



Plan to Stop TB
in 18 High-priority
Countries in the
WHO European Region,
2007–2015



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ABSTRACT

Tuberculosis (TB) remains an important public health problem worldwide and in the WHO European Region. Factors such as the high incidence of TB in many countries in the Region, the high level of multidrug-resistant TB, the appearance of extensive drug-resistant TB, the TB outbreaks in the growing pool of people living with HIV and the large population in prisons, and the increasing mobility of people, make TB a regional emergency and call for effective Region-wide control. The Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 describes the main challenges, opportunities, strategies and interventions to control TB in the Region's 18 high-priority countries: Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, the Republic of Moldova, Romania, the Russian Federation, Tajikistan, Turkey, Turkmenistan, Ukraine and Uzbekistan. The Plan aims to reduce illness and death caused by TB, while contributing to poverty reduction, by:

1. achieving, sustaining and exceeding the targets of 70% detection of sputum-smear positive cases and 85% treatment success rate of these cases under DOTS; and
2. ensuring universal access to high-quality care for all people with TB, especially the poor and marginalized.

The Plan is intended to be a guide for the high-priority countries to use in developing their own long- and short-term national plans on TB, and a reference for the WHO Regional Office for Europe and all other partners involved in fighting TB.

Keywords

TUBERCULOSIS, PULMONARY – prevention and control – drug therapy – economics
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Abbreviations

ACSM	advocacy, communication and social mobilization
ART	antiretroviral treatment
CAR	central Asian republics
DOT	directly observed treatment
DOTS	first component and pillar of the Stop TB Strategy recommended to control tuberculosis
DRS	drug resistance surveillance or survey
ECDC	European Centre for Disease Prevention and Control
eastern Europe	18 high-priority countries for TB control in WHO European Region: Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Republic of Moldova, Romania, Russian Federation, Tajikistan, Turkey, Turkmenistan, Ukraine and Uzbekistan
EEA	European Economic Area
EFTA	European Free Trade Association
ENP	European Neighbourhood Policy
EU	European Union
GDF	Global TB Drug Facility
GLC	Green Light Committee
HAART	highly active antiretroviral therapy
IDU	injecting drug user
ISTC	International Standards for Tuberculosis Care
LSTF	European Laboratory Strengthening Task Force
MDG	Millennium Development Goal
MDR-TB	multidrug-resistant tuberculosis (resistant to isoniazid and rifampicin)
NGO	nongovernmental organization
NTP	national tuberculosis control programme (or equivalent)
PAL	Practical Approach to Lung Health
PHC	primary health care
PLWH	people living with HIV
PPM	public–private or public–public mix
TB	tuberculosis
TB/HIV	HIV-related TB
XDR-TB	extensively drug-resistant TB (resistant to isoniazid and rifampicin and to any one of the fluoroquinolone drugs and to at least one of the three injectable second-line drugs (amikacin, capreomycin or kanamycin).
XXDR-TB	extremely drug-resistant TB (resistant to all first- and second-line anti-TB drugs available)

Foreword

Twenty years ago, tuberculosis (TB) was expected soon to disappear. Today, however, the WHO European Region has the highest levels of drug-resistant TB in the world and is under the threat of an HIV epidemic likely to further increase the number of new TB cases. Poor countries are heavily affected, but the transmission of TB is also high among weaker populations in rich countries. Tackling TB is both feasible and complex, as it requires health systems and health professionals to be able to apply appropriate treatment and respect worldwide guidance to prevent the development of resistance against medication. It requires commitment based on the core value of solidarity between countries and between people. This was achieved with the adoption of the Berlin Declaration on Tuberculosis on 22 October 2007.

The Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 is an effort to translate commitment into consensus and future coordination for concrete action. It is the continuation of the DOTS Expansion Plan to Stop TB in the WHO European Region 2002–2006 and the response to the Global Plan to Stop TB, 2006–2015, which raises concerns that eastern Europe may not achieve the Millennium Development Goal target for tuberculosis by 2015. It is the result of joint effort by Member States and the main international partners to work together against TB where it strikes hardest in the Region. Thus, it is not the WHO Regional Office for Europe's plan; it is everybody's plan.

Marc Danzon
WHO Regional Director for Europe

Preface

Often words such as *crisis*, *emergency*, *disaster* are used inappropriately and overstate a particular problem, creating a false impression. The Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015, however, clearly shows that Europe is in a crisis in the context of tuberculosis (and HIV). Europe faces a real emergency; a failure to respond effectively will be a disaster for the people and countries experiencing the highest burden of the disease.

On average, 50 new tuberculosis (TB) cases and 8 related deaths occur every hour in the WHO European Region, even though these had significantly declined in many countries prior to the 1990s. The socioeconomic problems of the 1990s in eastern Europe and central Asia and the subsequent deterioration of public health infrastructures created an environment in which TB has re-emerged as a major public health threat. Add drug-resistant and HIV-related TB into the equation and the need for this plan requires little justification.

This publication is more than just a plan to stop TB. It provides an articulate analysis of the current situation and trends, in particular highlighting the critical links between TB and HIV, injecting drug use, migration, migrant communities and vulnerable, socially disadvantaged populations, including prisoners. In addition, the Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 acknowledges the central role of affected communities and the Patients' Charter for TB Care, an approach that has often been lacking in the response to TB. Finally, the Plan suggests concrete actions that will lead, if implemented, to a substantial reduction in disease burden.

By strategically distributing the 18 high-priority countries into five subgroups for action, developing a set of qualitative indicators and recommending future interventions, the Plan offers the most comprehensive road map for halving TB prevalence and mortality (compared with 1990 levels) in eastern Europe by 2015.

I congratulate the WHO Regional Office for Europe for producing this plan and call upon all stakeholders to adopt and implement the recommendations and actions. The Plan is here; now political commitment, financial investment and community involvement are needed to implement it and stop TB again. Now is the time to go to work.

Mick Matthews
Chair, Stop TB Partnership for Europe

Executive summary

Tuberculosis (TB) remains an important public health problem in the WHO European Region. On average, 50 new cases and 8 TB-related deaths occur every hour in the Region, but TB incidence rates vary from as little as 5 new cases per 100 000 population per year in Norway to 198 in Tajikistan. The socioeconomic crisis and the deterioration of medical infrastructure in the countries of central and eastern Europe during the 1990s resulted in a resurgence of TB, the appearance of drug-resistant forms of the disease and an increasing pool of people at high risk, such as people living with HIV, in prisons and living in pockets of deprivation in many major cities. People's movement from high-prevalence to low-prevalence countries often impairs the efforts to control and eliminate TB in western European countries.

The Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 describes the main challenges, opportunities, strategies and interventions to control TB in the Region and focuses on 18 countries in the epidemiological subregion of eastern Europe: Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, the Republic of Moldova, Romania, the Russian Federation, Tajikistan, Turkey, Turkmenistan, Ukraine and Uzbekistan. These countries are considered a priority for implementing the updated Stop TB Strategy and fulfilling the commitments under the Global Plan to Stop TB, 2006–2015 and the Global MDR-TB and XDR-TB Response Plan 2007–2008.

The Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 analyses the latest progress made in TB control in the WHO European Region as a whole and in eastern Europe:

- a 48% detection rate and 74% treatment success among the new sputum smear-positive pulmonary cases (only 38% and 72%, respectively, in eastern Europe);
- the mechanisms for training and coordination established at the level of the Region;
- increasing access to international support, such as the Global Fund to fight AIDS, Tuberculosis and Malaria, the Global TB Drug Facility and the Green Light Committee; and
- the initiatives specifically addressing TB among people living with HIV and in prisons.

The Plan outlines the main challenges for controlling TB in the Region: limited coverage and equitable access of DOTS (the first component and pillar of the Stop TB Strategy recommended to control TB) services, high levels of drug resistance, growth of the HIV epidemic, weak public health infrastructure, poor TB control in prisons and limited awareness of TB. It also identifies the main opportunities: the commitment of the WHO Regional Committee for Europe to TB control, the availability of an internationally recommended strategy and a global plan to stop TB, the health system reforms made by many countries and the potential for making TB control more effective and sustainable, the Stop TB partnerships established globally and in the European Region to foster international networking, and the increasing availability of global resources.

The Plan aims to reduce illness and death caused by TB in the 18 high-priority countries of eastern Europe, to contribute to the achievement of Target 8 of Millennium Development Goal 6: "to have halted and begun to reverse incidence by 2015". Its specific objectives are:

- to expand access to high-quality diagnosis and treatment for all people with all types of TB, no matter their age, sex and socioeconomic status;
- to reduce the suffering and socioeconomic burden associated with TB;
- to protect poor and vulnerable populations from TB, including drug-resistant and HIV-related TB; and
- to support the timely and effective introduction of new tools for diagnosis, treatment and prevention.

The Plan has six targets for the year 2010:

1. to reach 100% DOTS population coverage in all eastern European countries;
2. to increase the case detection rate of new infectious (sputum smear-positive) TB cases to at least 73%;
3. to achieve treatment success in at least 85% of detected new infectious TB cases;
4. to provide treatment according to internationally recommended guidelines for 100% of multidrug-resistant TB cases (new and previously treated);
5. to reduce the prevalence of TB (all forms) to 188 cases per 100 000 population; and
6. to decrease the mortality rate of TB (all forms) to 16 deaths per 100 000 population.

In addition, annual milestones are proposed to monitor progress until 2010. While based on an optimistic but realistic scenario, the Plan also expects that new diagnostic tests will be available by 2008 to detect TB cases at referral laboratories and that these could be used at the peripheral level by 2010. Similarly, new anti-TB drugs could be introduced in the Region by 2010. Consequently, halving TB prevalence and mortality (from 1990 levels) in eastern Europe would be achievable by 2015.

The Plan continues by analysing the progress in implementing the Stop TB Strategy in countries through a set of qualitative indicators and by indicating future priority interventions. The 18 countries are strategically distributed into five subgroups for action:

1. eastern European countries in the European Union (EU) or candidates for membership (Bulgaria, Estonia, Latvia, Lithuania, Romania and Turkey);
2. Belarus, the Republic of Moldova and Ukraine;
3. countries of the southern Caucasus (Armenia, Azerbaijan and Georgia);
4. countries of central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan); and
5. the Russian Federation.

In the European Region as a whole, the Plan refers to the EU for TB control and elimination in its Member States and briefly considers in an addendum other European countries not part of the EU.

The total cost of implementing the Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 is estimated at US\$ 14.8 billion, of which 61% is for addressing drug-resistant TB, 31% for expansion of DOTS services, 1% for advocacy, communication and social mobilization and 2% for TB/HIV. The costs for technical cooperation are estimated at 5% of the total. The total available funding is estimated to be less than half of this (US\$ 6.7 billion), of which 91% comes from domestic sources, 3% from the Global Fund to Fight AIDS, Tuberculosis and Malaria and 6% from other donors. The funding gap is estimated to be US\$ 8 billion over nine years, or 55% of the total costs. A relatively small increase in domestic funding – from 0.1% to 0.3% of total government annual expenditure per capita for health – would fill most of this gap, providing that countries had the necessary political commitment. Nevertheless, increased domestic funding would most likely not cover the cost of the technical cooperation required; other resources would be needed for this task.

Introduction

Tuberculosis (TB) is often regarded as a disease of the past; however, in spite of considerable improvements in living standards and rapid socioeconomic development, TB remains an important public health problem worldwide and in countries in the WHO European Region. Better social conditions and improvements in case detection and treatment over the last 50 years were accompanied by a decline in the rates of TB from ten- to a hundred-fold in many European countries. The socioeconomic crisis and deterioration of medical infrastructure in the countries of eastern and central Europe during the 1990s, however, resulted in a resurgence of TB, with 130 000 more new cases reported to WHO from the Region in 1999 than in 1990.

On average, 50 new cases and 8 TB-related deaths are estimated to occur every hour in the Region. The situation in many countries of the former Soviet Union¹ is particularly alarming, because of the high rates of resistance to anti-TB drugs and the escalating rates of HIV infection. Several factors – such as the high incidence of TB in many countries in the European Region, the high level of multidrug-resistant TB (MDR-TB), the appearance of extensive drug-resistant TB (XDR-TB), the potential for TB outbreaks in the growing pool of people living with HIV (PLWH) and the large population in prisons, and the increasing mobility of people – make TB a regional emergency and call for effective Region-wide control.

The Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 describes the main challenges, opportunities, strategies and interventions to control TB in the European Region and focuses on 18 high-priority countries. They comprise the epidemiological subregion of eastern Europe:² Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, the Republic of Moldova, Romania, the Russian Federation, Tajikistan, Turkey, Turkmenistan, Ukraine and Uzbekistan. The Plan is the logical continuation of the DOTS Expansion Plan to Stop TB in the WHO European Region, 2002–2006 (1) and the Global Plan to Stop TB, 2006–2015 (2), whose global scenario describes eastern Europe with special attention. It includes updates based on the Global MDR-TB and XDR-TB Response Plan 2007–2008 (3).

This Plan considers the main activities to be undertaken during the years from 2007 to 2015 based on the current available tools for TB control. As a result of global efforts, new vaccines, diagnostic methods and treatment options might become available before 2015, speeding up countries' progress towards achieving the TB control targets set by the World Health Assembly (4) and the Stop TB Partnership (5) under Target 8 of Millennium Development Goal (MDG) 6: to "have halted by 2015 and begun to reverse the incidence" of TB (6).

At present, the WHO European Region comprises 53 Member States, 27 of which also belong to the European Union (EU).³ The European Centre for Disease Prevention and Control (ECDC) is preparing an additional plan to address TB to guide the Member States of the EU, the European Economic Area (EEA) and the European Free Trade Association (EFTA).⁴ Eight

¹ These countries are: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, the Republic of Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

² To make clearer the difference in trends in the six WHO regions (Africa, the Americas, the Eastern Mediterranean, Europe, South-East Asia and the Western Pacific), WHO groups countries under eight TB epidemiological subregions: Africa: high HIV prevalence; Africa: low HIV prevalence; Americas: Latin American countries; eastern Europe; the Eastern Mediterranean; established market economies and central Europe; South-East Asia; and the Western Pacific.

³ Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

⁴ Iceland, Liechtenstein and Norway.

countries in the European Region are geographical neighbours to the EU and covered by the European Neighbourhood Policy (ENP) (7), offering closer political links and some economic integration with the EU without membership.

Eleven Member States in the European Region are not part of the EU and are considered as having lower priority to stop TB: Albania, Andorra, Bosnia and Herzegovina, Croatia, Israel, Monaco, Montenegro, San Marino, Serbia, Switzerland and The former Yugoslav Republic of Macedonia. Some of these may consider adopting a strategy to eliminate TB while others have to strengthen their TB control efforts through the Stop TB Strategy. For them, an Addendum is attached to this Plan.

The Plan represents a joint effort by all concerned countries and the main international partners to analyse the progress, challenges and the actions needed to stop TB in eastern Europe. The data reported were taken from the most up-to-date published references; the qualitative analysis done for each country was discussed and agreed with the country authorities and partners. All were requested to provide further comments on the drafts of the Plan, to overcome the limitations of the analysis through consensus and to ensure the ownership of the Plan by all stakeholders.

The Plan is intended to be a guide for eastern European countries to use in developing their own long- and short-term national plans on TB, and a reference for the WHO Regional Office for Europe and all other partners involved in fighting TB in the Region.

Epidemiology of TB in the European Region

According to the latest WHO estimates, there were 445 000 new cases and almost 66 000 deaths associated with TB in the European Region alone in 2005 (8), 75% of them located in eastern Europe. The estimated annual incidence rate of TB in the European Region is 50 cases per 100 000 population, with a mortality rate of 7 per 100 000 population.

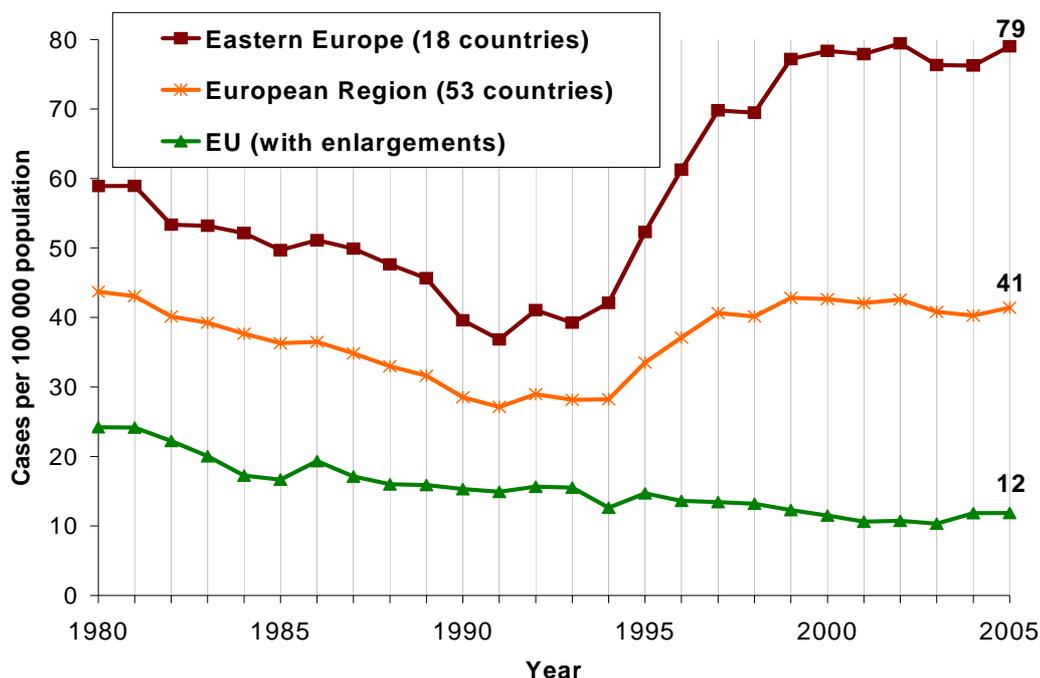
The epidemiology of TB in the European Region varies enormously between countries. TB incidence ranges from 5 new cases per 100 000 population per year in Norway to 198 in Tajikistan. Overall, TB incidence increases as one moves eastward. The socioeconomic crisis and the deterioration of medical infrastructure in the countries of the former Soviet Union during the 1990s contributed to the dramatic increase in TB notification rates and the persistently low treatment success rates, with increasing levels of MDR-TB and HIV-related TB (TB/HIV).

In 2005, the average TB notification rate for all the European Region was 41 per 100 000 population, with a trend basically reflecting the epidemiology in eastern Europe and the Russian Federation. The Russian Federation ranks twelfth among the 22 high-burden countries, which account for 80% of all new TB cases in the world.

In spite of the recent introduction of high-quality TB diagnostic and treatment services with the expansion of DOTS (the pillar of the Stop TB Strategy recommended internationally to control TB),⁵ the national TB control programmes (NTP) in eastern European countries continue to perform poorly owing to factors such as lack of political will, socioeconomic deterioration, poorly developed health systems with poorly trained and unmotivated staff, insufficient integration of TB services, emergence of drug-resistant TB, increasing levels of HIV infection, large penitentiary systems with poor TB and other services, incomplete engagement of all health care providers and poor involvement of civil society. In 2005, the average TB notification rate among the 18 high-priority countries of eastern Europe was 79 per 100 000 population, with a subsequent levelling off (Fig. 1).

⁵ The DOTS strategy was launched in 1994 as the internationally recommended strategy to control TB. Its key components are: government commitment; case detection by predominantly passive case-finding; standardized short-course chemotherapy to at least all confirmed sputum smear-positive cases, provided under proper case management conditions; a system of regular drug-supply; and a monitoring system for programme supervision and evaluation. DOTS has been part of the Stop TB Strategy since 2006.

Fig. 1. TB notification rates in the European Region, 1980–2005



Source: data from *Global tuberculosis control: surveillance, planning, financing. WHO report 2007 (8)*.

Improvements in living standards, socioeconomic development and the implementation of high-quality TB control programmes, along with increased coverage of health systems, contributed to a declining trend in TB notification rates across many western and central European countries. In the EU, TB has had a decreasing trend since the early 1980s, with some fluctuations after the admission of new members. Small increases in case notification were seen in 1986, when Spain and Portugal joined, and in 2004, after the inclusion of 10 new central and eastern European countries. In 2005, TB incidence was estimated at an average of 13 per 100 000 population in the 15 countries in the EU before May 2004, 25 per 100 000 population in the 10 countries that joined in 2004, 51 per 100 000 in Bulgaria, Croatia, Romania, The former Yugoslav Republic of Macedonia and Turkey, and up to 103 per 100 000 population in the countries bordering the EU.

The economic and geographical growth of the EU has favoured an increase of migrant workers from countries with high TB prevalence that stalled the decline in TB incidence and in some cases resulted in an increasing trend. TB is a disease that respects no borders and needs to be tackled jointly by all countries. Further, TB remains a leading infectious cause of death among young productive adults in western Europe, particularly in high-risk populations such as marginalized and socially disadvantaged groups living in pockets of deprivation in many major cities, illegal immigrants and Roma and other travelling groups.

Progress in TB control in the European Region

TB control has improved in the European Region. DOTS increased in population coverage⁶ from 17% in 2000 to 60% in 2005, and is currently used in 43 of the 53 European Member States (Table 1). All countries in eastern Europe have adopted DOTS since 2003, but DOTS population coverage reached only 46% in 2005: among the lowest levels in the world.

⁶ The percentage of a country's population living in areas where health services have adopted DOTS.

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Table 1. DOTS population coverage in the WHO European Region, 2005

Population coverage (%)	Countries
0	Finland, France, Greece, Ireland, Monaco, Montenegro, San Marino, Spain, Switzerland, United Kingdom
≤ 50	Albania, Croatia, Turkey, Turkmenistan, Ukraine
51–90	Italy, Russian Federation, Tajikistan
91–100	Andorra, Armenia , Austria, Azerbaijan, Belarus , Belgium, Bosnia and Herzegovina, Bulgaria , Cyprus, Czech Republic, Denmark, Estonia, Georgia , Germany, Hungary, Iceland, Israel, Kazakhstan, Kyrgyzstan, Latvia, Lithuania , Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania , Serbia, Slovakia, Slovenia, Sweden, The former Yugoslav Republic of Macedonia, Uzbekistan

Note. Eastern European countries are given in **bold**.

Source: data from *Global tuberculosis control: surveillance, planning, financing. WHO report 2007 (8)*.

Although the case detection rate⁷ under DOTS increased to 35% in 2005 and the treatment success rate increased to 74% in the 2004 cohort, the European Region still falls short of the World Health Assembly global TB control targets for 2005 (9): 70% case detection and 85% treatment success (Table 2). In eastern Europe, the rapid increase in TB notification rates seen after the dissolution of the Soviet Union has been halted. The detection rate of new sputum smear-positive pulmonary TB cases under DOTS increased to 38% in 2005 and treatment success to 72% in the 2004 patient cohort.

Table 2. Rates of DOTS treatment success and case detection in the WHO European Region, 2004–2005

Treatment success (%)	Case detection (%)			
	< 30	30–59	60–69	≥ 70
≥ 85	Turkey	Malta, Norway, Slovakia, Turkmenistan	Kyrgyzstan	Andorra, Bosnia and Herzegovina, Denmark, Portugal, Serbia, Slovenia
75–84	Albania, Tajikistan	Israel, Netherlands, Uzbekistan	The former Yugoslav Republic of Macedonia, Poland	Bulgaria, Romania
< 75	Ukraine	Austria, Azerbaijan, Belarus , Cyprus, Germany, Hungary, Iceland, Sweden, Russian Federation	Armenia , Belgium, Czech Republic, Estonia, Republic of Moldova	Georgia, Kazakhstan, Latvia, Lithuania

Note. Both detection rate and treatment success rate refer to new sputum smear-positive pulmonary cases. Some of the 53 countries in the WHO European Region are not listed because they did not report to WHO on case detection or treatment success. Eastern European countries are given in **bold**.

Source: data from *Global tuberculosis control: surveillance, planning, financing. WHO report 2007 (8)*.

Low TB case detection rates in the European Region result from low DOTS coverage and underuse of sputum microscopy for diagnosis, as clearly shown by the increase in case detection from 35% to 48% when considering cases reported from both DOTS and non-DOTS areas and to 88% when considering all TB cases (in any form of disease) reported from all areas. The low treatment success rates reported in many countries in the Region are due to

⁷ Detection rate of new infectious cases (pulmonary TB sputum-smear positive) under direct microscopy investigation. This is still preferred to a detection rate based on bacteriological investigation (sputum culture) because it is described under the World Health Assembly global TB targets (9).

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high treatment default among socially vulnerable patients, high treatment failure due to MDR-TB and the high mortality among elderly patients with severe comorbidity (particularly in western countries) (Table 3). Eastern Europe has the highest incidence of drug resistance and the lowest rate of treatment success in the world.

Table 3. Rates of treatment default and failure under DOTS in the WHO European Region, 2004

Treatment failure (%)	Treatment default (%)			
	< 1	1–4	5–9	≥ 10
≥ 10			Hungary, Kazakhstan	Republic of Moldova, Russian Federation, Ukraine
5–9		Belarus, Belgium, Kyrgyzstan	Azerbaijan, Tajikistan, Uzbekistan	Armenia, Georgia
1–4	Hungary, Iceland, Sweden	Denmark	Bulgaria, Lithuania, Romania, Turkmenistan	The former Yugoslav Republic of Macedonia
< 1	Bosnia and Herzegovina, Malta	Albania, Germany, Israel, Netherlands, Norway, Portugal, Serbia, Slovakia, Slovenia, Turkey	Austria, Estonia, Latvia, Poland	Cyprus, Czech Republic

Note. Both treatment failure rate and treatment default rate refer to new sputum smear-positive pulmonary cases; figures on both should be carefully interpreted after considering the proportion of cases transferred out or not evaluated, which is significant in some countries. Some of the 53 countries in the Region are not listed because they did not report to WHO on the number of cases either detected or treated successfully. In Estonia and Latvia, failed TB cases are routinely registered for MDR-TB treatment and reported as “under treatment” instead of “treatment failure”. Eastern European countries are given in **bold**.

Source: data from *Global tuberculosis control: surveillance, planning, financing. WHO report 2007 (8)*.

The collaboration between international partners has been strengthened, resulting in increased capacity to provide technical and financial support to countries in the Region. NTP managers in the European Region meet every second year to strengthen coordination, while the Technical Advisory Group on TB to the WHO Regional Office for Europe has met every year since 2004. The Stop TB Partnership was established in 2000 and the Stop TB Partnership for Europe in October 2006 (see p. 12). WHO collaborating centres in Riga (Latvia), Sondalo (Italy), Tartu (Estonia) and Warsaw (Poland) organize annual training courses to expand understanding of DOTS and the Stop TB Strategy and increase skills in programme management. Regional meetings for collaborative training and education are organized every six months. Since 2004, the Regional Office and partners have made major external reviews of NTPs in Armenia, Bosnia and Herzegovina, Kazakhstan, Kyrgyzstan, Romania, the Russian Federation, Turkey and Ukraine.

Donor funding has increased to assist low- and middle-income countries to tackle TB. The Global TB Drug Facility (GDF) helps 13 countries (Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Kyrgyzstan, the Republic of Moldova, Serbia (including the United Nations Administered Province of Kosovo), Tajikistan, The former Yugoslav Republic of Macedonia, Turkmenistan, Ukraine and Uzbekistan) to obtain high-quality first-line anti-TB drugs by providing grants or facilitating procurement at reduced prices. The Global Fund to fight AIDS, Tuberculosis and Malaria supports 18 countries in the European Region. Table 4 shows the situation after the Global Fund’s round 7.

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Table 4. Countries receiving and implementing Global Fund grants for TB control, European Region, 2007

Grant round	Phase I grant implementation or negotiation	Phase II grant implementation
1		Republic of Moldova
2		Kyrgyzstan, Romania
3		Russian Federation, Serbia, Tajikistan
4	Russian Federation, Serbia (United Nations Administered Province of Kosovo)	Georgia, Uzbekistan
5	Albania, Armenia, Azerbaijan , The former Yugoslav Republic of Macedonia	
6	Belarus, Bosnia and Herzegovina, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Montenegro, Republic of Moldova, Romania, Tajikistan	
7	Azerbaijan	

Note. Eastern European countries are given in **bold**.

Source: The Global Fund to Fight AIDS, Tuberculosis and Malaria [web site]. Geneva, Global Fund to Fight AIDS, Tuberculosis and Malaria, 2007 (<http://www.theglobalfund.org/en>, accessed 27 November 2007).

Responding to the European epidemic of MDR-TB, a WHO collaborating centre in Riga (Latvia) has become a regional and global training centre for various aspects of MDR-TB project management and implementation (10). The European Laboratory Strengthening Task Force was established in January 2005 to strengthen the laboratory services so urgently needed to increase case detection and scale up MDR-TB interventions. Under the Task Force, important guidelines were developed for the Region, such as the guidelines for the prevention of tuberculosis in health care facilities in high MDR-TB settings in Europe (11) and recommended standards for modern TB laboratory services in Europe (12). All the eastern European countries, except Turkmenistan, are linked to one of the nine supranational TB reference laboratories serving the European Region.

Sound MDR-TB control based on WHO recommendations has been implemented countrywide in Estonia and Latvia. Through national and Global Fund resources, in collaboration with the Green Light Committee (GLC),⁸ MDR-TB interventions are being supported in Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Lithuania, the Republic of Moldova, Romania, the Russian Federation (13 regions), Ukraine and Uzbekistan. Unfortunately, several bottlenecks in procuring second-line drugs through this mechanism need to be solved.

Addressing the rapid growth of the HIV epidemic and the sharp increase in TB/HIV, WHO published the *Interim policy on collaborative TB/HIV activities* (13), the *European framework to decrease the burden of TB/HIV* (14) and a clinical protocol on management of TB and HIV co-infection (15). The WHO Regional Office for Europe organized regional courses in WHO collaborating centres on TB/HIV programme management (Sondalo, Italy) and HIV surveillance in TB patients (Zagreb, Croatia); organized special training for the first time in 2007 (Kyiv, Ukraine) to guide eastern European countries in operational research on TB/HIV; and consistently promoted internationally recommended collaborative TB/HIV activities in most of the European Region and assisted them in eastern European countries through subregional workshops and pilot projects.

⁸ The GLC was created in 2000 as part of the Stop TB Partnership Working Group on MDR-TB to foster access to and rational use of reduced-price second-line anti-TB drugs.

In many eastern European countries, reforms in penitentiary systems (including decreased population density owing to shorter periods of detention before trial) improved the living conditions in prisons. TB services are improving in the prisons of many countries through the use of increased national and external resources and implementation of better policies. The network of the WHO Health in Prisons Project developed the *Status paper on prisons and tuberculosis (16)* to advise policy-makers.

Challenges for TB control in the European Region

Reversing the TB epidemic in the Region requires greater political and financial commitment from governments. Countries facing a high burden of TB need to increase their expenditure on control interventions and on improving social conditions. Even countries with low TB need to raise awareness of the emergency in the Region and increase their financial contribution to TB control.

Limited coverage of and inequitable access to DOTS services

Although most countries in the European Region have adopted the DOTS strategy, several obstacles still remain to achieving countrywide population coverage, which remains the lowest of all WHO regions. Lack of political and financial commitment is perhaps the most important barrier to DOTS expansion.

In eastern Europe, international support is widespread, but sometimes poorly linked to national long-term strategic action plans. National legislation is often outdated or insufficient to support DOTS implementation. Health workers are often inadequate in number, distribution and skills, and poorly motivated.

The socioeconomic problems of the 1990s resulted in the deterioration of public health infrastructures, including the infrastructure to support laboratory capacity for direct sputum smear microscopy, which forms the basis for international comparisons of TB case detection rates, and for high-quality culture and drug-susceptibility testing, which is essential for the diagnosis and treatment of anti-TB drug resistance and the main bottleneck in scaling up MDR-TB interventions.

The highly centralized, vertical TB control programmes inherited by eastern European countries are difficult to integrate with general health services, because of financing mechanisms based on hospital-bed occupancy rates, poorly developed primary health care (PHC) services and sometimes disagreement by TB specialists. TB patients often remain in hospital throughout their intensive treatment, if not longer, while directly observed treatment (DOT) during outpatient continuation treatment is difficult to organize. Many TB patients are members of socially vulnerable groups – such as homeless people, alcohol and other substance abusers, former prisoners and migrants – whose treatment compliance is usually poor. The use of incentives and enablers for these patients is still limited to pilot areas.

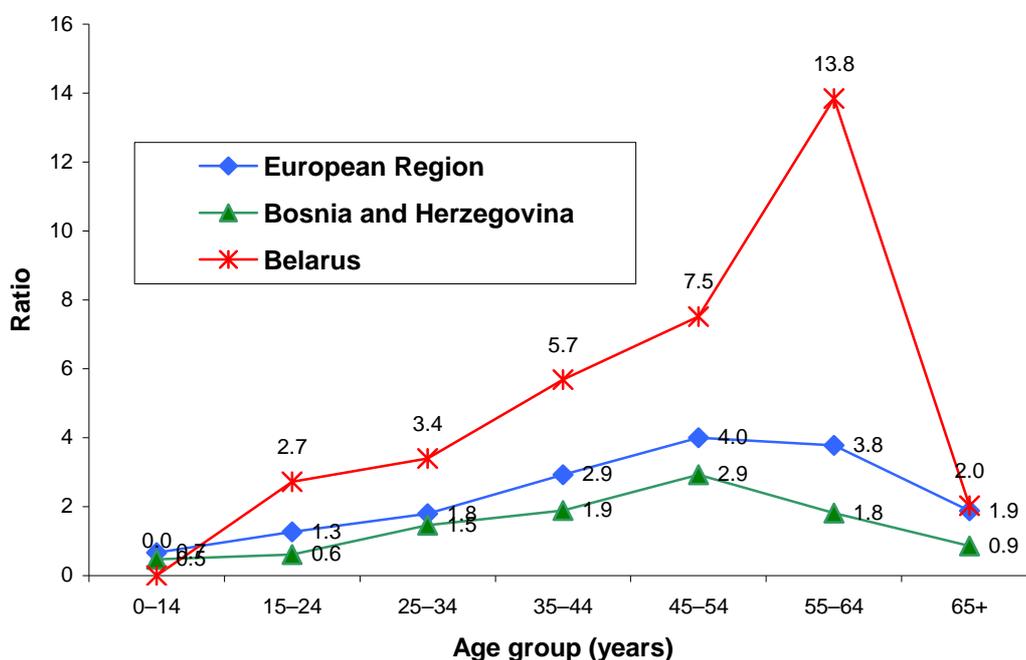
The male:female ratio among new sputum smear-positive pulmonary TB cases registered for treatment and reported to WHO is 2.1:1, or 2.1 men for each woman. Ratios are higher in the groups aged 45–54 and 55–64 years, and vary widely in countries (see Fig. 2). Additional studies are required to explore gender differences in TB case reporting and understand if it is due to male-specific TB risk groups (such as prisoners or injecting drug users) or to differences in access to TB services and in reporting.

In 2005, the NTPs of 53 countries reported more than 400 000 new TB cases to the WHO Regional Office for Europe, of which only 15 000 (4%) were in children under 15 years of age. Nevertheless, TB in children is believed to be underreported. Consistently with the Stop TB Strategy and with more specific guidelines recently issued by WHO (17), all NTPs should make the prevention and management of TB in children part of their routine activities, such as screening and management of household TB contacts, effective diagnosis and treatment of cases according to the internationally recommended guidelines and notification of all cases. NTPs should also deal with children with TB/HIV and drug-resistant TB.

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Many countries produce anti-TB drugs without complying with good manufacturing practice, and need to strengthen their drug management systems. Some eligible countries that may benefit by accessing GDF grants choose not to apply. Monitoring and evaluation of NTPs should be strengthened in many countries. Most western European countries practise most of the DOTS components, but their reporting systems are unable to monitor TB treatment outcomes at the central level; they are consequently considered non-DOTS countries. In many eastern countries, TB recording and reporting are sporadically used to monitor programme performance at regional level, and figures are consolidated and analysed at the national level only once a year and with large delays. Proper standards should be ensured for establishing and maintaining a national electronic database of TB patients, and surveillance systems should be updated to incorporate information on HIV and ant-TB drug resistance.

Fig. 2. Male:female ratio in TB notification by age group; European Region and two countries (Bosnia and Herzegovina and Belarus), 2005



Note. Ratios were obtained by comparing TB case notification rates per 100 000 population for males and females.
Source: data from *Global tuberculosis control: surveillance, planning, financing. WHO report 2007 (8)*.

High levels of drug-resistant TB

The European Region has the lowest rate of treatment success among new TB patients after the WHO African Region; this is mostly due to the very high rates of MDR-TB. While incidence is relatively low in western and central Europe, the estimated rates of MDR-TB in the 18 countries of eastern Europe are the highest in the world (18), averaging 15.8%. About 70 000 cases of MDR-TB are reported in the European Region every year; more than 55 000 of them from eastern Europe (Table 5).

Trends in western Europe are greatly affected by immigration, but in general remain steady and low. This is largely true also of central European countries. In eastern Europe, trends show a gradually decrease in MDR-TB where good TB control is in place, as in the Baltic states. Where TB control remains poor, trends increase. Moreover, extensively drug-resistant TB (XDR-TB, resistant to isoniazid and rifampicin, to any fluoroquinolone and to at least one second-line injectable agent: amikacin, kanamycin and/or capreomycin) has appeared in many countries in the Region but is of greatest concern in eastern Europe, given these countries' incidence of MDR-TB and extensive use of second-line anti-TB drugs. A significant proportion of MDR-TB is believed to be XDR-TB. Anecdotal evidence also suggests that some XDR-TB strains in the Region may, in fact, be extremely drug-resistant TB (XXDR-TB), resistant to all available first-

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and second-line anti-TB drugs (19). Unfortunately, the magnitude and trends of MDR-TB, XDR-TB and HIV coinfection in eastern Europe are not known with certainty, and this information is needed to establish representative surveillance of anti-TB drug resistance, which should be merged with HIV surveillance in TB patients.

Table 5. Estimated incidence and number of cases of MDR-TB in the European Region, 2004

Incidence (%)	Cases				
	< 99	100–499	500–999	1000–9999	≥ 10 000
≥15		Estonia, Latvia, Lithuania	Georgia, Kyrgyzstan	Azerbaijan, Kazakhstan, Republic of Moldova, Uzbekistan	Russian Federation
10–14			Belarus	Tajikistan, Ukraine	
1–9	Albania, Austria, Belgium, Cyprus, Czech Republic, Germany, Greece, Hungary, Ireland, Israel, Norway, Slovakia, Sweden, The former Yugoslav Republic of Macedonia, United Kingdom	Armenia, Bulgaria, France, Italy, Poland, Portugal, Spain, Turkmenistan		Romania, Turkey	
< 1	Andorra, Bosnia and Herzegovina, Croatia, Denmark, Finland, Iceland, Luxembourg, Malta, Monaco, Montenegro, Netherlands, San Marino, Serbia, Slovenia, Switzerland				

Note. Estimated number and rate of MDR-TB cases (shown as the mean with a 95% confidence interval) include both newly and previously treated TB cases. Eastern European countries are given in **bold**.

Source: data from Zignol et al. (18).

MDR-TB requires considerably more expensive and prolonged treatment and extensive patient supervision and support, and has a higher fatality rate. MDR-TB patients are often treated on an individual basis, according to the local availability and affordability of drugs (often depending on the patient's ability to purchase them), with a high risk of inadequate treatment regimens that have ultimately amplify drug resistance. The quality of these drugs is often uncertified.

MDR-TB patients in the European Region often belong to socially vulnerable groups. MDR-TB among prisoners, particularly in countries of the former Soviet Union, also constitutes a considerable problem. In addition, subgroups in the population are at risk of both MDR-TB and HIV infection, such as prisoners and injecting drug users (IDUs), which represent the largest proportion of PLWH. The HIV epidemic in eastern Europe is growing at the highest rates in the world.

Growth of the HIV epidemic

TB is a leading cause of death in PLWH, and HIV prevalence has risen steeply in the European Region, particularly in eastern Europe. In 2005, 4.6% of all reported new TB cases were estimated to be associated with HIV coinfection (8). Morbidity and mortality from TB/HIV are expected to accelerate significantly.

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An estimated 50–90% of recently diagnosed HIV infections in eastern Europe are associated with IDUs. The numbers of IDUs in many of these countries are high and growing, particularly among people under 25 years old, fuelled by the deterioration in socioeconomic conditions, unemployment, poverty and the globalization of drug trafficking. Sharing needles and engaging in sex work to support drug habits put IDUs at increased risk of HIV infection. While managing drug-susceptible TB in this population is particularly difficult, the impact of an MDR-TB/HIV that has high mortality and is difficult to control cannot be understated and requires urgent attention.

The lack of coordination between TB and HIV/AIDS control programmes and the limited implementation of collaborative interventions are likely to result in a large epidemic of TB/HIV in eastern European countries. In addition, the poor infection control measures in prisons and the high levels of TB and MDR-TB, combined with a rapidly increasing HIV epidemic, could have a significant impact on an already severe MDR-TB situation. The countries of priority for establishing collaborative interventions for TB/HIV are those where the HIV (20) and TB epidemics overlap most (Table 6).

Table 6. Estimated prevalence of TB and HIV in the European Region, 2005

HIV prevalence (%)	TB prevalence (per 100 000 population)				
	< 10	10–34	35–84	85–135	≥ 135
≥ 1.0			Estonia	Ukraine	Republic of Moldova, Russian Federation
0.5–0.9	Italy	Spain	Latvia		
0.1–0.4	Austria, Denmark, Finland, Germany, Iceland, Luxembourg, Malta, Netherlands, Norway, Sweden, Switzerland	Belgium, Czech Republic, France, Greece, Hungary, Ireland, Poland, Portugal, United Kingdom	Armenia, Belarus, Lithuania	Azerbaijan, Georgia, Kyrgyzstan	Kazakhstan, Tajikistan, Uzbekistan
< 0.1		Slovakia, Slovenia, The former Yugoslav Republic of Macedonia	Bosnia and Herzegovina, Bulgaria , Croatia, Serbia	Turkmenistan	Romania
No estimate	Cyprus, Israel, Monaco, San Marino	Albania, Andorra	Montenegro, Turkey		

Note. HIV prevalence estimated in the population aged 15–49 years and considered in its mean within the “plausibility bounds” given by the Joint United Nations Programme on HIV/AIDS (UNAIDS). Eastern European countries are given in **bold**.

Source: data from *Global tuberculosis control: surveillance, planning, financing. WHO report 2007 (8)* and *Report on the global AIDS epidemic (20)*.

Weak public health infrastructure

Strengthening health systems for effective TB control is one of the main priorities in eastern Europe. The dissolution of the Soviet Union brought economic instability with devastating effects on already underfunded and outdated health systems. Functioning health systems are essential to the implementation of TB control (21). Appropriate health policies are needed to secure financing, human resources and adequate health care management. Health information systems are necessary for the timely recording, reporting and monitoring of programme performance. A laboratory infrastructure is essential to secure TB diagnosis. A countrywide PHC network is essential to improve people’s access to early diagnosis and treatment follow-up.

In addition, many health care providers in the public and rising private sector do not collaborate with TB control programmes or follow international standards for TB care. This leads to

overdiagnosis, missed or delayed diagnosis, poor treatment results, drug resistance and wasted resources, including patients' resources when they have to make out-of-pocket payments. Undergraduate and postgraduate training is rarely linked to national public health policies to control TB.

TB in prisons

Eastern European countries have the highest reported prison population rates in the world, and TB services in prisons are often poor and poorly integrated with civilian services. Prison inmates have consistently higher risks of becoming ill and dying from TB than the general population, owing to poor conditions in prisons, such as overcrowding, inadequate ventilation, malnutrition, poor hygiene and poor health care. In addition, prisoners often come from communities at increased risk of TB or HIV infection, such as IDUs.

Prison populations represent an important breeding ground for TB and especially MDR-TB; the spread of TB to other prisoners, staff and the community at large must be considered. Based on country reports to the Regional Office in 2004, TB cases in prisons represent 10% of all TB cases reported in eastern Europe but only 2% in the rest of the Region.

Limited awareness of TB

The lack of strategies for advocacy, communication and social mobilization (ACSM) results in limited awareness of TB in governments, health care professionals and civil society. TB is often considered a disease of the past, delaying both presentation to health services and diagnosis. TB in eastern Europe is more prevalent in socially vulnerable groups, such as homeless people, unemployed people, migrants and itinerant groups, alcohol or other substance abusers, and prisoners and ex-prisoners. The stigma associated with TB continues to be present among the public and health professionals, and constitutes a barrier to early diagnosis and the completion of treatment.

The public's lack of knowledge about what types of TB services are and should be available often contributes to ineffective and unresponsive services, and increases the social costs of TB as both disease and economic burden. Public health efforts to control TB will have only limited impact without involving communities and communicating their rights to receive proper care. Limited awareness in high-income countries with low TB incidence is a barrier to raising donor contributions to control activities in countries with high or intermediate incidence.

Opportunities for TB control in the European Region

The MDGs provide a framework and an opportunity for advocacy and international cooperation to address inequalities and tackle socioeconomic disparities, including improving the health of the poor. Target 8 of MDG 6 includes: to "have halted by 2015 and begun to reverse the incidence" of TB (6).

The report of the Commission on Macroeconomics and Health issued in 2001 (22) outlines the rationale for countries to increase funding for health, including TB control, to fight poverty.

In response to the alarming epidemiological situation of TB in the European Region, the Regional Office launched the DOTS Expansion Plan to Stop TB in the WHO European Region 2002–2006 (1) in 2002. It provided guidance on mobilizing human and financial resources to ensure adequate TB control through implementation of DOTS in all countries in the Region. Also in 2002, the WHO Regional Committee for Europe declared TB a Region-wide emergency and called for a scaled-up response (23).

In February 2005, the WHO Regional Director for Europe wrote a letter calling on all Member States to ensure that TB had the highest priority on the health and development agenda and to increase resources for control. Both western and eastern European countries needed to recognize their roles in the fight. TB could be overcome only if all countries contributed in making TB control a political priority and ensuring adequate technical and financial support.

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The Stop TB Strategy (24), published in 2006, builds on the achievements of DOTS and outlines the technical approaches for NTPs to achieve and sustain the levels of TB case detection and cure (70% and 85%, respectively) required to reduce TB incidence and halve TB prevalence and deaths by 2015.

The Global Plan to Stop TB 2006–2015 (2), launched in 2006, follows the strategic directions set up in the Stop TB Strategy and outlines key activities to reduce the global burden of TB. Nevertheless, eastern Europe and the African Region are expected to reach the targets later than 2015, owing to the challenges posed by MDR-TB and TB/HIV, respectively.

The health system reforms recently made in many eastern European countries are intended to strengthen health systems, and offer several opportunities to make TB control more effective. In addition, helping to strengthen health systems is an integral part of the Stop TB Strategy (24). A set of “dos and don’ts” and “non-negotiable” functions are being developed for TB programmes in strengthening health systems (25).

The Stop TB Partnership was established in 2000, and comprises a network of international organizations, countries, donors from public and private sectors, governmental and nongovernmental organizations and individuals aiming to eliminate TB as a public health problem. The Stop TB Partnership has more than 600 partners, many of them providing financial and/or technical support for implementation of the Stop TB Strategy in European countries. Most TB control activities in eastern Europe, at both regional and national levels, are implemented with their essential support.

The Stop TB Partnership for Europe (26) was established in October 2006. A sister of the global alliance, it is a European alliance of a growing number of organizations, including countries, donors in the public and private sectors and governmental and nongovernmental organizations. These partners work together to secure and accelerate social and political action to reduce the burden of TB and ultimately to eliminate it as a public health problem in the Region.

Global resources have increased to support TB control in Europe. GDF, the Global Fund and the World Bank have been joined by UNITAID (27), an international drug purchase facility launched in September 2006 and financed through funds raised through a solidarity levy applied to the international air tickets issued by an increasing number of airlines.

1. Vision

Goal

The Plan to Stop TB in 18 High-priority Countries of the WHO European Region, 2007–2015 aims to reduce illness and death caused by TB, while contributing to poverty reduction, by:

- achieving, sustaining and exceeding the targets of 70% detection of sputum-smear positive cases and 85% treatment success rate of these cases under DOTS; and
- ensuring universal access to high-quality care for all people with TB, especially the poor and marginalized.

The goal is in line with the Global Plan to Stop TB 2006–2015 (2), which aims to achieve the Stop TB Partnership and the MDG targets for 2015: halving and begun to reverse the incidence of TB and halving TB prevalence and deaths, compared with 1990 levels,⁹ by ensuring access to high-quality diagnosis and treatment for all.

Objectives

The objectives of the Plan are:

- to expand access to high-quality diagnosis and treatment equally for people with all types of TB, in all age, gender and socioeconomic groups;
- to reduce the suffering and socioeconomic burden associated with TB;
- to protect poor and vulnerable populations from TB, including drug-resistant and TB/HIV; and
- to support the timely and effective introduction of new tools for diagnosis, treatment and prevention of TB

Targets

The targets, which can be achieved by 2010 through the implementation of the Stop TB Strategy in eastern Europe, under an optimistic but realistic scenario, are:

- to reach **100% DOTS population coverage** in all eastern European countries;
- to increase the **case detection rate** of new infectious (sputum smear-positive) TB cases to at least 73%;
- to achieve **treatment success** in at least 85% of detected new infectious TB cases;
- to provide **treatment** according to internationally recommended guidelines to 100% of **MDR-TB cases** (new and previously treated cases);
- to reduce the **prevalence** of TB cases (all forms) to 188 per 100 000 population; and
- to decrease the **mortality rate** of TB cases (all forms) to 16 per 100 000 population.

New diagnostic tests are expected to be available by 2008 for detection of TB cases at referral laboratories, and to be used at peripheral level by 2010. Similarly it is expected that new anti-TB drugs could be introduced in the Region by 2010. Consequently, halving TB prevalence and mortality (compared with 1990 levels) in eastern Europe would be achievable by 2015.

⁹ The 1990 levels of TB prevalence and mortality in the WHO European Region are estimated to have been 55 cases and 6 deaths per 100 000 population, respectively (and 84 cases and 8 deaths per 100 000 in eastern Europe). Because TB prevalence and mortality in eastern Europe increased dramatically during the mid-1990s, halving them by 2015 represents a major challenge.

Milestones

Table 7 lists the milestones in the Plan.

Table 7. Milestones in the Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015

Milestones (%)	Year					
	2005/ Baseline ^a	2007	2008	2009	2010	2015
Population covered by DOTS services	46	63	73	91	100	100
Case detection of new smear-positive TB cases treated according to DOTS	38	53	59	66	73	98
Treatment success in new smear-positive TB cases treated according to DOTS	72 ^b	79	81	83	85	85
Proportion of new culture-positive TB cases with drug susceptibility testing	NA ^c	87	89	90	92	100
Proportion of MDR-TB cases treated according to WHO guidelines	NA	50	65	80	100	100
Proportion of TB patients treated in DOTS programmes tested and counselled for HIV	NA	43	51	68	85	85
Proportion of TB patients taken into care at PHC level	NA	20	40	55	70	95

^a 2005 is the baseline year with the most recent available data.

^b Baseline year is 2004.

^c NA = not available.

2. Strategy

The 18 countries in eastern Europe vary in their socioeconomic and epidemiological conditions and have complex needs. The experience of more than a decade of countries' applying the DOTS strategy for TB control have shown that the strategy's five elements are essential but not sufficient to control TB.

The Stop TB Strategy (24) is the result of the continuous evolution and adaptation of the DOTS strategy to tackle the major barriers to TB control in different country situations. The key strategic directions for TB control in eastern European countries are in line with the six components of the Strategy:

1. pursue high-quality DOTS expansion and enhancement: achieving complete coverage of basic DOTS services, so that all public health units in eastern European countries provide TB care, according to the International Standards of Tuberculosis Care (ISTC) (28) and the Stop TB Strategy, by 2015;
2. address TB/HIV, MDR-TB and other challenges: scaling up collaborative activities on TB/HIV, interventions for MDR-TB, successful pilot-tests using incentives and enablers and other relevant approaches, to give all TB services a pro-poor and equity-based approach;
3. contribute to health system strengthening: NTPs' strengthening their governance functions (including regulation, financing, monitoring, evaluation and surveillance), and establishing collaborative links with other health programmes and general services to strengthen health systems and public health infrastructure;
4. engage all care providers: NTPs' involving all relevant care providers, including the public and private sectors, academe and nongovernmental organizations (NGOs) in providing effective TB services and applying the ISTC;
5. empower people with TB and communities: developing or scaling up community initiatives, creating demand through context-specific ACSM activities, including the promotion of the right to receive proper care (29), and developing mechanisms to involve patients and communities productively in relevant aspects of TB control; and
6. enable and promote research: working with scientific and academic institutions, governments and industry to develop and promote research to maximize the benefit of existing tools and to develop new drugs, diagnostics and vaccines.

3. Interventions

The Strategy is applied in detail below, with descriptions of the main interventions in the 18 eastern European countries, distributed into five subgroups for action, and in the Region as a whole:

- eastern European countries belonging to or candidates for membership in the EU: Bulgaria, Estonia, Latvia, Lithuania, Romania and Turkey;
- Belarus, the Republic of Moldova and Ukraine;
- the countries of the South Caucasus: Armenia, Azerbaijan and Georgia;
- the countries of central Asia: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan;
- the Russian Federation; and
- the European Region.

The interventions given with bullet points are to be carried out mostly by countries but also with partners, including WHO. The Addendum covers 11 other countries in the Region that are not part of the EU or EEA/EFTA. Annex 1 defines the indicators used in the tables in this chapter.

Eastern European countries belonging to or candidates for membership in the EU

Five countries in eastern Europe have joined the EU: Estonia, Latvia and Lithuania in May 2004, and Bulgaria and Romania in January 2007. Turkey entered accession negotiations with the EU in October 2005. Consequent to their formal links with the EU, these countries have seen or expected to see in the near future accelerated changes in their social and economic structures, including in their health care systems. These countries are expected to decrease their high TB burden sooner than other eastern European countries, although all are working through the effective implementation of the Stop TB Strategy.

Activities to pursue high-quality DOTS expansion and enhancement

Bulgaria, Estonia, Latvia, Lithuania and Romania have already reached DOTS countrywide coverage. Turkey had only 3% coverage in 2006, but expanded DOTS countrywide in 2007. Ensuring the quality of implementation after such rapid expansion is a priority, considering that Turkey has the Region's fifth highest absolute number of new TB cases per year.

The quality of DOTS implementation varies between countries. It should be further improved by taking account of the characteristics of each country's health system; all are being reformed and moving towards delivering services through health insurance schemes and family medicine. Table 8 gives an overview of the countries' policies for TB control.

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Table 8. Overview of TB control policies in the eastern European countries belonging to or candidates for membership in the EU, 2006

Country	DOTS population coverage (%)	TB national manual	External quality assurance for smear microscopy	Standard treatment regimens	DOT	Regular drug supply	Treatment outcome monitored
Bulgaria	100	–	–	++	++	++	++
Estonia	100	++	++	++	++	++	++
Latvia	100	++	++	++	++	++	++
Lithuania	100	++	++	++	++	++	++
Romania	100	++	++	++	++	++	++
Turkey	3	++	–	++	++	++	++

Note. ++ = yes/all; + = some/partially; – = no/none.

- Develop medium-term national TB control plans with budgets in all countries.
- Use the current Global Fund grants in Bulgaria and Romania to strengthen the delivery of TB services and ensure their sustainability in the national health systems.
- Establish and further strengthen the national networks of laboratory services for direct microscopy, bacteriological culture and drug susceptibility testing in Bulgaria and Turkey. Ensure external quality assurance through collaboration with a supranational TB reference laboratory.
- Ensure supervision of TB treatment and patient support through a proper balance of PHC and other levels of health care.
- Promote quality among national manufacturers of first- and second-line anti-TB drugs through the adoption of WHO-recommended good manufacturing practice.
- Strengthen TB recording and reporting in the national surveillance system, and use TB data at the national and subnational levels for quarterly monitoring of NTP services.
- Validate the quality of national TB surveillance and revise the WHO estimates on TB incidence, prevalence and mortality based on it.
- Mainstream the prevention and management of TB in children as part of routine NTP activities in all countries.

Activities to address MDR-TB, TB/HIV and other challenges

The low treatment success rate reported in eastern Europe is mainly related to high treatment failure due to MDR-TB. MDR-TB interventions should become routine NTP policy and practice. A strong laboratory with the capacity to perform high-quality bacteriological culture and drug susceptibility testing, and an uninterrupted supply of second-line anti-TB drugs are essential prerequisites. Poorly treated MDR-TB leads to XDR-TB and XXDR-TB, which have already been reported in the Baltic states.

HIV has spread rapidly in eastern Europe since the late 1990s, particularly among IDUs, who represent the large majority of PLWH. XDR-TB in HIV-positive cases is reported especially in the Baltic states.

A large proportion of TB patients belongs to vulnerable and socially disadvantaged groups, including prisoners and ex-prisoners and the Roma population, especially in Bulgaria and Romania. Table 9 gives an overview of TB-related challenges facing the countries.

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Table 9. Overview of MDR-TB, TB/HIV and other challenges in the eastern European countries belonging to or candidates for membership in the EU, 2006

Country	MDR-TB		TB/HIV		Other challenges	
	Policy in line with WHO	Interventions by NTP	Policy for HIV counselling and testing	HAART ^a coverage	Prisons	Main other risk groups for TB
Bulgaria	+	–	–	++	+	Roma
Estonia	++	++	++	+	++	IDUs
Latvia	++	++	++	++	++	IDUs
Lithuania	++	+	+	++	++	
Romania	++	++	++	++	++	Roma
Turkey	–	+	+	+	+	

^a HAART = highly active antiretroviral therapy.

Note. ++ = yes/all/> 75% HAART coverage; + = some/partially; – = no/none

- Strengthen capacity for TB bacteriological culture and drug susceptibility testing, particularly in Bulgaria and Turkey.
- Adopt the WHO guidelines on the management of drug-resistant TB (10) in Bulgaria and Turkey.
- Scale up MDR-TB interventions in Bulgaria, Lithuania, Romania and Turkey.
- Ensure adequate provision and utilization of high-quality second-line drugs following GLC recommendations.
- Strengthen collaboration between the TB control and HIV/AIDS control programmes in all countries.
- Promote HIV surveillance among TB patients, particularly in Bulgaria.
- Promote activities targeting high-risk groups, including prisoners and IDUs in all countries. Address TB control in the Roma population in Bulgaria and Romania.
- Link prison health services (and other relevant services outside the health ministry) with NTPs.
- Promote social support for TB patients.

Activities to help strengthen health systems

The challenge is for all these countries actively to participate in efforts to improve system-wide policy and health systems' human resources, financing, management, service delivery and information systems. The enlargement of the EU represents an opportunity and a challenge for NTPs to collaborate to strengthen health systems, and to pilot-test and document innovative approaches and best practices to improve TB control in the general health system. Countries, however, are at different stages of collaboration and integration to strengthen both the quality of TB services and their health care systems (Table 10).

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Table 10. Overview of strengthening health systems in the eastern European countries belonging to or candidates for membership in the EU, 2006

Country	NTP with plan for human resources	Doctors and nurses with basic training in TB	Staff involved in TB with up-to-date job descriptions	NTP plan with health system strengthening	PAL ^a implemented
Bulgaria	+	+	++	++	+
Estonia	+	++	++	+	++
Latvia	++	++	++	++	++
Lithuania	++	++	++	++	++
Romania	++	++	++	+	++
Turkey	+	++	+	-	-

^a PAL = Practical Approach to Lung Health.

Note. ++ = yes/all; + = some/partially; - = no/none

- Ensure a proper plan for human resources development to support the effective and efficient provision of high-quality TB services, particularly in Bulgaria and Estonia.
- Promote and support the integration of TB services at PHC level through an appropriate curriculum for the basic education of doctors and nurses, up-to-date job descriptions and implementation of the Practical Approach to Lung Health (PAL), particularly in Bulgaria and Turkey.
- Collaborate on strengthening the health system through Global Fund grants in Bulgaria and Romania.
- Ensure that the reorganization of services under health sector reform preserves and strengthens essential TB services.

Activities to engage all health care providers

Table 11 gives an overview of activities to engage all health care providers. Providers in both the public (public hospitals, health insurance agencies, military, medical college hospitals, prisons) and private (private practitioners, NGOs, private hospitals, corporate services) sectors are considered.

Table 11. Overview of activities to engage all health care providers in the eastern European countries belonging to or candidates for membership in the EU, 2006

Country	Guidelines for private practitioners	Collaboration with all public providers	Collaboration with all private providers	Promotion of ISTC
Bulgaria	-	+	-	++
Estonia	++	++	++	++
Latvia	++	++	+	++
Lithuania	++	+	+	++
Romania	-	+	++	++
Turkey	-	++	++	++

Note. ++ yes/all; + some/partially; - no/none.

- Enhance NTPs' current collaboration with all public and private health care providers in all countries.
- Explore the potential involvement of additional public/private sectors.
- Ensure that all public and private health care providers in the country adhere to the ISTC (28).

Activities to empower people with TB and communities

People with TB and communities, and civil society at large, are essential partners in ensuring adherence to treatment and facilitating case-finding. ACSM activities can help to generate sustainable political, social and behavioural support for TB control and progress towards reaching the MDGs. The promotion of the Patients' Charter for TB Care (29) is of paramount importance. The ways and means for ACSM depend on the local context, including specific needs, financial and technical capacities and the sociocultural environment. Table 12 gives an overview of the countries' activities for empowerment.

Table 12. Overview of activities to empower people with TB and communities in the eastern European countries belonging to or candidates for membership in the EU, 2006

Country	NTP with written ACSM plan	NTP measuring ACSM impact through population surveys	Community-based TB care	Patients' Charter for TB Care
Bulgaria	–	–	–	–
Estonia	–	–	–	–
Latvia	–	–	–	++
Lithuania	–	–	–	–
Romania	–	–	+	++
Turkey	–	–	++	–

Note. ++ = yes/all; + = some/partially; – = no/none.

- Develop written national plans, ensure adequate financial and human resources and implement evidence-based, country-specific ACSM activities.
- Assess the impact of ACSM activities through population-based surveys.
- Explore and use opportunities for community-based TB care.
- Disseminate and promote the Patients' Charter for TB Care countrywide, and support patients' groups and organizations in monitoring compliance by health service providers.

Activities to enable and promote research

Estonia, Latvia and Romania conduct operational research to guide their NTPs; Bulgaria, Lithuania and Turkey do not.

- Develop and implement a plan for operational research, documenting interventions and guiding further planning.

Belarus, the Republic of Moldova, Ukraine

Belarus, the Republic of Moldova and Ukraine are neighbouring countries at the eastern border of the EU. They share similar TB epidemiology, but vary in their progress in TB control.

Activities to pursue high-quality DOTS expansion and enhancement

While Belarus and the Republic of Moldova have already reached DOTS countrywide coverage, Ukraine had only 40% coverage in 2006 (Table 13), expanding to 100% in 2007 by ministerial order. The Republic of Moldova has fully established DOTS implementation. Belarus needs to improve the quality of its implementation, especially regarding sputum-smear microscopy, as does Ukraine. High-quality DOTS implementation in Ukraine is a priority for the Region, considering the threats posed by MDR-TB and HIV in the country. Clear and consistent political commitment is required in future in both Belarus and Ukraine.

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Table 13. Overview of TB control policies in Belarus, the Republic of Moldova and Ukraine, 2006

Country	DOTS population coverage (%)	TB national manual	External quality assurance for smear microscopy	Standard treatment regimens	DOT	Regular drug supply	Treatment outcome monitored
Belarus	100	+	–	++	+	++	+
Republic of Moldova	100	++	++	++	++	++	++
Ukraine	40	++	+	+	+	+	+

Note. ++ = yes/all; + = some/partially; – = no/none.

- Develop clear, strong commitment to TB control in Belarus and Ukraine through full implementation of the Stop TB Strategy.
- Establish an NTP in Ukraine, with a central management unit within the health ministry with a clear mandate and responsibilities.
- Develop/Implement in each country a national plan, based on the Stop TB Strategy, to strengthen DOTS implementation countrywide by 2010. Develop medium-term national plans for TB control with budgets.
- In Ukraine, consider seeking additional funding through the Global Fund.
- Use current Global Fund grants in Belarus and the Republic of Moldova to strengthen the delivery of TB services and ensure their sustainability in the national health systems.
- Develop updated national guidelines and manuals for TB control based on international standards.
- Establish a national network of laboratory services for direct microscopy in Belarus and Ukraine, and establish a national TB reference laboratory for the NTP in Ukraine.
- Ensure supervision of TB treatment and patient support through a proper balance of PHC and other levels of health care. Pursue compliance with TB treatment by providing incentives and enablers for patients from vulnerable groups.
- Promote quality among national manufacturers to first- and second-line anti-TB drugs through the adoption of WHO-recommended good manufacturing practice.
- Strengthen TB recording and reporting in the national surveillance system, ensuring that it covers all TB patients. Use TB data at the national and subnational levels for quarterly monitoring of NTP services.
- Validate the quality of national TB surveillance and revise the WHO estimates on TB incidence, prevalence and mortality based on it.
- Mainstream the prevention and management of TB in children as part of routine NTP activities.

Activities to address MDR-TB, TB/HIV and other challenges

The low treatment success rate reported in all three countries is related to the high treatment default and failure rates due to the very high levels of MDR-TB. MDR-TB interventions – including bacteriological culture and drug susceptibility testing, and treatment with second-line anti-TB drugs – are already routine practices. Adherence to internationally recommended standards in Belarus and Ukraine is poor, however, carrying high risks of amplifying drug resistance (Table 14). The HIV epidemics in the Republic of Moldova and Ukraine are at a generalized level, which increases the epidemiological challenges of TB/HIV and MDR-TB. Moreover, all three countries have some of the highest rates of detention in prison, which create large pools of current or former prisoners fuelling both the TB and HIV epidemics.

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Table 14. Overview of MDR-TB, TB/HIV and other challenges in Belarus, the Republic of Moldova and Ukraine, 2006

Country	MDR-TB		TB/HIV		Other challenges	
	Policy in line with WHO	Interventions by NTP	Policy for HIV counselling and testing	HAART coverage	Prisons	Main other risk groups for TB
Belarus	–	–	++	++	+	IDUs
Republic of Moldova	++	++	++	++	++	IDUs
Ukraine	+	+	+	+	+	IDUs

Note. ++ = yes/all/> 75% HAART coverage; + = some/partially; – = no/none.

- Ensure the quality of TB bacteriological culture and drug susceptibility testing in Belarus and Ukraine through collaboration with a supranational TB reference laboratory.
- Adopt the WHO guidelines on the management of drug-resistant TB (10) in Belarus and Ukraine.
- Ensure adequate provision and utilization of high-quality second-line drugs following GLC recommendations.
- Introduce and reinforce a ban on selling anti-TB drugs in pharmacies.
- Strengthen collaboration between the TB control and the HIV/AIDS control programmes, especially in Ukraine.
- Promote activities targeting high-risk groups, including prisoners and IDUs.
- Link prison health services (and other relevant services outside the health ministry) with NTPs.
- Promote social support for TB patients.

Activities to help strengthen health systems

Of the three countries, the Republic of Moldova is at the most advanced stage of collaboration and integration of TB services with the general health care system (Table 15). Belarus and Ukraine maintain specialized programmes with dedicated TB staff and infrastructures; these are expected to change with the reforms of the health systems that are likely to be made.

Table 15. Overview on strengthening health systems in Belarus, the Republic of Moldova and Ukraine, 2006

Country	NTP with plan for human resources	Doctors and nurses with basic training in TB	Staff involved in TB with up-to-date job descriptions	NTP plan with health system strengthening	PAL implemented
Belarus	+	+	+	+	+
Republic of Moldova	++	++	++	++	+
Ukraine	–	++	+	+	–

Note. ++ = yes/all; + = some/partially; – = no/none.

- Ensure a proper plan for human resources development to support the effective and efficient provision of high-quality TB services, particularly in Belarus and Ukraine.
- Promote and support the integration of TB services with others at PHC level through appropriate curriculum for the basic education of doctors and nurses, up-to-date job descriptions and the implementation of PAL.
- Collaborate in strengthening health system through Global Fund grants.

Activities to engage all health care providers

In Belarus, the Republic of Moldova and Ukraine, national TB institutes are important authorities and enjoy some autonomy from the health ministries. The ISTC (28) are still not fully recognized as national standards, and public health approaches to TB control are often not consistently followed.

The provision of health care by the private sector is growing; it should be carefully monitored and considered for potential partnership. Table 16 considers health care providers in both the public (public hospitals, health insurance agencies, military, medical college hospitals, prisons) and private (private practitioners, NGOs, private hospitals, corporate services) sectors.

Table 16. Overview on engaging all health care providers in Belarus, the Republic of Moldova and Ukraine, 2006

Country	Guidelines for private practitioners	Collaboration with all public providers	Collaboration with all private providers	Promotion of ISTC
Belarus	–	++	–	+
Republic of Moldova	++	++	++	++
Ukraine	–	++	–	+

Note. ++ = yes/all; + = some/partially; – = no/none.

- Enhance NTPs' current collaboration with all public and private health care providers.
- Explore the potential involvement of additional public/private sectors
- Ensure that all public and private health care providers in the country adhere to the ISTC.

Activities to empower people with TB and communities

ACSM, community-based TB care and empowering people with TB and communities are very important parts of the Stop TB Strategy. As newly developed strategic interventions, they are just beginning to be implemented in Belarus, the Republic of Moldova and Ukraine (Table 17). In the Republic of Moldova and one region in Ukraine, social mobilization campaigns were undertaken in the past, designed on the results of a survey of knowledge, attitudes and practices and assessed for their impact with a second survey. The Patients' Charter for TB Care (29) is very innovative for all three countries, turning the focus from the service provider's to the service user's perspective.

Table 17. Overview on empowering people with TB and communities in Belarus, the Republic of Moldova and Ukraine, 2006

Country	NTP with written ACSM plan	NTP measuring ACSM impact through population surveys	Community-based TB care	Patients' Charter for TB Care
Belarus	–	–	+	–
Republic of Moldova	–	++	+	–
Ukraine	–	+	–	–

Note. ++ = yes/all; + = some/partially; – = no/none.

- Develop written national plans, ensure adequate financial and human resources and implement evidence-based, country-specific ACSM activities.
- Assess the impact of ACSM activities through population-based surveys, particularly in Belarus and Ukraine.
- Explore and use opportunities for community-based TB care.

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- Disseminate and promote the Patients' Charter for TB Care countrywide, and support patients' groups and organizations in monitoring compliance by health service providers.

Activities to enable and promote research

Considering the levels of MDR-TB and HIV, controlling TB is a real challenge in all three countries. Cost-effective routine implementation of MDR-TB interventions, treatment to prevent TB in PLWH in countries where resistance to isoniazid is high, TB case finding and treatment linked to interventions for HIV harm reduction are just examples of the operational research that is needed throughout eastern Europe and appropriate to these countries. The Republic of Moldova and Ukraine conduct some operational research to guide the NTP, but Belarus does not.

- Develop and implement a plan for operational research, documenting interventions and guiding further planning.

Countries of the South Caucasus

Armenia, Azerbaijan and Georgia are located in the corner between the EU, the Russian Federation and central Asia. These countries vary in their socioeconomic structures and health care systems. When and how current political tensions will be resolved are uncertain.

Activities to pursue high-quality DOTS expansion and enhancement

While all three countries have 100% DOTS coverage, they need to improve the quality of DOTS implementation, especially access to high-quality sputum-smear microscopy and DOT (Table 18). TB services have not yet been integrated into PHC countrywide. Legislation should include the use of incentives and enablers to improve treatment follow-up. The key factor in all three countries is a well-coordinated, attentive and effective central TB unit in the health ministry.

- Endorse national medium-term TB control national plans, with associated budgets, to back up effective implementation of the Stop TB Strategy.
- Ensure effective coordination and intrasectoral/intersectoral cooperation by the central TB unit.

Table 18. Overview of TB control policies in the countries of the South Caucasus, 2006

Country	DOTS population coverage (%)	TB national manual	External quality assurance for smear microscopy	Standard treatment regimens	DOT	Regular drug supply	Treatment outcome monitored
Armenia	100	–	+	++	+	++	++
Azerbaijan	100	++	+	++	+	++	++
Georgia	100	++	++	++	+	++	++

Note. ++ = yes/all; + = some/partially; – = no/none.

- Use current Global Fund grants to strengthen the delivery of TB services and ensure the sustainability of improved services within national health systems.
- Develop updated national TB control regulations and guidelines based on international standards, particularly in Armenia.
- Establish national networks of laboratory services for high-quality direct microscopy, bacteriological culture and drug susceptibility testing, particularly in Armenia and Azerbaijan.
- Pursue external quality assurance through collaboration with a supranational TB reference laboratory, and collaboration among the countries of the subregion.

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- Ensure supervision of TB treatment and patient support through a proper balance of PHC and other levels of health care. Pursue compliance with TB treatment by including incentives and enablers for patients from vulnerable groups.
- Strengthen TB recording and reporting within the national surveillance system, and use TB data at the national and subnational levels for quarterly monitoring of NTP services.
- Validate the quality of national TB surveillance and revise the WHO estimates on TB incidence, prevalence and mortality based on it.
- Mainstream the prevention and management of TB in children as part of routine NTP activities in all countries.

Activities to address MDR-TB, TB/HIV and other challenges

The low treatment success rates reported in Armenia, Azerbaijan and Georgia are related to an excessively high treatment default rate and very high treatment failure due to MDR-TB. Current MDR-TB interventions are limited to the penitentiary system and small pilot projects in the civilian sector, but are planned to be scaled up with financial support from the Global Fund. XDR-TB has already been reported in all three countries.

HIV has spread rapidly in the South Caucasus, particularly among IDUs. HIV harm reduction interventions could be effectively used as an entry point for TB services.

A large proportion of TB patients belongs to vulnerable and socially disadvantaged groups, such as prisoners and ex-prisoners, migrant workers, and alcohol and other substance abusers (Table 19). Georgia is reforming the health services in its prisons, and plans to hand over these services to the Ministry of Labour, Health and Social Affairs.

- Strengthen capacity for TB bacteriological culture and drug susceptibility testing, particularly in Armenia and Azerbaijan.
- Scale up current MDR-TB interventions countrywide in all countries.
- Ensure adequate provision and utilization of high-quality second-line drugs following GLC recommendations.
- Strengthen collaboration between the TB control and the HIV/AIDS control programmes in all countries.

Table 19. Overview of MDR-TB, TB/HIV and other challenges in the countries of the South Caucasus, 2006

Country	MDR-TB		TB/HIV		Other challenges	
	Policy in line with WHO	Interventions by NTP	Policy for HIV counselling and testing	HAART coverage	Prisons	Main other risk groups for TB
Armenia	+	+	+	++	++	
Azerbaijan	-	-	+	+	++	
Georgia	++	+	+	++	++	Break-away territories

Note. ++ = yes/all/> 75% HAART coverage; + = some/partially; - = no/none.

- Promote HIV surveillance among TB patients in all countries and link it to routine drug-resistance surveillance.
- Ensure and strengthen the quality of TB services in prisons in Georgia during and after the handover of prison health care services to the Ministry of Labour, Health and Social Affairs.
- Scale up social support to TB patients.

Activities to help strengthen health systems

All three countries are reforming their health care systems, particularly through improving PHC services based on family medicine approaches. This is a golden opportunity for NTPs to decentralize TB case finding and treatment follow-up, reducing TB patients' treatment default and thus the development of drug resistance. Meanwhile, the wide spread of MDR-TB and HIV requires the consolidation of specialized TB services. The revision of health policies, human resources planning, service financing, management and delivery and the information system are all required to preserve and enhance the quality of TB control (Table 20).

Table 20. Overview on strengthening health systems in the countries of the South Caucasus, 2006

Country	NTP with plan for human resources	Doctors and nurses with basic training in TB	Staff involved in TB with up-to-date job descriptions	NTP plan with health system strengthening	PAL implemented
Armenia	–	++	–	+	–
Azerbaijan	+	++	+	+	+
Georgia	++	++	++	++	–

Note. ++ = yes/all; + = some/partially; – = no/none.

- Ensure a proper plan for human resources development to support the effective and efficient provision of high-quality TB services.
- Pursue the integration of TB services with others at the PHC level through an appropriate curriculum for the basic education of doctors and nurses, up-to-date job descriptions and implementation of PAL.
- Collaborate in strengthening the health systems through Global Fund grants.

Activities to engage all health care providers

The private sector has a growing role in providing health care services in all three countries. Companies in profitable businesses, such as oil exploitation and construction, also provide corporate services. The importance of private versus public TB services is still unclear. Academic institutions do not consistently promote the ISTC (28). Table 21 considers health care providers in both the public (public hospitals, health insurance agencies, military, medical college hospitals, prisons) and private (private practitioners, NGOs, private hospitals, corporate services) sectors.

Table 21. Overview on engaging all health care providers in the countries of the South Caucasus, 2006

Country	Guidelines for private practitioners	Collaboration with all public providers	Collaboration with all private providers	Promotion of ISTC
Armenia	–	+	–	+
Azerbaijan	–	+	–	+
Georgia	++	+	–	++

Note. ++ = yes/all; + = some/partially; – = no/none.

- Enhance NTPs' current collaboration with all public and private health care providers in all countries.
- Explore the potential involvement of additional public/private sectors.
- Ensure that all public and private health care providers in the country adhere to the ISTC.

Activities to empower people with TB and communities

People with TB and communities, and civil society at large, do not yet participate much in planning, delivering, monitoring and evaluating NTP services (Table 22). The representatives of affected communities and civil-society activists increasingly participate in the country coordination mechanisms initially established to serve the Global Fund grant process, however, which paves the way for greater involvement. Also, expanded public awareness activities increasingly involve various layers of society.

Table 22. Overview on empowering people with TB and communities in the countries of the South Caucasus, 2006

Country	NTP with written ACSM plan	NTP measuring ACSM impact through population surveys	Community-based TB care	Patients' Charter for TB Care
Armenia	–	–	–	–
Azerbaijan	–	+	–	–
Georgia	+	+	–	–

Note. ++ = yes/all; + = some/partially; – = no/none.

- Develop written national plans, ensure adequate financial and human resources and implement evidence-based, country-specific ACSM activities.
- Assess the impact of ACSM activities through population-based surveys.
- Explore and use opportunities for community-based TB care.
- Disseminate and promote the Patients' Charter for TB Care (29) countrywide, and support patients' groups and organizations in monitoring compliance by health service providers.

Activities to enable and promote research

Georgia conducts operational research to guide the NTP; Armenia conducts some such research and Azerbaijan does not.

- Develop and implement a plan for operational research, documenting interventions and guiding further planning.

Countries of central Asia

The five central Asian countries – Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan – are located between the Russian Federation to the north, China to the east and Asian countries to the south (including Afghanistan, India, the Islamic Republic of Iran and Pakistan). The central Asian countries differ in size, cultural and socioeconomic features, and the extent of reform of their health systems. They maintain strong cultural and economic links with the Russian Federation.

Activities to pursue high-quality DOTS expansion and enhancement

Three of the five central Asian countries have achieved countrywide DOTS population coverage (Table 23). Nevertheless, many TB patients are still registered and treated as “non-DOTS” patients (with different treatment categories and regimens) in DOTS areas. Implementation of DOTS faces resistance by doctors and nurses trained in TB case management under the Soviet system. Current undergraduate training is still based on textbooks published in the 1980s. Using old approaches, health professionals prefer radiology to sputum microscopy, and often do bacteriological culture and drug susceptibility testing with poor quality and under unsafe conditions. DOT and consistent treatment follow-up are often ensured only in hospitals. Anti-TB drugs are sold in pharmacies without medical prescription, promoting poor adherence to treatment and the development of drug resistance. Scaling up MDR-TB interventions, so much needed in these countries, is difficult and even potentially dangerous if not preceded by a solid

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improvement in DOTS implementation. Only Kyrgyzstan consistently strengthened TB control through a comprehensive reform of its health care system and the decentralization of TB diagnostic and treatment services to PHC.

Table 23. Overview of TB control policies in the countries of central Asia, 2006

Country	DOTS population coverage (%)	TB national manual	External quality assurance for smear microscopy	Standard treatment regimens	DOT	Regular drug supply	Treatment outcome monitored
Kazakhstan	100	–	–	+	+	+	++
Kyrgyzstan	100	–	++	++	++	++	++
Tajikistan	85	+	+	+	+	++	++
Turkmenistan	71	+	+	+	++	++	++
Uzbekistan	100	+	+	+	+	++	++

Note. ++ = yes/all; + = some/partially; – = no/none.

- In Tajikistan and Turkmenistan, develop/implement national plans, based on the Stop TB Strategy, to achieve 100% DOTS coverage by 2010.
- Develop medium-term national plans for TB control with specified budget needs and funding sources in all countries.
- Use current Global Fund grants to strengthen the delivery of TB services and ensure their sustainability in the national health systems.
- In Turkmenistan, consider seeking additional funding from the Global Fund.
- Establish a national network of laboratory services for direct microscopy, bacteriological culture and drug susceptibility testing, and ensure external quality assurance through collaboration with a supranational TB reference laboratory.
- Ensure supervision of TB treatment and patient support through a proper balance of PHC and other levels of health care. Pursue compliance with TB treatment by including incentives and enablers for patients from vulnerable groups.
- Promote quality among national manufacturers to first- and second-line anti-TB drugs through the adoption of WHO-recommended good manufacturing practice.
- Strengthen TB recording and reporting in the national surveillance system, including all TB patients in the same system. Use TB data at the national and subnational levels for quarterly monitoring of NTP services.
- Validate the quality of national TB surveillance and revise the WHO estimates of TB incidence, prevalence and mortality based on it.
- Mainstream the prevention and management of TB in children as part of routine NTP activities in all countries.

Activities to address MDR-TB, TB/HIV and other challenges

The central Asian countries have the highest rates of MDR-TB in the world, but have adopted and implemented internationally recommended MDR-TB interventions in different ways, mainly on a pilot basis (Table 24). Meanwhile, DOTS implementation needs to be strengthened and second-line anti-TB drugs are widely available.

HIV has spread rapidly in these countries since the late 1990s, particularly among IDUs, who represent the large majority of PLWH. XDR-TB is reported in HIV-positive cases.

A large proportion of TB patients belongs to vulnerable and socially disadvantaged groups. With very high detention rates in the population, the numbers of prisoners and ex-prisoners are very

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large and fuel the TB epidemic. Migrant workers, especially those going to other countries in the former Soviet Union, are at special risk of TB and treatment default.

Table 24. Overview of MDR-TB, TB/HIV and other challenges in the countries of central Asia, 2006

Country	MDR-TB		TB/HIV		Other challenges	
	Policy in line with WHO	Interventions by NTP	Policy for HIV counselling and testing	HAART coverage	Prisons	Main other risk groups for TB
Kazakhstan	+	+	-	+	++	Migrant workers
Kyrgyzstan	++	++	+	+	++	IDUs
Tajikistan	-	-	-	++	+	
Turkmenistan	-	-	-	-	+	
Uzbekistan	++	+	++	+	+	

Note. ++ = yes/all/> 75% HAART coverage; + = some/partially; - = no/none.

- Strengthen the capacity for TB bacteriological culture and drug susceptibility testing in all countries. A national reference laboratory should be established and receive official status in each country.
- Ensure implementation of modern laboratory standards to increase the accuracy of diagnosis of drug-resistant TB in all countries.
- Adopt the WHO guidelines on management of drug-resistant TB (10).
- Introduce infection control based on international standards in TB facilities.
- Scale up MDR-TB interventions in all countries.
- Ensure the adequate provision and utilization of high-quality second-line drugs following GLC recommendations.
- Strengthen collaboration between the TB control and the HIV/AIDS control programmes in all countries.
- Promote HIV surveillance among TB patients.
- Promote activities targeting high-risk groups, including prisoners and IDUs in all countries. Address TB control in the population of migrant workers.
- Link prison health services (and other relevant services outside the health ministry) with NTPs.
- Promote social support to TB patients.

Activities to help strengthen health systems

The five central Asian countries have struck very different balances between independent and separate delivery of TB services and full integration into the general health system. Where NTPs enjoy Global Fund support, TB control interventions should be planned with the additional purpose of strengthening the health system. Where health system reforms are in an advanced stage, the NTP should see them as both a challenge and a golden opportunity to improve TB case finding and treatment follow-up, as in Kyrgyzstan (Table 25).

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Table 25. Overview on strengthening health systems in the countries of central Asia, 2006

Country	NTP with plan for human resources	Doctors and nurses with basic training in TB	Staff involved in TB with up-to-date job descriptions	NTP plan with health system strengthening	PAL implemented
Kazakhstan	++	++	+	+	–
Kyrgyzstan	–	++	++	+	++
Tajikistan	+	+	+	+	–
Turkmenistan	+	+	+	–	–
Uzbekistan	+	+	+	+	–

Note. ++ = yes/all; + = some/partially; – = no/none.

- Ensure a proper plan for human resources development to support the effective and efficient provision of high-quality TB services, particularly in Tajikistan, Turkmenistan and Uzbekistan.
- Promote and support the integration of TB services with others at PHC level through an appropriate curriculum for the basic education of doctors and nurses, up-to-date job descriptions and implementation of PAL, particularly in Tajikistan, Turkmenistan and Uzbekistan.
- Collaborate on strengthening health system through Global Fund grants.

Activities to engage all health care providers

All central Asian countries still have a vertical structure for their NTPs, although the Stop TB Strategy promotes collaboration with all current and potential TB providers. Despite some progress, activities to engage all health care providers need expansion and to include follow-up of treatment outside hospital. Table 26 considers health care providers in both the public (public hospitals, health insurance agencies, military, medical college hospitals, prisons) and private (private practitioners, NGOs, private hospitals, corporate services) sectors.

Table 26. Overview on engaging all health care providers in the countries of central Asia, 2006

Country	Guidelines for private practitioners	Collaboration with all public providers	Collaboration with all private providers	Promotion of ISTC
Kazakhstan	+	+	–	+
Kyrgyzstan	–	+	–	+
Tajikistan	–	+	–	+
Turkmenistan	++	+	–	+
Uzbekistan	–	+	–	++

Note. ++ = yes/all; + = some/partially; – = no/none.

- Enhance NTPs' current collaboration with all public and private health care providers in all countries.
- Explore the potential involvement of additional public/private sectors.
- Ensure that all public and private health care providers in the country adhere to the ISTC (28).

Activities to empower people with TB and communities

People with TB and communities, and civil society at large, are essential partners in ensuring adherence to treatment and facilitating case finding. ACSM activities can help to generate sustainable political, social and behavioural support for TB control and progress towards achieving the MDGs. The promotion of the Patients' Charter for TB Care (29) is of paramount

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importance (Table 27). The methods used for ACSM depend on the local context, including specific needs, financial and technical capacities and the sociocultural environment.

Table 27. Overview on empowering people with TB and communities in the countries of central Asia, 2006

Country	NTP with written ACSM plan	NTP measuring ACSM impact through population surveys	Community-based TB care	Patients' Charter for TB Care
Kazakhstan	–	–	–	+
Kyrgyzstan	–	–	+	–
Tajikistan	–	–	–	+
Turkmenistan	–	–	–	–
Uzbekistan	–	–	–	+

Note. ++ = yes/all; + = some/partially; – = no/none.

- Develop written national plans, ensure adequate financial and human resources and implement evidence-based, country-specific ACSM activities.
- Assess the impact of ACSM activities through population-based surveys.
- Explore and use opportunities for community-based TB care.
- Disseminate and promote the Patients' Charter for TB Care countrywide, and support patients' groups and organizations in monitoring compliance by health service providers.

Activities to enable and promote research

Evidence-based practice is important to prove the effectiveness of TB control activities in the countries of central Asia. Operational research should be encouraged. Kyrgyzstan and Uzbekistan conduct some operational research to guide their NTPs; the other three countries do not.

- Develop and implement a plan for operational research, documenting interventions and guiding further planning.

Russian Federation

The Russian Federation spreads over the European and Asian parts of the WHO European Region, bordering the central Asian republics and China in the east and the Baltic states, Belarus and Ukraine in the west. The country covers over 17 000 thousand km², divided into 88 administrative regions. The population is over 143 million. Economic and political reforms in recent years have resulted in improvements in the main socioeconomic indicators, but aggravated income disparity in the population and the growth of a socially deprived stratum. These present additional challenges to the health care system, which is undergoing intensive reforms.

The dramatic increase of TB in the Russian Federation at the end of the 20th century has levelled off, according to the main indicators used for monitoring. Nevertheless, the country has high rates of TB notification and TB-related mortality.

Recent years have seen a sizeable expansion of DOTS in the country, but with low treatment success. Better results are expected when the new services introduced through the rapid DOTS expansion become routine practice and improve quality.

Activities to pursue high-quality DOTS expansion and enhancement

The Russian Federation has a long tradition in TB control, but most of the TB specialists trained in the Soviet system have been slow to accept and implement new initiatives and approaches.

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Further, TB doctors and nurses are poorly paid, even in comparison to other medical specialties. Health professionals prefer radiology to sputum microscopy and often do bacteriological culture and drug susceptibility testing of poor quality and in unsafe conditions.

Nevertheless, government political commitment to TB control has grown at both the federal and regional levels, with increasing funding and mobilization of technical resources. At the end of 2006, 86 out of 88 regions were implementing DOTS. All 86 submitted information on TB detection to the Ministry of Health and Social Development, and 67 supplied information on TB treatment outcome (Table 28).

Table 28. Overview of TB control policies in the Russian Federation, 2006

Country	DOTS population coverage (%)	TB national manual	External quality assurance for smear microscopy	Standard treatment regimens	DOT	Regular drug supply	Treatment outcome monitored
Russian Federation	90	++	+	+	+	+	+

Note. ++ = yes/all; + = some/partially; – = no/none.

- Develop a long-term national plan, based on the Stop TB Strategy, to strengthen and achieve 100% DOTS coverage by 2010 in the framework of the Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015. Develop medium-term national plans for TB control, with budgets.
- Build capacity and strengthen data analysis to improve TB management and coordination at the federal and regional levels.
- Continue revising the national policy, focusing on developing and finalizing national guidelines on MDR-TB management, TB/HIV and surveillance.
- Use the Global Fund grant to strengthen the delivery of TB services and ensure their sustainability within the national health system.
- Strengthen the national network of laboratory services for direct microscopy, bacteriological culture and drug susceptibility testing, and establish internal and external quality control.
- Ensure supervision of TB treatment and patient support through a proper balance of PHC and other levels of health care.
- Promote an uninterrupted supply of TB drugs of high quality, efficacy and safety and their rational use by creating a mechanism for quality assurance of first-line TB drugs.
- Strengthen TB recording and reporting within the national surveillance system, and use TB data at the federal and regional levels for quarterly monitoring of TB services.
- Mainstream the prevention and management of TB in children as part of routine NTP activities.

Activities to address MDR-TB, TB/HIV and other challenges

The Ministry of Health and Social Development acknowledges high and increasing levels of MDR-TB in the country and is scaling-up specific interventions with the support of the Global Fund. While some patients have already received care under GLC-approved projects, the country needs to expand its laboratory capacity for high-quality drug susceptibility testing of first- and second-line anti-TB drugs to detect MDR- and XDR-TB. Rapid diagnostic tools should be encouraged.

The number of TB/HIV coinfections is growing fast. Most cases are among IDUs, comprising a large majority of PLWH. A significant increase in new TB cases is expected among IDUs, due to the limited availability of antiretroviral therapy (ART) and the progression of HIV infection.

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A large proportion of TB patients belongs to vulnerable and socially disadvantaged groups, such as alcohol and other substance abusers, homeless people and migrant workers. Early detection and prevention of treatment default among these groups remain difficult. While successful control activities in the prison system have resulted in a large decrease in the TB burden among incarcerated populations, the incidence of TB and MDR-TB among prisoners and ex-prisoners remains high (Table 29).

Table 29. Overview of MDR-TB, TB/HIV and other challenges in the Russian Federation, 2006

Country	MDR-TB		TB/HIV		Other challenges	
	Policy in line with WHO	Interventions by NTP	Policy for HIV counselling and testing	HAART coverage	Prisons	Main other risk groups for TB
Russian Federation	+	+	++	+	+	Unemployed, homeless, migrant workers, IDUs

Note. ++ = yes/all/> 75% HAART coverage; + = some/partially; – = no/none.

- Strengthen capacity for TB bacteriological culture and drug susceptibility testing, and implement drug resistance surveillance countrywide.
- Improve management of MDR-TB in accordance with international recommendations by developing national guidelines for and supporting the implementation of MDR-TB control projects in the Russian Federation.
- Disseminate the best knowledge and experience on MDR-TB control through training courses and centres of excellence in the civilian and penitentiary sectors.
- Ensure adequate provision and use of quality-assured second-line drugs following GLC recommendations.
- Strengthen collaboration between the TB control and the HIV/AIDS control programmes.
- Promote TB control activities specifically targeting high-risk groups, including prisoners and IDUs, migrants and other socially vulnerable groups.
- Improve the effectiveness of TB treatment and case management by addressing the needs of TB patients, including providing social and psychological support for them.

Activities to help strengthen health systems

The NTP is a part of the general health system and contributes to its performance; it also shares the system's problems and main challenges: financing, human resource development, redistribution of service delivery between PHC and the tertiary level, overall management effectiveness (Table 30). The Russian Federation is reforming its health system, focusing on strengthening PHC and decentralizing responsibilities for health care delivery from the federal government to the regions. The delivery of good TB services should be ensured during this process.

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Table 30. Overview on strengthening the health system in the Russian Federation, 2006

Country	NTP with plan for human resources	Doctors and nurses with basic training in TB	Staff involved in TB with up-to-date job descriptions	NTP plan with health system strengthening	PAL implemented
Russian Federation	–	++	++	+	–

Note. ++ = yes/all; + = some/partially; – = no/none.

- Ensure a proper plan for human resources development to support the effective and efficient provision of high-quality TB services, as a part of the national plan to stop TB and in coordination with the national plan for human resource development for health.
- Support incorporation of the Stop TB Strategy and appropriate training materials in undergraduate and postgraduate medical education.
- Promote and support the integration of TB services with others at the PHC level.
- Promote effective output-oriented financial mechanisms to improve the effectiveness of health care delivery.
- Collaborate in strengthening the health system through Global Fund grants.

Activities to engage all health care providers

The state PHC and TB services have the mainly responsibility for TB detection, diagnosis and treatment in the Russian Federation. Private sector involvement in TB control is very limited and little explored. TB control is also part of health interventions by other parties than the Ministry of Health and Social Development, such as the ministries responsible for justice, defence and penal institutions, and big corporations such as Russian Railways, oil and gas companies, etc. Ensuring that all health care providers take the same approach to TB control, no matter where they work, is crucial. Table 31 considers care providers in both the public (public hospitals, health insurance agencies, military, medical college hospitals, prisons) and private (private practitioners, NGOs, private hospitals, corporate services) sectors.

Table 31. Overview on engaging all health care providers in the Russian Federation, 2006

Country	Guidelines for private practitioners	Collaboration with all public providers	Collaboration with all private providers	Promotion of ISTC
Russian Federation	–	+	+	++

Note. ++ = yes/all; + = some/partially; – = no/none.

- Enhance the current collaboration of NTP with all public and private health care providers.
- Explore the potential involvement of additional public/private sectors.
- Ensure that all public and private health care providers in the country adhere to ISTC (28).

Activities to empower people with TB and communities

ACSM activities play a key role in the Stop TB Strategy by empowering people with TB and generating sustainable political, social and behavioural support for TB control activities. There is very little involvement of people and communities in planning, delivering and evaluating TB control activities, as this is a relatively new concept in the Russian Federation (Table 32).

- Develop written national plans, ensure adequate financial and human resources and implement evidence-based, country-specific ACSM activities.
- Assess the impact of ACSM activities through population-based surveys.
- Explore and use opportunities for community-based TB care.
- Disseminate and promote the Patients' Charter for TB Care (29) countrywide, and support patients' groups and organizations in monitoring compliance by health service providers.

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Table 32. Overview on empowering people with TB and communities in the Russian Federation, 2006

Country	NTP with written ACSM plan	NTP measuring ACSM impact through population surveys	Community-based TB care	Patients' Charter for TB Care
Russian Federation	–	–	–	–

Note. ++ = yes/all; + = some/partially; – = no/none.

Activities to enable and promote research

Basic and programme-based operational research have been implemented in the Russian Federation by the federal TB research institutes and regional TB institutes carrying out pilot TB control projects with the support of international technical agencies. Such research is limited in scale to selected regions only, however, and does not address all the important questions about improving the effectiveness of TB control interventions.

- Initiate and support operational research on key aspects of TB control: TB and MDR-TB epidemiology, MDR-TB and TB/HIV, the use of comprehensive approaches for improving adherence to TB treatment, and improving health care staff's motivation and performance.
- Promote cost-effectiveness analysis of different interventions to guide TB management and coordination.

WHO European Region

The actions in this section should be carried out by the members of the Stop TB Partnership, working at the level of the European Region or groups of countries.

Activities to pursue high-quality DOTS expansion and enhancement

Political commitment with increased and sustained financing

Although political commitment to TB control in eastern European countries has significantly increased, recent political and economical changes, decentralization processes, many competing priorities and the great needs of chronically underfunded and underdeveloped health systems represent important risk factors for ensuring sustained political commitment that translates into adequate financial support for TB control.

- Disseminate the Stop TB Strategy in the Region.
- Develop a plan to achieve TB-related Target 8 of MDG 6 in the 18 high-priority countries of eastern Europe.
- Assist countries in developing their own national plans to control TB.
- Organize a ministerial forum on TB to raise awareness and commitment in all European Region Member States (30).
- Support and strengthen the European Stop TB Partnership.
- Develop an advocacy strategy to promote political commitment to TB control in the Region.
- Organize high-level TB missions to high-priority countries.
- Provide technical assistance to support countries accessing international funding.

Case detection through quality-assured bacteriology

The proportion of smear-positive new pulmonary cases remains low in eastern Europe, suggesting that radiology is still broadly used as a diagnostic method in many countries. The laboratories performing sputum smear microscopy and/or bacteriological culture vary widely in number between countries and in accessibility by the population. Bacteriological culture and drug susceptibility testing of variable quality are too common.

- Support the European Laboratory Strengthening Task Force.

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- Promote the implementation of the European standards for modern TB laboratory services (10).
- Provide technical assistance to countries for upgrading laboratories' physical infrastructure, including adequate infection control systems.
- Promote and facilitate laboratory networking (training, laboratory twinning, quality assurance, drug resistance surveillance).
- Promote the use of fluorescent microscopy and rapid methods for culture and identification of resistance to rifampicin.
- Strengthen regional and subregional coordination and assistance on laboratory.

Standardized treatment with supervision and patient support

While TB treatment regimens adopted in eastern Europe meet internationally recommended standards, DOT is hospital-based during the intensive phase of treatment and poorly organized during the continuation phase. Incentives and enablers to increase adherence and compliance to treatment are still used on a pilot scale.

- Disseminate and ensure implementation of ISTC (28) in eastern European countries.
- Disseminate and promote the Patients' Charter for TB care (29) to all countries.
- Document and promote successful projects using incentives and enablers for patients.

Effective drug supply and management systems

Some countries rely on the local capacity to manufacture anti-TB drugs, whose quality needs to be assessed and ensured.

- Promote wide adoption of accepted international standards for TB commodity management systems, such as WHO good manufacturing practice, International Organization for Standardization (ISO) standards and United Nations Children's Fund (UNICEF) guidelines.
- Ensure technical assistance to assess the needs for TB commodities and to strengthen TB commodity management systems in countries.
- Promote strengthening of TB commodity management systems through international grants.
- Ensure coordination and assistance with GDF.
- Promote quality among national manufacturers of first- and second-line anti-TB drugs by means including the prequalification process when applicable.
- Promptly update policy for commodity supply as new vaccines, diagnostic tools and drugs are developed.

Monitoring and evaluation system and impact measurement

The main trend in eastern Europe is reporting TB data to the central level with centralized management through electronic databases dealing with patients as individuals. Unfortunately, data sometimes differ in standard, and there is often a backlog of TB patients labelled as chronic according to old classifications, that is kept separately from DOTS registration. Very often, data are not consolidated or analysed locally for monitoring of the NTP at the regional and subregional levels. Consolidation and analysis at the central level vary in quality, completeness and timing, and feedback to peripheral units is limited. Further, countries have difficulties in understanding how TB incidence rates are currently estimated and question the reported case detection rates. They have also a limited capacity to estimate TB prevalence and mortality rates, and thus to monitor the impact of their TB control interventions.

- Strengthen regional and subregional capacity and coordination to ensure the quality, completeness and timeliness of country reporting of TB data.

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- Provide technical assistance for the development of national health information systems and TB data management, according to international standards and considering countries' specific needs.
- Promote streamlining of registration of TB patients into one system.
- Provide technical assistance to countries to ensure local utilization of data for programme monitoring.
- Assist in planning TB epidemiological surveys in selected countries.

Activities to address MDR-TB, TB/HIV and other challenges

MDR-TB is the main challenge for TB control in eastern Europe; it has a high potential to merge epidemiologically with HIV infection, because it shares the same risk groups, such as IDUs and prisoners. Eastern Europe has some of the highest detention rates in the world, and its very large prison populations are reservoirs for TB transmission countrywide. Workers migrating from poor to rich economies are also at higher risk of TB infection, disease and unsuccessful treatment. Further, mobile populations, such as Roma communities, usually have limited access to TB diagnosis and treatment.

Prevent and control drug-resistant TB

- Promote and assist the establishment of representative country surveillance for routine monitoring of the levels of anti-TB drug resistance.
- Disseminate and promote the implementation of the new WHO guidelines on the management of drug-resistant TB (10) throughout eastern Europe.
- Promote the recommended standards for modern TB laboratory services in Europe (12).
- Ensure assistance to countries in starting and scaling up internationally recommended MDR-TB interventions.
- Maintain and expand regional training courses on MDR-TB.
- Expand assistance to countries in obtaining reduced-price second-line drugs under rigorous GLC assessment and monitoring. Ensure that all MDR-TB patients enrolled for treatment actually receive it.
- Conduct high-level missions to countries on MDR-TB management, addressing national commitment, planning and allocation of resources, and drug regulations (registration and quality of second-line drugs).
- Increase the capacity for GLC assistance in the European Region.
- Ensure Region-wide coordination through the GLC.

Implement collaborative TB/HIV activities

The internationally recommended policy for collaborative activities on TB/HIV needs to be promoted and implemented according to the epidemiological context and organization of TB and HIV services in each eastern European country. The primary consideration is to understand the level of HIV prevalence among TB patients, in order to decide the level of implementation of collaborative activities.

- Promote the interim policy on collaborative TB/HIV activities (13) in all countries and assist its implementation. Ensure that HIV counselling and testing are provided to all TB patients according to the most updated international recommendations.
- Develop specific guidelines for implementing collaborative TB/HIV activities among IDUs and prisoners.
- Update and disseminate regional guidelines for the clinical management of TB and MDR-TB among PLWH (15).
- Conduct TB/HIV missions to offer technical assistance tailored to countries' needs, health system structures and epidemiological trends.

Address prisoners, refugees and other high-risk groups and special situations

- Promote equivalence between the penitentiary and civilian health care systems in TB diagnosis and care, and the minimum standards recommended by WHO (16).
- Assist countries to maintain and strengthen TB services in prisons during and after reforming their penitentiary systems.
- Promote increased access to TB diagnosis and treatment of legal and illegal immigrants.
- Promote access to and quality in TB diagnosis and care for vulnerable populations, such as the Roma.
- Collaborate in fostering resources to increase disadvantaged groups' access to TB control.
- Analyse and disseminate the evidence on effective interventions for TB control in difficult-to-reach groups.

Activities to help strengthen health systems

Actively participate in efforts to improve health systems' policy, human resources, financing, management, service delivery and information systems

- Contribute to the policy dialogue with all partners on strengthening health systems through TB services and vice versa.
- Assist the process of analysis and reorganization of health services to improve access to and the sustainability of TB services.
- Promote integration and cost sharing of TB services with others at the PHC level.
- Assist countries in strengthening their health systems through Global Fund grants.
- Advocate the linking of TB control to strategic agendas for development, socioeconomic improvement and poverty reduction in the Region.
- Monitor the reorganization of TB services in health sector reform, ensuring that programme mainstreaming preserves and strengthens essential TB services.

Share innovations that strengthen systems

- Promote PAL as an important means to improve respiratory care and increase TB case detection.
- Assist countries to document effective TB control interventions that strengthen their health systems.

Adapt innovations from other fields

- Pursue common approaches and interventions with other health programmes, institutions and ministries (such as ministries responsible for the economy and development) to improve TB control in, for example, difficult-to-reach and vulnerable populations.

Activities to engage all health care providers

Public–public and public–private mix approaches

- Disseminate the WHO guidelines (31) for implementing a public–private mix approach in DOTS programmes to countries in the Region.
- Provide technical assistance to countries in the Region on the framework for developing activities taking public–public and public–private mix approaches.

ISTC

Ensure the ISTC (28) are widely accepted and disseminated.

Activities to empower people with TB and communities

ACSM

- Ensure coordination and technical assistance for ACSM at the Region and subregional levels.
- Assist countries to formulate national ACSM plans and make impact assessment studies.

Community participation in TB care

- Promote the active participation of representatives of civil society and TB communities in planning and evaluating TB control at the Region, subregional and country levels.

Patients' Charter for Tuberculosis Care

- Disseminate and support the implementation of the Patients' Charter for TB Care (29) in all countries.

Activities to enable and promote research

Programme-based operational research

- Support countries to develop the capacity to conduct operational research.
- Support and assist operational research to identify effective interventions.

Research to develop new diagnostic methods, drugs and vaccines

- Ensure coordination with all stakeholders in research – such as key European research funders, national research agencies and research foundations – to define priorities and increase funding for TB research.
- Monitor and document current progress in developing new diagnostic methods, drugs and vaccines.
- Through the global and European Stop TB Partnerships, ensure links between institutions involved in basic research and in public health.
- Prepare and coordinate actions to introduce the use of effective new diagnostic methods, drugs and vaccines in countries.

4. Estimated costs, available funding and funding gap

The necessary costs and the available funding for the full implementation of the Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 have been estimated, and funding gaps have been calculated. All estimates are based on the same assumptions and methodology used for the Global Plan to Stop TB 2006–2015 and described in detail in its annex (32). The MDR- and XDR-TB component has been further revised to consider the latest updates of the Global Plan.

Five broad areas were considered for costing: DOTS expansion,¹⁰ MDR- and XDR-TB, TB/HIV, ACSM and technical cooperation.¹¹ Research and development of new tools, such as new vaccines, new drugs and new diagnostics, are part of a global effort and therefore while they were included in the global plan they are excluded from this regional plan.

Fig. 3 shows the costs of implementing the Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015. Fig. 4 shows that the costs per year increase progressively, reaching US\$ 2.04 billion in 2015.

Fig. 3. Total costs to stop TB in eastern Europe, 2007–2015

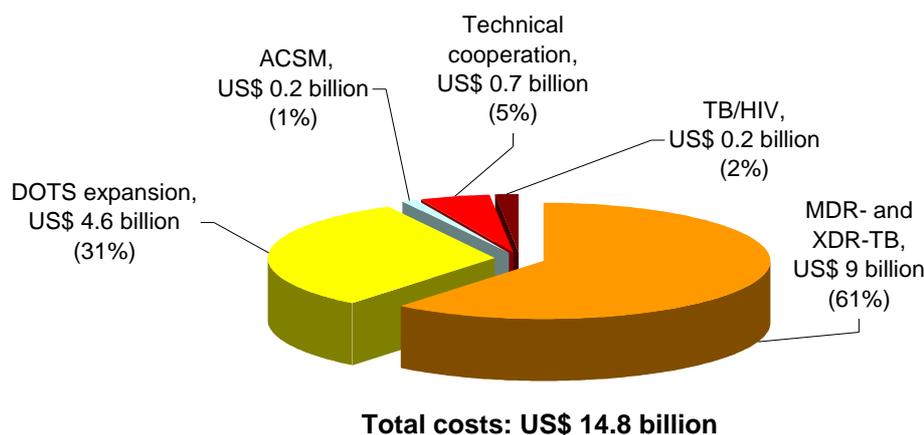


Fig. 5 illustrates the available funding by source: domestic sources, the Global Fund and other donors.¹² The total available funds to implement the Plan are estimated at US\$ 6.7 billion.

¹⁰ DOTS expansion includes: supply of first-line anti-TB drugs, staff, routine programme management and supervision activities, laboratory inputs, patient support, training, public–public and public–private mix approaches, PAL, community-based care, monitoring and evaluation, operational research, miscellaneous items and hospital care.

¹¹ Technical cooperation covers the cost of staff and activity funding needed by technical agencies, which were estimated separately for WHO and all other technical partners.

¹² Domestic funding assumes that government commitments in 2007 are sustained and increase in line with inflation. The Global Fund funding is based on the lifelong grant commitments made in rounds 1–6. Other donor funding assumes that commitments reported in 2004 are sustained and increase in line with inflation.

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Fig. 4. Annual costs to stop TB in eastern Europe, 2007–2015

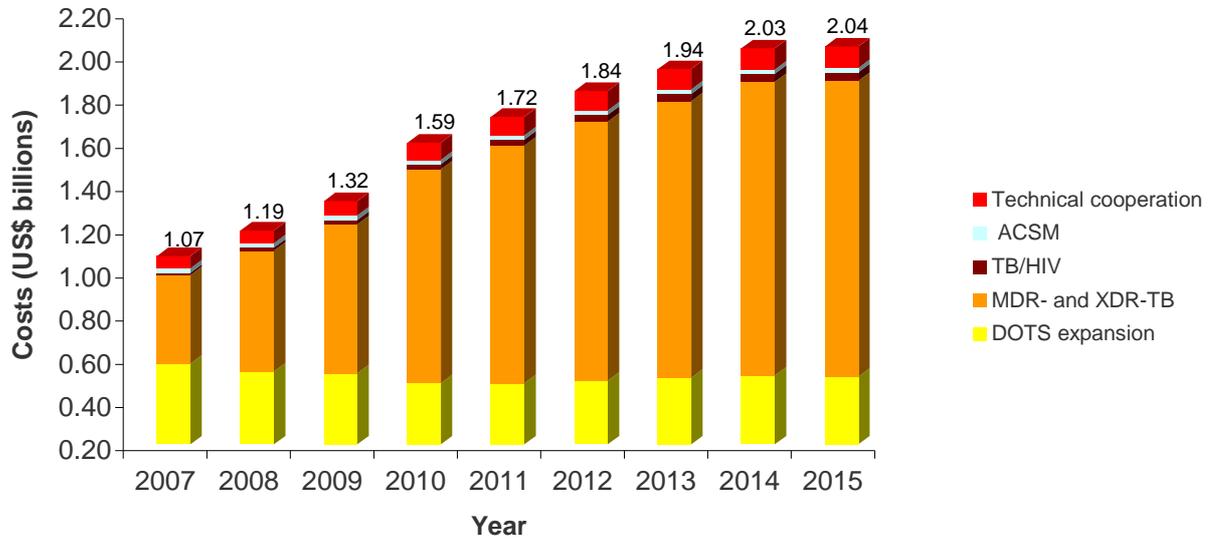


Fig. 5. Total available funding to stop TB in eastern Europe, 2007–2015

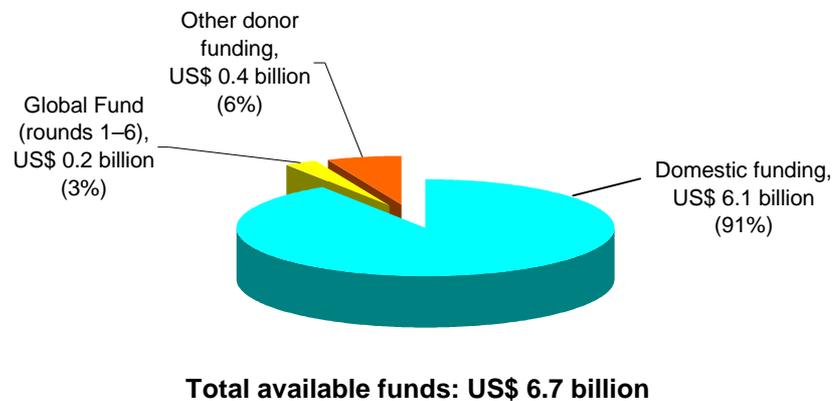


Fig. 6 shows that the available funding per year, without additional efforts, is projected to increase steadily over time, from US\$ 0.68 billion in 2007 to US\$ 0.82 billion in 2015.

Fig. 7 shows that, based on current levels of funding, only US\$ 6.7 billion is estimated to be available to cover the foreseen costs of implementation. This leaves a funding gap of US\$ 8 billion over nine years: 55% of the total costs.

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Fig. 6. Available funding to stop TB in eastern Europe per year, 2007–2015

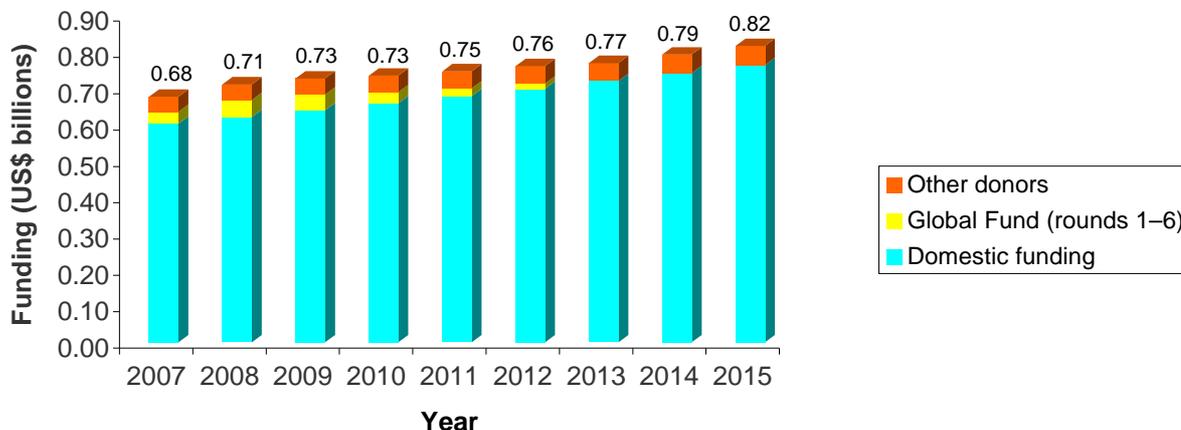


Fig. 7. Total funding gap to stop TB in eastern Europe, 2007–2015

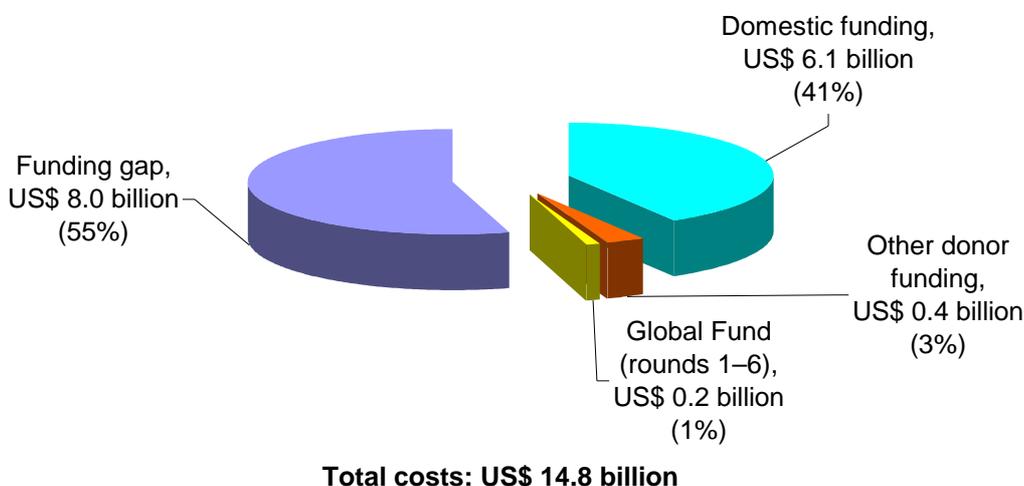
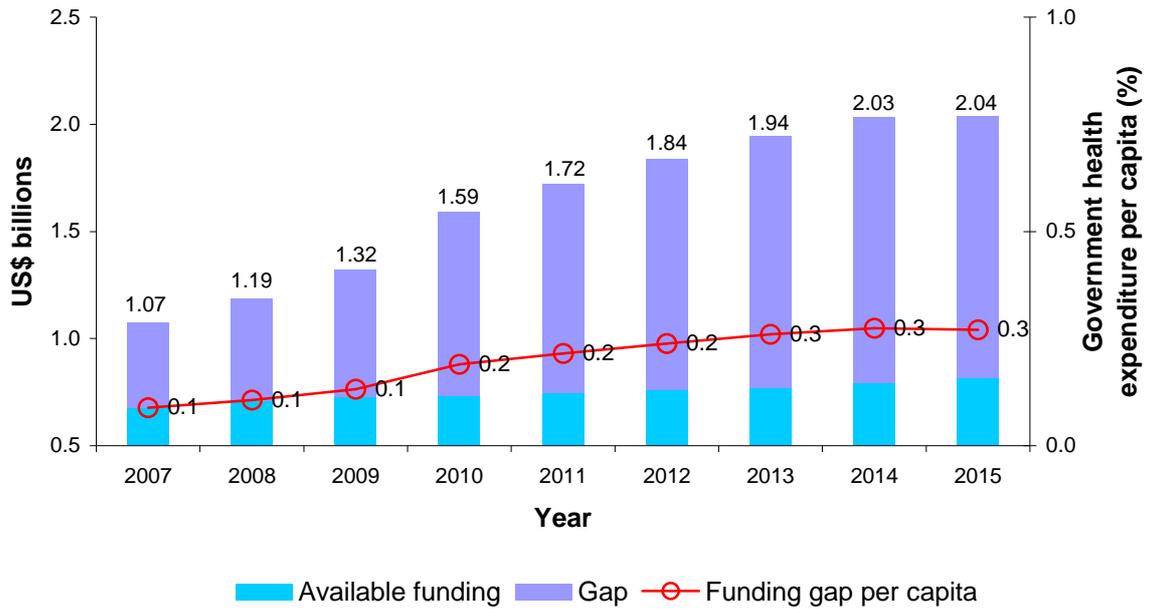


Fig. 8 indicates that the funding gap is estimated to increase every year. Filling it would require increasing funding from current levels by only US\$ 1.0 per person in 2007 and by US\$ 3.1 per person in 2015; these figures represent a very small proportion (from 0.1% to 0.3%) of total government annual expenditure per capita on health. A relatively small increase in domestic funding appears to be feasible and, given the necessary political commitment in all 18 eastern European countries, would fill most of the funding gap. Nevertheless, increased domestic funding will most likely not cover the cost of the technical cooperation required; adequately funding such cooperation requires increased funding from the Global Fund or other donors.

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Fig. 8. Funding gap to stop TB in eastern Europe per year, 2007–2015



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Addendum. Countries with lower priority for stopping TB and outside the EU

At present, the WHO European Region comprises 53 Member States; 27 of these are also members of the EU, and 3 (Iceland, Lichtenstein and Norway) fall under EEA and EFTA. Two long-term strategic plans address TB in Europe: the Plan to Stop TB in 18 High-priority Countries in the WHO European Region and the plan being developed by ECDC to guide the EU Member States and those under EEA and EFTA.

This Addendum considers 11 countries neither of high priority for TB control (according to the criteria expressed in the main body of the Plan) nor belonging to the EU. Six have a TB incidence of less than 20 cases per 100 000 population and are thus able to plan for TB elimination: Albania, Andorra, Israel, Monaco, San Marino and Switzerland. The other five – Bosnia and Herzegovina, Croatia, Montenegro, Serbia and The former Yugoslav Republic of Macedonia – must first pass the milestones of the targets for TB control.

No borders stop TB transmission, so all countries in the Region must consider TB-related interventions proportionate to their epidemiological situations. This Addendum focuses on where the implementation of the Stop TB Strategy is most needed as a condition for TB elimination in the future.

Activities to pursue high-quality DOTS expansion and enhancement

Table 1 summarizes TB control policies in the 11 countries.

Table 1. Overview of TB control policies, 2006

Country	DOTS population coverage (%)	TB national manual	External quality assurance for smear microscopy	Standard treatment regimens	DOT	Regular drug supply	Treatment outcome monitored
Albania	33	+	–	+	–	++	++
Andorra	100	++	–	++	–	++	++
Bosnia and Herzegovina	100	++	++	++	++	++	++
Croatia	25	++	++	++	++	++	+
Israel	100	++	++	++	++	++	++
Monaco	0	–	–	++	++	NA	–
Montenegro	NA	NA	NA	NA	NA	NA	NA
San Marino	0	–	–	+	+	NA	–
Serbia	98	++	+	++	++	+	++
Switzerland	0	++	++	++	+	++	–
The former Yugoslav Republic of Macedonia	100	++	–	++	+	++	++

Note. ++ = yes/all/> 75% HAART coverage; + = some/partially; – = no/none; NA = not applicable. Until January 2007, information on Montenegro was included under Serbia.

- In Albania, Croatia and Montenegro, develop/implement a national plan, based on the Stop TB Strategy, to achieve 100% DOTS coverage shortly. Develop medium-term national plans for TB control with budgets.

Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015

- In Monaco, San Marino and Switzerland, ensure surveillance systems allowing the health ministry to collect and analyse the treatment outcome of TB patients at PHC level. This is the only condition lacking to enable them to become “DOTS countries”.
- Develop/implement a national plan for TB elimination in the countries that have already achieved the TB control targets or a TB incidence lower than 20 cases per 100 000 population, such as Albania, Israel, Monaco and Switzerland.
- Use current Global Fund grants in Albania, Bosnia and Herzegovina, Montenegro, Serbia and The former Yugoslav Republic of Macedonia to strengthen the delivery of TB services and ensure their sustainability in the national health systems.
- Strengthen the national networks of laboratory services for direct microscopy, bacteriological culture and drug susceptibility testing in Albania, Montenegro, Serbia and The former Yugoslav Republic of Macedonia. Maintain external quality assurance through collaboration with a supranational TB reference laboratory.
- Ensure supervision of TB treatment and patient support through a proper balance of PHC and other levels of health care in all countries. Pursue compliance with TB treatment by including incentives and enablers for patients from vulnerable groups.
- Promote quality among national manufacturers of first- and second-line anti-TB drugs through the adoption of WHO-recommended good manufacturing practice.
- Strengthen TB recording and reporting in national surveillance systems, and use TB data at the national and subnational levels for quarterly monitoring of NTP services.
- Validate the quality of national TB surveillance and revise the WHO estimates on TB incidence, prevalence and mortality based on it.
- Mainstream the prevention and management of TB in children as part of routine NTP activities in all countries.

Activities to address MDR-TB, TB/HIV and other challenges

Even a small number of cases of MDR-TB and TB/HIV can represent a challenge for an NTP that must organize high-quality diagnosis, treatment and care services (Table 2). Very often, these cases are detected among migrant workers and IDUs, populations with special needs.

For many countries, grants from the Global Fund represent an opportunity to reach international standards for laboratory performance and the quality of second-line anti-TB drugs, which could have been initially excluded from national plans owing to poor cost-effectiveness.

- Strengthen capacity for TB bacteriological culture and drug susceptibility testing, particularly in Albania, Montenegro, Serbia and The former Yugoslav Republic of Macedonia.
- Adopt the WHO guidelines on the management of drug-resistant TB (10) in Albania, Bosnia and Herzegovina, Montenegro and The former Yugoslav Republic of Macedonia.
- Ensure adequate provision and use of high-quality second-line drugs following GLC recommendations.
- Strengthen collaboration between the TB control and the HIV/AIDS control programmes.
- Promote HIV surveillance among TB patients in Albania, Bosnia and Herzegovina, Montenegro, Serbia and The former Yugoslav Republic of Macedonia.
- Promote activities targeting high-risk groups, including migrant workers, prisoners and IDUs, in all countries.
- Link prison health services (and other relevant services outside the health ministry) with NTPs.
- Promote social support to TB patients.

Table 2. Overview of MDR-TB, TB/HIV and other challenges, 2006

Country	MDR-TB		TB/HIV		Other challenges	
	Policy in line with WHO	Interventions by NTP	Policy for HIV counselling and testing	HAART coverage	Prisons	Main other risk groups for TB
Albania	–	–	–	++	–	
Andorra	+	–	–	++	++	
Bosnia and Herzegovina	–	+	–	++	–	
Croatia	++	++	++	++	–	
Israel	++	++	++	++	++	Migrant workers
Monaco	–	–	–	++	NA	
Montenegro	NA	NA	NA	++	NA	
San Marino	–	–	–	++	NA	
Serbia	++	+	+	+	++	Roma, displaced people, refugees
Switzerland	++	++	++	++	++	Migrant workers
The former Yugoslav Republic of Macedonia	+	+	+	++	++	

Note. ++ = yes/all; + = some/partially; – = no/none; NA = not applicable. Until January 2007, information on Montenegro was included under Serbia.

Activities to help strengthen health systems

Especially in these 11 countries, where TB incidence is lower and further efforts to control and eliminate TB should be maintained for a long time, TB services must be built into the general health system. The national health system, in each of its functions (governance, financing, resource generation and service delivery) should be the main supporter of high-quality TB services, delivered through the family medicine network already in place (Table 3). In addition, central management of the planning, coordination and monitoring of TB services should be maintained, as well as updated national policies and training, and specialized diagnosis and treatment.

- Ensure a proper national plan for human resources development to support the effective and efficient provision of high-quality TB services.
- Promote and support the integration of TB services with others at PHC level through appropriate curricula for the basic education of doctors and nurses, up-to-date job descriptions and implementation of PAL.
- Collaborate on strengthening the health system through Global Fund grants in Albania, Bosnia and Herzegovina, Montenegro, Serbia and The former Yugoslav Republic of Macedonia.
- Ensure that the reorganization of services in health sector reform preserves and strengthens essential TB services.

Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015

Table 3. Overview on strengthening health system, 2006

Country	NTP with plan for human resources	Doctors and nurses with basic training in TB	Staff involved in TB with up-to-date job descriptions	NTP plan with health system strengthening	PAL implemented
Albania	–	+	–	–	–
Andorra	–	+	++	–	–
Bosnia and Herzegovina	++	+	++	–	–
Croatia	–	+	++	–	–
Israel	++	++	++	–	–
Monaco	–	–	–	–	–
Montenegro	NA	NA	NA	NA	NA
San Marino	–	–	–	–	–
Serbia	+	++	++	++	–
Switzerland	–	–	++	–	–
The former Yugoslav Republic of Macedonia	++	++	++	–	–

Note. ++ = yes/all; + = some/partially; – = no/none; NA = not applicable. Until January 2007, information on Montenegro has been included under Serbia.

Activities to engage all health care providers

Table 4 considers public (public hospitals, health insurance agencies, military, medical college hospitals, prisons) and private (private practitioners, nongovernmental organizations (NGOs), private hospitals, corporate services) health providers.

Table 4. Overview on engaging all health care providers, 2006

Country	Guidelines for private practitioners	Collaboration with all public providers	Collaboration with all private providers	Promotion of ISTC
Albania	–	–	–	–
Andorra	++	++	++	–
Bosnia and Herzegovina	–	–	–	–
Croatia	–	–	–	–
Israel	–	–	–	–
Monaco	–	–	–	–
Montenegro	NA	NA	NA	NA
San Marino	–	–	–	–
Serbia	–	+	+	++
Switzerland	++	++	++	–
The former Yugoslav Republic of Macedonia	–	+	+	++

Note. ++ = yes/all; + = some/partially; – = no/none; NA = not applicable. Until January 2007, information on Montenegro was included under Serbia.

- Enhance the collaboration of NTP with all public and private health care providers in all countries.
- Explore the potential involvement of additional public/private sectors.

- Ensure that all public and private health care providers in the country adhere to the ISTC.

Activities to empower people with TB and communities

People with TB and communities, and civil society at large, are essential partners in ensuring adherence to treatment and facilitating case finding (Table 5). ACSM activities can help to generate sustainable political, social and behavioural support for TB control and progress towards reaching the MDGs. The promotion of the Patients' Charter for TB Care is of paramount importance. ACSM methods depend on the local context, including specific needs, financial and technical capacities and the sociocultural environment.

Table 5. Overview on empowering people with TB and communities, 2006

Country	NTP with written ACSM plan	NTP measuring ACSM impact through population surveys	Community-based TB care	Patients' Charter for TB Care
Albania	–	–	–	–
Andorra	–	–	–	–
Bosnia and Herzegovina	–	–	–	–
Croatia	–	–	–	–
Israel	–	–	–	–
Monaco	–	–	–	–
Montenegro	NA	NA	NA	NA
San Marino	–	–	–	–
Serbia	–	+	–	–
Switzerland	–	–	++	++
The former Yugoslav Republic of Macedonia	–	–		

Note. ++ = yes/all; + = some/partially; – = no/none; NA = not applicable. Until January 2007, information on Montenegro was included under Serbia.

- Develop written national plans, ensure adequate financial and human resources and implement evidence-based, country-specific ACSM activities.
- Assess the impact of ACSM activities through population-based surveys.
- Explore and use opportunities for community-based TB care.
- Disseminate and promote the Patients' Charter for TB Care countrywide, and support patients' groups and organizations in monitoring compliance by health service providers.

Activities to enable and promote research

Serbia and Switzerland conduct operational research to guide their NTPs, but the other countries (Albania, Andorra, Bosnia and Herzegovina, Croatia, Israel, Monaco, San Marino and The former Yugoslav Republic of Macedonia) do not.

- Develop and implement a plan for operational research, documenting interventions and guiding further planning.
- Monitor the performances of the TB programme through the process of reforming the general health system and its service delivery.
- Seek the most effective interventions addressing TB among populations at special risk.

Annex 1. Indicators used in the tables in Chapter 3

Pursue high-quality DOTS expansion and enhancement

Directly observed treatment (DOT): implementation of directly observed treatment.

DOTS population coverage: the percentage of the national population living in areas where health services have adopted DOTS.

External quality assurance for smear microscopy: functioning of a system of external quality assurance for smear microscopy.

Regular drug supply: availability of uninterrupted supply of high-quality first-line anti-TB drugs.

Standard treatment regimens: adoption of standardized treatment regimens as recommended internationally.

TB national manual: the availability of a national TB control manual or guidelines for TB diagnosis and treatment.

Treatment outcome monitored: practice of patient cohort analysis to monitor treatment outcomes and TB programme performance.

Address MDR-TB, TB/HIV and other challenges

HAART coverage: percentage of people who are estimated to be living with HIV, to need highly active antiretroviral therapy and to be receiving it.

Main other risk groups for TB: presence of interventions addressing subgroups of the population at particular risk of TB, excluding the penitentiary system.

MDR-TB interventions by NTP: implementation of WHO-recommended MDR-TB interventions by the national TB programme.

MDR-TB policy in line with WHO guidelines: adoption of management guidelines for multidrug-resistant TB patients according to the WHO-recommended guidelines.

Policy for HIV counselling and testing: adoption of a national policy to offer HIV counselling and testing to TB patients (even if only in specific groups).

Prisons: implementation of internationally recommended TB control guidelines addressing the penitentiary system.

Contribute to health system strengthening

Doctors and nurses with basic training in TB: presence of TB control in the curriculum for basic training of both doctors and nurses.

NTP plan with health system strengthening: inclusion of approaches strengthening the general health system in the plan of the national TB programme.

NTP with plan for human resources: availability of a comprehensive strategic plan for human resource development, developed by the national TB programme.

PAL implemented: implementation of the Practical Approach to Lung Health.

Staff involved in TB with up-to-date job descriptions: availability of up-to-date job descriptions for staff involved in TB control.

Engage all health care providers

Collaboration with all private providers: extent of collaboration of the national TB programme with private service providers.

Collaboration with all public providers: extent of collaboration of the national TB programme with other public service providers.

Guidelines for private practitioners: availability of national guidelines on TB management for medical practitioners working outside public health clinics.

Promotion of ISTC: promotion of the International Standards for TB Care by the national TB programme.

Empower people with TB and communities

Community-based TB care: extent of community participation in TB care.

NTP measuring ACSM impact through population surveys: practice of the national TB programme to monitor the impact of advocacy-communication-social mobilization interventions.

NTP with written ACSM plan: availability of a plan for advocacy, communication and social mobilization written by the national TB programme.

Patient's Charter for TB Care: promotion of the Patients' Charter for TB Care.

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Office for Europe**

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PLAN TO STOP TB IN 18 HIGH-PRIORITY COUNTRIES IN THE WHO EUROPEAN REGION,
2007–2015

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