gained in TB control in the country. . . . Despite the low prevalence, there are [a] substantial number of MDR-TB cases that are documented in different hospitals and among health care workers. The absence of a policy on follow-up of these cases or treatment regimen could easily increase transmission to the general population."[81]

To support the government's efforts in this area, WHO sponsored a visit by a DOTS-Plus consultant in 2003 and 2004 to assess the level of preparedness for DOTS Plus implementation as well as eligibility to apply to the international Green Light Committee for securing the appropriate drugs for treatment of MDR-TB. The consultant concluded that the introduction of DOTS-Plus would be feasible if several conditions could be met, including establishment of quality-assured laboratory capacity to conduct Drug Resistance Surveillance (DRS) and strengthening the systematic collection of specimens for culture and drug-susceptibility testing for new and re-treatment cases.[82]

In response, the NTLP has improved the quality of laboratory services, renovated the central laboratory, and procured new equipment.[83] The NTLP has also centralized the feedback mechanism to enable effective communication among the lower-level laboratories and has improved the registration system of MDR-TB cases throughout the country so that all MDR data are captured centrally.

The MoH plans to establish a DOTS-Plus component within the regular DOTS program at the Kibong'oto TB Hospital by 2009. The NTLP plans to apply to the WHO's Green Light Committee to purchase second-line drugs and to seek technical assistance, including training for health personnel in MDR-TB management. With this assistance, the NTLP hopes to ensure treatment for all identified MDR-TB patients with a standardized second-line treatment regimen.

Case recording and reporting

Although the NTLP is one of the few TB control programs in Eastern Africa with an electronic TB register, problems in data collection are evident. All TB facilities—public and private—are required to report to the NTLP on their TB-related activities. The government's electronic TB register is designed to routinely record TB cases and treatment outcomes at the district level. Despite this reporting requirement, official NTLP data on TB are incomplete, delayed, and not easily accessible. Moreover, the NTLP does not include indicators for TB/HIV coinfection in its data collection system. These problems in data recording and

reporting hamper the free flow of information necessary for effective community involvement and civil society advocacy for improved TB policies.[84]

The NTLP is highly dependent on data gathered at the quarterly review meetings conducted at the district, regional, and national levels. These meetings are used to share quarterly data, discuss trends, and share issues that require attention. At the district level, DTLCs are equipped with motorbikes and are required to visit DOTS sites in their districts at least once per month to monitor progress and drug distribution.[85] However, the NTLP has noted problems related to regular and timely notification of TB data from service providers at the district level.[86] Some service providers reported difficulties in maintaining accurate records of patients who move to other locations.[87] The NTLP's delays in publishing updated annual reports also reflect larger, systemic problems with timely reporting of data. As of July 2005, the NTLP's 2004 report had still not been published.

There is a significant gap between the number of cases recorded by the NTLP and the number recorded by the WHO, suggesting a lack of accurate data and unreported cases. For example, in 2004, the WHO estimated 137,000 cases of all forms of TB in Tanzania, or 371 cases per 100,000 people. In contrast, the *NTLP Annual Report* notes that the TB notification rate of all forms of TB in Tanzania was about 177 per 100,000, representing only 48 percent of the cases estimated by the WHO.[88]

In addition to problems of missing or delayed data collection and reporting, the NTLP's information management system is separate and parallel to the Health Management Information System (HMIS) used by all other MoH programs.[89] This means there are no direct linkages between data collection for TB and other diseases such as HIV/AIDS because the recording and reporting for these diseases are done separately.

Targeting vulnerable populations

The NTLP has identified certain populations, including people living in poverty (particularly in urban areas), refugees, and prisoners, as vulnerable to TB infection. However, progress in developing targeted programs and services for these groups has been slow, and other groups, such as mineworkers and women, who are less likely to access services once infected, have not yet been identified as such in NTLP policy.

As noted, the NTLP's DOTS expansion strategy is trying to expand access to low-income areas through CB-DOTS and patient-centered programs. Several private hospitals are also implementing special outreach programs for individuals with TB who live in poor or remote communities.[90] For example, PASADA's home-based care program reaches out to people living in Dar es Salaam's overcrowded "rural and slum areas."[91] PASADA provides home-based TB treatment, care, and support and encourages persons who are able to visit

their clinics. PASADA'S outreach program targets children with TB who are now living with extended family members and provides food to low-income patients who request it as part of their TB treatment regimen.[92] Through its nutritional support program, PASADA provides extra food support to poor patients in the form of milk, sugar, rice, and maize flour. This nutritional support is important since TB drugs often make people nauseous if taken on an empty stomach and a good diet is an important factor in treatment outcomes. However, most private TB clinics do not have the capacity to incorporate such programs without government funding.

The NTLP plans to work with local governments, NGOs, the United Nations High Commissioner for Refugees (UNHCR), and council health management teams to implement targeted TB control activities for prisoners and refugee populations. Some prisons, such as the Ukonga prison in Dar es Salaam, have developed TB treatment programs and are isolating infected inmates, ensuring DOT, and providing special diets throughout the course of treatment;[93] and a number of private TB providers have developed programs for specific vulnerable populations, but so far this has occurred only on an ad hoc basis and with limited funding. Additional efforts and funding are required both to design more effective programming for these vulnerable groups and to ensure that this programming is implemented.

Women with active cases of TB appear to be less likely than men to access available treatment services. A 2001–2002 study conducted by the NTLP and Healthscope, a research NGO, found that fewer women than men seek TB treatment. The study found these gender differences to be strongly influenced by an individual's financial situation. For women, the decision to visit a health care facility depended largely on whether they had cash available or not. Without cash, a woman had to wait for the assistance of her husband or another family member. Even when money was available, women tended to weigh the financial implications of expending available resources on their own medical treatment against other family demands such as food, school fees for their children, books, uniforms, etc.[94] For women especially, it is essential for the NTLP to improve its efforts to disseminate information about TB and to identify and take measures to eliminate these "hidden costs" of accessing TB treatment services.[95]

Few TB clinics have the capacity to analyze patient data based on "specific characteristics such as gender, age or economic status."[96] The community-based KITUPA program is a notable exception; KITUPA analyzes age (most of their patients are between 18 and 45 years old[97]) and gender (the male:female ratio in their program is approximately 2:1). However, KITUPA's budget does not allow other data on vulnerable populations to be collected. In the absence of such data, it is difficult to design appropriately targeted policies and services and to identify groups that may not be accessing TB services. The NTLP should encourage and support operational research and data collection to identify groups that are particularly vulnerable to TB and to identify the special obstacles those groups face

in accessing and completing treatment. This type of research could provide a sound basis for the development of more effective TB services for vulnerable groups.

Program management

Administration

Beginning in 1993, the MoH has implemented a series of health sector reforms with the goal of improving the efficiency and accessibility of health services. Thanks in part to these reform efforts, the NTLP is well organized and managed, and employs field staff down to the district level.

Administratively, the NTLP operates at three levels. At the national level, there is a Central Coordinating Unit within the MoH. The Central Unit is responsible for planning, monitoring, evaluation, and resource mobilization as well as for coordinating the activities of regional and district offices. The regional and district TB and leprosy coordinators (RTLCs and DTLCs) supervise the activities of hospitals and other health centers, sharing the responsibility for monitoring TB treatment outcomes and constraints to successful treatment. District-level staff plan, coordinate, and implement activities with minimal supervision from the NTLP's Central Unit. However, quarterly and annual meetings provide platforms for all RTLCs and DTLCs to interact and share reports with other stakeholders and officials at the national level.

Again, health sector reforms have led to the general health system taking on greater responsibility for delivering TB services and to the NTLP staff managing fewer functions at the central and district levels than in the past. Local governments now have a greater role in decision making, and a number of participatory structures such as Council Health Management Teams have been established.

Some health service providers and several DTLCs have expressed concern that this "horizontalization" of the TB program has resulted in lower quality of services and insufficient funding to sustain the successes registered under the more "vertical" program approach implemented in the past, particularly in light of the added strains on TB program implementation due to the HIV/AIDS epidemic.

Despite many positive developments in health outcomes brought by health sector reform, the translation from theory to action has worked better in some districts than others. For example, DTLCs are not always included in the district-level Council Health

Management Teams, which play an important role in health program planning in many districts.[98] Many district and regional coordinators are not fully aware of the ways in which TB control has been integrated into general health services and would benefit from the enhanced NTLP information and awareness-raising efforts recommended above.

Staffing

> *We are only three staff working [in the] TB department. This is not sufficient as [the] number of TB patients increases daily. I would like for every section to have sufficient and quality staff. This will make our jobs much easier than now.*
>
> *—Health care worker, PASADA Hospital*[99]

While the NTLP has increased the number of DTLCs at the district level to accommodate the push for DOTS expansion, most DOTS facilities and laboratories are experiencing a severe shortage in trained staff. The NTLP attributes this to bureaucratic obstacles associated with hiring new staff, high turnover, and low salaries.[100] Another challenge is that NTLP staff cover both TB and leprosy.[101] The government's HIV/AIDS department has relatively more staff, and many health workers believe HIV/AIDS programs are usually given priority when the issue of understaffing is addressed.[102] Health workers report that patients must queue for hours due to staffing shortages.[103] Patients complain about the long waits, noting that they sometimes spend an entire day trying to access services.

Many private and faith-based facilities also face human resource constraints. The PASADA health facility, for example, is seriously understaffed. At the end of the day, medical staff are overwhelmed with patients who have walked miles to reach the health center.

To address issues of understaffing and to support health sector reform efforts to promote "horizontalization" of TB control, the MoH is directing more primary health care facilities to provide DOTS. For instance, out of PASADA's 13 health care centers, four are now dealing specifically with TB. However, staffing in many primary health centers is not sufficient to manage the influx of TB patients.[104]

In addition to the lack of personnel, the NTLP acknowledges that many health workers and laboratory technicians lack necessary skills and training.[105] In 2003, the NTLP initiated an in-service TB training program for all health workers engaged in TB control efforts. The program aims to improve health workers' knowledge of TB and DOTS skills as a way of supporting more effective integration of TB services into general health care facilities at the district level.[106]

Budgeting and expenditures

Limited political commitment to the health sector in general and to TB in particular has led to insufficient budgetary allocations. The resulting deterioration in the quality of basic health care services across the country has created additional challenges for TB and HIV control programs, including drug shortages, weak infrastructure, and a dearth of well-trained managers and health care workers.[107]

The government has a relatively low per-capita expenditure on health, which has not increased significantly in recent years despite the recent adoption of funding targets.[108] The NTLP budget has increased significantly, from $5.5 million (TZS 6.9 billion) in 2002 to $7.6 million (TZS 9.6 billion) in 2005.[109] However, while the total NTLP budget has increased, the Tanzanian government contributed 35 percent of the total budget in 2006.[110] Moreover, the government's sector-wide approach (SWAp) to finance health programs has shortchanged district-level budgets for TB control. Though intended to increase efficiency and rationalize use of available resources, in practice, the "common funding basket" system coupled with decentralization of health services and program management has resulted in the prioritization of HIV and malaria control budgets and activities over TB programs.

The NTLP has received bilateral assistance from a variety of government agencies. In addition, in 2004, the Global Fund to Fight AIDS, Tuberculosis and Malaria awarded Tanzania grants of $23.9 million (or TZS 30 billion) to be used in the scale-up to control TB/HIV coinfection control in selected pilot districts[111] and $959,000 (TZS 1.2 billion) to implement DOTS activities in Zanzibar.[112] The MoH also receives funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) to implement TB/HIV programs.

The NTLP has underutilized the funding available from bilateral and multilateral donors. For example, in 2003 the NTLP only used about 64 percent of the donor support it received, or TZS 2,670,238,402 ($2.3 million) out of the TZS 4,074,318,314 ($3.6 million) received.[113]

Monitoring and evaluation

As noted above, the NTLP has a system of collecting and analyzing TB data on a quarterly basis. In addition to these surveillance efforts, NTLP administrators at the central, regional, and district levels conduct regular monitoring and supervisory visits within their area of responsibility. They are required to visit assigned sites at least once a month to address issues that include drug logistics and supplies management, recording and reporting of TB cases at the health-facility and district levels, patient care and support, and staff performance.[114] However, due to lack of funds, heavy work loads, and poor transportation, these visits tend to be conducted on an ad hoc basis.

Infrastructure, drugs, and research

Primary health care system

The MoH claims that health care facilities are fairly well-distributed throughout Tanzania; the MoH reports that about 80.5 percent of the population has access to health services and over 90 percent live within 10 kilometers of the nearest health facility.[115] Government-owned facilities are arranged according to a pyramidal pattern, with multiple dispensaries, health centers, and district hospitals grouped around a smaller number of regional hospitals. Public facilities are complemented by a smaller (though significant) number of privately owned and funded clinics.

By 2002, there were about 4,990 registered health facilities in the country, of which 3,060 (61 percent) were government owned, 953 (19 percent) were either voluntary (nongovernmental or faith-based organizations) or parastatal owned (i.e., funded by public corporations), and 977 (20 percent) were for-profit—a slight increase in the total number of public and private facilities registered in 1999.[116] However, the country's population has been growing faster than the number of health facilities; fewer health care facilities are available relative to an "increased demand"[117] and the MoH has acknowledged that the quality of health care delivery does not meet an acceptable minimum standard.[118]

Drug distribution system

The MoH's Medical Stores Department procures most of its TB drug supply from the Global Drug Facility, which enables the government to buy drugs at relatively inexpensive prices. Clinics throughout Tanzania are usually well stocked with essential TB drugs. Once registered at a DOTS clinic, patients can obtain TB drugs free of charge, though a number of factors noted above, including stigma, initial consultation fees, and transportation costs, may hinder initial registration by people who need TB treatment.

Education and research

Research and knowledge about the TB epidemic, including information on health-seeking behavior and epidemiological trends, are crucial to the government's TB control efforts. The NTLP has conducted several studies in collaboration with other institutions and has utilized the results to improve NTLP activities.

In 2004, the NTLP identified several priority research areas, including patient-centered DOTS, adverse reactions to TB drugs, TB/HIV treatment protocols, and TB preventive therapy. In its new strategy, the NTLP aims to strengthen its capacity to conduct operational research that is relevant to TB and leprosy control in collaboration with other partners and institutions, such as the National Institute of Medical Research (NIMR), WHO, KNCV, and IUATLD. Studies underway in 2004 and 2005 are in different stages of implementation and include the following:[119]

1. TB Prevalence Survey: This surveillance effort will provide baseline data for TB prevalence in Tanzania.

2. Case Detection and Treatment Success: The Fidelis Project in collaboration with IUATLD is testing mechanisms to increase case detection and treatment success through DOTS in seven regions.

3. TB-HAART[120] Study: The NTLP in collaboration with the Special Programme for Research and Training in Tropical Diseases (TDR) is studying treatment regimens for patients coinfected with HIV and TB.

4. Knowledge, Attitudes, Beliefs and Practices (KABP) Study: The PHC Institute is conducting a study on KABP-related factors that affect TB/HIV coinfected patients in Iringa.

Partnerships

Collaboration with the private sector

> *Public-private partnership in TB treatment is still minimal. The government is virtually the sole provider and monitoring agent with little involvement from the private sector. Furthermore, there is no specific strategy to guide private sector participation in TB management. In contrast, the government's partnership with the private sector in HIV/AIDS service provision is more extensive and further defined.*
>
> *— Fred Lwilla, program officer, NTLP*[121]

There is limited coordination of TB control activities undertaken by public and private health providers. For the most part, the government remains the sole provider of DOTS services; there has been little involvement in DOTS implementation from the private sector or NGOs. Private providers must receive government approval to implement DOT, but many provide other TB services without this approval. Traditional healers provide alternative medicine to many people with TB symptoms and for-profit clinics offer TB medication, but most do not administer DOT. By contrast, the government has forged extensive and relatively well-defined partnerships with private providers in HIV/AIDS service provision.

Despite limited public-private collaboration to date, the government has taken some steps to expand opportunities for partnership. In the past, the government viewed private providers as competitors rather than collaborators and placed some restrictions on private health providers in terms of the services they were allowed to provide. Since 1991, the government has been working harder to foster public-private partnerships in the provision of social services, including health services.

The Health Sector Strategic Plan (HSSP) of 2003–2008's Strategy 7 specifically addresses the need for the MoH to strengthen public-private partnerships. To this end, the government established a working group consisting of representatives from the MoH, the private health sector, faith-based groups, development partners, as well as the Tanzania Public Health Association (TPHA). To create an environment that is conducive to increased partnership between the private and public health sectors, the government is to focus on policy formulation, governance, regulation, financing, monitoring, and quality assurance of health services.

Private health facilities, which include not-for-profit facilities such as those run by faith-based organizations as well as for-profit facilities, are increasingly incorporating DOTS

into their services. The NTLP has encouraged private hospitals such as the Aga Khan, Hindu Mandal, and PASADA hospitals in Dar es Salaam to develop TB clinics. These private health facilities receive free drugs from the MoH and are required to report case data to the MoH along with public facilities.

Despite this evidence of the NTLP's initial efforts to expand partnerships with the private sector, such partnerships are still on a limited scale and quality assurance is sometimes an issue of concern. And despite some effort on the part of the government to provide guidance in management of TB to private providers, interviews with private health care providers revealed that most are not well versed on DOTS strategy or the public-private partnership guidelines.[122] A study commissioned by the MoH is currently underway to assess the extent to which private health service providers are aware of the government's strategies and to assess how public-private relationships could be improved.

The NTLP should make greater efforts to disseminate its guidelines for TB management to private providers. The government could also think more creatively about how to encourage the private sector to fund and support community-based initiatives, including CB-DOTS and social mobilization and awareness-building efforts. The Kahama and the Geita mining companies, for example, have set positive examples by establishing DOTS programs in the workplace. Encouraging these types of programs would help to make the government less dependent on foreign donors.[123]

Collaboration with NGOs/community organizations

Few civil society organizations are including TB in their HIV/AIDS-control efforts. This results in part from the MoH's inadequate leadership and coordination on this issue. There has been minimal information-sharing and exchange between the government and civil society organizations on TB. Many civil society activists working in the areas of TB and HIV interviewed have little knowledge of international commitments to control TB such as the Amsterdam Declaration or the Washington Commitment.

As noted, a few organizations (mostly hospitals run by faith-based organizations) have been collaborating with the NTLP by providing DOTS services, by monitoring and reporting to the MoH, and by engaging in public awareness-raising activities. However, site visits revealed that few civil society organizations are actively engaged in either TB advocacy or DOTS services provision, especially when compared to the level of engagement in HIV/AIDS activities.[124] WAMATA, which provides care and support to people living with HIV/AIDS, for instance, focuses primarily on HIV/AIDS activities; their involvement in TB has been limited to referral of clients to the nearest DOTS centers whenever TB symptoms are observed.

The NTLP should promote greater civil society engagement in TB control activities, especially from organizations of people living with HIV/AIDS and from former TB patients, by delineating clear opportunities for consultation, participation, and input. The NTLP should devote effort and resources to building the capacity of civil society organizations by providing training on the DOTS strategy and key aspects of NTLP policy and by partnering with these organizations to conduct information, treatment literacy, and public awareness-raising campaigns as well as to increase and enhance programs to provide additional support to people suffering from TB symptoms and undergoing TB treatment.

Collaboration with multilateral organizations and bilateral donors

At least 65 percent of the NTLP's budget comes from external bilateral and multilateral donors; these donors provide indispensable financial and technical assistance to the NTLP. However, the lack of domestic investment in TB control has raised serious concerns among Tanzanian experts and program officials about "donor-dependence" and long-term sustainability.

A range of technical support and financial partners involved in TB control have formed an Interagency Coordination Committee that meets once a year. Many of these development partners have been supporting NTLP activities for several decades. Several development partners provide valuable technical assistance to the NTLP; the Royal Netherlands Tuberculosis Foundation (KNCV), for example, monitored NTLP performance in 2003. Most external monitoring reports, including that of the KNCV, remain within the NTLP's Central Unit; the government should make such reports available to the public.

Greater political commitment to TB control must be reflected in increased allocation of domestic resources to core TB control activities. Donors should take care to ensure that assistance programs reinforce NTLP leadership, contribute to strengthening the Tanzanian health system, and do more to foster the involvement of civil society groups, particularly organizations of people living with HIV/AIDS, in TB control activities.

Recommendations

To improve its TB control efforts, the government of Tanzania and the NTLP should:

- **Expand DOTS services**, including by:
  - Examining community-based DOTS closely as a potentially sound basis for expanding access to DOTS services throughout the country;
  - Ensuring adequate human resources for DOTS expansion;
  - Expanding community outreach activities and the number of diagnostic centers to place more emphasis on early case detection.
- **Increase government expenditure in health** to $12 (TZS 15,130) per capita in order to fulfill the vision of the National Health Policy. An increase in health resources will help to improve health outcomes, including those in the area of TB control, for the poor and vulnerable populations and will also sustain the good macroeconomic performance seen in recent years.
- **Pay more attention to the needs of vulnerable populations**, including by:
  - More aggressively addressing the many treatment barriers for TB patients living in poverty, including diagnostic and medical consultation fees, transportation costs, and lack of nutritional support;
  - Encouraging and supporting operational research and data collection to identify groups that are particularly vulnerable to TB and the special obstacles they face in accessing and completing treatment. This type of research could provide a sound basis for the development of more effective TB services for vulnerable groups.
- **Increase TB/HIV programmatic linkages**, including by:
  - Expanding TB/HIV programs further to make "one-stop" testing and treatment centers for TB and HIV a priority;
  - Articulating a transparent strategy with clear budget lines for integrated TB and HIV programs and services;
  - Promoting NGO engagement—especially among HIV/AIDS organizations—on TB control by setting policy guidelines and supporting capacity-building training on various aspects of TB and TB policy for civil society organizations.

- **Review efforts to integrate TB treatment into the general health care delivery system** to identify and minimize negative impact on TB control efforts and to better serve the comprehensive health needs of communities.
- **Provide clear guidelines on public-private partnership** for TB management to private providers and monitor their implementation.
- **Undertake a sustained communications and awareness-raising initiative** (which should target not just the general public, but also HIV/AIDS providers and decision makers at the district and community levels), including by:
  - Developing treatment-literacy programs for new TB patients and the general community that engage people who have successfully recovered from TB;
  - Expanding TB education and awareness programs.

To step up their contribution to TB control efforts, private companies and industries can:

- **Investigate the possibility of offering TB services in the workplace, following the lead of the mining industry**;
- **Provide funding for media and community mobilization campaigns** to raise awareness about TB;
- **Engage with district health management teams** in the areas where they operate to ensure adequate allocation of resources to TB control.

To enhance their efforts to complement government TB control policy, nongovernmental and community organizations should:

- **Mainstream both HIV and TB** into existing programs on human rights and poverty alleviation;
- **Organize media trainings and journalism workshops** to counteract negative stereotypes and misconceptions and to encourage greater coverage of TB in the print and electronic media;
- **Follow the model of PASADA** and other NGOs that are already successfully employing models of patient-centered and community-based DOTS programs.

To enhance the effectiveness of its support for TB control activities, the international community should:

- **Ensure that assistance programs reinforce NTLP leadership** and contribute to strengthening the Tanzanian health system;
- **Monitor the utilization of TB/HIV funding** to see that it is effectively reaching target communities, including by supporting and engaging with community-level observers;
- **Support operational research** to assess the impact of TB/HIV interventions;
- **Review efforts to integrate TB treatment into the general health care delivery system** in order to identify and minimize negative impact on TB control efforts and to better serve the comprehensive health needs of communities.

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Public Health Watch TB Monitoring Project

TANZANIAN ADVISORY GROUP

Gabriel Faustin, Ifakara Health Research and Development Centre
Asia Hussein, University College of Health Sciences
Julius Kaaya, Tanzania Network of People Living with HIV/AIDS (TANOPHA)
S. Kamazina, University College of Health Sciences
Fred Lwilla, National Tuberculosis and Leprosy Programme (NTLP), Ministry of Health
Charles Mtoi, Femina Health Information Project
Rev. Fr. Sebastian, Roman Catholic Church, Diocese of Dar es Salaam
Magreth Semkiwa, Walio katika Mapambano na AIDS Tanzania (WAMATA)

Notes

1. A. Hussein, and I. Semali, *Identification of Areas and Levels for the Integration of Tuberculosis and Leprosy Control Program Activities into the General Health System Functions: A Research Report* (Dar es Salaam, 2004), pp. 1–7. This report was conducted by the authors for the NTLP and has not been published. The researchers are from Muhimbili University College of Health Sciences.
2. Ministry of Health (MoH), *NTLP Annual Report* (Dar es Salaam, 2004).
3. *National Population and Housing Census* (Dar es Salaam, 2002).
4. MoH, The Adult Morbidity and Mortality Project (AMMP), 2002. Available at www.ncl.ac.uk/ammp/ (accessed May 8, 2006).
5. World Bank, *Memorandum on a Country Assistance Strategy of the World Bank Group for the United Republic of Tanzania* (June 30, 2000), p. 4.
6. *National Strategy on Growth and Reduction of Poverty* (Dar es Salaam: Vice President's Office, June 2005).
7. *National Strategy on Growth and Reduction of Poverty* (Dar es Salaam: Vice President's Office, June 2005), pp. 39–40.
8. *National Population and Housing Census*, 2002.
9. MoH, *NTLP Annual Report* (Dar es Salaam, 2004).
10. *National Sentinel Surveillance System of the Adult Morbidity and Mortality Project* (2002), p. 94.
11. MoH, *NTLP Annual Report* (Dar es Salaam, 2004).
12. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 128.
13. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 128.
14. MoH. *National HIV/AIDS/STI Surveillance Report,* No. 8 (Dar es Salaam: MoH, 2003).
15. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2005), p. 138.
16. MoH, *Manual of the National Tuberculosis and Leprosy Programme* (Dar es Salaam: MoH, 2003).
17. MoH, *Manual of the National Tuberculosis and Leprosy Programme* (Dar es Salaam: MoH, 2003).
18. E. Makundi, and J. Nyoni, *The Implications of Health Sector Reforms on Reproductive Health Services: The Case of Bukoba District—Kagera Region, Tanzania Study* (Takoma Park, MD: Center for Health and Gender Equity, June 2005), available at www.genderhealth.org/pubs/HSRTanzJune2005.pdf (accessed May 4, 2006).
19. B. Schreuder, et al, "Viewpoint: Why and How Tuberculosis Control Should Be Included in Health Sector Reviews," *Tropical Medicine and International Health,* 2004; 9 (8): 910.
20. J. Pepall, *Making Plans for Success—The Tanzania Essential Health Interventions Project* (International Development Research Center (IDRC), 2003). Available at http://www.idrc.ca/en/ev-45726-201-1-DO_TOPIC.html (accessed on September 1, 2005).
21. Interview with F. Lwilla, program officer, NTLP, Dar es Salaam, June 2005.
22. Comments by Tanzanian experts at roundtable meeting in Dar es Salaam, November 8, 2005.
23. W. Hsiao, *Unmet Health Needs of Two Billion: Is Community Financing a Solution?* (Washington, D.C.: Commission on Macroeconomics and Health, Sept. 2001). Available at http://siteresources.worldbank.org/HEALTHNUTRITIONANDPOPULATION/Resources/281627-1095698140167/Hsiao-UnmetNeeds-whole.pdf (accessed May 3, 2006).
24. J. Pepall, *Making Plans for Success—The Tanzania Essential Health Interventions Project* (International Development Research Center (IDRC), 2003). Available at www.idrc.ca/en/ev-45726-201-1-DO_TOPIC.html (accessed on May 3, 2006).
25. Interview with F. Lwilla, NTLP program officer, Dar es Salaam, June 2005.

26. *National Strategy on Growth and Reduction of Poverty* (Dar es Salaam: Vice President's Office, June 2005), pp. 39–40.
27. "Table 1: NTLP Funding and Expenditure for 2003," in MoH, *NTLP Annual Report* (Dar es Salaam, 2003), p. 4.
28. Interview with health worker, Dar es Salaam, February 2005.
29. *Joint Health Sector Review Report*, April 2005.
30. Anna Abdallah, minister of health, in "Focus on Tanzania," Integrated Regional Information Network (IRIN), March 24, 2003, available at www.aegis.com/news/irin/2003/IR030318.html (accessed on May 3, 2006).
31. Interview with TB patient, Dar es Salaam, February 2005.
32. For example, the Harare-based NGO, Southern Africa AIDS Information Dissemination Services (SAfAIDS), conducted a one-week training workshop in 2003 for journalists on media, gender and HIV/AIDS.
33. Interview with F. Lwilla, Dar es Salaam, June 2005.
34. Interview with F. Lwilla, Dar es Salaam, June 2005.
35. Field interviews in Ifakara, Dar es Salaam, and Lushoto, February–April, 2005.
36. E. Wandwalo and O. Morkve, "Knowledge of Disease and Treatment Among Tuberculosis Patients in Mwanza, Tanzania," *International Journal of Tuberculosis and Lung Disease*, 2000; 4 (11): 1041–46.
37. E. Wandwalo and O. Morkve, "Knowledge of Disease and Treatment Among Tuberculosis Patients in Mwanza, Tanzania," *International Journal of Tuberculosis and Lung Disease*, 2000; 4 (11): 1041–46.
38. Interview with health care worker, Temeke Clinic, Dar es Salaam, April 2005.
39. Comments by Tanzanian experts at roundtable meeting in Dar es Salaam, November 8, 2005.
40. Study by Healthscope Tanzania and the NTLP, reported in MoH, *NTLP Annual Report* (Dar es Salaam, 41. Available at http://72.14.203.104/search?q=cache:NiMNHk3urdMJ:www.aidharmonization.org/ah-st/ah-browser/indexabridged%3Fmaster%3Dmaster%26rgn_cnt%3Dtz+joint+health+sector+review+Tanzania&hl=en&gl=us&ct=clnk&cd=1&client=firefox-a (accessed May 7, 2006).
42. Interview with F. Lwilla, Dar es Salaam, June 2005.
43. Interview with F. Lwilla, Dar es Salaam, June 2005.
44. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 128.
45. Government of Tanzania, *Poverty and Human Development Report*, 2003.
46. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 128.
47. *National Strategy on Growth and Reduction of Poverty* (Dar es Salaam: Vice President's Office, June 2005), pp. 39–40.
48. *National Strategy on Growth and Reduction of Poverty* (Dar es Salaam: Vice President's Office, June 2005), p. 11.
49. A. Hussein, and I. Semali, *Identification of Areas and Levels for the Integration of Tuberculosis and Leprosy Control Program Activities into the General Health System Functions: A Research Report* (Dar es Salaam, 2004), pp. 1–7.
50. Interview with TB patient, Dar es Salaam, February 2005.
51. E. Wandwalo, B. Robberstad, and O. Morkve, "Cost and Cost-effectiveness of Community-based and Health Facility Based Directly Observed Treatment of Tuberculosis in Dar es Salaam, Tanzania," *Cost Effectiveness and Resource Allocation*, 2005.
52. "Focus on Tanzania," Integrated Regional Information Network (IRIN), March 24, 2003, available at www.aegis.com/news/irin/2003/IR030318.html (accessed on May 3, 2006).
53. E. Wandwalo, B. Robberstad, and O. Morkve, "Cost and Cost-effectiveness of Community-based and Health Facility Based Directly Observed Treatment of Tuberculosis in Dar es Salaam, Tanzania," *Cost Effectiveness and Resource Allocation*, 2005.
54. Interview with male TB patient, April 2005.

55. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
56. E. Wandwalo, B. Robberstad, and O. Morkve, "Cost and Cost-effectiveness of Community-based and Health Facility Based Directly Observed Treatment of Tuberculosis in Dar es Salaam, Tanzania," *Cost Effectiveness and Resource Allocation*, 2005.
57. Interview with health worker, Ifakara, April 2005.
58. Interview with health care worker, Kilombero, February 2005.
59. Interview with TB patient, Dar es Salaam, February 2005.
60. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
61. Interview with TB patient, Kilombero, February 2005.
62. HealthScope Tanzania, *Factors Affecting Diagnosis and Treatment of Tuberculosis Among Men and Women in Tanzania* (Dar es Salaam, National Tuberculosis and Leprosy Programme, HealthScope Tanzania, July 2003).
63. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003) and interview with health care worker at the Kilombero District Hospital, Kilombero, Februray 2005.
64. Interviews with TB patients, Kilombero, February 2005.
65. Interview with assistant DTLC in Kilombero, February 2005.
66. Interview with assistant DTLC in Kilombero, February 2005.
67. Interview with male TB patient, Kilombero, February 2005.
68. E. Wandwalo, B. Robberstad, and O. Morkve, "Cost and Cost-effectiveness of Community-based and Health Facility Based Directly Observed Treatment of Tuberculosis in Dar es Salaam, Tanzania," *Cost Effectiveness and Resource Allocation*, 2005.
69. Interview with health workers, Ifakara, February 2005.
70. Interview with F. Lwilla, Dar es Salaam, June 2005.
71. Interview with staff from KITUPA, Kilombero, February 2005, and interview with DTLC, Kilombero February, 2005.
72. Interview with health care worker, Dar es Salaam, April 2005.
73. Interview with acting DTLC, Kilombero, February 2005.
74. WHO, *Interim Policy on Collaborative TB/HIV Activities*, 2004. Available at www.who.int/hiv/pub/tb/tbhiv/en/ (accessed June 25, 2006).
75. Journalists Against AIDS (JAAIDS) Nigeria, civil society press release, "Civil Society Organizations Applaud African Leaders on Abuja Commitments," May 5, 2006.
76. Interview with F. Lwilla, program officer, NTLP, Dar es Salaam, June 2005.
77. Mookherji, S., et al., "Motivating and Enabling Improved Tuberculosis Case Detection in Tanzania," 2003. Available at www.msh.org/projects/rpmplus/pdf/tb/CountryPage/TBCaseDetectionTanzania2003.pdf (accessed May 7, 2006).
78. Interview with F. Lwilla, Dar es Salaam, May 4, 2006.
79. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2001).
80. MoH, *NTLP Strategic Plan 2005–2009*.
81. MoH, *NTLP Strategic Plan 2005–2009*.
82. S. Egawawa, presentation on DOTS Plus in Tanzania Preparations Phase, 2004.
83. S. Egawawa, presentation on DOTS Plus in Tanzania Preparations Phase, 2004.
84. Interview with health care worker, Temeke Clinic, Dar es Salaam, February 2005.
85. Interview with F. Lwilla, Dar es Salaam, June 2005.
86. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003), p. 6.
87. Interview with Semindu, district NTLP coordinator (DTLC), Dar es Salaam, November 9, 2005.

88. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2004).
89. MoH, *Second Review of Medium Term Development Plan (MTDP)*.
90. Site visits to district hospitals in Temeke, Dar es Salaam, and Kilombero, February–April, 2005.
91. Interview with health worker at PASADA Hospital, Dar es Salaam, February 2005.
92. Interview with health worker at PASADA Hospital, Dar es Salaam, February, 2005.
93. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
94. HealthScope Tanzania, *Factors Affecting Diagnosis and Treatment of Tuberculosis Among Men and Women in Tanzania* (Dar es Salaam: NTLP, HealthScope Tanzania, July 2003).
95. Interview with staff from KITUPA and interview with DTLC, Kilombero, February, 2005.
96. Interview with assistant DTLC, Kilombero, February 2005.
97. E. Wandwalo, B. Robberstad, and O. Morkve, "Cost and Cost-effectiveness of Community-based and Health Facility Based Directly Observed Treatment of Tuberculosis in Dar es Salaam, Tanzania," *Cost Effectiveness and Resource Allocation*, 2005.
98. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
99. Interview with health care worker, PASADA Hospital, Dar es Salaam, July 2005.
100. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
101. MoH, *NTLP Strategic Plan*, 2005–2009.
102. Comments by Tanzanian experts at roundtable meeting, Dar es Salaam, November 8, 2005.
103. Conversations with health workers during site visits to Temeke and Ifakara hospitals.
104. Interview with health care worker, PASADA Hospital, Dar es Salaam, July 2005.
105. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
106. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
107. WHO, *The World Health Report 2003—Shaping the Future* (Geneva: WHO, 2003).
108. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
109. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 130.
110. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 128.
111. Global Fund website: www.theglobalfund.org/en/ (accessed on May 3, 2006).
112. Global Fund website: www.theglobalfund.org/en/ (accessed on May 3, 2006).
113. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
114. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
115. MoH, *Health Statistics Abstract* (Dar es Salaam: MoH, 2002).
116. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
117. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2002).
118. MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2002) and MoH, *NTLP Annual Report* (Dar es Salaam: MoH, 2003).
119. MoH, *NTLP Annual Report* (Dar es Salaam: WHO, 2004).
120. HAART stands for Highly Active Anti-retroviral Therapy.
121. Interview with F. Lwilla, Dar es Salaam, June 2005.
122. Interviews with private health care providers, Walio Katika Mapambano na AIDS Tanzania (Wamata) Clinic, Dar es Salaam, February 2005.
123. Comments by Tanzanian experts at roundtable meeting, Dar es Salaam, November 8, 2005.
124. Interview with health care provider, Dar es Salaam, February 2005.

VI.
TB Policy in Thailand

Contents

Executive Summary

Tuberculosis incidence in Thailand, which fell by 50 percent from 1985 to 1991, rose again in the 1990s with the emergence of the HIV/AIDS epidemic. Today Thailand has an incidence rate of 142 cases per 100,000 people, and is 18th on the World Health Organization's list of high-burden countries.

Thailand, through the National Tuberculosis Programme (NTP), has committed itself to implementing the internationally recommended DOTS strategy, which emphasizes directly observed treatment, and achieving the international TB control targets of 70 percent detection rate and 85 percent treatment success rate. The government reports considerable progress in meeting these goals: 100 percent DOTS coverage by 2002; and, more recently, a 71 percent detection rate and 73 percent treatment success rate.

Some Thai experts, however, question the reliability of these statistics. DOTS coverage, detection, and treatment vary widely from place to place in Thailand. The 73 percent treatment success rate masks rates as low as 25 percent among some vulnerable groups such as migrant workers and injection drug users. In addition, since detection and treatment rely only on one form of diagnosis (active, sputum smear-positive cases), the overall treatment success rate for those with active TB may be considerably lower.

Budget reductions resulting from health care reforms have had a dramatic impact on the NTP's capacity to fight TB, particularly with regard to monitoring and evaluation, staffing, training, and public awareness-raising efforts. The integration of TB and HIV/AIDS departments at the central level appears to have resulted in TB being overshadowed by the more powerful AIDS program, rather than becoming its equal partner.

Civil society actors, such as recovered TB patients and community health activists, do not play an active role in TB policy development. The NTP's media outreach efforts have been minimal, and few nongovernmental organizations (NGOs) have initiated TB advocacy and treatment education efforts.

In the absence of easily accessible, accurate information about TB and TB/HIV, public awareness of the basic facts about TB—and the serious threat TB poses to public health—is low. TB is widely viewed as a curable but rare disease. Stigmatization of people living with TB and TB/HIV, and of women in particular, is an issue of concern.

Increased NTP funding and support for advocacy, communication, and social mobilization activities could play a crucial role in addressing many of these concerns. Key activities could include the following:

- Establish and staff a specialized department within the NTP to oversee the development and implementation, in partnership with community representatives, of a plan to increase public awareness about TB and TB/HIV.

- Develop and disseminate media and patient-friendly informational materials, including targeted materials and strategies for reaching vulnerable groups.
- Compile and publish the performance records of regional and district TB control activities to allow for public scrutiny of the quality of services available.
- Improve support and training for village health volunteers and family members who deliver important services such as assisting health workers with the distribution of TB drugs and follow-up with patients.
- Develop programs and procedures to invite and encourage greater participation in TB control activities by affected communities, particularly by persons who have recovered from TB.
- Provide direct support to NGOs that have proven effective in HIV/AIDS service delivery and advocacy to integrate TB into their activities and programming.

The current national context of budget reductions and austerity measures makes additional government funding unlikely for advocacy, communication, and social mobilization programming—activities that are often considered nonessential. International funding to the Ministry of Public Health, NGOs, and research institutions for collaborative activities in this area could provide a critical source of support, and also spur greater civil society involvement and public attention to TB without raising the risk of replacing the allocation of government funding for core TB control services.

Background

Baseline statistics

Thailand has experienced rapid economic growth in the past few decades. Its average economic growth rate was 5.4 percent a year from 1975 to 2001.[1] By 2002, its GDP per capita had reached $2,060 (78,286 baht). By 2004, Thailand was widely considered a "middle income country."[2]

Increasing prosperity has been matched by increased government expenditure on health. Health expenditures rose from 3.5 percent of GDP in 1979 to 6.1 percent in 2000,[3] and the country has experienced significant improvements in health and other social indicators. For example, in the period from 1960 to 2005, the infant mortality rate decreased from 84.3 to 17.3 per 1,000 live births;[4] by 2002, the adult literacy rate was 92.6 percent.

In this broader context of socioeconomic development and increased investment in health, the National Tuberculosis Programme (NTP) succeeded in reducing TB incidence by 50 percent in six years, from 150 cases per 100,000 people in 1985—a record for the country—to 76 per 100,000 in 1991.[5] However, TB incidence rose again in the 1990s with the emergence of the HIV/AIDS epidemic,[6] and the deadly interaction of TB and HIV brought new challenges to TB control efforts. With an estimated annual TB incidence of 142 per 100,000, Thailand is 18th on the World Health Organization's (WHO's) list of TB high-burden countries.[7] Experts have noted, however, that national estimates may be compromised by the fact that a comprehensive survey to estimate incidence has not been conducted in over 15 years.[8]

TB/HIV and multidrug-resistant TB

The estimated prevalence of HIV in Thailand is among the highest in Southeast Asia, with an infection rate of 1.5 percent among adults aged 15–49.[9] Sentinel surveys, which are based on data gathered at selected clinics and hospitals, indicate that HIV prevalence among TB patients ranges from 10 to 15 percent countrywide, but may reach 40 percent in the north.[10] According to a statement by Deputy Minister of Public Health Anutin Charnvirakul, about one-third of people living with HIV also have TB—approximately 12 times higher than the rate among people who do not have HIV.[11]

Such high rates of TB/HIV coinfection are alarming, especially since the diagnosis and treatment of TB in people who are also HIV-positive is a challenge. Many HIV-positive patients either have sputum smear-negative or extrapulmonary TB, which are not detected

through standard microscopy. The lack of reliable diagnostic tools results in missed cases and higher mortality as well as mistreatment of non-TB cases in some instances.[12]

A two-year survey conducted in collaboration with the WHO from 1996 to 1998 recorded primary MDR-TB prevalence at 2.57 percent nationally.[13] However, according to the WHO, primary MDR-TB prevalence was estimated to be just 0.9 percent as of 2004.[14] Some Thai experts express concern that MDR rates could be higher among vulnerable groups, including the urban poor, prisoners, seasonal contract workers, and migrants.[15]

Health system infrastructure

Thailand has a strong public health infrastructure. Basic medical services and facilities are relatively easy to access through government-financed hospitals and over 9,000 primary health care centers.[16] The public sector finances approximately 57 percent of total annual health expenditures.

NTP implementation is overseen by the "TB Cluster," which is located within the Bureau of HIV/AIDS, TB and Sexually Transmitted Infections (STIs). The TB Cluster is responsible for developing and planning TB policies, training health workers, and monitoring TB control activities throughout the country. TB diagnostic and treatment services are provided through a network of provincial and district level hospitals and clinics.

Thailand also has an extensive network of private health facilities. According to one recent study, an estimated 20–40 percent of TB cases are treated in the private sector.[17] Private practitioners generally do not observe NTP guidelines, and treatment for their TB patients is most often self-administered, rather than administered and observed by a clinician. Most private facilities do not offer services available in public clinics, such as HIV testing, standardized TB and HIV treatment regimens, and routine monitoring of patients.[18] Few private facilities perform cultures and drug sensitivity testing.[19]

Health reform

> *There used to be a TB center here, and we could refer people there. Now we have to refer people to the hospital, using the 30 baht scheme. Some people living with HIV/AIDS are scared and reluctant to go to general hospitals. I try to talk to government officers about this problem. They say that TB work is [now] part of the municipality's work, but it doesn't work very well.*
>
> *—Samran Takan, director of New Life Friend Center*[20]

In May 2000, the Office of Health System Reform initiated a consultative process for the development of a new national health bill to set the terms for a reform of the national health system. This process has resulted in a major effort to decentralize health programs and services. According to present plans, by 2010 the Ministry of Public Health (MoPH) will have shifted approximately 80 percent of its annual budget and 90 percent of its staff to the subdistrict and municipal levels.[21]

Decentralization has had a significant impact on the NTP, with a major reduction in dedicated funding and staff size. Thai TB experts give mixed reviews on the effects of decentralization so far, but agree that roles and responsibilities within the new system have not been communicated clearly, and that the emphasis on cost-cutting measures has compromised the effectiveness of the health system in general and TB control efforts in particular. As one regional director noted, "many directors of public hospitals are new [and] they don't understand what is required—they only think about saving money."[22]

Another outcome of the health reform was the introduction in 2003 of a countrywide health insurance system known as the universal coverage scheme or the 30 baht scheme (since patients pay only 30 baht or $0.79 for each hospital or clinic visit). The budget for universal coverage covers those drugs and other services identified as part of an "essential package of care," which is delivered at MoPH and MoPH-affiliated facilities. TB drugs (including the "second-line drugs" that are used to treat MDR-TB) are considered a component of "essential care," and as such are financed through the universal coverage scheme. As of 2004, 75 percent of the population, or 47 million people, had their health insurance financed under the universal coverage scheme. Of the remaining 25 percent, or 16 million people, 5 million civil servants receive health coverage through the Civil Servant Medical Benefit Scheme, 8 million receive coverage through the Social Security Scheme, and approximately 3 million are uninsured.[23]

However, there is no budget within the universal coverage system for training, supervision, and monitoring. The TB Cluster must negotiate with the Department of Disease Control (DDC) to receive nonuniversal coverage funding for these activities or rely

on resources from the Global Fund to Fight AIDS, Tuberculosis and Malaria. The reliance on outside funding raises concerns about the sustainability of these aspects of the TB program.[24] Due to budget shortfalls, many planned NTP training activities could not be implemented at the provincial and district levels in 2004. The emphasis on primary care has also had a detrimental effect on such core NTP activities as program monitoring and evaluation, as well as case recording and reporting.[25]

While some patients like the new universal coverage scheme, others have expressed frustration. For instance, one representative from a network of people living with HIV/AIDS asserted that referring patients to the hospital rather than to a local TB center has reduced accessibility to TB services.

Political commitment

> *I don't think the government views TB as a threat. [T]here's an inherent faith that a rising tide of better health care in general will lift all boats — [that] TB will progressively be eliminated along with other developing country diseases . . . [while] HIV garners such high-profile activism that it's hard to shut the door on it. . . .*
>
> *—Jay Varma, section chief for TB Prevention and Control of the Thailand–U.S. Collaboration (TUC)*[26]

The Thai government has demonstrated a high level of political commitment to TB control activities and implementation of the WHO-recommended DOTS strategy. By joining other high-burden country governments in adopting the Amsterdam Declaration to Stop TB in 2000, the government embraced the global TB control targets of 70 percent case detection and 85 percent treatment success. In 2003, the MoPH declared TB to be one of five "priority diseases." (The other priority diseases are HIV/AIDS, malaria, heart diseases, and diarrhea.)[27]

However, some observers assert that there is still insufficient political recognition of the persistence and severity of TB as a public health threat. According to the leader of one faith-based group, the general perception among political leaders as well as in Thai society is that TB has been completely eradicated.[28]

Political commitment to TB control is particularly weak at the regional, provincial, and district levels, where officials often place higher priority on other health issues such as dengue fever, avian flu, and diarrhea. Budget reallocation has exacerbated this trend. Resources formerly devoted to specialized TB control activities and staffing are now part of

the general budget for primary health care and subject to reallocation.[29] According to one regional TB official, "We need someone to show the flag. . . . If we have political commitment at the highest levels, then district-level officials and provincial-level examiners will be more cooperative; but if TB isn't on the 'priority list' of health inspectors, district and provincial officials will not make a commitment to TB work."[30]

The NTP should develop innovative ways of encouraging a greater level of accountability for performance on TB control efforts among health officials. For example, one national TB official suggested that publicizing regional and district case detection and treatment success rates on the NTP website might be "one way to stir things up."[31] Providing feedback to health officials at these levels would increase their awareness of how the statistics they compile contribute to TB control efforts and enhance their sense of engagement in a common, national cause. Another regional TB official suggested developing a "traffic signal" system, which would award districts red, yellow, and green lights based on performance as a way of creating competition among them to achieve better results.[32]

There are few nontraditional actors involved in the development of TB control policy. This contributes to a sense that TB control is best left to the specialists, limits the level of "political buy-in" from other government ministries, and reduces the likelihood that public pressure will play a role in prompting more effective government action. As one activist puts it: "Designing plans for TB control should involve all stakeholders, but this is something I haven't seen yet. . . . If we compare TB policy to a tree, and the managers are on top, we might have to find stakeholders to shake the tree—to shake the whole tree, but not too hard; otherwise it will fall down."[33]

The NTP should expand its efforts to involve a broader range of stakeholders, including recovered patients and community health activists, in TB policy development and implementation. This could help generate a greater shared sense of commitment to TB control efforts, and greater public pressure for more effective TB and TB/HIV services.

Public mobilization

Public awareness of the threat posed by TB is generally low. TB is widely viewed as a curable but rare disease, while HIV/AIDS is seen as a fatal disease deserving more attention.[34] NTP media outreach efforts have been minimal, particularly when compared to the scope of national campaigns around HIV/AIDS. In the absence of easily accessible, accurate information about TB and TB/HIV, local organizations lack the resources and knowledge to educate their communities,[35] and stigmatization of people living with TB and TB/HIV continues to be an issue of concern.

World TB Day

[World TB Day is like] a flash of the camera, and then it's gone.
—Somsak Akksilp, director, Office of Disease Prevention and Control[36]

Most government-sponsored TB awareness-raising activities are centered on World TB Day. Past World TB Day activities have included public statements by high-ranking MoPH officials,[37] MoPH-sponsored television programs about TB, road shows, and exhibitions. On occasion public hospitals have offered services such as free testing, counseling, and basic medical check-ups for a full week around World TB Day. However, Thai TB experts generally agree that more sustained attention to TB awareness-raising activities is needed.[38]

Media coverage

In comparison to the breadth and effectiveness of AIDS-awareness media campaigns, NTP-sponsored activities to promote awareness of TB and TB/HIV have been limited in scope. One national-level TB Cluster official commented that the lack of media outreach is a "serious limitation" of the NTP,[39] while regional health officials point to reductions in the budget for public awareness-raising activities in the wake of the health sector reforms.[40]

Many journalists, unconvinced that TB is an important health issue, decline to cover TB-related stories and events. In addition, media personnel often lack the information and skills to report on TB news and policies,[41] particularly given that TB-related issues and research are often presented in highly technical terms. The NTP should produce regular updated, media-friendly materials on the TB situation to encourage and facilitate quality reporting. The NTP should also cultivate relationships with health journalists, including by offering training seminars and organizing regular press events to present current issues such as progress on achieving TB control targets, results of latest TB research efforts, and global TB developments.

To facilitate these activities, the TB Cluster should consider establishing a specialized media department and hiring trained communications staff to promote NTP policies and activities as well as disseminate accurate information about TB and TB/HIV—how TB is spread, prevented, and treated; the risks of TB and other opportunistic infections for people living with HIV/AIDS; and where people can go for diagnosis and treatment.[42] To reach some of the communities most affected by TB, the activities of this department will need to extend to television, radio, and the Internet as well,[43] and to develop effective partnerships with regional and local community organizations and media outlets.[44]

Stigmatization of TB patients

> *Even people who . . . are educated still have fears and stigmatizing attitudes. So we need to think about how to conduct prevention efficiently—how to provide information without scaring people. It is important to emphasize that TB is curable.*
>
> *—Rev. Sanan Wutti, The Church of Christ in Thailand*[45]

Nongovernmental organizations report that community activists "lack academic skills" and knowledge about TB themselves, and therefore "don't feel confident" in conducting awareness-raising efforts in their communities.[46] And where communities lack a clear understanding of how TB is spread and treated, stigmatization of persons who have TB and TB/HIV is common. Some TB patients report satisfaction both with services received in community hospitals and with levels of support from family members and neighbors.[47] But fear of stigmatization presents a significant barrier to treatment. Enhanced support for community education and stigma reduction activities could create a more enabling environment for people to access rather than avoid diagnostic and treatment services.[48]

Both women and men report experiencing stigmatization upon being diagnosed with TB. However, there are some indications that women are affected more severely. For example, one recent assessment carried out in Kanchaburi found that TB is perceived as a "male" disease, associated with high-risk lifestyle and behaviors such as working in an unsanitary environment, drinking, smoking, and overindulging in nightlife activities. Thus, women infected with TB are seen as being at odds with social norms and expectations of "female" behavior, intensifying the level of stigmatization they experience.[49]

Some community activists have warned that lack of information about the interaction between TB and HIV/AIDS is particularly severe, and noted that providing effective communication about TB/HIV without adding to stigmatization is a particular challenge.[50] This makes it extremely important for the NTP and the National AIDS Control Programme to develop and disseminate materials that provide accurate and accessible information about TB as well as about the interaction between TB and HIV, including through close partnership with civil society organizations based in the most affected and high-risk communities.

NGOs and community-based groups generally can and should play a more active role in mobilizing and educating the public and those at high risk of TB infection, as the experience with HIV/AIDS demonstrates. Since the 1990s, HIV/AIDS NGOs and community-based groups have played a vital role in advocating for drug and clinical trials, training health care workers, and providing outreach to marginalized populations such as injection drug users, sex workers, migrant workers, and men who have sex with men.[51] Given their record of success in communications and advocacy work in particular, HIV/AIDS NGOs

could contribute a great deal to TB control efforts by sharing their experiences and providing people living with HIV/AIDS with vital information in the process.[52]

Government Program for TB and TB/HIV Control

Program content

The NTP was established in 1966. DOTS was adopted as the NTP's core policy in 1996, and identified as a priority of the national health policy in 1997. By 2002, the NTP reported that 100 percent of the population had access to DOTS services. According to the most recent government figures, the NTP detected 71 percent of the estimated total number of TB cases, surpassing the 70 percent global case detection target. Of these, 73 percent were treated successfully, still short of the 85 percent global treatment target.[53]

In 2001, the NTP issued a revised set of operating principles, articulating a transformation in the role and function of regional, provincial, and district personnel, and a new process for assessment of outcomes at each level. The revised policy prioritizes the following elements:

- **Decentralization of treatment service:** Local health centers have responsibility for distribution of TB drugs in rural areas.
- **Community involvement:** Village health volunteers or family members can provide directly observed treatment (DOT), with training and support from local authorities.
- **Quality assurance:** District TB coordinators (DTCs) ensure appropriate training for health center staff, village health volunteers, and family members.
- **Diagnostics:** Prioritization of the need for improved diagnostic services (reflecting growing concern about MDR-TB).
- **Drug administration:** Ensuring free TB diagnostic services (sputum examinations and x-rays) to those who can not afford to pay (others pay a minimum charge for these services) and free TB drugs for all.

TB and poverty reduction

The government has taken a number of steps to bolster its poverty reduction policies and activities,[54] including the designation of poverty alleviation as a priority area by the National Economic and Social Development Board. However, while maternal and child health, infant

mortality, and HIV/AIDS are highlighted in current poverty reduction schemes, TB is not mentioned. The government should explicitly acknowledge the linkage between TB and poverty and the significance of TB control efforts in all of its policies and programs to prevent and ameliorate poverty.

DOTS expansion

> *These are policies that we receive from the government, and from the international community. . . . [T]hey say that people must receive DOT in every single case . . . [b]ut . . . we can't do this 100 percent. . . . We have a nurse to do home visits. [But n]urses have a lot of duties and many diseases to take care of—so no, they don't get to everyone. We try to utilize community workers. . . . But if the TUC [U.S. Centers for Disease Control Collaboration] doesn't provide us with financial support, this won't necessarily be sustainable.*
>
> *—Pruthi Israngkul Na Ayudya, director, Health Center 21, Bangkok*[55]

Prior to national implementation of the DOTS strategy, supervised TB treatment was not available throughout the country. Though the NTP reported 100 percent DOTS coverage by 2002, the accessibility and quality of services available varies significantly in practice, as reflected in variable case detection and treatment success rates among different communities and regions.

There are indications that the administration of directly observed therapy (DOT)—an essential component of the DOTS strategy—is not observed strictly in practice. For example, statistics from the 10th Zonal TB and Chest Disease Center in Chiang Mai indicate that 42.1 percent of patients self-administer treatment.[56] Moreover, though DOTS may be available in all districts, access appears to be difficult for marginalized groups such as migrant workers and injection drug users.[57]

Some Thai experts also indicate doubts about the comprehensiveness and reliability of reported data on case detection and treatment success. For instance, the reported 71 percent case detection rate may include non-TB cases such as bacterial pulmonary infection, and the national treatment success rate of 73 percent masks rates as low as 25 percent among some vulnerable groups.[58] Perhaps more importantly, the current targets relate to detection and treatment of active, sputum smear-positive cases only. The WHO, however, states that the smear-positive test captures only about 44 percent of all those with active TB. For Thailand, this means that despite fairly positive national progress toward meeting the detection and treatment success targets, in fact only about 23 percent of those with active TB are being cured.[59]

According to one AIDS activist, many people living with HIV/AIDS—who are often smear-negative—die from TB without ever being diagnosed with TB or treated for it.[60] Others assert that an overriding focus on achieving targets may result in insufficient attention to country-specific issues such as the need to strengthen health systems and improve the service delivery infrastructure.[61] However, many Thai TB experts consider the global TB targets critical in motivating government progress, and express confidence in the national capacity to achieve or exceed them.[62]

DOTS implementation

> *We think of ARV [antiretroviral drug] distribution among people living with HIV/AIDS as a model. People living with HIV/AIDS become actively involved [in their own treatment]: they do home visit projects; they join committees at hospitals; they have a role in encouraging and supporting their fellow people living with HIV/AIDS to stick to treatment. This is the crucial role local communities have played in making AIDS programs successful [and] this . . . story could be replicated for TB patients.*
>
> *—Rev. Sanan Wutti, The Church of Christ in Thailand*[63]

DOTS implementation is decentralized to the district and the subdistrict levels, the lowest units of management for TB control. District and provincial hospitals offer diagnostic services, and house TB clinics that register and track the treatment of all patients. The 19 Zonal TB centers coordinate the activities of the provincial and district hospitals and the subdistrict health centers and provide technical supervision and drug supplies.

According to NTP guidelines, all TB patients can choose to receive DOT from a government health care worker, a village health volunteer, or a family member. One major study found that DOT was most effective when administered by professional health care workers, but that high turnover rates limited the efficacy and accessibility of this option. On the other hand, DOT administered by family members frequently deviated from NTP guidelines, which is reflected in higher levels of noncompliance with treatment.[64] This may be due to family members' lack of understanding of the treatment protocol and the complexities of interpersonal dynamics.[65] However, according to some observers, since district hospital staff are overburdened, "it's simply not practical to expect public health officials to look after patients who have to take drugs for six months."[66] Moreover, many patients seem to prefer the family-administered DOT option.

In order to improve treatment success rates, there is an urgent need for more effective strategies to retain and train professional health care workers and to build capacity

through appropriate, ongoing support and training for family member observers and village health volunteers. Some community groups assert that the NTP and TB experts should study the involvement of people living with HIV/AIDS and support groups in the distribution of antiretroviral drugs as a model for encouraging and involving TB patients (and former patients) in taking responsibility for their own treatment.

TB/HIV

After initiating efforts to develop a national TB/HIV policy in 1999, the MoPH established a national TB/HIV coordinating body in 2001, which began implementing a strategy to increase TB/HIV collaborative services in 2004. Critics contend that the strategy is still incomplete; that health workers have not been trained or resourced to implement it; that "integrating" TB and HIV has often meant that the NTP is subsumed within the more powerful and better resourced National AIDS Control Programme; and that there is an urgent and unfulfilled need for better coordination between TB and HIV/AIDS services at the field level.

The 2004 strategy stipulates that HIV/AIDS programs should include TB counseling and screening services; TB treatment should be provided to all HIV patients with active TB; and efforts should be made to identify latent TB cases, particularly among people living with HIV/AIDS, and to provide prophylactic treatment.[67] The content of the strategy, with its emphasis on provision of TB services to people living with HIV/AIDS, perhaps reflects the effectiveness of advocacy efforts by HIV/AIDS NGOs. There are almost 900 groups for people living with HIV/AIDS nationwide, and the network has been vocal, active, and successful in obtaining nearly universal access to ARVs for people with HIV.[68] This strategy should be developed further to facilitate early detection of HIV, free HIV testing, and routine CD4-count testing among TB patients as well. Recent population-based surveillance indicates that 90 percent of TB patients have compromised CD4 counts (below 200). The death rate for HIV-infected TB patients is 20–30 percent, and ARV therapy provided during TB treatment can reduce the relative risk of death by 90 percent.[69]

As implementation of the national TB/HIV strategy began relatively recently, reliable data on its results and impact are not yet available. However, a number of challenges have become immediately apparent. Health workers are not well informed about or trained on how to put the policy into operation. According to one TB doctor, TB clinical workers have not been trained on how to conduct HIV counseling and testing, while HIV clinical workers have little experience with TB.[70] Particularly in the northern region, health officials contend that the lack of integrated services and the difficulties in diagnosing TB among people living with HIV/AIDS have led to a drop in treatment success rates and rising mortality rates

among people living with HIV/AIDS.[71] The interaction between TB drugs and ARVs is not well understood among health practitioners, and the National AIDS Control Programme is not always well equipped to cope with the needs of people living with HIV/AIDS who become ill with TB.[72] Finally, people with HIV may be more likely to delay seeking TB treatment,[73] underscoring the importance of outreach and active TB case-finding services at HIV/AIDS treatment centers.

Some TB experts have asserted that the integration of TB and HIV/AIDS programs happened too quickly, resulting in the dominance of the National AIDS Control Programme over the NTP and the downgrading of TB services. For example, the director of one zonal TB center has insisted that both programs must be independently effective for integration to be mutually beneficial. In his view, an effective TB policy requires the employment of specialized TB staff, and a "second health reform" is needed to reinstate an independent TB division to prepare for more effective integration of services at the field level.[74]

For community-based groups and NGOs that work at the field level, the integration of services may seem logical because patients with both diseases have a clear continuum of needs.[75] The NTP and National AIDS Control Programme should reexamine the infrastructure of integration to ensure that proper support is provided to public health clinics and HIV/AIDS community organizations for addition of TB care to their existing line of services and to TB clinics for HIV counseling, testing, and referral services.

Isoniazid preventive therapy

One recent research study conducted in the northern provinces confirmed that isoniazid preventive therapy (IPT) provides significant protection against TB infection among people living with HIV/AIDS. Of the 412 people living with HIV/AIDS enrolled in the study, 50.5 percent persisted with IPT for nine months and showed no signs or symptoms of active TB based on physical examination, chest radiography, and sputum examination; 12.9 percent died; 33 percent defaulted; 2.2 percent developed active TB and dropped out; 0.5 percent developed hepatitis; and 1 percent migrated to other provinces.[76]

Health care providers, however, are still debating the efficacy of IPT. Some point out that the effectiveness of IPT may wear off in about two years,[77] and express concerns about drug toxicity and resistance developing as a result of prolonged IPT treatment. Because of these concerns, and in the absence of clear national policy guidelines, many Thai physicians do not recommend IPT, and Thai health clinics do not offer it systematically.[78] The NTP and National AIDS Control Programme should consider developing national guidelines and training on when and how to use IPT treatment.

MDR-TB

> *National figures obscure local differences. . . . There are subepidemics by regions and populations. Many groups are not included in the national figures. For migrant workers, we don't do cultures. We just treat them.*
>
> *—Comment at Public Health Watch roundtable meeting*[79]

Most TB experts believe that MDR-TB is not a severe problem since the estimated national prevalence is only 0.9 percent.[80] However, there is considerable concern that significantly higher rates of drug resistance among vulnerable groups such as prisoners and migrants could quickly lead to higher rates among the general population as well.

Though the national MDR-TB rate may be low, figures are significantly higher among certain groups. For example, official MoPH data in 2003 revealed an average MDR rate of 6 percent in prisons,[81] and one recent study of 154 TB patients in prisons revealed resistance to any one drug at over 50 percent, and 19.5 percent multidrug resistance.[82] Comparable rates have been recorded among migrants. For example, one study carried out along the Thai-Burmese border in 2001–2002 estimated an MDR-TB rate of 6.5 percent among cross-border migrants.[83] Regular surveillance of MDR-TB rates among vulnerable groups such as prisoners and migrants is critical to identifying areas for which the NTP should design and implement targeted case-finding and treatment services.

There is no conclusive scientific evidence that MDR-TB and HIV/AIDS are linked. However, several studies in Thailand based on small samples indicate higher rates of primary drug resistance among people living with HIV/AIDS.[84] In northern Thailand MDR-TB prevalence rates as high as 2.7 percent have been recorded among people living with HIV/AIDS. Another study found a primary MDR-TB rate of 5 to 7 percent among people living with HIV/AIDS compared to 0.9 percent for the general population. And a national survey in 1997–1998 found a correlation between the high proportion of drug resistance to TB treatment among people below age 34 and a high HIV burden for this group.[85] Though more research may be justified to investigate whether or not a linkage exists, AIDS activists in particular caution against reliance on these preliminary studies, which could have the effect of further stigmatizing people living with HIV/AIDS.[86]

To help track and treat MDR-TB, the government has recently established the MDR-TB Network, which has completed a first set of guidelines for treatment.[87] The network, which also helps with drug susceptibility testing, has a special budget for purchasing laboratory supplies and second-line drugs to treat MDR-TB, and for training staff to support implementation of MDR-TB guidelines.[88] However, according to a report by Médecins Sans Frontières (MSF), the quality of second-line TB drugs produced in Thailand is less than optimal, and indeed the WHO has not yet judged the drugs to be reliable.[89] The NTP should

take an active role in monitoring drug quality, and should consider making an application to the Green Light Committee for internationally approved second-line drugs to better manage MDR-TB.

Case recording and reporting

The NTP has a comprehensive, standardized system in place for recording and reporting TB cases. In the context of staff shortages and the lack of regular refresher training courses, however, considerable delays in filing reports are not uncommon. Very few private providers comply with NTP recording and reporting guidelines.

There are three TB surveillance systems. First, the MoPH collects TB case information as part of its standard communicable disease reporting system, which is sent to the Bureau of Epidemiology. Second, disease surveillance and cohort reports are submitted to the Bureau of AIDS, TB and STIs.[90] Third, cohort reports are collected quarterly, and include case-finding reports for newly registered cases, a last trimester sputum conversion rate report, and a treatment outcomes report.

All health facilities use standardized recording and reporting forms for both cohort and surveillance reports, which include data on TB and TB/HIV. Provincial TB coordinators (PTCs) are responsible for consolidating district-level reports into provincial reports and submitting the information to the regional TB coordinators (RTCs), who in turn compile regional and provincial figures for the central TB Cluster.

Although the surveillance and cohort reports provide useful information, recording and reporting procedures are time-consuming for clinical staff. Due to staff shortages, time constraints, and heavy workloads, clinical workers report that it is often difficult to complete their recording and reporting responsibilities on time.[91] The delay in reporting is up to one year in some areas. Due to the complexity of the forms, repeated training is also necessary, as clinical staff forget how to fill out the forms by the time the next reporting period comes around.[92]

Since private facilities do not rely on government funding, their patients are not required to disclose medical information to government authorities, and private providers are reluctant to spend time filling in complicated forms. Some private hospitals sign on to collaborate, but soon drop out because the reporting system is too cumbersome and time-consuming.[93] Lack of participation from the private sector makes comprehensive national record keeping and follow-up difficult.

Many health workers believe a computerized system is needed to facilitate case recording and reporting, and to encourage reporting from the private sector. In 2004, the government introduced a computerized data management system and training in select provinces under the supervision of a team from the TB Cluster. According to the head of the

TB Cluster, expansion of this system would improve the efficiency and accuracy of reports, reduce reporting delays, and facilitate reporting from the private sector as well. Though manuals and workbooks are reportedly ready for distribution to clinical staff at all levels,[94] the expansion of the system itself was not assured as of December 2005.

Targeting vulnerable populations

Though the NTP has developed some targeted programming for vulnerable groups, including migrants, prison populations, the urban poor, ethnic minorities, and mobile workers, TB experts and NGO workers alike express serious concern about the resurgence of TB among these groups, the lack of official data and information about what many experts consider to be subepidemics,[95] and the significant barriers such groups face in accessing diagnostic and treatment services.[96]

Migrants

There are strong indications that TB is a serious issue among migrant populations from neighboring Burma, Laos, and Cambodia. Mandatory health testing among migrants detected 1,766 active TB cases in 2003, and a single clinic in the Mae Sot district detected 700 new cases in 2004, 250 of which needed immediate treatment.[97] As the total number of migrants is unknown, it is difficult to estimate the total TB burden among the migrant population.

Most recent migrants, particularly those from Burma, seek temporary employment opportunities in Thailand, often as undocumented workers.[98] Thus, even if they are diagnosed with TB, many do not complete treatment, and health workers find it difficult to ensure proper follow-up.[99] In fact, in one analysis, the cure rate for migrants from Burma is only about 25.8 percent.[100] In the same analysis, the authors note that the DOTS coverage rate for migrants from Burma was only 22.9 percent, and Burmese migrants had a 66.5 percent default rate.[101] The level of treatment interruption suggested by these figures has raised growing concern about the rise in primary drug resistance.[102]

Many migrants lack official documentation, such as residence and work permits, and fear deportation if they come into contact with public authorities. Many cannot read or speak Thai, hampering outreach activities by health workers. Most are poor and lack the resources to seek out health care.[103] Ethnic minority groups from within Thailand face similar linguistic and financial barriers. To effectively reach these communities, the NTP must partner closely with community-based organizations and researchers who have the contacts and linguistic skills to overcome these barriers.

Prison populations

TB prevalence is markedly higher in prisons than in the general population. In one Bangkok prison, the prevalence of new smear-positive cases was 1,226 per 100,000.[104]

In October 1998, the NTP, MoPH, and the Ministry of Justice initiated a collaborative effort to ensure implementation of the DOTS strategy in 11 prisons in Bangkok and nearby provinces.[105] This effort, which involved working with prison TB clinical staff to ensure close adherence to the DOTS strategy,[106] has posted a high treatment success rate (68.7 percent from June 1999 to May 2002), and has been cited by the WHO as a model for other countries.[107] The NTP's successful prison outreach project should be expanded to improve the system for follow-up with people after they have been released from prison.

According to one official, the biggest challenge to the success of the prison program is the follow-up with people after they are released from prison.[108] The system for transferring cases from prison clinics to public clinics is inefficient. Treatment for people newly released is more likely to be interrupted or even discontinued, especially as many former prisoners reportedly fail to show up at the hospitals to which they are directed, provide false contact names and addresses, or just disappear.[109] NTP research on the reasons people released from prison discontinue treatment should be used to develop a more streamlined policy to ensure proper referral and follow-up.[110]

TB and poverty

There is abundant evidence that poverty increases vulnerability to TB, and that having TB can in turn make patients more vulnerable to poverty. According to a recent study, for those with incomes at or below the poverty line, out-of-pocket expenditure for diagnosis and treatment amounted to more than 15 percent of annual household income while incomes were reduced by an average of 5 percent.[111] While TB treatment is free, travel to medical facilities, lack of compensation for time off from work, purchase of food during hospital visits, and diagnostic services such as x-rays and sputum examinations (for which patients are often charged, despite official NTP policy) add up to expenses that may limit access to treatment for the poor. (According to official NTP policy, patients have to pay for diagnostic and examination services only if they can afford it.)

Some regional clinics reportedly provide subsidies to TB patients living in poverty, but the funds available for these efforts have been gradually decreasing since the health care reforms were enacted.[112] To increase treatment access for the poor, the government should consider providing subsidized support on the basis of need to cover incidental expenses such as transportation costs and meals.

Program management

Administration

Following the reorganization of the Department of Disease Control (DDC), the TB Cluster was incorporated into the Bureau of AIDS, TB and STIs. The TB Cluster is responsible for developing and planning TB policies, training health workers, and monitoring TB control activities countrywide. Reportedly, the reorganization has resulted in blurred lines of authority and lack of clarity on roles and responsibilities within the new system.

National TB coordinators monitor NTP implementation in Thailand's four geographical regions (north, northeast, central, and south) and provincial TB coordinators (PTCs) operate in each of the country's 76 provinces. TB staffing levels vary considerably among provinces. Regional TB centers are integrated into the Regional Office of Disease Prevention and Control (ODPC) as part of the Bureau of AIDS, TB and STIs and are responsible for monitoring, training, and supervising TB health workers at the provincial and district levels.

PTCs work closely with district TB coordinators (DTCs). DTCs coordinate TB control activities, often in collaboration with TB clinics in hospitals. The PTCs, DTCs, and local health center staff are responsible for implementing the District TB Control Programme, which provides for quality-controlled TB case detection and treatment services and coordination of the network of DOTS providers at the subdistrict level. DTCs also evaluate and report treatment outcomes to the PTC every four months.

TB clinics are based in district, provincial, and regional hospitals. TB diagnosis is largely conducted by doctors in district and provincial hospitals, which have laboratory testing and x-ray facilities. TB treatment is provided in district and provincial hospitals as well as in health centers at the subdistrict level, where village health volunteers coordinate with local health workers to ensure access to treatment and to monitor treatment adherence.

Many TB experts report that roles and responsibilities within the reformed health system are not clear and that "everything is up to interpretation." As a result, all offices of the ODPC at the regional level oversee TB work according to their own perspectives and priorities. Under these circumstances, some regional offices decide that TB is not as urgent as other diseases and consider scaling back TB services an acceptable cost-saving measure.[113]

In this environment, TB control officials worry that some districts also appear to be cutting back their budgets for essential TB services, particularly for monitoring and evaluation.[114] To ensure that quality services are maintained during this period of transition, the NTP should ensure sufficient allocation of resources to guarantee coordinated monitoring and evaluation of TB control services at all levels.

Staffing

Health care reforms resulted in a reduced budget for the NTP and in lower levels of health staffing. As a result, remaining health workers are required to shoulder a heavier burden of responsibilities without a corresponding increase in salary. Budget reductions have also meant a reduction in training opportunities and other incentives. To address these problems, the NTP has developed a comprehensive human resource development plan, but the identification of funding to ensure implementation has been a challenge.

Staff reductions have had a dramatic impact on the capacity of many regional TB offices, and on the workloads of those who kept their jobs. As one regional TB director commented, "Individuals have too many different jobs to handle. No one is dedicated to TB, and with other acute diseases to deal with, such as avian flu, people tend to think that TB can wait."[115] Training courses and supervision and monitoring meetings are now held only once a year, often in conjunction with training for other health programs to minimize costs.[116] Moreover, many health care workers believe that working with TB patients is a "high risk, unattractive job,"[117] which leaves them more vulnerable to TB infection.[118] (In fact, one research study in a Chiangrai hospital detected an increased risk of TB infection for health care workers.[119]) This combination of perceived (and real) risk, heavy workload, and inadequate compensation has resulted in low morale and high turnover rates among TB clinical staff. In particular, the NTP's inability to offer a higher salary or other incentives has led to an increasing number of health workers who transfer to other health departments.[120]

The initiative to offer DOT through village health volunteers and family members was one attempt to respond to the staffing shortage. In addition to administering DOT, village health volunteers are expected to provide a wide range of primary health services, including TB education, in return for free medical care. Family volunteers do not receive even this level of compensation. Some village health volunteers report that they find their jobs are unappealing,[121] and others think that the level of responsibility and the heavy workload attached to providing community and patient education is too demanding to be undertaken by volunteers.[122] Many health administrators agree that village health volunteers "need to be supported and salaried. We can't make them work for free all the time."[123]

According to one recent study, the practice of DOT is quite different from the theory. Health personnel were more likely to observe DOT according to guidelines than other types of observers, but less likely to remain in their positions long-term. To improve accessibility to DOT services, the NTP needs to develop better strategies for motivating health personnel to remain dedicated to TB work and to devise additional measures to provide training and support to village health volunteers and family members.[124]

Human resource capacity could also be improved by encouraging medical and nursing schools to include or expand coverage of TB care and treatment issues in their

curricula,[125] and by doing more to ensure in-service training and continuing education for doctors and nurses on the latest developments in TB care. In a recent example of policy-oriented research, researchers from the TB Cluster assessed curricula from 71 nursing schools and found that an average of just 15 minutes was devoted to TB.[126] Spurred by these findings, a new curriculum and teaching guidelines were developed and are being disseminated. TB Cluster staff believe that this research has sparked greater interest in the importance of increasing the level of training and teaching on TB at other institutions as well; for example, a TB component has been added to Mahidol University's annual HIV/AIDS training for nurses.[127]

The government should consider urgent measures to improve the incentive package for TB workers to attract new staff, ensure high-quality TB services through appropriate and ongoing training, decrease high levels of staff turnover, and enhance the prestige of TB work.

Budgeting and expenditures

Health reforms have made it more difficult to obtain an accurate and comprehensive picture of annual government spending on TB care.

The universal coverage system places a priority on preventive care rather than treatment of illnesses. As a result, TB treatment is now included in the "essential package of care." Provincial and district hospitals receive funding from the MoPH to cover the costs of providing the essential package of care, but without any specification as to how much funding is required to ensure TB control. According to some officials, this situation has resulted in a lack of transparency and consistency in decision making on health budgets and in the underfunding of TB in some areas since "it's a struggle to get TB prioritized."[128] This has had a particularly serious impact on budgets for training, monitoring, and supervision since these activities are funded at the discretion of provincial medical officers, who are under pressure to cut costs.

Funding for the NTP is provided from the MoPH budget. Between 1991 and 1998, despite a severe financial crisis in 1997,[129] per capita NTP expenditure on TB control remained roughly constant in absolute dollar terms.[130] More recently, the NTP budget has been reduced significantly, from $6.1 million (231 million baht) in 2002 to $4.7 million (178 million baht) in 2005, compared to the total estimated cost of $10 million per year (378 million baht).[131]

However, the NTP budget figure reported to the WHO for 2005 only reflects the budget managed by the TB Cluster, and not total spending on TB control. The apparent reduction in NTP funding does not reflect the amounts allocated to TB control at the

regional level, and does not give an accurate picture of overall funding for TB control activities. Furthermore, a significant portion of the NTP's budget is now being covered with resources provided by the Global Fund;[132] 45 percent of the NTP's 2005 budget came from this source. This increasing reliance on outside funding raises some concerns about long-term sustainability of important NTP programs.

At present, comprehensive NTP budgetary data is not available for the period from 2003 to 2005, and there is no system in place to ensure budgetary transparency moving forward. In order to obtain a more comprehensive estimate of TB spending, the NTP should implement a financial monitoring system to track budgets and available funding for all provinces and districts.

Monitoring and evaluation

The NTP publishes official quarterly and annual reports detailing its TB control activities, as required by the DOTS strategy. These reports are reviewed by the provincial chief medical officers, the TB Cluster, and the DDC, and are available publicly on the Internet and in brochures and reports.

Infrastructure, drugs, and research

Primary health care system

The NTP provides TB control services through the primary health care system. TB treatment is provided through local health centers to maximize the accessibility of services to patients. Decentralization of the health care system has created opportunities to enhance pro-poor, equity-oriented approaches to communicable disease prevention and treatment.

Most notably, village health volunteers are intended to act as a two-way link between communities and the health care system. In addition to providing health education and services (such as DOT), they are well positioned to provide feedback to health authorities on community health issues and priorities. Village health volunteers constitute a central pillar of the decentralization process, and the success of the pro-poor strategy is largely dependent on their skills, capacity, commitment, and confidence to reach out and to work positively with poor and excluded groups. As noted above, village health volunteers need additional support, training, and motivation to fill this extremely critical role.

Laboratory network

Thailand has relatively well-equipped laboratories with few supply and maintenance problems. In addition to the National Central Reference Laboratory (NRL), there are 167 provincial and 678 district laboratories, all of which are equipped to perform smear microscopy, while approximately 85 percent are capable of performing mycobacterial cultures.[133]

The NTP is planning to improve the availability of TB diagnostic services by increasing capacity to conduct cultures in provincial hospitals and by strengthening culture facilities in regional TB reference laboratories. External Quality Assurance (EQA) activities cover all TB laboratories in MoPH facilities, and efforts are being made to include the private sector in the quality assurance scheme. In addition to developing laboratory capacity, the NTP is expanding its training activities to enhance the performance of TB control and laboratory staff in technical areas.

Drug distribution systems

Responsibility for procurement and distribution of TB drugs has been decentralized to the provincial and district levels,[134] raising some concerns about capacity to ensure proper quality control and effective management of drug stocks.

Procurement and quality control

Anti-TB drugs are manufactured in Thailand, but at higher cost than the drugs available on international markets.[135] The WHO has recommended that the government should renegotiate drug prices with the Government Pharmaceutical Organization (GPO) or explore alternate procurement channels to make local funding for drugs more viable, and to free up more NTP funding for other activities such as training and supervision.[136] NGOs may have a role to play in building public support for this message through media outreach efforts.

Second-line drugs produced in Thailand are available free of charge to patients diagnosed with MDR-TB at provincial hospitals; cases diagnosed at the district level are referred to the provincial level for treatment services. However, international agencies have not formally assessed and approved these drugs, which raises concerns about quality control and requires donors to continue purchasing more expensive second-line drugs from quality-assured sources outside of Thailand.

Distribution

In addition to manufacturing drugs, the GPO also oversees drug distribution. The Regional Office of Disease Prevention and Control directly distributes TB drugs to 19 zonal TB control centers, which in turn supply the provincial and district hospitals. District health workers then collect TB drugs from district hospitals, and supervise distribution by local health workers to patients.

A case study in southern Thailand revealed drug shortages and overstocking at the local level, beyond the provincial and district hospitals' control. According to the study, rifampicin was overstocked most frequently (five times the recommended amount) and shortages of ethambutol were most common.[137] Local solutions to these problems include extra purchasing, requesting additional drug supplies to cover shortages, and sending surplus drugs to other institutes. In 1999, approximately 555,000 baht ($14,681) worth of TB drugs expired due to overstocking.[138] A more centralized system of drug management and distribution would help eliminate or decrease such inefficiencies.

Education and research

The MoPH has supported a range of operational research projects on issues related to TB control. Thai TB experts emphasize the importance of prioritizing research that can be translated into policy, and of relating research priorities to the most pressing issues in the field, such as TB/HIV, the impact of health reforms on TB control, and the existence of subepidemics and inadequate access to services among vulnerable groups.

To date, the NTP has prioritized operational research on DOTS, with a focus on evaluating DOTS implementation, the behavioral factors associated with adherence to TB treatment, and the cost effectiveness of the TB control strategy. In addition, funding agencies such as the Thailand Research Fund and the Health System Research Institute have hosted meetings to brainstorm on TB research priorities. Regional and district-level research has reflected regional priorities such as TB/HIV (in the northern region) and the impact of decentralization on TB control activities (in Yala province, southern Thailand).

The government should commit financial resources to conduct research on the following:

- further standardization of TB diagnostic and treatment services to minimize the risk of MDR-TB
- the effects of sociocultural factors on TB adherence
- techniques for diagnosing TB among HIV patients
- the effect of health system reform on NTP implementation

- the effectiveness of IPT
- effective methods for encouraging compliance with DOTS among private TB service providers
- the model of advocacy and social mobilization developed by HIV/AIDS NGOs and its applicability to TB work
- factors influencing the accessibility of TB services for vulnerable groups[139]

Partnerships

Collaboration with private sector

The NTP considers strengthening coordination among public and private TB service providers to be a priority. A donor-supported Public-Private Mix for DOTS (PPM DOTS) expansion program has achieved promising initial results, but NTP leadership and financial support will be necessary to ensure expansion of the program throughout the country. There are still too few opportunities for public and private practitioners to identify common goals and shared strategies for reaching them. Further study of pilot PPM DOTS projects could provide a basis for more effective and systematic integration of private practitioners as partners into the NTP's DOTS expansion efforts.

The NTP faces significant barriers in its attempts to promote public-private partnerships. Since private providers are not dependent on government funding, they have little incentive to comply with DOTS. Public facilities are sometimes reluctant to share knowledge, staff or equipment without the promise of receiving patient data in exchange. In turn, private providers are frustrated by the complicated and time-consuming case recording and reporting standards required by the NTP, especially since they see few if any benefits to their own clinics and institutions. The deputy director of one private hospital in Bangkok remarked that "people come to us for information and then they leave—they don't tell us what to do or what they're doing."[140]

One pilot project has demonstrated that streamlining data collection systems made private providers both more willing to comply with DOTS and more willing to provide their patient data to the MoPH. When the MoPH, the U.S. Centers for Disease Control Collaboration (TUC), and Bangkok Metropolitan Authority (BMA) jointly launched a user-friendly, computerized case recording and reporting system, reporting from private hospitals improved significantly. For example, one BMA TB center identified up to 600–700 new TB cases, compared to 200 cases detected before the introduction of the computerized system.[141] According to the TB clinical staff, the computerized TUC forms are "relatively easy to complete."[142] The BMA has also provided additional incentives to encourage private practitioners' participation, including free x-ray and sputum testing services, training, and TB education materials. After a successful pilot phase, the project was expanded to seven BMA districts, and aims to reach all BMA districts eventually.

University hospitals also play an important role in facilitating public-private partnerships and in delivering technical services. For example, the Faculty of Medicine at Mahidol University, in collaboration with a private hospital in Bangkok, established the

Drug Resistant Tuberculosis Research Centre in 2001 under the royal patronage of Princess Kulyanivatana. The center plays a significant role in enhancing national capacity to deal with MDR-TB by providing smear microscopy laboratory services free of charge to both private and public facilities.[143]

Workplace programs on HIV/AIDS could provide an interesting model for TB control activities. The Thailand Business Coalition on AIDS established the Business and AIDS Network in 1999 to provide a forum for business managers to exchange ideas about successes and challenges in effectively managing HIV/AIDS workplace programs. The network, which now has over 150 members, meets on a quarterly basis in two provinces to evaluate and provide accreditation for such programs, with the aim of promoting more workplaces that are sensitive to the needs of people living with HIV/AIDS. The difficulty of obtaining time off from work is a significant barrier to accessing TB treatment, particularly for laborers and migrant workers, so increasing workplace flexibility for TB patients could improve treatment adherence and outcome.

Collaboration with NGOs and community organizations

> *We . . . don't feel confident [about TB]. We lack academic skill. I talk with doctors to gain knowledge for myself, but my network members might not have that knowledge.*
>
> *—Samran Takan, director of New Life Friend Center, Chiang Mai*[144]

Participation by NGOs in TB policy development and implementation has been minimal, particularly when contrasted with the level of mobilization and engagement in policymaking by HIV/AIDS NGOs and networks of people living with HIV/AIDS. There are a number of barriers to greater NGO participation in TB policymaking, most notably the low level of public awareness on TB and the lack of communication and exchange between TB experts and community-based organizations.

The NGO contribution to government HIV/AIDS policy is widely acknowledged. A National Coordinating Committee for AIDS NGOs has been in operation since 1989, and a similar committee focuses on joint TB/HIV activities in the northern provinces. A network of almost 900 groups of people living with HIV/AIDS provides an array of services ranging from prevention campaigns to community support for AIDS patients,[145] and advocates for specific aims such as obtaining access to cotrimoxazole prophylaxis therapy for people living

with HIV/AIDS.[146] In recognition of their key role in both advocacy and service delivery, the MoPH provides around $2 million (75.6 million baht) annually for the activities and services provided by HIV/AIDS NGOs, including on TB/HIV.[147]

By contrast, the involvement of NGOs (including HIV/AIDS NGOs) around TB has been minimal, and has tended to focus on service delivery. For example, the Thai TB Foundation provides grants to TB patients (to defray transportation and food costs), research organizations (to support academic work and lab equipment), and even the TB Cluster itself (to help nurses cover incidental costs related to patient follow-up).[148] Neither government nor NGOs have made enough of an effort to engage former TB patients in TB control programs, though engagement of people living with HIV/AIDS has proven crucial to AIDS advocacy. Engaging TB patients in policy development or advocacy efforts may be more challenging since TB is not a life-long disease. Nevertheless, some TB experts urge the NTP to consider developing a strategy to promote the greater involvement of recovered TB patients in TB control efforts.[149]

Some NGOs consider the low level of general awareness and knowledge about TB (even among HIV/AIDS NGOs) to be one of the principal barriers to greater community involvement. TB is often considered a highly "academic" subject, and community activists often feel they lack the necessary expertise to engage with health workers and policymakers. This suggests a need for stepped-up NTP and international support for TB treatment literacy activities, involving former TB patients whenever possible. Ensuring that accurate, nonacademic, Thai-language information about TB is readily available at the community level is the first step to increasing demand for high-quality TB services.

Other community leaders and activists claim that they have experienced resistance from public health experts when they have tried to learn more about TB and to become involved in TB policymaking processes. One NGO activist claimed that public health workers often consider TB too "academically complicated" for community activists to grasp, and that TB experts "are very knowledgeable, but don't trust that NGOs can also work on these issues . . . just because they have not been formally trained."[150] Another decried the government's failure to enact a "participatory approach" with regard to TB.[151]

Again, HIV/AIDS NGOs could play a leadership role in sparking greater community activism around TB, as they have demonstrated the effectiveness of treatment literacy activities in enhancing the accessibility of scientific knowledge; increasing the demand for services; and positioning community activists as key participants in the design, implementation, and evaluation of policies and programming. NTP or donor-sponsored research of the techniques adopted by Thai HIV/AIDS NGOs and networks could be critical in encouraging better understanding of their applicability with regard to NGO activism around TB. Finally, according to some TB experts, enhanced NGO partnerships could be a particularly critical

tool for the NTP to improve its access to marginalized groups such as migrant workers, ethnic minorities, and former prisoners.[152]

Collaboration with multilateral organizations and bilateral donors

Over 90 percent of the national response to TB and TB/HIV is funded from the government budget and out-of-pocket spending.[153] Thai TB experts insist that assistance from bilateral and multilateral donors should reinforce national health systems and contribute to health policies and programming that are sustainable in the long term.

Participants at one roundtable meeting unanimously emphasized the importance of balancing donor interests and requirements with the need for funded projects to complement existing structures and programs. For example, one prominent regional health administrator insisted that donor-supported TB projects must support the NTP, take steps to ensure support from the communities in which they are to be implemented, and avoid replacing essential TB control activities and functions that should be managed by the Thai government. In the administrator's view, the NTP must always be able to "do without donor-supported supplemental activities if it has to."[154] For this reason, some health officials express concern about the fact that Global Fund resources have supported such core activities as training programs for health workers, which have not received sufficient funding from the NTP since the health reforms. They emphasize that these resources should be seen by the NTP only as a short-term opportunity to build a stronger base for programs that will have to be continued without donor funding in the future.[155]

There are positive examples of donor projects that fulfill these requirements in the eyes of their Thai partners. For example, the director of one Bangkok-based health center identified a collaborative project with the U.S. Centers for Disease Control and Prevention in which the donor organization arrived with one idea of what to fund, but proved willing to change the parameters of the project in response to local feedback and suggestions on what was needed. The result was a PPM DOTS program that has posted significant successes, enjoys strong local support, and provides a strong basis for scaling-up. It demonstrates the benefits of international donor/public sector partnerships that are firmly rooted in the communities they serve and that can provide a long-term return on a short-term investment.[156]

Another donor organization that has adapted the assistance it provides to locally identified needs is the Research Institute of Tuberculosis (RIT) in Japan. The RIT has provided long-term support for the improvement of laboratory capacity, provincial-level

meetings, and health worker training in northern Thailand. RIT-supported TB research in Chiangrai has generated important data on TB, TB/HIV, MDR-TB, and behavioral challenges to TB control since 1995.

Finally, the Global Fund has provided an important source of funding for TB control activities, particularly as many Thai experts believe that TB has often been neglected by international donors operating in Asia compared to the attention received by other diseases such as avian flu.[157] The first phase of the $6.9 million (261 million baht) TB grant has so far been used to support training for health care workers; DOTS expansion in prisons, poor urban areas, and HIV/TB integrated service centers; and establishment of surveillance and monitoring systems to track the spread of MDR-TB among vulnerable populations. As noted above, Thai TB experts express concern that the NTP could grow dependent on Global Fund resources to cover the cost of core activities rather than for short-term, supplemental purposes; Global Fund support for TB control activities is assured through 2008, but there is no guarantee of funding beyond this date.[158]

Some Thai experts voice regret that the Country Coordinating Mechanism (CCM), which includes both public and private institutions and organizations among its members,[159] appears to act mainly as a "secretary to the Global Fund" once a grant is approved. These commentators feel that a more prominent role for Thai experts in overseeing implementation and evaluation of grant effectiveness would be warranted.[160]

Recommendations

The Thai government and NTP should:

- **Restructure and strengthen the NTP**, including by
  - Ensuring sufficient central authority and staffing for effective management;
  - Clarifying lines of responsibility and accountability;
  - Guaranteeing consistent funding levels for core NTP activities at all levels;
  - Ensuring proper monitoring and evaluation of TB control services at all levels;
  - Assuring more centralized drug management and distribution;
  - Allowing for the development of a financial monitoring system that will allow for greater transparency in tracking budget allocations and spending on TB at the national, provincial, and district level;
  - Including TB in the monitoring checklist utilized by health inspectors and district and regional officials.
- **Develop innovative approaches to encourage greater accountability for performance on TB control at the regional and district levels**. The government should consider the establishment of measurable and comparable TB control performance indicators, regular publication of regional and district "report cards" on performance, and encouragement and support for public-private partnerships.
- **Redouble efforts to improve TB detection, treatment, and referral services for vulnerable groups**, including migrants, members of ethnic minority groups, contract and seasonal workers, prisoners, and the urban poor.
- **Explicitly acknowledge the linkage between TB and poverty.** TB control efforts are needed in all poverty-reduction policies and programs. Food and transportation subsidies should be allocated for low-income TB patients.
- **Reassess the integration of the TB and HIV/AIDS programs.** The government should ensure that comprehensive integrated TB/HIV services are provided to patients and that TB control is not simply subsumed and minimized within the national HIV/AIDS program.

- **Maintain attention to reducing the risk of MDR-TB**, including by
  - Ensuring capacity to conduct culture and susceptibility testing countrywide;
  - Conducting targeted surveillance among high-risk groups such as migrants and prisoners;
  - Monitoring drug quality and applying to the Green Light Committee for quality-assured second-line drugs.
- **Expand efforts to involve a broader range of stakeholders in TB policy.** Recovered TB patients, HIV/AIDS NGOs, and community health activists should have a greater voice in TB policy development and implementation.
- **Develop and implement a media outreach plan to raise public awareness about TB**, including by
  - Establishing and staffing a specialized media and public relations department to promote NTP policies and activities;
  - Producing regular updates in media-friendly language on the TB situation in Thailand to encourage and facilitate quality television, radio, and newspaper reporting at the national, regional, and community levels;
  - Cultivating relationships with health journalists by offering training seminars and organizing regular press events to present current issues such as progress on achieving TB control targets, results of latest TB research efforts, and global TB developments.
- **Support community-led awareness-raising activities**, including by
  - Developing and disseminating accurate, context-sensitive, and nontechnical educational materials about TB and TB/HIV;
  - Implementing targeted awareness-raising and stigma-reduction activities for vulnerable groups and communities, including women, migrants and ethnic minorities;
  - Researching and identifying "lessons learned" from the treatment literacy activities undertaken by NGOs working on HIV/AIDS;
  - Supporting HIV/AIDS NGOs to take on TB awareness raising and treatment literacy activities;

  - Encouraging and supporting the involvement of recovered TB patients in awareness-raising activities.

- **Improve the incentive package for TB health workers**, including by
  - Improving salaries and developing performance-based incentives to enhance the prestige of TB work;
  - Increasing attention to TB within nursing and medical curricula;
  - Ensuring adequate in-service training;
  - Acknowledging and taking steps to alleviate concerns about health risks to TB workers.
- **Ensure improved support and training for village health volunteers** and family members administering DOT.
- **Develop incentives for private practitioners to participate in implementing DOTS**, including by
  - Implementing a nationwide computerized case recording and reporting system;
  - Providing private practitioners who agree to participate in DOTS with joint training, laboratory services, and access to integrated systems for patient referral and VCT;
  - Enhancing support to university hospitals and research institutions to encourage programming, research, and other activities explicitly complementary to NTP implementation;
  - Developing workplace programs to increase flexibility on working hours for TB patients who need time off to participate in TB treatment.
- **Prioritize support for research areas that can inform more effective TB control policy.** Thai TB experts have identified the following topics in need of research:
  - Standardization of TB diagnostic and treatment services to minimize the risk of MDR-TB
  - Effects of sociocultural factors on TB treatment adherence
  - Techniques for preventing, diagnosing, and treating TB among HIV patients

- Impact of health system reform on NTP implementation
- Effective methods for encouraging compliance with DOTS among private TB service providers
- Advocacy and social mobilization techniques developed by HIV/AIDS NGOs and their applicability to TB work
- Factors affecting the accessibility of TB services for vulnerable groups

Nongovernmental and community organizations should:

- **Investigate opportunities to integrate TB and TB/HIV activities into existing HIV/AIDS-related programming and activities**, including by
  - Examining lessons learned from effective NGO advocacy on HIV/AIDS to gauge applicability to greater advocacy on TB;
  - Promoting TB awareness-raising and treatment-literacy activities among networks of people living with HIV/AIDS;
  - Integrating enhanced support services for people living with HIV/AIDS with TB;
  - Developing and implementing TB/HIV-specific stigma-reduction activities;
  - Identifying people living with HIV/AIDS who have been cured of TB to act as spokespeople and leaders in targeted stigma-reduction and TB awareness-raising activities among people living with HIV/AIDS.
- **Articulate specific needs for additional (and more context-specific and culturally sensitive) information on TB and TB/HIV.**
- **Assist in the development of patient-friendly information and communications materials on TB and TB/HIV.**
- **Assist in development and implementation of targeted outreach services for vulnerable groups.**
- **Seek out opportunities for participating in TB policymaking processes at the national, regional, and local levels.**

The international community should:

- **Ensure that funding for TB control in Asia is sustained**. TB should not be pushed aside by increased attention to other priority diseases such as HIV/AIDS and avian flu.
- **Ensure that funding strengthens and reinforces national health systems.** Support should contribute to health policies and programming that are sustainable in the long term. Whenever possible, international funding should be used to support supplemental activities rather than for essential TB control activities and functions.
- **Develop international programming and projects in close consultation with national TB experts.** Such consultations ensure that donor interests and requirements complement existing structures and locally identified needs.
- **Encourage and support greater community and NGO involvement in TB social mobilization, advocacy, and service delivery.**
- **Support the development of structured mechanisms by which the NTP and international donors such as the Global Fund can receive community input and feedback on the accessibility of information and services on TB and TB/HIV,** in the interest of developing more effectively targeted programming that is responsive to the needs of TB and TB/HIV patients and affected communities.

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Notes

1. United Nations Development Programme (UNDP), *Human Development Report 2004* (New York: UNDP, 2004), pp. 140, 185.
2. See, e.g. *Achieving the Millennium Development Goals: the Middle Income Countries*, British Department for International Development (DFID, August 2004), p. 19, available at: www.dfid.gov.uk/pubs/files/achievingmdgmidincome.pdf (accessed February 5, 2006).
3. Bureau of Policy and Strategy, Ministry of Public Health (MoPH), *Health Policy in Thailand* (2003), p. 7.
4. *Mahidol Population Gazette*, January 2005; Vol. 14.
5. Department of Communicable Disease Control, MoPH, Thailand and World Health Organization (WHO), *Second Review of the National Tuberculosis Programme in Thailand* (Geneva: WHO, 1999), p. 9.
6. TB Division, MoPH, *Battle Against TB* (National Tuberculois Programme, 1999).
7. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 122.
8. Written comments on a draft of this report by Jay Varma, section chief for TB Prevention and Control of the Thailand–U.S. Collaboration (TUC) and internist and epidemiologist, U.S. Centers for Disease Control and Prevention, Bangkok, December 2005.
9. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 131.
10. Department of Communicable Disease Control, MoPH and WHO, *Second Review of the National Tuberculosis Programme in Thailand* (1999), p. 3.
11. Kaiser Family Foundation, "Thailand to Offer TB Treatment as Part of HIV/AIDS Treatment Program," (Washington, D.C.: August 4, 2005) available at www.kaisernetwork.org (accessed August 4, 2005).
12. M. Perkins and P. Small, "Admitting Defeat," *International Journal of Tuberculosis and Lung Disease*, 2006; 10 (1): 1.
13. The same study showed that resistance to individual drugs ranged from 5.96 percent for isoniazid (INH) to 2.2 percent for rifampicin. WHO, 1996–1998.
14. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 122.
15. Comments by Thai experts at roundtable meetings supported by Public Health Watch in Bangkok and Chiang Mai, December 9 and 12, 2005.
16. MoPH, Bureau of Policy and Strategy, 2003, *Health Policy in Thailand 2003,* p. 7.
17. Written comments on a draft of this report by Jay Varma, section chief for TB Prevention and Control of the Thailand–U.S. Collaboration (TUC) and internist and epidemiologist, U.S. Centers for Disease Control and Prevention, Bangkok, December 2005. The study was carried out in four regions of Thailand: Bangkok, Chiangrai (in the north), Phuket (in the south), and Ubol Ratchatani (in the northeast).
18. Written comments on a draft of this report by Jay Varma, section chief for TB Prevention and Control of the Thailand–U.S. Collaboration (TUC) and internist and epidemiologist, U.S. Centers for Disease Control and Prevention, Bangkok, December 2005.
19. Interview with Attapon Cheepsattayakorn, director of the 10th TB Zonal Tuberculosis and Chest Disease Center, December 2005.
20. Comment by Samran Takan, director of New Life Friend Center, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
21. MoPH, *Thailand Health Profile, 1999–2000* (Thailand, MoPH, 2002).
22. Somsak Akksilp, director, Office of Disease Prevention and Control Region 7.
23. National Health Security Office, *Annual Report 2004, Progress and Achievement* (2004), p. 10.
24. Interview with Sirinapha Jittimanee, public health officer, TB Cluster, Bureau of AIDS, TB and STIs December 7, 2005.

25. Written comments on a draft of this report by Jay Varma, section chief for TB Prevention and Control of the Thailand–U.S. Collaboration (TUC) and internist and epidemiologist, U.S. Centers for Disease Control and Prevention, Bangkok, December 2005.
26. Written comments on a draft of this report by Jay Varma, section chief for TB Prevention and Control of the Thailand–U.S. Collaboration (TUC) and internist and epidemiologist, U.S. Centers for Disease Control and Prevention, Bangkok, December 2005.
27. WHO, *Third Review of the National Tuberculosis Programme in Thailand* (2004), p. 7.
28. Comments by Rev. Sanan Wutti, The Church of Christ in Thailand, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
29. Comment from Attapon Cheepsattayakorn, director of 10th TB Zonal Tuberculosis and Chest Disease Center, December 2005.
30. Comment by Petchawan Pungrassami, Office of Disease Prevention and Control Region 12, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
31. Comment by Suksont Jittimanee, Bureau of AIDS, TB and STIs, Ministry of Public Health, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
32. Comment by Somsak Akksilp, Office of Disease Prevention and Control Region 7, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
33. Comment by Suksont Jittimanee, Bureau of AIDS ,TB and STIs, Ministry of Public Health, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
34. Comment at Public Health Watch Local Advisory Group Meeting, Bangkok, December 29, 2004.
35. Comment by Samran Takan, director, New Life Friend Center, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
36. Comment by Somsak Akksilp, director, Office of Disease Prevention and Control Region 7, at Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
37. For example, in 2005 the deputy minister of public health stated that "the more tuberculosis patients who are cured, the less chance there is that the disease will spread to the rest of the population." See "Thailand to Offer TB Treatment As Part of HIV/AIDS Treatment Program," August 4, 2005, available at www.kaisernetwork.org/daily_reports/rep_index.cfm?DR_ID=31827 (accessed February 8, 2005).
38. Comments from the Local Advisory Board Meeting, Bangkok, December 29, 2004, Public Health Watch roundtable meetings in Bangkok, December 6, 2005, and Chiang Mai, December 9, 2005.
39. Comment by Suksont Jittimanee, Bureau of AIDS, TB and STIs, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
40. Comment by Sumalee Amarinsangpen, Office of Disease Prevention and Control Region 10, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
41. Interview with NTP consultant to the Bureau of AIDS, TB and STIs, October 3, 2005.
42. Interview with Sirinapha Jittimanee, public health officer, TB Cluster, Bureau of AIDS, TB and STIs, December 7, 2005.
43. The websites for the Institute of AIDS Research, Thai Red Cross, Ministry of Public Health, and the National Tuberculosis Programme already provide detailed information on where and how to access counseling and treatment services. For example, see www.tbcthailand.org (accessed February 8, 2005).
44. Comment by Prasert Dechaboon, president, Northern PLWHA Network, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
45. Comment by Rev. Sanan Wutti, The Church of Christ in Thailand, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
46. Comment by Samran Takan, director of New Life Friend Center, Public Health Watch roundtable meeting, Chiang Mai, December, 9, 2005.
47. Interview with a male TB/HIV coinfected patient and a male TB patient, Chiang Mai province, January 18, 2005; and a male TB patient in Tak province (anonymity requested), January 26, 2005.

48. See, e.g., J. Ngamvithayapong, et al. "Health seeking behaviour and diagnosis for pulmonary tuberculosis in an HIV epidemic mountainous area of Thailand," *International Journal of Tuberculosis and Lung Diseases*, 2001; 5 (11): 1–8.

49. A. Soonthorndhada, et al., *Community Perceptions and Experiences of TB in Kanchanaburi, Thailand: A Gender Equity Analysis*, Institute for Population and Social Research, Mahidol University, 2003, Publication No. 287.

50. Comments by Rev. Sanan Wutti, The Church of Christ in Thailand, and Prasert Dechabon, President, Northern PWA Network, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

51. UNDP, "Thailand at a Glance," You and AIDS: The HIV/AIDS Portal for the Asia Pacific, available at http://www.youandaids.org/Asia%20Pacific%20at%20a%20Glance/Thailand/index.asp (accessed May 11, 2006).

52. Comments by multiple participants, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

53. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2006), p. 122.

54. The *Thailand Millennium Development Goals Report 2004* cited the success of the Thai government's poverty reduction efforts in a number of areas. Available at www.undg.org/documents/4581-Thailand_MDG_report_-_English-pdf (accessed March 24, 2005).

55. Comment by Pruthi Israngkul Na Ayudya, director, Health Center 21, Bangkok, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

56. Comment from Attapon Cheepsattayakorn, director, 10th Zonal TB and Chest Disease Center, December 8, 2005.

57. Comment by Voravit Suwanvanichkij, Johns Hopkins Bloomberg School of Public Health, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

58. Comment by Voravit Suwanvanichikij, Johns Hopkins Bloomberg School of Public Health, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005. P. Wandee, et al., *Dual TB/HIV Epidemic in the Northern Thailand and Myanmar Border: The Vital Need for Bridging Cross-country Cooperation*. Paper pesented at the International AIDS Conference, Bangkok 2004.

59. According to the WHO, about 44 percent of all those with active TB of some kind test smear-positive. Of these smear-positive cases, 72 percent are detected, and 74 percent of those detected are cured. This means that 23 percent of those with active, smear-positive, pulmonary TB in Thailand are being cured. Comment by Tim France, Health and Development Networks, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

60. Comment from Karyn Kaplan, Thai AIDS Treatment Action Group (TTAG), Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

61. Comment by Tim France, Health and Development Networks, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

62. Written comments on draft of this report by Jamie Uhrig, independent TB and HIV consultant, December 9, 2005. Local Advisory Board Meeting, Bangkok, December 29, 2004.

63. Comment by Rev. Sanan Wutti, The Church of Christ in Thailand, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

64. Compared to patients treated under direct observation of health personnel or nonfamily members in the community, patients observed by family members had noncompliance rates of 32 to 38 percent, far higher than the other two study groups. See Pungrassami et al., "Has Directly Observed Treatment Improved Outcomes for Patients with Tuberculosis in South Thailand?" *Tropical Medicine and International Health*, March 2002; 7(3): 271–279.

65. Interviews with TB staff in Chiang Mai province, January 2005, and TB staff of Mae Sod Hospital, Tak province, January 2005.

66. Comment by Dantawan Pinitswon, AHRN, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

67. An earlier pilot program in the northern provinces enjoyed considerable political commitment from high-level policymakers. This integrated strategy, which included early TB screening and care for people living with HIV/AIDS, provided a visible example of how the NTP and National AIDS Program could work closely together at all levels. See Ministry of Public Health, *National Recommendations Guideline: the Integrated HIV-TB Care Strategies for the Control and Prevention of Tuberculosis in Thailand*, 2001.
68. Comment by Karyn Kaplan, Thai AIDS Treatment Action Group (TTAG), Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
69. Written comments on a draft of this report, Jay Varma, section chief for TB Prevention and Control of the Thailand–U.S. Collaboration (TUC) and internist and epidemiologist, U.S. Centers for Disease Control and Prevention, Bangkok, December 2005.
70. Comment from Attapon Cheepsattayakorn, director, 10th Zonal TB and Chest Disease Center, December 8, 2005.
71. Comment by Sumalee Amarinsangpen, Office of Prevention and Disease Control Region 10, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
72. Comment by Karyn Kaplan, Thai AIDS Treatment Action Group (TTAG), Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
73. J. Ngamvithayapong, et al., "Health Seeking Behaviour and Diagnosis for Pulmonary Tuberculosis in an HIV-epidemic Mountainous Area of Thailand" *International Journal Tuberculosis Lung Disease*, 2001; 5(11): 1–8.
74. Interview with Attapon Cheepsattayakorn, director, 10th Zonal TB and Chest Disease Center, Chiang Mai, December 8, 2005.
75. Comment at Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
76. S. Piyaworavong, et al., "Tuberculosis Preventive Therapy as Part of a Care Package for People Living with HIV in a District of Thailand." *Journal of the International AIDS Society*, September 2001; 15(3): 1739–1741.
77. Comments by Somsak Akksilp, Office of Disease Prevention and Control Region 7, and Petchawan Pungrassami, Office of Disease Prevention and Control Region 12, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
78. Comments by Sumalee Amarinsangpen, Office of Disease Prevention and Control Region 10, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005, and by Pruthi Israngkul Na Ayudya, director, Health Center 21, Bangkok, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
79. Comment at Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
80. Comments by various participants, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
81. Comment by Suksont Jittimanee, Bureau of AIDS, TB and STIs, Ministry of Public Health, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.
82. W. Pleumpanupat, et al., "Resistance to Anti-tuberculosis Drugs among Ssmear-positive Cases in Thai Prisons 2 Years after the Implementation of the DOTS Strategy," *International Journal of Tuberculosis and Lung Disease*, 2003, 7(5): 472–477.
83. Comment from Attapon Cheepsattayakorn, director,10th TB Zonal Tuberculosis and Chest Disease Center, Chiang Mai, December 8, 2005.
84. Deputy director general of the Department of Disease Control, Ministry of Public Health, "Ministry to Target TB during HIV Treatment," *The Nation*, Thailand, August 2, 2005.
85. V. Payanandana, et al., "Surveillance for Anti-tuberculosis Drug Resistance in Thailand: Result from a National Survey," *Thailand Tuberculosis and Chest Disease*, 2000; 21(1): 1–7.
86. Comment at Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.
87. Comment at Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

88. Comments from Attapon Cheepsattayakorn, director, 10th Zonal TB and Chest Disease Center, Chiang Mai, December 8, 2005.

89. Médecins Sans Frontières (MSF), "Running Out of Breath? TB Care in the 21st Century," Geneva, 2004.

90. Written comments on draft of this report by Jay Varma, section chief for TB Prevention and Control of the Thailand–U.S. Collaboration (TUC) and internist and epidemiologist, U.S. Centers for Disease Control and Prevention, Bangkok, Thailand, December 2005.

91. Interview with groups of health personnel at Chiang Mai and Tak Provincial Medical Offices, February 2005, and the Local Advisory Board, Bangkok, December, 29, 2004.

92. Interview with Sirinapha Jittimanee, public health officer, TB Cluster, Bureau of AIDS, TB and STIs, December 7, 2005.

93. Interview with Sirinapha Jittimanee, public health officer, TB Cluster, Bureau of AIDS, TB and STIs, December 7, 2005.

94. Interview with TB Cluster head, Bangkok, February 2005.

95. Comment by Voravit Suwanvanichkij, Johns Hopkins Bloomberg School of Public Health, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2006.

96. Comments by Karyn Kaplan, Thai AIDS Treatment Action Group (TTAG), Public Health Watch roundtable meeting, Bangkok, December 6, 2005; Rev. Sanan Wutti, The Church of Christ in Thailand, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2006.

97. M. Macan-Markar, "Millennium Goals: Burma Must Tackle TB and HIV," Inter Press Service, Bangkok, September 5, 2005, available at www.aegis.com/news/ips/2005/IP050901.html (accessed on April 27, 2006).

98. Caouette and Pack, 2002, *Pushing Past the Definitions: Migration from Burma to Thailand* (Refugees International and Open Society Institute, December 2002) available at www.refugeesinternational.org/files/3074_file_burma.pdf (accessed on April 27, 2006).

99. Comment by Sumalee Amarinsangpen, Office of Disease Prevention and Control Region 10, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

100. P. Wandee , et al., "Dual TB/HIV Epidemic in the Northern Thailand and Myanmar Border: The Vital Need for Bridging Cross-country Cooperation." Paper presented at the International AIDS Conference, Bangkok, 2004.

101. P. Wandee, et al., "Dual TB/HIV Epidemic in the Northern Thailand and Myanmar Border: The Vital Need for Bridging Cross-country Cooperation." Paper pesented at the International AIDS Conference, Bangkok, 2004.

102. J. Suksont, "Report on the Thai/Myanmar Border TB Situation," *Border Health*, WHO Thailand, 2005.

103. Interviews with country director and programme officer, Médecins Sans Frontières, and director of Mae Tao Clinic in Mae Sot, Tak province, February, 2005.

104. S. Nateniyom, et al., "Implementation of the DOTS Strategy in Prisons at Provincial Level, Thailand," *International Journal of Tuberculosis and Lung Disease,* 2004, 8(7): 848–854.

105. S. Nateniyom, et al., "Implementation of the DOTS Strategy in Prisons at Provincial Level, Thailand," *International Journal of Tuberculosis and Lung Disease,* 2004, 8(7): 848–854.

106. *Model Development for Early Tuberculosis Diagnosis and Management, Prison-public Referral System and Drug Resistance Monitoring in Urban Prison, Thailand.* A final summary report presented at Grand Miracle Hotel, Bangkok, January 11, 2005.

107. The treatment success rate of 68.7 percent involved 1,158 registered patients. See S. Nateniyom et al, pp. 848–854.

108. Interview with Sirinapha Jittimanee, Bureau of AIDS, TB, and STIs, December 7, 2005.

109. Comment by Sumalee Amarinsangpen, Office of Disease Prevention and Control Region 10, at Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

110. Interview with Sirinapha Jittimanee, Bureau of AIDS, TB and STIs, December 7, 2005.

111. P. Kamolratanakul, et al., "Economic Impact of Tuberculosis at the Household Level," *International Journal of Tuberculosis and Lung Disease*, 1999: 3(7): 596–602.

112. Interview with Attapon Cheepsattayakorn, director, 10th Zonal TB and Chest Disease Center, Chiang Mai, December 8, 2005.

113. Comment by Petachawan Pungrassami, Office of Disease Prevention and Control Region 12, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

114. Comment by Somsak Akksilp, director, Office of Disease Prevention and Control Region 7, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

115. Interview with Attapon Cheepsattayakorn, director, 10th Zonal TB and Chest Disease Center, Chiang Mai, December 8, 2005.

116. Interview with a provincial chief medical officer, Chiang Mai Provincial Health Office, and the director, 10th Zonal TB and Chest Disease Center, and his staff, Office of Disease Prevention and Control Region 10, Chiang Mai, January 17, 2004.

117. Comment at Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

118. Interview with TB team, Chiang Mai, January 20, 2005.

119. Cross-sectional study jointly conducted by the Ministry of Public Health, the TB Research Institute and the U.S. Centers for Disease Control and Prevention, 1995–1996.

120. Comment by Sumalee Amarinsangpen, Office of Disease Control and Prevention Region 10, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2006.

121. Interview with NTP consultant to the Bureau of AIDS, TB and STIs, October 3, 2005.

122. Group discussion with village health volunteers in Mae Sod District, Tak province, January 26, 2005.

123. Comment by Sumalee Amarinsangpen, Office of Disease Prevention and Control Region 10, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2006.

124. P. Pungrassami et al., "Are Health Personnel the Best Choice for Directly Observed Treatment in Southern Thailand? A Comparison of Treatment Outcomes among Different Types of Observers," J*ournal of Transactions of the Royal Society of Tropical Medicine and Hygiene*, 2002; 96: 695–699.

125. Comment at Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

126. Interview with Sirinapha Jittimanee, public health officer, TB Cluster, Bureau of AIDS, TB and STIs Bangkok, December 7, 2005.

127. Interview with Sirinapha Jittimanee, public health officer, TB Cluster, Bureau of AIDS, TB and Bangkok, December 7, 2005.

128. Interview with Attapon Cheepsattayakorn, director, 10th Zonal TB and Chest Disease Center, Chiang Mai, December 8, 2005.

129. The financial crisis of 1997 increased the number of people below the poverty line by an estimated three million. See UNDP, *Human Development Report 2004*, Thailand.

130. Department of Communicable Disease Control, MoPH, Thailand, and WHO, *Second Review of the National Tuberculosis Programme in Thailand* (Geneva: WHO, 1999), p. 17

131. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2005), p. 132.

132. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2005), p. 132.

133. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2005), p. 129.

134. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2005), p. 129.

135. When drug purchase and distribution was still a responsibility of the NTP, prior to health reforms, the NTP reported spending approximately 80 percent of its total drug budget on drugs produced by the Government Pharmaceutical Organization (GPO), Thailand. WHO, *Second Review of the National Tuberculosis Programme in Thailand* (Geneva: WHO, 1999), p. 29.

136. WHO, *Global Tuberculosis Control: Surveillance, Planning, Financing* (Geneva: WHO, 2005), p. 131.

137. K. Rookkapan and N. Poomviset, "Problems of Anti-tuberculosis Drug Management in Southern Thailand." Paper presented at 17th Annual academic Meeting, Faculty of Medicine, Prince Songkla University, Hat Yai, Songkla, August 15–17, 2001. Available at www.clib.psu.ac.th/acad_44/rkorng1.htm (accessed March 24, 2006).

138. K. Rookkapan and N. Poomviset, "Problems of Anti-tuberculosis Drug Management in Southern Thailand" Paper presented at 17th Annual Academic Meeting, Faculty of Medicine, Prince Songkla University, Hat Yai, Songkla, August 15–17, 2001. Available at www.clib.psu.ac.th/acad_44/rkorng1.htm (accessed March 24, 2006).

139. Participants in Public Health Watch roundtable meetings, Bangkok and Chiang Mai, December 2005.

140. Comment at Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

141. Comment by Pruthi Israngkul Na Ayudya, director, BMA Health Center 21, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

142. Interview with TB clinic staff, Health Center 21, Bangkok, December 13, 2005.

143. Interview with Ankana Chaiprasert, Faculty of Medicine, Mahidol University, March 24, 2005.

144. Interview with Samran Takan, director of New Life Friend Center, Chiang Mai, December 13, 2005.

145. For example, the Thai NGO Coalition on AIDS (TNCA) and the Thai Network of People with HIV (TNP+) each represent over 300 organizations, and both are represented on the National Committee.

146. One organization of people living with HIV/AIDS established a group of more than 100 volunteers to educate people with HIV on risk reduction and encourage peer care and support. Interview with Samran Takan, director of New Life Friend Center, Chiang Mai, January 18, 2005.

147. Bureau of Policy and Strategy, Ministry of Public Health (MoPH), *Health Policy in Thailand* (2003), p. 7.

148. Interview with Sirinapha Jittimanee, public health officer, TB Cluster, Bangkok, December 7, 2005.

149. Comments by Suksont Jittimanee, Bureau of AIDS, TB, and STIs, MoPH, Public Health Watch roundtable meeting, Bangkok, December 6, 2005, and participants at Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

150. Comment by Jutatip Chaisakul, Health Development Networks, Publc Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

151. Comment by Prasert Dechabon, president, Northern PWA Network, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

152. Comment by Voravit Suwanvanichkij, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

153. Comment by UNAIDS representative, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

154. Comment by Somsak Akksilp, director, Office of Disease Prevention and Control Region 7, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

155. Comment by Sumalee Amarinsangpen, Office of Disease Prevention and Control Region 10, Public Health Watch roundtable meeting, Chiang Mai, December 9, 2005.

156. Comment by Pruthi Isrankul Na Ayudya, director, Health Center 21, Public Health Watch roundtable meeting, Bangkok, December 6, 2005. The CDC is also supporting a range of other TB control activities, including: TB prevention activities targeting vulnerable groups such as injection drug users, high-risk youth, and people living with HIV/AIDS; improving TB laboratory and diagnostic services; and TB surveillance. Written comments by Jay Varma, section chief for TB Prevention and Control of the Thailand–U.S. Collaboration (TUC) and internist and epidemiologist, U.S. Centers for Disease Control and Prevention, Bangkok, December 2005.

157. Comment by Ankana Chaiprasert, Faculty of Medicine, Mahidol University, Public Health Watch roundtable meeting, Bangkok, December 6, 2005, and a university researcher, Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

158. See www.theglobalfund.org/search/docs/1THAT_391_100_ga.pdf (accessed February 21, 2006).

159. For a list of CCM members in Thailand, see www.theglobalfund.org/search/memberlist.aspx?countryID=THA (accessed February 21, 2006).

160. Comments at Public Health Watch roundtable meeting, Bangkok, December 6, 2005.

WE RECOGNIZE THAT: THE GLOBAL tuberculosis emergency . . . cannot be defeated by the health sector acting alone; CONFRONTING tuberculosis requires collaboration across government sectors & action across society.
—Amsterdam Declaration to Stop TB

Public Health Watch promotes informed civil society engagement in policymaking on tuberculosis and HIV/AIDS. The project's monitoring reports offer a civil society perspective on the extent to which government policies comply with international commitments such as the Amsterdam Declaration to Stop TB and the Declaration of Commitment on HIV/AIDS—and on the extent to which those policies have been implemented.
TB monitoring reports include assessments of policies in Bangladesh, Brazil, Nigeria, Tanzania, and Thailand.

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