



TUBERCULOSIS POLICY FRAMEWORK AND IMPLEMENTATION IN RUSSIA

EPIDEMIOLOGICAL SITUATION

- > **Between 1991 and 2000, incidence of tuberculosis (TB) in the Russian Federation increased by 2.7 percent. In 2007 alone, a total of 117,738 new TB cases were reported.** More than one third of the cases – a total of 48,938 – were diagnosed as active TB. Meanwhile, the number of officially registered TB cases totaled 289,015 (as per 2006 data).
- > **According to the World Health Organization (WHO), Russia in 2006 ranked 11th in TB incidence out of the world's 22 high-burden countries¹.** Of all newly diagnosed TB cases reported in WHO's European Region², 35 percent were in Russia. The 117,738 new cases in 2007 correspond to national incidence of 82.6 cases per 100,000 persons. That rate is well above the average of 52.6 cases per 100,000 for WHO's European Region overall, and compares particularly unfavorably with 5 or 6 cases per 100,000 persons in countries including Finland, Norway and Sweden. TB incidence in 26 regions of Russia exceeded 100 cases per 100,000 persons, with the highest rates reported in Siberia and the Far East. For example, incidence was as high as 206.5, 143.8, 135.8 and 128.6 cases per 100,000 persons in, respectively, the Republic of Tyva, the Republic of Buryatia, Primorsky Krai and Kemerovo oblast.

¹ Information about the extent of TB and other diseases (such as HIV) is often provided in terms of incidence and prevalence. The terms are not interchangeable, however; they refer to very different things. The term incidence refers to new cases arising in a given time period (such as one year). The term prevalence refers to the total number of cases which exist in the population at a given point in time. As such, prevalence is based on cumulative data.

² The WHO European Region includes Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, the Former Yugoslav Republic of Macedonia, Finland, France, Germany, Greece, Georgia, Hungary, Iceland, Ireland, Israel, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Russian Federation, Romania, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, the United Kingdom of Great Britain and Northern Ireland, Tajikistan, Turkmenistan, Turkey, Ukraine and Uzbekistan.

- > **TB is more common among men than women in Russia; in 2006, TB incidence in men was 2.7 times as high as that in women** (126.2 and 45.9 cases per 100,000 persons, respectively). Almost 70 percent of new TB cases are registered among individuals in the most economically productive age group (25 to 54 years). The peak incidence of TB in women – 82.6 cases per 100,000 persons, as of 2005 – is among those in prime reproductive age (25 to 34 years old). Unfavorable social and economic conditions and factors, including inadequate diet or malnutrition, chronic stress, excessive fatigue, alcohol abuse, smoking, and overall unhealthy lifestyles appear to decrease immunity and facilitate the spread of TB. Partly for that reason, most people diagnosed with TB belong to socially vulnerable groups such as the homeless, the unemployed, migrants, or heavy alcohol users. Among the unemployed, TB incidence (as per 2005 data) is around 750 cases per 100,000 persons; the comparable figure among the working population is 45 cases per 100,000.
- > **In 2006, the number of TB cases reported across all Federal Correctional Service facilities was 14,283, which corresponded to more than 12 percent of all inmates in the system.** Between 1999 and 2006, the TB notification rate in correctional facilities declined from 4,347 to 1,387 cases per 100,000 detainees (suspected or charged) although in 2006 it was still 16.8 times higher than in the civilian sector.
- > **The proportion of primary multi-drug resistant (MDR³) pulmonary TB among newly diagnosed smear-positive TB cases in Russia increased from 6.7 percent in the early 2000s to nearly 9.5 percent in 2006.** A total of 4,056 new cases of MDR-TB were reported in 2006, bringing the cumulative number of MDR-TB cases in dispensary records to 24,055 cases by the end of 2006. The growing prevalence of MDR-TB lends greater urgency to the need for concerted action to prevent the spread of TB by improving the effectiveness

³ MDR-TB refers to strains of TB that are resistant to at least two of the most effective first-line TB drugs, rifampicin and isoniazid. The likelihood of a patient contracting MDR-TB is increased when he or she does not complete a full course of TB treatment. Lack of adherence to treatment regimens is one of the main reasons behind the spread of drug-resistant forms of TB.

and quality of bacteriological diagnosis of TB, promoting treatment, ensuring continued chemotherapy and regular drug administration, rendering social support to TB patients, and providing infection control measures. There is an important financial factor to consider as well. The cost of a full course (six months, usually) of first-line treatment for TB \$60 to \$100. However, a full course of treatment for MDR-TB usually lasts from 18 to 24 months and costs \$25,000 to \$30,000 because expensive second-line drugs must be used. (Such costs can be reduced to \$5,000 to \$7,000 when the drugs are purchased through the Green Light Committee [GLC] mechanism, but they are still far higher than for first-line treatment).

- **TB is a major cause of death from infectious diseases in Russia**, accounting for 83 percent of mortality associated with “some infectious and diseases”. In 2005, there were 32,292 deaths from TB, with mortality rate of 19.5 deaths per 100,000 persons. More than two thirds (67.3 percent) of deaths attributable to TB occur mainly in the economically productive age group of 25 to 54.
- **In 2006, there were 3,907 newly diagnosed cases of HIV-associated TB in Russia**, yielding an incidence of 6.4 cases per 100,000 persons (9,102 cases, or 31 percent of all TB patients). Although the TB notification rate in correctional facilities has decreased since 1999, the number of HIV-infected persons has increased. This has contributed to a rise in TB/HIV co-infection among inmates: in 2006, the TB/HIV co-infection rate among all detainees increased from 3.7 percent to 6 percent. Overall, there were 1,625 HIV-associated TB deaths in Russia in 2006 (exceeding those in 2005 by 41.3 percent), accounting for 59 percent of the total deaths of persons living with HIV. Therefore, by 2006 TB had become the main cause of death of HIV-infected persons in Russia.

PROGRAMS AND POLICY IMPLEMENTATION

- **Authorities in the former Soviet Union devoted significant attention to TB control and prevention. They established a large network of specialized TB institutions, most of which continue to operate in Russia today.** Each region of Russia has a central TB dispensary and TB hospitals, rooms and outpatient departments. The national health policy, which drives all TB-related prevention and treatment efforts, is determined by the Ministry of Health and Social Development of the Russian Federation. The Federal Agency on Health Care and Social Development and the Federal Correctional Service are responsible for the implementation of targeted health programs in their respective areas (the general population and the penitentiary system). There are five federal research institutes responsible for the collection and analysis of regional data on TB.

KEY COORDINATING BODIES AND AGENCIES FOR TB ACTIVITIES

Federal Ministry of Health and Social Development

Federal Agency on Health Care and Social Development

Federal Correctional Service

National Coordination Committee

Interagency Coordination Committee

High-Level Working Group on Tuberculosis

➤ A collegial advisory body established in 1999 by the Ministry of Health and Social Development, the Ministry of Justice, the Russian Academy of Medical Sciences and WHO to utilize Russian and international experience in TB control and prevention.

The following research institutes at the federal level are involved in the development of methods to treat TB:

- Institute of Phthiopolmonology at I.M. Sechenov Moscow Medical Academy;
- Novosibirsk Institute of Tuberculosis;
- St. Petersburg Institute of Phthiopolmonology;
- Ural Institute of Phthiopolmonology; and
- Central Research Institute of Phthiopolmonology of the Russian Academy of Medical Sciences

Federal Center for TB Monitoring at the Central Research Institute for Health Care Organization and Information

Coordinating Board for Prevention and Treatment of HIV-Associated Tuberculosis

➤ This board was established in 2005 to develop a unified strategy of TB control for people living with HIV.

- **TB control services and the epidemiological situation significantly deteriorated in the 1990s. As a result, the Federal Program on Urgent Measures to Combat TB in the Russian Federation (1998–2004) was adopted by the government to ensure TB care for all patients; increase the effectiveness of TB detection, treatment, and prevention; and promote domestic production of TB drugs and vaccines.** In 2001, this program was integrated into a larger-scale Federal Program on the Prevention and Control of Socially Significant Diseases and extended until 2006. In 2007, the government decided to extend the Federal Program on the Prevention and Control of Socially Significant Diseases, including TB, for a period from 2007 to 2011.
- **The current Russian strategy in phthiology, which is based on the Soviet era strategy⁴,** consists of training people and health care professionals to make them aware of the basic principles of TB prevention;

⁴ The term “phthiology” refers to the study and care of TB.

early detection of TB by means of chest X-ray (fluorography) screening or tuberculin skin test in children, with particular focus on members of most-at-risk populations; creation of a specialized network of TB institutions, with TB dispensaries as key components of the network; long-term hospital stays of patients with active TB; individual tailoring of TB treatment regimens; the use of surgical treatment in addition to medical treatment of pulmonary TB; and TB control and prevention measures for outbreaks of TB infection.

- **The first pilot projects to implement WHO's recommended TB control strategy (DOTS)⁵ were started in Russia in 1994–1995.** WHO's strategy outlines the minimum essential measures required to ensure the efficiency of TB control programs. Its priorities include the following five components: sustained political commitment; early identification of contagious patients; standard chemotherapy under direct observation; secure and uninterrupted supply of TB drugs; and TB monitoring and recording based on a system of cohort analysis. DOTS is aimed at promoting minimum standards of TB control measures in highly resource-constrained environments, but it is also considered applicable and appropriate in countries such as Russia. WHO's TB control strategy was considerably revised, expanded, and amended in 2006. The current strategy focuses on quality control, TB/HIV, MDR-TB, coordination between partners, the community's role, and promotion of research.
- **The Federal Law on Prevention of the Spread of Tuberculosis in the Russian Federation** and the corresponding Decree of the Government of the Russian Federation were issued in **2001**. They outlined the state and financial priorities in TB control and prevention activities.
- **National guidelines and instructions developed on the basis of international experience and WHO recommendations were published in 2003–2006.** They focused on, among other things, laboratory diagnosis of TB, standardized chemotherapy, cohort analysis, and recording and reporting forms.
- **Since 2003, TB control projects have been initiated in Russia with support from international sponsors.** In 2003, several TB control programs were launched using a five-year \$100 million loan from the World Bank. In December 2004, funds became available from the Global Fund to Fight AIDS, TB, and Malaria (Global Fund) as part of a five-year grant totaling \$11 million. Partners in Health, a non-governmental organization (NGO), is

the Principal Recipient of that Round 3 Global Fund grant, which focused initially on the Tomsk region. The Global Fund vowed to provide a much larger amount of money (\$88 million over five years) in a Round 4 grant program that started in December 2005; another NGO, the Russian Health Care Foundation, is the Principal Recipient of that grant. All three of these projects (through the World Bank and Global Fund) are aimed at providing necessary equipment to TB institutions and equipping health care professionals, both phthisiologists and other physicians, with knowledge of various aspects of TB control. TB monitoring systems are being improved and the training of health care professionals is being upgraded and improved. Moreover, measures to address HIV-associated TB are among the priorities of the Global Fund programs.

- **Nine specialized centers for TB control and prevention, including in correctional facilities, have been opened with support from the Global Fund.** Five of these centers were established at federal research institutes. The Global Fund programs are also aimed at providing infection control tools and second-line TB drugs for treating patients with MDR-TB. Russian health care officials, international organizations and WHO officials have worked to ensure that 18 Russian regions have been approved by the Green Light Committee (GLC) for initiating the implementation of MDR-TB control projects. With GLC approval, second-line TB drugs can be purchased at considerably lower prices.
- **Funding for TB control activities in Russia comes from several sources.** In 2007, the total costs of TB control in Russia reached 5.46 billion rubles (\$230 million). Of that sum, 49 percent (about 2.7 billion rubles) were allocated from the budgets of the Russian regional governments; 29 percent, or 1.57 billion rubles, were allocated from the federal budget – including 1.41 billion rubles from the Federal Program on the Prevention and Control of Socially Significant Diseases (2007–2011) and 160 million rubles from a high-priority national project “Health”; and 22 percent (about 1.19 billion rubles) came from international donations, notably the World Bank loan and Global Fund grants. In 2007, funding to fight TB was distributed in the following way: 4.82 billion rubles, or 88 percent of the total sum, were spent on TB treatment, including purchase of TB drugs; 160 million rubles were earmarked for TB prevention; some 450 million rubles were allocated for building and construction, as well as renovation; and 30 million rubles were allocated for research from the federal budget.

⁵ DOTS is an acronym for “directly observed treatment, short course”. Additional information is available on WHO's website: www.who.int/tb/dots/en/.

The total funding for the subprogram “Tuberculosis” of the Federal Program on the Prevention and

Control of Socially Significant Diseases (2007–2011) was 26.28 billion rubles, including 9.78 billion rubles from the federal budget and 16.5 billion rubles from the budgets of the Russian regions.

Increased government funding as well as financial support from the Global Fund and World Bank have made it possible to improve infrastructure, provide up-to-date equipment, and modernize TB institutions and correctional facilities across Russia.

- > **A Group of Eight (G8) Summit Declaration on the Fight against Infectious Diseases** was adopted on Russia's initiative at the 2007 G8 summit in St. Petersburg. The declaration emphasized the fact that tackling TB is a global challenge.
- > **The TB situation remains critical despite containment efforts undertaken to date.** Increasing prevalence of MDR-TB and TB/HIV co-infection is of special concern. In an annual cohort of newly diagnosed, smear-positive TB cases reported in 2005, chemotherapy was effective in 57.2 percent of cases and ineffective in 14.7 percent; premature discontinuation of treatment was reported in 10.4 percent of patients; and 9.3 and 3.5 percent of deaths were attributed to TB and other conditions, respectively.

URGENT ISSUES TO ADDRESS

- > **Financing of TB services differs widely across individual regions in Russia**, a situation that limits the effectiveness of full-scale integrated TB control measures.
- > **The lack of adequate political support, especially among regional governments**, leads to not only insufficient TB funding but also to poor coordination of TB control activities.
- > **The high cost of second-line drugs and persistent deficit of budget funds impede adequate access to MDR-TB treatment**, thereby contributing to the spread of drug-resistant TB strains.
- > **Drugs purchased and used for treating TB should be of proper quality.** The use of low-quality drugs will contribute to the spread of life-threatening forms of MDR-TB.
- > **There is lack of cooperation between different individual facilities and also federal ministries.** More efficient coordination and continuity of care are essential at all levels. It is necessary to ensure close coordination between TB services and general

health care services, especially primary health care facilities and providers.

- > **A shortage of skilled TB specialists exists at all levels** – local, regional, and federal. At the end of 2006, the TB control system comprised a total of 48,131 professionals, including 14,910 physicians and 33,221 low-grade medical workers. Actually, the TB services had 8,517 physicians and 32,022 low-grade medical workers. Poor motivation, low wages and increased risk of contracting TB are the main reasons behind the currently experienced problems in recruiting people to fill vacant positions. Not only are young specialists not interested in working in TB institutions, but potential staff are often dissuaded by the fact that the TB incidence among health care workers employed at TB institutions is 4.5 times higher than that of the general population.
- > **Equipment and facilities at many health care institutions, including those focusing on TB, are often decrepit and obsolete.** It is therefore difficult to provide adequate care and treatment for patients and to protect medical staff from infection.
- > **Inadequate and poorly implemented microbiological testing and examination methods** lead to misdiagnoses or ineffective treatment of patients, especially those with MDR-TB. An appropriate and modern quality control system has not yet been implemented across the country.
- > **TB treatment and management in Russia are characterized by a relatively low level of effectiveness.** This shortcoming is particularly worrying because it increases the likelihood of an even greater MDR-TB epidemic.
- > **The growing prevalence of MDR-TB and HIV-associated TB** has the potential to massively destabilize and weaken TB control in Russia. If no concerted action is taken soon to adequately address these trends, a surge in **extensively drug resistant TB** (XDR-TB⁶) is a likely result.

PRIORITY RECOMMENDATIONS

- > **A national body in Russia should be established to exercise executive power** and responsibility for

⁶ XDR-TB is a relatively new and especially dangerous form of MDR-TB. It was first diagnosed in southern Africa in 2006 and has since been spreading around the world. XDR-TB is defined as TB that is resistant not only to isoniazid and rifampin (first-line drugs), but also to any drug in the fluoroquinolone class and at least one of three injectable second-line drugs (i.e., amikacin, kanamycin, or capreomycin).

- TB control planning, coordination, financing, development, promotion, and surveillance. This body must have corresponding powers to promote and supervise TB control program at all levels and ensure inter-institutional coordination. It should include representatives of all ministries and departments involved in TB control activities, including the Ministry of Health and Social Development, the Ministry of Agriculture, the Ministry of Economy and Development, the Ministry of Finance and the Federal Correctional Service. The coordinating body's decisions should be binding.
- > **A national strategic plan (for 8-10 years) should be developed** to ensure sufficient TB services throughout the country. A key element of this plan should be the provision of estimates for adequate resources to prevent the spread of TB at all levels.
 - > **Mechanisms for coordinating TB control measures should be initiated at all administrative levels, including regional and local governments.** These mechanisms should be established within the frames of various health care structures and among various departments involved in the prevention and treatment of socially significant diseases.
 - > Because investments in TB prevention are most effective in averting TB epidemic, **it is necessary to develop and implement an overall TB prevention strategy.** One priority of such a strategy should be improved TB prevention in health care facilities.
 - > **Programs designed to combat the spread of MDR-TB and TB/HIV co-infections must be fully funded and expanded.** Based on estimated requirements, federal officials must use federal budget funds to close budgetary gaps in TB services at both regional and local levels. It seems reasonable to establish a specially protected funding stream from the federal budget to ensure the full financing of TB control activities.
 - > **TB service programs should be provided** with all materials and tools required. Additional resources and regulatory approaches should be identified to increase the wages and motivation of employees in TB care facilities and to provide social support for TB patients.
 - > **National TB policies should include mechanisms for mobilizing private-sector resources** and leveraging core business competencies to combat the spread of TB in Russia. The private sector can play an important role in promoting awareness campaigns, TB prevention programs and worksite health protection programs. The sector should also be enlisted to help develop new and improved methods of TB detection and treatment.
 - > Funds should be made available for **ongoing, advanced training** of physicians and other health care professionals.
 - > It is of vital importance that **effective TB management and continued, supervised TB treatment are ensured.** Standardized treatment guidelines and protocols, as advanced by WHO, should be followed as rigorously as possible. Poor adherence and inappropriate treatment regimens are the main risk factors for the development and spread of drug-resistant forms of TB.
 - > Federal research institutes, together with international organizations and WHO, should perform a **standard study to measure the prevalence of drug-resistant TB in Russia.**
 - > Measures for identifying and preventing the spread of **XDR-TB** should be developed and implemented as soon as possible. The time to act is now, before this especially deadly strain becomes common in Russia.
 - > **Quality control systems for TB laboratory tests should be introduced** in each region of Russia.
 - > Various types of integrated, applied **research** should be adequately financed as part of a comprehensive effort to **improve TB treatment.** A particular focus of such efforts should be on mechanisms and therapies to more effectively treat drug-resistant forms of TB and TB associated with HIV and other diseases.
 - > Comprehensive and targeted measures should be taken to **raise public awareness about TB** and its associated risk factors and symptoms

References

1. "Tuberculosis in the Russian Federation in 2006". Analytical review of TB statistics used in the Russian Federation, Moscow, 2007.
2. "Global Tuberculosis control—surveillance, planning, financing", WHO report, 2008.
3. The Stop TB strategy: Building on and enhancing DOTS to meet TB-related Millennium Development Goals, WHO, 2006.
4. "Health for all", WHO European Region database.
5. Subprogram "Tuberculosis" of the Federal Program on the Prevention and Control of Socially Significant Diseases (2007–2011).