



# **CURRENT ISSUES IN TUBERCULOSIS CONTROL**

by  
**Manfred Zahorka, MD, MPH**  
**Ricarda Merkle, MSc**  
**Claudia Kessler Bodiang, MD, MPH**  
**SCIH/STI**

A Key Issue Paper established in the frame of the  
SDC Backstopping Mandate 2004 of the  
Social Development Division's Health Desk

## Table of contents

Executive Summary	3
1. Current TB situation- facts and figures	4
2. Treatment Progress in DOTS	6
3. Upscaling TB control in the health system	9
4. Final conclusions	14
Selected further resources and links	14

## List of abbreviations

<b>BCG</b>	Bacille Calmette-Guerin, current BCG vaccine bacillus	<b>MDG</b>	Millennium Development Goals
<b>CSW</b>	Commercial Sex Workers	<b>MOH</b>	Ministry of Health
<b>DOTS</b>	Directly Observed Therapy;branded name of the WHO recommended tuberculosis control strategy	<b>MSF</b>	Medecins sans frontiere
<b>DOTS Plus</b>	Tb control strategy for multi drug resistant Tuberculosis based on the DOTS scheme	<b>NTP</b>	National Tb Programme
<b>FDC</b>	Fixed dose combination drugs	<b>OR</b>	Operational Research
<b>GDF</b>	Global Drug Fund	<b>PLWHA, PLWH</b>	People living with HIV/AIDS
<b>GDP</b>	Gross Domestic Product	<b>PPM-DOTS</b>	Public private mix DOTS, a strategy to involve private health care providers in DOTS strategy
<b>GFATM, GF</b>	Global Fund for Fighting AIDS, Tuberculosis and Malaria	<b>SDC</b>	Swiss Agency for Development and Cooperation
<b>HBC</b>	High Burden Countries	<b>STI</b>	Sexually Transmitted Infections
<b>HAART</b>	Highly active anti retroviral treatment	<b>TB</b>	Tuberculosis
<b>H FA</b>	Health For All	<b>UNAIDS</b>	Joint United Nations Program on HIV/AIDS
<b>HIV/AIDS</b>	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome	<b>UNDP</b>	United Nations Development Fund
<b>IDU</b>	Injecting Drug Users	<b>USAID</b>	United States Agency for International Development
<b>MDR-TB</b>	Multi drug resistant Tuberculosis, TB bacillus resistant to at least Isoniazid and Rifampicin	<b>VCT</b>	Voluntary Counselling and Testing
		<b>WHO</b>	World Health Organisation

## Contacts

### Swiss Agency for Development and Cooperation

Franziska Freiburghaus  
Franziska.Freiburghaus@deza.admin.ch

### Swiss Centre for International Health/ Swiss Tropical Institute

Manfred Zahorka  
manfred.zahorka@unibas.ch

## Disclaimer

The paper is mainly compiled with information from Progress Reports on the STOP TB Partnership, the TB-HIV/AIDS Working Group, the Millennium Project Task Force/Subgroup on Tuberculosis and corresponding websites. The update is also based on information gathered during the 2<sup>nd</sup> Stop TB Partners Forum in New Delhi/India in March 2004 and the XV. International AIDS Conference in Bangkok/ August 2004. Previous papers on TB established in the frame of the Backstopping Mandate can be downloaded from [www.sdc-health.ch](http://www.sdc-health.ch)

## **Executive Summary**

**The present paper is a key issue paper on current trends and perspectives in TB treatment and control. The TB epidemic, once thought under control, has re-emerged. This trend is mainly due to the HIV epidemic and the increasing problem of multi-drug resistant TB. Every year there are 8-10 million new infections worldwide. TB killed 2 million people in 2002 and is the world's biggest killer of women. To account for this, fighting TB has been included in the MDGs.**

**Much progress in the fight against TB can be reported over the past years. Global commitment and funding has increased and the scaling up of the Directly Observed Therapy (DOTS) strategy is progressing at great speed. By the end of 2002, all 22 countries with the highest number of TB cases, which together have 80% of the world's estimated incident cases, had adopted the DOTS strategy. Treatment success rates under DOTS are approaching the targets (82% in 2000), but case detection rates are still far too low and are the main reason for the unlikeliness of meeting 2005 targets. Despite all the progress made, today still only one third of the TB infectious patients receive adequate treatment and a small minority only has access to the DOTS Plus regimens that are needed for treating resistant TB. There remains a great potential for improving the DOTS response. While some African countries like Uganda and Nigeria have experienced disappointing fall backs, many of the developing countries have made great progress towards the goals. India is maybe the biggest success story, but others, like the Democratic Republic of Congo, Afghanistan, Pakistan or Viet Nam are other good practice examples. Several good practice initiatives are described in the boxes in the various chapters.**

**While there is little good news in terms of new diagnostic tools or drugs that would be available for the countries most in need of them, many successful strategies have been developed to increase access to effective TB diagnosis and treatment and improve patient compliance, even where health systems are weak. One promising way forward is the combination or integration of TB and HIV/AIDS control programmes. Pilot interventions have shown mutual benefits from combining the two approaches. The accent now lies on scaling up the pilot experiences and generating the evidence that it can work when scaled up.**

## 1. Current TB situation – facts and figures

The TB epidemic is re-emerging, mainly due to the HIV pandemic and the problem of multi-drug resistant TB.

The largest number of TB cases occur in South East Asia.

TB incidence rates and mortality rates are greatest in sub-Saharan Africa.

The Global goal to detect 70% of cases and successfully treat 85% of cases is also reflected in a MDG.

Progress in international commitment has been achieved; but the funding gap 2001-2005 remains at \$ 1,2 billion.

TB infection is currently spreading at the rate of one person per second and it is the **world's biggest killer of women** (WHO, Stop-TB). The **larges number of cases occurs in the South-East Asia Region**, which accounts for 33% of incident cases globally. However, the estimated **incidence per capita in sub-saharan Africa is nearly twice that of South-East Asia**, at 350 cases per 100'00 population. Every year 8-10 million people worldwide become infected leading to 2 million deaths in 2002. While the largest number of deaths occur in South East Asia, the highest mortality per capita is in the African region, where HIV has led to rapid increases in the incidence of TB and increases the likelihood of dying from TB (WHO,2004). **TB cases have grown 20% worldwide over the last decade**. This is mainly explained by the mutual fuelling of the two epidemics: **TB and HIV/AIDS** (mainly the problem in sub-saharan Africa) and the rapid spread of **multi drug resistant TB** (main problem in the former Soviet states).

TB accounts for about 13% of AIDS deaths worldwide and **HIV is in Africa the single most important factor determining the increased incidence of TB in the past 10 years**. TB co-infection accelerates disease progression in people living with HIV/AIDS (PLWHA) and vice versa with a rapid deterioration of health status<sup>1</sup>. By now 14 million people living with HIV/AIDS (PLWA) are co-infected with TB – of which 70% are living in sub-Saharan Africa. Some **sub-Saharan African countries have witnessed a fourfold increase in TB cases over the last 10-15 years**.

If these trends continue, **TB incidence will increase by 41%** in the next 20 years. Tuberculosis is a major cause of ill health and death in developing and transitional countries causing serious economic losses to families and societies particularly among the poorest groups. This is why halving TB prevalence and death rates by 2015 is included in the Millennium Development Goals 6 (MDG). This goal is based on and goes hand in hand with the **target of WHO to achieve by 2005 a 70% case-detection rate and an 85% treatment-success rate** (WHO targets ratified at the 1991 World Health Assembly).

To reach these goals, progress has to accelerate considerably. Only 5 countries (Vietnam, Cuba, Malaysia, the Maldives, and Nicaragua) of the 139 countries who reported to WHO had met the interim goals for the year 2000.<sup>2</sup> There has been considerable increase in funding for TB control since the early 90s also due to new GFATM and World Bank money, reducing the **estimated TB funding gap for 2001-2005** from US\$ 1.4 billion (WHO 2002 estimate) **to the current figure of US\$1.2 billion**. The extra US\$ 150 million that High Burden Countries (HBC) for example planned to spend in 2003 only represents a fraction of what would be needed in addition.

It is now estimated that the **WHO global targets for 2005 will only be reached by 2013 - if current progress still accelerates**. DOTS programmes would need to trace **an additional 333 000 cases each year**.

<sup>1</sup> see Tb update October 2002 for further reference

<sup>2</sup> Dye, C., Watt, C.J., Bleed, D. Low access to a highly effective therapy: a challenge for international tuberculosis control. *Bulleting of the World Health Organization*. 2002; 89(6): 437-44.

Reaching the 2005 global targets is threatened by the low case detection rates.

This implies substantial additional efforts considering that case detection in the world as a whole has remained roughly stable since records began in 1980. WHO estimates that case detection could be increased from 37% to 59% by **improving the implementation of public DOTS programs**. For this, a concerted and strengthened effort is needed at the global, the national and the community level. Globally, the **major players** remain unchanged, being the **World Health Organisation**, International Union Against Tuberculosis and Lung Disease (**IUATLD**) Global Fund for AIDS, the Tuberculosis and Malaria (**GFATM**) and the **Bill and Melinda Gates Foundation**, which is the main funder of Aeras (Global TB Vaccine Foundation). The main coordination mechanism, created by WHO in 1998, is the **Stop TB Partnership**, a global initiative of organizations working together to stop the tuberculosis epidemic. Its central focus is building expanded support for good TB control and strengthened health systems in high prevalence/low income countries. Several coalitions including about 75 partners have come forward as part of the Stop TB movement to accelerate progress in specific areas, including DOTS expansion, new drug development, and containment of MDR TB emergencies (*for more details, see the 2001 Paper under [www.sdc-health.ch](http://www.sdc-health.ch)*).

Multi-drug resistant TB is further spreading and posing a particular threat in the former Soviet countries.

Besides financial constraints a major threat to achieving the WHO goals is **Multi-Drug Resistant TB**. For more details about the background of this issue, the reader is referred to the previous update 2002 ([www.sdc-health.ch](http://www.sdc-health.ch)). In 2003 the WHO/IUATLD Global Project on Anti-Tuberculosis Drug Resistance Surveillance published their third report. Two previous reports that were published in 1997 and 2001 included data from 35 and 58 settings respectively. The main conclusions of the two previous reports were that drug-resistant tuberculosis (TB) was present in all settings surveyed, multi-drug resistance (MDR) was identified in most settings, and that good TB control practices were associated with lower or decreasing levels of resistance. The 2004 report includes new data from 77 settings or countries collected in the third phase of the project, between 1999 and 2002, representing 20% of the global total of new smear-positive TB cases. It includes 39 settings not previously included in the Global Project and reported trends for 46 settings. As in the two previous surveys, drug-resistant TB, including **multi-drug resistant TB, was found in all regions of the world**. The prevalence of MDR-TB was **exceptionally high in almost all former Soviet Union countries surveyed**, including Estonia, Kazakhstan, Latvia, Lithuania, the Russian Federation, and Uzbekistan. High prevalences of MDR-TB were also found among new cases in China (Henan and Liaoning provinces), Ecuador and Israel. Central Europe and Africa, in contrast, reported the lowest median levels of drug resistance. The proportion of retreatment of all TB cases is an indicator of programme performance. As in previous phases of the Global Project, a **link was found between poor programme performance, or insufficient coverage of a good programme, and drug resistance**. Previously treated cases, worldwide, are not only more likely to be drug-resistant, but also to have resistance to more drugs than untreated patients. The findings of this phase of the Global Project **emphasize the importance of strengthening TB control worldwide, by expanding DOTS** in order to prevent the emergence of further drug resistance. Existing cases need to be managed by national programmes, regardless of prevalence, through application of the **DOTS-Plus strategy** and using the **Green Light Committee** to ensure quality of second-line drugs and proper implementa-

tion and monitoring. Full adoption of DOTS is vital if the creation of MDR-TB cases is to be halted<sup>3</sup>.

The following chapters will show, that major progress in expanding DOTS coverage was achieved and also highlight challenges and opportunities in terms of increasing access of infected patients to diagnosis and treatment through the health system- the two most vital strategies in effective TB control.

## 2. Treatment: Progress in DOTS

The DOTS strategy has shown considerable progress over the past years.

Directly observed Therapy, **DOTS**, is a public health-based strategy launched in 1994 by WHO, **acknowledged to be the most effective approach to deliver global TB control**. It is based on political commitment, accurate diagnosis, standardised drug treatment and monitoring of treatment results. It is not just a medical approach but also a **brand, designed to provide a simple clear message** to Western donors and developing country policy-makers.

The Global DOTS Expansion Plan focuses on medium term plans and national coordination.

Since its introduction in 1991, more than 13 million patients have received treatment under the DOTS strategy. By the end of 2002, all 22 of the countries with the highest number of TB cases, which together have 80% of the world's estimated incident cases, had adopted the DOTS strategy. In total, **180 countries were implementing the DOTS strategy and 69% of the global population was living in parts of countries with a DOTS strategy**. In 2001, the **Global DOTS Expansion Plan** was published. The two pillars of the plan are the development of **medium-term (at least 5-year) plans for TB control** in all countries, and the **establishment of national interagency coordination committees (NICCs)**. All 22 countries with the highest number of cases had formulated plans by the end of 2003, and all but two had NICCs that met regularly.

**DOTS geographical coverage has increased substantially and treatment success rates under DOTS are approaching the targets** (albeit with wide geographical differences), standing at **82% in 2000**. However, DOTS case detection, while increasing, is still low, at 32% in 2001. The **low case detection** stems from populations having poor access to TB services, cases not suspected or correctly diagnosed, cases not notified, and/or public health programmes or the private sector not being adequately linked to the National Tuberculosis Programmes<sup>4</sup>.

The **2004 Global Tuberculosis Control report** confirms that DOTS programmes are now **treating three million TB patients every year, an increase of more than one million patients compared to just two years ago**. That increase is nearly double the average annual increment of 270,000 patients during the previous six-year period, and the trajectory is

<sup>3</sup> [http://whqlibdoc.who.int/publications/2004/9241562854\\_foreword\\_summary.pdf](http://whqlibdoc.who.int/publications/2004/9241562854_foreword_summary.pdf); *Anti-tuberculosis drug resistance in the world report no. 3* WHO/HTM/TB/2004.343

<sup>4</sup> This paragraph is drawn from: DOTS expansion: will we reach the 2005 targets? [Stop TB Partnership], [The International Journal of Tuberculosis and Lung Disease](#), January 2004, vol. 8, no. 1, pp. 139-146(8)

DOTS is treating 3 million patients each year, a significant increase to two years ago.

Despite progress, only one third of patients are receiving adequate treatment.

HIV poses major challenges to the TB control efforts in sub Saharan Africa.

Some of the world's poorest countries are making greater progress than some wealthier countries.

Encouraging developments are the development of new kits for drug administration, new research results and increasing Public Private collaboration.

still heading upward. **India** is leading the surge with more than a quarter of all additional DOTS cases being treated, followed by smaller but significant increases in five other key countries with high rates of TB: **South Africa, Indonesia, Pakistan, Bangladesh and the Philippines.** **DOTS expansion is one of the major public health success stories of the past decade**, one that is saving thousands of more lives every day," Dr Lee said. "But to reach the 2005 targets for detection and treatment, the challenge now is to add another one million TB patients to DOTS programmes each year. Many of these new cases will be recruited from the hospitals and private health sector in Asia, especially China, and from beyond the present limits of health systems in Africa." (WHO, 2004)

Despite the progress achieved, much still needs to be done, as **nearly two-thirds of patients with infectious TB are not receiving adequate treatment** and just a tiny fraction of those with multi drug resistant TB are being adequately diagnosed and treated in a DOTS Plus programme. According to the **2005 Global TB Control Report Card**, **TB control efforts are stalled in seven of the nine African countries** with the largest burden of TB. In Uganda, 10 percent fewer infectious TB patients were detected and cured with DOTS TB treatment services in 2003 compared to four years before, in spite of the country's much heralded success in slowing the spread of HIV. In Nigeria, 105,000 people died of TB last year — more than any other African country — as its TB control programme has struggled without sufficient government commitment and donor resources.

By contrast, the **Democratic Republic of the Congo** has expanded its TB control efforts to cure 9 percent more cases of TB in 2003 than in 2000, despite absolute poverty, a high incidence of HIV and chronic civil conflict. **Afghanistan**, another country plagued by civil strife, is also making impressive progress in controlling TB.

Many large Asian countries are succeeding in curing more TB patients with the DOTS strategy, including **Myanmar, Philippines and Thailand** which have cured nearly 20 percent more cases over the past four years and India which has achieved an astounding 31 percent increase over the same period. The 2005 Global TB Control Report Card also commends **Indonesia and Pakistan** for making rapid progress in curing more infectious TB cases with the DOTS strategy.

The Report Card notes that **many of the world's poorest countries are making greater progress in controlling TB than some wealthier countries.** Cambodia and Viet Nam, for example, have extended use of the DOTS strategy to cure 50 percent to 80 percent of all infectious TB cases respectively. By contrast, Brazil and Russia are providing DOTS services to cure less than 15 percent of estimated TB cases. (*source of the paragraph: 2005 Global TB Report Card Finds TB Control Stalled in Africa*<sup>5</sup>)

Some recent developments are opening up interesting perspectives. The Global Drug Fund is currently promoting further simplification of TB drug treatment by developing **patient kits**, where all drugs needed for a full course of treatment are included in a single package ("**Stop TB Patient Kit**").

<sup>5</sup> <http://results.org/website/article.asp?id=1446>

In addition, **new research** (conducted by an international team of researchers from Mexico's National Institute and Stanford University and published in the Lancet) has shown for the first time that the **spread of multi drug-resistant TB can be halted through a well executed standard treatment programme**. Bacterial fingerprinting techniques used to track disease transmission in a southern Mexico community revealed that all categories of tuberculosis were controlled when the DOTS strategy was used. The policy implications of this research still need to be elaborated. However, Dr Peter Small from Stanford University is certainly right, when he said: "Our data show that DOTS is an essential public health intervention. But even with this programme the number of people dying from multi-drug resistant TB remains unacceptable, highlighting the desperate need for new tools to save the lives of the hundreds of thousands of people who are suffering from it."

Further opportunities arise from intensified Public- Private collaboration, as the Indian example in the box below shows.

#### **India's Public-Private response**

India is one of the leading examples for political commitment to up-scale DOTS. Apart from using the public health sector, the national programme has contracted 600 NGOs and 3000 private medical practitioners (PPs). PPs who join the programme have the choice to either refer patients to the nearest treatment centres or to become DOTS providers. To facilitate cooperation the programme has minimized administrative documentation and promotes regular interaction. A training manual has been designed to educate PPs about DOTSs and how they can contribute to overall programme activities. In 2004 the "India Business Alliance" committed to help fight TB – largely as a result of intense lobbying by the World Economic Forum's Global Health Initiative. The Alliance constitutes of three of India's biggest companies and four other firms. Initiatives include a range of community and workplace programs. One of the companies intends to use its 5 million-phone mobile network for a text-message campaign

First results and lessons learned include:

- Overall, the country has achieved fastest expansion at a very low cost of 5 US cents per capita, though especially the states with high levels of poverty and poor health structures show low success until now with TB cure rates for DOTS of 30% or less.
- In some states, 15 to 40 percent additional cases were detected through public-private mixes.
- Private sector and NGO collaboration is especially important in urban areas with slums and unplanned colonies where the health system is less developed.
- For community ownership the program needs to be promoted as a people's movement.
- Marketing and IEC activities contribute to increasing case detection.

*Source: Stop-TB e-forum, Delhi 2004 International TB Conference*

### 3. Upscaling TB control in the health system

There is now a consensus that **TB control must find a central place in national poverty reduction strategies (PRSP)**. The Stop TB Partnership has started a Network for Action on TB and Poverty to become a platform for innovative implementation and information exchange (see resources).

The priority challenges in scaling up TB control have not changed recently. They are :

1. **New development of tools** for treatment including new diagnostics, new drugs and new vaccines.
2. **Health systems** need to become more responsive to TB and HIV.
3. **Access to and compliance** with treatment are major aspects of pro-poor TB interventions and need to be improved.
4. **Synergies between HIV and TB programs** need to be strengthened and further explored.

#### Ad 1. New Tools for TB care

Although TB is one of the world's best-studied killers, TB tools have remained unchanged for decades, despite their limited performance. The major needs for development include:

- **Diagnostic tests** that are more accurate than sputum-smear microscopy and can rapidly detect rifampicin resistance.
- **New drugs** that are simpler to use and affordable.
- **Improved methods** to identify infected persons at risk of developing active TB and to distinguish HIV-infected patients with TB from those without TB.

**Diagnostic tests** until now are far from reliable detecting TB in only 50% of HIV patients even in a well run TB programme.<sup>6</sup> New diagnostic tests that have been developed are designed for use in developed countries and require trained technicians, good laboratory facilities and are relatively expensive. WHO estimates that **\$5-15 million are needed to adapt a test to the conditions of resource-poor settings**.

Current first-line **TB drugs** were developed in the 1940s and 1960s and are less than satisfying. The sector has suffered from a **lack of investments by the pharmaceutical industry** arguing that development costs far outweighed the potential global market for anti-TB drugs. There have been some company driven TB ventures/ projects:

- **Novartis** opened the **new Institute for Tropical Diseases in Singapore in 2003**, with a focus on identifying new drug and vaccine targets for TB and dengue with the announcement to team up with Global Alliance for TB drug Development (GATB) and offer reasonable price rates for endemic countries.
- **Astra-Zeneca** opened a **research centre in India in 2003**, with a focus on TB drug discovery and developing country sales.

Nevertheless, compared to other clinical areas, these **current TB efforts within the multinational pharmaceutical industry are minimal**. A promising way forward to balance business objectives and social benefits appears to be **public-private partnerships** such as the **Global Alliance for**

Little progress in terms of practical implications can be reported in terms of new diagnostics and new drug developments.

Positive news for drug development are the initiatives of Novartis, Astra Zeneca and the GATB.

<sup>6</sup> MSF Press Release – 19 March, 2004

**TB drug Development (GATB).** Evaluating more precisely the size of the TB market and finding ways to decrease the development costs for the industry are currently debated options. Also, the relatively “small” TB market may be more interesting to smaller biotech companies or generic producers building development capacity. There have been some companies such as Chiron and Lupin that identified promising new targets, but they face **insufficient resources to fully develop drugs** themselves. To step in this gap, the **GATB** has been launched in 2000 backed by international institutions, public research institutes, foundations and government donors. It’s goal is **to bring at least one new TB drug through the development pipeline by 2010 through linking pharmaceutical industry expertise and public sector know-how and funds**. So far, the problem has been that the multinational pharmaceutical industry has shown limited interest in co-operating with GATB with almost all answers to its call for proposals coming from public or academic sources. It is estimated that it will take about two to three years before new diagnostics tools become available, between 8 and 20 years for new drugs and 15 years or more with regard to vaccines.

## **Ad 2. Health systems**

The success of DOTS implementation is very much linked to a **good primary health care (PHC)** structure in cooperation with strong National TB programmes. There are a variety of approaches used to compensate for weak PHC systems:

Many successful strategies have been developed to compensate for weak health systems.

- **Community involvement and other “bottom-up” initiatives:** In Uganda, a **network and referral system** has been **created with community volunteers** on the ground and training and supervision of health workers through the district health centres.
- **Private sector involvement:** India, Nepal and the Philippines significantly involved private doctors.
- **Cooperation with NGOs:** In Nigeria an NGO was formed as a **society task force** to stop TB through **mobilizing civil society groups**. The task force is responsible for monitoring the DOTS program especially to ensure patients’ follow-up.

### **Uganda and Nigeria: Community-based TB care**

*Source: Community partnerships against TB – Uganda and Nigeria, STOP-TB e-forum, 26 Mar 2004*

As **Uganda** has a less than optimal and functional PHC system, it opted for a community based model. Sub-county health workers are identified which serve as entry points into the community. The local leadership is invited and trained about the impact of TB in their community. The health workers identify community volunteers to advocate for household awareness. All suspect household members are referred to the health worker. He provides support supervision and drugs for identified patients to the community volunteers who act as DOTS treatment partners. The community health centre is equipped with a light microscope and TB drug supplies. The district medical officer provides support to all health centres and supervises drugs and supplies.

Outreach activities, fighting stigma and discrimination and better responsiveness of the health system can help to promote access and improve compliance.

In **Nigeria**, an NGO was formed through mobilizing local civil society groups into a society task force to stop TB. The NGO procures TB drugs and provides them free of charge to the local health centres. It monitors and evaluates the DOTS program in the health centres, which are directly accountable to it supplying information on patient enrolment, follow-up and default notification charts. In case of defaulters, the NGO appoints volunteers to follow up and encourages restarting treatment. All volunteers are community members and non-salaried.

### **Ad 3. Access and compliance to treatment**

For population groups with low access to health services, such as migrants or nomadic people, alternative models have been found including efforts to facilitate patients' lives by **reducing their need to come to a clinic**, i.e. examples of **home-based care** in Cambodia and **factory-based treatment** in Thailand. To improve access to TB MSF for example increasingly has expanded TB treatment to conflict areas such as Afghanistan, South Sudan and Angola.

To **improve access to and responsiveness of health systems** to the poor it is important to consider social factors such as **stigma and responsiveness of health systems**.

The national TB program in Nicaragua is implementing a set of interventions to reduce the negative effects of TB-related stigma including:

- Review of care pathway of the patient in order to identify the many non-evidence base isolation precautions taken by health staff giving false ideas to the community about precautions to be taken with people affected by TB
- Develop TB clubs as a means to reinforce coping skills of TB patients
- Develop psychosocial skills of health personnel
- Organise case discussion amongst health staff centred on the psychosocial problems of patients

*Source Stigma-lurking on the edge of TB response, Stop-TB e-formu, 9.4.2004*

India, in order to attain community ownership, **promoted its national TB programme as a "people's movement"**. Success of the Bangladeshi TB program partly resulted from the **use of female community workers** who earlier used to provide micro credits to poor women. This approach led to a doubling up of DOTS providers. Another important issue is the **use of IEC activities to raise the level of awareness of the general public**. If there is full coverage with DOTS, but low case detection rates, this can be addressed by aggressive marketing, as it is currently initiated with the so-called "COMBI" campaign in Kerala/India. In Peru an approach to improve drug adherence of the poor was to provide incentives to the patients such as food, subsidized transportation or loans for small businesses. These initiatives have helped to reach a cure rate of over 80 percent for MDR-TB patients.<sup>7</sup>

<sup>7</sup> Management Strategies for Improving Health Services: Improving Drug Management to Control Tuberculosis, Volume 10, No 4, 2001.

Another interesting approach to promote access is the use of mobile phones to improve patient adherence, as successfully tested in South Africa and described in the following box.

#### **South Africa: Using Cell phones to improve adherence to TB treatment**

A pilot intervention in Cape Town, South Africa, is using SMS or “text messages” to remind TB patients to take their medication, a system called Cell Phone Prompted Self Administered Therapy (PSAT). A database is used to keep the patient’s details, a computer server reads the database, and then sends personalised messages to each patient. In addition to information on reminding for treatment, disease information and orientation on life style management is provided. The system uses a technology based on a freely available open source software operation system, web server, mail transport agent and a database. There is now a database of over 800 messages that are changed on a daily basis.

Pilot studies have shown cell phone usage amongst 71% of the target population. Further, widespread patient and staff acceptability of this intervention have been shown. Of the 300+ patients involved in the pilot there were only five treatment failures and WHO has singled out the scheme as an example of good practice. It costs US\$1.3 per patient per month to run the SMS reminder service. First indications show the system to be simple, affordable and flexible.

*Source: Green, D. Using cell phones to boost TB compliance, E-Drug Electronic Discussion Group*

#### **Ad 4 Integrating TB and HIV/AIDS control**

As shown before in this paper, the TB and the HIV epidemic are mutually interdependent. There is one major difference between HIV and TB: **TB is a curable disease; HIV/AIDS so far is not.** However, TB and HIV control programs have much in common and share similar challenges, such as:

**There are a lot of similarities and potential synergies between the control of TB and HIV/AIDS.**

- Both diseases are associated with high stigmatisation, which reduces access to care;
- Need for skilled health workers and mobilized communities;
- Need for uninterrupted supply of effective drugs;
- Need for high compliance of patients to long term treatment;
- Drug resistance as a consequence of non-compliance and interruption of supply;
- Difficulties in case detection due to weaknesses in diagnostic tools and staff performance.

**Mutual benefits** of integrating TB and HIV Programmes can result from:

- **Utilizing the DOTS organizational structure** to deliver highly active anti-retroviral treatment (HAART), e.g. the principle of observing therapy, the detailed recording and reporting elements of DOTS, and the emphasis on a reliable drug supply.
- TB patients are more likely to accept HIV testing than the general population. TB control can therefore contribute to better HIV/AIDS control by **providing an entry point to HIV prevention and care** for people with TB.

**Challenges and risks in combining both approaches** result from:<sup>8</sup>

- **Different treatment schemes**
- If one disease control programme is given more weight at the expense of the other, **scaling up of antiretroviral therapy can be potentially detrimental to the existing TB programme.**
- **TB diagnostics are less reliable** in HIV-positive patients.

Current experience shows that combined TB/HIV responses do work in pilot settings. The evidence that it works when scaled up is yet to be established.

To implement combined TB/HIV responses in high-prevalence countries, WHO established the **ProTEST initiative with pilot projects in Malawi, South Africa and Zambia**. The objective was to develop and evaluate the feasibility, impact and cost-effectiveness of a set of interventions, using mainly **HIV counselling and testing services as the entry point to a package of prevention, care and support services**. The evaluation of ProTEST so far shows significant progress towards the original goals. The governments of the three countries involved are now formulating and approving plans for national expansion of TB/HIV joint activities, based on the experience of these pilot projects. Of crucial importance is to develop good quality combined treatment protocols that take account of the possible drug interactions between the two regimens.

Although integrating DOTS and HAART has been demonstrated to be highly effective in some projects and even in the most impoverished settings,<sup>9</sup> much operational research is still needed on issues such as cost-effectiveness or behavioural aspects. In addition, scaling-up remains the major challenge.

The **Global TB/HIV Working Group** focuses on improved collaboration between TB and HIV/AIDS programmes. It has developed a **policy on collaborative TB/HIV activities** in 2004<sup>10</sup> and launched a **clinical manual for TB/HIV** at the 2004 Bangkok conference.<sup>11</sup> In March 2004, a workshop of the Stop TB Partners Forum in New Delhi was held with the objective to begin to identify key issues and opportunities in advocacy and community mobilization around TB/HIV. Whereas **TB advocacy** has generally not been sufficient to get important messages through, the **dynamics in HIV activism** is frequently more “passionate” and attracts larger interest.

A well managed drug management system is a prerequisite to both effective TB and HIV/AIDS control.

As mentioned above, both DOTS and HAART interventions crucially depend on the maintenance of an **uninterrupted supply of high-quality drugs**. Policy makers have to be convinced that more drugs and better procurement and distribution systems are needed for both diseases (not “either/or”). There is much unrealized potential. The use of regional and trans-national resource-pooling with for example technical and financial support of the Global Drug Facility (**GDF**) and the **GFATM** may render national drug procurement strategies more effective. **Well-defined policies and drug management systems** can put a country in a **better position to respond to global initiatives** such as the Global Fund. The cost of drugs at the point of the user is greatly determined by an efficient drug management system, which starts by determining the essential drug list, rational purchasing, efficient logistics and rational drug use.

<sup>8</sup> Salim S.A. K et al. AIDS 2004, 18 : 975-979, Presentation at the XV Aids Conference Bangkok 2004

<sup>9</sup> Farmer, P., Leandre, F, Mukherjee, J., Gupta, R., Tarter, L., Kim, J.Y: Community-based treatment of advanced HIV disease: introducing DOT-HAART (directly observed therapy with active antiretroviral therapy.) Bulletin of the World Health Organization, 2001; 79(12:1145-51).

<sup>10</sup> Interim policy on collaborative Tb/HIV activities. Geneva, WHO, 2004

<sup>11</sup> Tb/HIV: A clinical manual, WHO, 2004

## 4. Final Conclusions

Tuberculosis is one of today's greatest health paradoxes today: **despite the proven effectiveness and the low-cost of the DOTS strategy, only one-third of all TB patients worldwide receive treatment according to these standards.**

*"Since the global TB targets were set, progress has been made. Political commitment has increased, additional financial resources mobilised, access to anti-tuberculosis drugs augmented and planning and coordination improved. Constraints still remain, the most important related to human resource capacity. Although the issue is being tackled, many countries still suffer from a lack of trained health care professionals. Finally, new strategies have been developed to face the current challenges such as public-private mix, community TB care, social mobilisation, TB/HIV collaborative interventions and Practical Approach to Lung Health. The current efforts should be maintained and strengthened in order to approach these targets"<sup>12</sup>.*

### Selected further resources and links

**Global tuberculosis control – surveillance, planning, financing, WHO report 2004** The report includes data on case notifications and treatment outcomes from all national TB control programmes that have reported to WHO. Eight consecutive years of data are now available to assess progress towards the 2005 targets for case detection and treatment success. <http://www.who.int/gTB/publications/globrep04/index.html>

**Running out of breath? TB care in the 21<sup>st</sup> century, MSF Campaign for access to essential medicines, Geneva, March 2004** This report provides good insights into the practical challenges faced with implementing DOTS. It speaks of MSF's first-hand experience of implementing DOTS. <http://www.accessmed-msf.org/prod/publications.asp?scentid=12520041420303&contenttype=PARA&>

**Background Paper of the Task Force on Major Diseases and Access to Medicine, Subgroup on Tuberculosis, Millenium Project, Commissioned by the UN Secretary General and supported by the UN Development Group. 2003.** The paper presents main obstacles and challenges, recent advances and recommendations for moving forward in the fight against TB. It further issues the "added value" of linking the Millennium Development Goals and TB. The appendix includes Costs Projections for DOTS implementation. <http://www.unmillenniumproject.org/documents/tf05TBapr18.pdf>

**Report of a "Lessons Learnt" Workshop on the six PROtest Pilot projects in Malawi, South Africa and Zambia, World Health Organization, Geneva, 2004.** This is a good document on the current lessons learnt and recommendations how to implement combined responses to TB/HIV [http://whqlibdoc.who.int/hq/2004/WHO\\_HTM\\_TB\\_2004.336.pdf](http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.336.pdf)

**Guidelines for Implementing TB and HIV Programme Activities, WHO 2003,** This resource provides background information on TB and the HIV epidemic, how to plan and implement collaborative TB and HIV programme activities at district and national level. It further provides "Practical tools for implementation including "prioritized-activity charts" and "Implementing-activity boxes". [http://www.who.int/hiv/pub/prev\\_care/pub31/en/](http://www.who.int/hiv/pub/prev_care/pub31/en/)

**The Stop Tuberculosis Partnership** This Site provides intensive information regarding current initiatives and developments, progress reports, country programmes and different working groups such as the one on TB/HIV. It also hosts the Global Drug Facility Initiative. <http://www.stopTB.org>

---

<sup>12</sup> DOTS expansion: will we reach the 2005 targets? [Stop TB Partnership], [The International Journal of Tuberculosis and Lung Disease](#), January 2004, vol. 8, no. 1, pp. 139-146(8)