World Health Organization
REGIONAL OFFICE FOR Europe

Self-reliance review of tuberculosis activities in Belarus

25-28 March 2018
Mission Report

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Suggested citation. Self-reliance review of tuberculosis activities in Belarus**.** World Health Organization; [2018]. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris.

Abstract

The WHO Regional Office for Europe is assessing readiness for transition from Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM)-financed tuberculosis (TB) activities in six selected countries (Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova and Ukraine) in the landscape of overall dwindling external donor funding. The aim of this work is to assist (i) countries in documenting their preparedness to move from donor-funded to domestically funded anti-TB activities and (ii) country-level stakeholders to highlight and prioritize transition-focused efforts. As part of this work, two WHO experts visited Belarus during 25–28 March 2018 for WHO's third in-country meeting for discussion and assessment of the project. This report presents an overview of the transition process in Belarus, some sustainability aspects and challenges stemming from donor withdrawal from TB-related activities, along with recommendations on how to overcome transition-related difficulties and ensure sustainability.

Keywords

BELARUS, TUBERCULOSIS, TRANSITION, GLOBAL FUND, FINANCIAL SUSTAINABILITY, HEALTH SYSTEM STRENGTHENING

Contents

Abbreviations

Bdq	bedaquiline
Cfz	clofazimine
DOT	directly observed treatment
DR-TB	drug-resistant tuberculosis
FLD	first-line antituberculosis drug
GDF	Global Drug Facility
GDP	gross domestic product
GFATM	Global Fund to fight AIDS, Tuberculosis and Malaria
MDR-TB	multidrug-resistant tuberculosis
MoF	Ministry of Finance
MoI	Ministry of the Interior
MoH	Ministry of Health
MSF	Médecins Sans Frontières
M/XDR-TB	multidrug and extensively drug-resistant tuberculosis
NTP	National Tuberculosis Programme
PHC	primary health care
PIU	Project Implementation Unit (of the Global Fund to fight AIDS, Tuberculosis and Malaria)
RSPCMT	Republican Scientific and Practical Centre for Medical Technologies
RSPCPT	Republic Scientific and Practical Center of Pulmonology and Tuberculosis
SLD	second-line antituberculosis drug
TB	tuberculosis
TB-REP	Tuberculosis Regional Eastern European and Central Asian Project
USAID	United States Agency for International Development
XDR-TB	extensively drug-resistant tuberculosis

Overview

On 25–28 March 2018, WHO consultants visited Minsk, Belarus to assess the financial and programmatic sustainability of TB activities in the country and its readiness to transition from a donor-financed to a government-financed programme. This document provides an overview of the mission and the resulting findings.

Scope and purpose of the technical assistance mission

Under the framework of a United States Agency for International Development (USAID) Regional Platform project, the WHO Regional Office for Europe is supporting the six Member States within the Eastern Partnership[1] to document their preparedness to transition to government-financed programmes and the financial sustainability of their TB activities, considering the reduction in support from the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) and other donors. The project will review the sustainability of donor-financed TB activities, analyse the challenges and potential consequences of the transition, and suggest actions to mitigate challenges and maximize opportunities in the six Eastern Partnership countries. Belarus was the third Eastern Partnership country visited during this project.

The mission objectives were to:

- discuss sustainability successes and challenges to date with relevant stakeholders;
- explore the triggers and enablers for transition;
- identify the gaps in key transition-related financial, human resources and programmatic data; and
- support the review and subsequent development of tailored strategic plans in countries where these are currently lacking, and to review and provide expert opinion on existing ones.

The consultants are grateful to the WHO Regional Office for Europe's Joint TB, HIV and Viral Hepatitis programme for driving the preparations for the technical mission; the WHO Country Office in Belarus; and the WHO Representative in Belarus, Batyr Berdyklychev. Special thanks are given to the national professional officer, Viatcheslav Grankov, for organizing the mission and providing overall support during the country visit. Thanks are also given to the Head of the Republican Scientific and Practical Center of Pulmonology and Tuberculosis (RSPCPT), Professor Henadz Hurevich, and his team, the Ministry of Health (MoH) of Republic of Belarus, and staff of the GFATM Principal Recipient, the Republican Scientific and Practical Center of Medical Technologies and all colleagues and stakeholders met in Belarus. A full list of people met with on this mission is included in Annex 2.

[1] Eastern Partnership countries comprise Armenia, Azerbaijan, Belarus, Georgia, the Republic of Moldova and Ukraine

Executive summary

The WHO Regional Office for Europe is supporting six Eastern Partnership countries to document their preparedness to transition from donor-funded to domestically funded antituberculosis (anti-TB) activities. As part of this work, two consultants travelled to Belarus on 25–28 March 2018 for WHO's third in-country discussions for this project. The discussions focused on successes and challenges related to sustainability; triggers and enablers for transition; gaps in transition-related financial, human resource and programmatic data; and the country's existing TB and health system-related plans. The findings are outlined below.

Belarus remains committed to the principle of universal access to health care and provides health care that is free at the point of use through predominantly state-owned facilities. Incremental change, rather than radical reform, has been the hallmark of health care policy in Belarus and, as a result, the role of primary health care (PHC) is still secondary to that of specialist and hospital-based care.

Key concerns focus on the issues of high costs in the hospital sector; excess hospital capacity; lack of evidence-based screening, diagnostic and treatment procedures; and a need for more efficient allocation and financing mechanisms, all which currently preclude health system and health outcome optimization.

Nevertheless, between 2008 and 2013, 33% fewer people died from TB. Other achievements to date include a reduction in TB rates, morbidity and mortality: 150 fewer patients were diagnosed with multidrug-resistant TB (MDR-TB) in 2017 than in 2016. Among those diagnosed with TB, the MDR-TB rate was 36% among new cases and 68% among previously treated cases.

Pilot projects in the Mogilev and Brest oblasts are currently seeking to provide an evidence base for improving allocative efficiency and scaling up for a more efficient TB response and health system arrangement.

Suggestions to address programmatic and transition-related gaps in Belarus are summarized below.

Area	Action	Timeline	Responsible agency
Socioeconomic and geopolitical context in Republic of Belarus	Begin an open dialogue between the MoH, Ministry of Finance (MoF) and the National TB Programme (NTP) to ensure budget allocations and priorities are aligned, sustainable and realistic in light of Belarus's economic situation	Commence immediately, ongoing until complete (ASAP)	MoF, MoH, NTP
	Revise the activities and resources planned in the strategic documents	Commence Q4 2018, ongoing	MoF, MoH, NTP

	(National strategy for sustainable social and economic development, TB subprogramme; and Concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care) and reprioritize the activities in light of the country's changed economic and donor landscape	until complete (ASAP)	
	Develop new, budgeted action plans to address the period spanning 2019–2021 to align with the new GFATM grant for the same period	Commence Q4 2018, ongoing until complete (ASAP)	MoH, NTP
Policy and strategies pertaining to TB	Update strategic documents and develop and endorse an additional strategic document on laboratory service development. Additionally, update and consolidate a single document incorporating in the **People's Health and Demographic Security of the Republic of Belarus" (2016-2020)[2],** TB sub-programme, the Plan on MDR-TB and extensively drug-resistant TB (M/XDR-TB) and laboratory service development, which should include all aspects of TB prevention, treatment and care in the country	Commence Q4 2018, ongoing until complete (ASAP)	MoH
	Recalculate the TB budget, considering the new funding from GFATM for 2019–2021 (US$6 677 941)	Q1 2019	MoH, NTP, GFATM Project Implementation Unit (PIU)
	Revise the Implementation plan for the concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care to illustrate the extent of implementation to date. The new	Q4 2018	MoH, NTP, GFATM PIU

[2] Council of Ministers of the Republic of Belarus; http://www.government.by/ru/solutions/2431

	plan should be developed for the 2019–2021 period, considering the new GFATM grant for the same period		
Financing and planning			
	Assist the Department of Organizational and Methodological Work in devising and implementing an action plan based on the findings and recommendations of the Optimizing investments in Belarus' tuberculosis response study (Optima TB study), in particular, how to reallocate resources to achieve allocative efficiency for the National TB Program (NTP)	Ongoing	WHO Regional Office for Europe
	Support resource mobilization efforts to increase political will to ensure that potential savings resulting from improved efficiencies in other areas are reallocated to more effective bedaquiline (Bdq) treatment regimens containing new and repurposed anti-TB drugs	To commence Q4 2018	WHO Regional Office for Europe
	Substantially reduce inpatient treatment and duration of hospitalization in line with WHO recommendations. At the same time, maximize patient outcomes by increasing support to basic ambulatory directly observed treatment (DOT) service points	Commence Q4 2018	MoH, NTP
	Build capacity and provide guidance for all necessary stakeholders (MoH, NTP) for procuring drugs on the international market so that drugs can be purchased more cost-effectively	Commence Q4 2018	Global Drug Facility (GDF), MoH, NTP, WHO Regional Office for Europe

	Renew and update the current Action plan on sustainability (which covers 2016–2018) so that it includes the three remaining years of GFATM support (2019–2021)	Q4 2018	MoF, MoH, NTP
	Utilize the Optima TB report to advocate for significant shifts away from inpatient and involuntary isolation care towards upstream efforts (early diagnosis, treatment and health maintenance)	Commence Q4 2018, build efforts around key parliamentary dates	MoH
Supervision, monitoring and surveillance	Include the expenses of supervision/monitoring visits in the TB budget and reflect the takeover of funding by the Government in the Implementation plan	Q4 2019	MoH
Medicine procurement	Consider taking the actions envisaged in the Implementation plan (listed above)	Q4 2018	MoH
	Define new and exact time frames for each action, while developing plans for the 2019–2021 period	Commence in line the previous action	MoH
	Revise medicine registration practice to simplify the procedure and remove barriers to importing high-quality drugs	Q1 2019	MoH
	Ensure a budget is provided for drugs addressing the side-effects of all drug-resistant TB (DR-TB) patients, irrespective of the patient profile or model of care	Q1 2019	MoH
	Coordinate and discuss the procurement process for drug and laboratory supplies for 2019 to avoid interruption in treatment and diagnostics	Commence immediately, conclude Q4 2018	GFATM, MoH, RSPCPT/NTP, WHO

	Support capacity-building for local stakeholders involved in forecasting and procurement of drug and laboratory consumables	Commence immediately, continue support until Q3 2019	GFATM, MoH, RSPCPT/NTP, WHO
Quality, safety and standards	Build capacity and provide guidance for all necessary stakeholders (MoH, NTP) in how to procure drugs via the GDF so that drug quality and consistency can be assured	Commence immediately, continue support until Q3 2019	WHO Regional Office for Europe
	Assist local drug manufacturers in applying for WHO prequalification	Ongoing	WHO Regional Office for Europe
Service delivery and linking with other interventions; health system strengthening; and evidence-based policy and practice	Consider experiences from the Mogilev pilot project and Optima TB project results, and the expertise available from the WHO Tuberculosis Regional Eastern European and Central Asian Project (TB-REP) in implementing the pilot project in the Brest oblast	Commence Q1 2019, ongoing	MoH, RSPCPT
	Consider learnings from the pilot project in Brest and introduce point-of-care services for patients with TB, HIV, hepatitis C and substance abuse	Commence Q1 2019, ongoing	MoH, RSPCPT
	Consider the experiences of Médecins Sans Frontières (MSF) in improving TB treatment adherence among patients with alcohol abuse issues	Commence Q4 2018	MoH, RSPCP
	Provide technical assistance according to the TB-REP-developed blueprint for a people-centred approach to TB care in: • calculating the optimal number of TB beds for each oblast, with the involvement of	Commence Q4 2018, ongoing	WHO Regional Office for Europe

	representatives from each oblast; • defining the services given by service providers; and • implementing results-based financing for TB services		
	Provide expertise and recommendations to inform diagnosis-related groups, as defined by the MoH	Commence Q1 2019, ongoing	WHO Regional Office for Europe
	Scale up the use of rapid molecular diagnostics	Commence Q4 2018, ongoing	MoH, NTP
	Strengthen the links between HIV and TB services	Commence Q4 2018, ongoing	MoH, NTP
	Improve contact tracing, active case-finding and care for patients with latent TB infection	Commence Q4 2018, ongoing	MoH, NTP
	Improve care for TB patients with alcohol and illegal drug abuse	Commence Q4 2018, ongoing	MoH, NTP
	Develop a case study on the pilot projects in the Brest and Mogilev oblasts to highlight the lessons learned, particularly the unintended consequences of dis/incentives linked to financing mechanisms	Q1 2019	WHO Regional Office for Europe
	Conduct a full assessment of the possible implications of merging TB and pulmonology specialities	Q1 2019	MoH, NTP
TB care in the penitentiary system	Engage and involve representatives of the Medical Department of the Ministry of the Interior (MoI) in revising the Implementation plan	Q4 2018	MoH, MoI
	Reflect the transition of funding from the GFATM to the MoI in the new plan for 2019–2021	Commence Q4 2018, complete ASAP	MoH, MoI
	Continue providing support for staff	Q1 2019	GFATM

	training in the penitentiary system to enhance support for and follow-up of released prisoners		
	Assess intensive care measures in the prison TB hospital and address any identified problems using support planned in the new GFATM grant	Q1 2019	GFATM
Communications and advocacy	Provide technical assistance and in-field (not lecture-based) capacity-building support with the aim of improving physician/patient interactions	Q1 2019	WHO Regional Office for Europe and in-country partner (TBD)
	Form an advocacy coalition and develop materials targeting decision-makers to communicate the cost–effectiveness of upstream actions in improving early diagnosis of TB and treatment with the best available drugs	Q4 2019	Fight TB Together, Red Cross

ASAP: as soon as possible; Q1: first quarter; Q2: second quarter; Q3: third quarter; Q4: fourth quarter; TBD: to be determined.

1. Belarus: the socioeconomic and geopolitical context

The Republic of Belarus declared independence from the Soviet Union in December 1991. Since then, the country has been a titular democracy, headed by a president with very strong executive powers. President Lukashenko has been in power since 1994. Owing to the moderate pace of economic reforms and partial price liberalization, the country avoided the full impact of economic liberalization (as experienced in many other countries of the Commonwealth of Independent States). The relatively mild economic transformation has resulted in comparatively low rates of unemployment, poverty and inequity, as well as less drastic fluctuations in mortality indicators. However, the global economic crisis which began in 2008 has threatened this stability. Furthermore, revaluation of the Belarusian rouble in 2011 rapidly increased the relative cost of imports, including fuel and pharmaceuticals, had an inevitable impact on the standard of living in the population.[3]

Despite considerable changes since its independence, Belarus retains a commitment to the principle of universal access to health care provided free at the point of use through predominantly state-owned facilities. Incremental change, rather than radical reform, has also been the hallmark of health care policy; as a result, the role of PHC is still is still secondary to that of specialist and hospital-based care.

Belarus ranks 52nd in the United Nations Development Programme's Human Development Index.[4,5] The country has a population of approximately 9 507 120 (population growth rate, 0.184% in 2016), of which 77% live in urban areas.[6]

The World Bank classifies the Republic of Belarus as an upper-middle income country. The gross national income was US$6730 per capita in 2013, but an estimated 5.5% of the population lives below the national poverty level.[7] In 2015, the country had a Gini index[8] of 26.7.

In Belarus, the gross domestic product (GDP) and GDP per capita followed a generally positive trend between 2000 (when the GDP and GDP per capita were $12.737 billion and $1276, respectively) and 2014 (when the GDP reached $78.814 billion and GDP per capita reached $8318). However, this trend reversed sharply in 2016, with negative GDP growth (−2.469%), reducing the GDP to $47.407 billion

[3] Richardson E, Malakhova I, Novik I, Famenka A. Belarus: health system review. Health Systems in Transition. 2013;15(5):1–118 (http://www.euro.who.int/__data/assets/pdf_file/0005/232835/HiT-Belarus.pdf?ua=1, accessed 1 August 2018).

[4] A ranking of 52 out of 188 countries places Belarus in the "very high human development" group (data from 2015).

[5] Table 2: Trends in the Human Development Index, 1990–2015. In: Human Development Reports [website]. New York: United Nations Development Program; 2018 (http://hdr.undp.org/en/composite/trends, accessed 1 August 2018).

[6] Urban population (% of total). United Nations Population Division. World Urbanization Prospects: 2014 Revision. In: Data [website]. Washington (DC): The World Bank; 2018 (https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=BY, accessed 1 August 2018).

[7] Belarus. GNI per capita, Atlas method (current US$). In: Data [website]. Washington (DC): The World Bank; 2018 (http://data.worldbank.org/country/belarus, accessed 1 August 2018).

[8] Gini index measures the extent to which the distribution of income within an economy deviates from a perfectly equal distribution. It indicates in/equality. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.

($4989 per capita) and government tax revenue as a percentage of GDP[9] to 13.88% during the first recession in two decades.

During 2016–2017 period, the external environment deteriorated considerably; in particular, the slow-down in the economy of the Russian Federation contributed to a decline in the Belarusian industrial output, which fell by 6.6%.

The country is divided into six administrative regions called **oblasts** (Brest, Gomel, Grodno, Mogilev, Minsk and Vitebsk), with the city of Minsk a separate administrative entity. A fifth of the country's population reside in Minsk. The oblasts are further divided into 121 districts called rayons, with populations varying from 12 000 to 120 000.

Recommendations

Recommendations for the MoF, MoH and NTP:

- Begin an open dialogue to ensure that budget allocations and priorities are aligned, sustainable and realistic in light of country's economic situation.
- Develop new plans for the 2019–2021 period aligned with the new GFATM grant for the same period.

Recommendations for the MoH and NTP:

- Based on the outcomes of the dialogue, revise the activities and resources planned in the strategic documents (National strategy for sustainable social and economic development; the TB subprogramme; and Concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care), and reprioritize the activities in light of the country's changed economic and donor landscape.

2. Policy and strategies pertaining to TB

The main strategic document on TB care in Belarus is included in the state programme for 2016–2020, People's health and demographic security of the Republic of Belarus**.** The Programme was developed in accordance with the priority areas of social and economic development defined in the National strategy for sustainable social and economic development of the Republic of Belarus for the period up to 2020 and was endorsed by Council of Ministers of the Republic of Belarus on 14 March 2016 (order no. 200).[10]

The state programme includes seven subprogrammes, with Subprogramme 4 (entitled Tuberculosis) focused on TB prevention, treatment and care. The objectives of the TB subprogramme are to: (i)

[9] Tax revenue refers to compulsory transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties and most social security contributions are excluded. Refunds and corrections of erroneously collected tax revenue are treated as negative revenue.

[10] Council of Ministers of the Republic of Belarus [website]. Minsk; 2018 (http://www.government.by/en/, accessed 1 August 2018).

prevent TB mortality; (ii) prevent TB incidence; and (iii) provide quality care for MDR-TB patients. Each objective has corresponding indicators, which need to be revised and updated.

The TB sub-programme is presented in the list of activities by objectives for each oblast, including the MoI, with a corresponding budget for each year. The sub-programme provides information on the funding source, as outlined in Section 2.1.

The MoH has endorsed the ministerial decrees related to the sustainability of TB and HIV programme activities: the Implementation plan for the concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care, signed 21 December 2016; and the Concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care, dated 21 April 2017.[11]

The Implementation plan covers the three years spanning 2016–2018 and contains several important topics for consideration during the transition period and for ensuring sustainability:

- development and finalization of regulations to ensure permission for procurement of drug and laboratory consumables from international platforms (i.e. the GDF);
- domestic takeover of purchasing (new and reprogrammed) anti-TB drugs and laboratory consumables for rapid molecular tests;
- promotion and support for registration of new and reprogrammed anti-TB drugs; and
- full coverage of expenses for maintenance and further development of the electronic database.

The Plan on M/XDR-TB prevention and control in the Republic of Belarus, 2016–2020 was approved by Minister of Health Decree on 16 June 2016. The Plan contains a summary budget for the years spanning 2016–2018 only. The budget indicates funding gaps of $9.6 million for drug procurement for MDR-TB patients and of $0.56 million for other activities (monitoring and evaluation, operational research, training, technical assistance).

Updated national guidelines on the treatment for all forms of TB (including childhood TB), pharmacovigilance and infection control are available in the NTP.

Recommendations

Recommendations for the MoH:

- Update strategic documents and develop and endorse an additional strategic document on laboratory service development and Plan on M/XDR TB, to include all aspects of TB prevention, treatment and care in the country; update and consolidate a document including the TB sub-programme;
- Revise and update indicators in the state programme, People's health and demographic security of the Republic of Belarus;
- Recalculate the TB budget, considering the new funding from GFATM for 2019–2021 ($6 677 941).

[11] MoH of the Republic of Belarus [website]. Minsk; 2018 (http://www.minzdrav.gov.by/en/, accessed 1 August 2018).

- Revise the Implementation plan for the Concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care to illustrate the extent of implementation to date. The new Implementation plan should be developed for the 2019–2021 period, considering the new GFATM grant for the same period.

3. Financing and planning[12]

Most health care expenses are financed by the Government of Belarus and pooled funds are generated via general taxation. Private health insurance plays an almost negligible role, although that which does exist is typically funded by multinational corporation employers. Government budget allocations, including for health, are the result of a MoF-produced budget, which is debated and amended/approved by parliament before funds are sent to the MoH for programme implementation.

Public expenditure on health has fallen in Belarus, mainly due to the broader economic climate and an overall reduction in available funds. This aside, the country has been increasing national spending to fund programmes to fight TB and now finances 100% of the costs of drugs to treat MDR-TB.[13]

The state bears the main burden of expenditure (about 90%), with donor support (primarily by the GFATM) at less than 10% and very low private expenditure (less than 1%). According to governmental statistical reporting form 1-cc3 of the MoH Report on health care revenues and expenditures:

- the total health expenditure in 2016 was 5612.0 million Belarusian roubles (5.95% of GDP; ~$2806 million), including:
  - public sector expenditure of 3981.2 million roubles (4.2% of GDP; ~$1990.67 million); and
  - private sector expenditures of 1607.2 million roubles (1.7% of GDP; ~$803.63 million);
- the overall TB expenditure in 2016 was:
  - 80.9 million roubles (~$40.5 million), including 71.0 million roubles (~$35.5 million) from the public sector; and
  - 9.1 million roubles (~$4.55 million) from the GFATM; and
- funds allocated to the TB sub-programme were:
  - 19.1 million roubles (~$9.55 million) in 2016; and
  - 25.8 million roubles ($12.9 million) in 2017.

See Annex 1 for further information.

The total budget to finance the activities of the TB sub-programme (2016–2020) was estimated at 1 122 257.5 million roubles including funds of the republican budget (493,780.3 million roubles), state-targeted budget funds (preventive funds; 1100 million roubles), local budgets (573 090 million roubles)

[12] All Belarusian roubles to US dollars conversions listed here represent the rate as of 25 April 2018.

[13] Belarus. In: The Global Fund [website]. Geneva: Global Fund to Fight AIDS, Tuberculosis and Malaria; 2018: Belarus. (https://www.theglobalfund.org/en/portfolio/country/?k=8f5db665–828c-4560-b959–155d0e156a30&loc=BLR, accessed 1 August 2018).

and other sources (GFATM; 145 387.2 million roubles).[14] GFATM resources were considered in activities for the 2016–2018 period, with additional support ($6 677 941) anticipated for 2019–2021.

The breakdown of subprogramme allocation for 2016 and 2017 is shown in Table 1. A breakdown of the national health accounts for 2016 is presented in Annex 1.

Table 1. TB subprogramme: national, local and other allocations

Source of financing	Funds allocated, in million roubles (%)	
	2016	2017
National budget	6.3 (33.0)	14.3 (55.4)
Local budgets	3.7 (19.4)	4.6 (17.8)
Other (the GFATM)	9.1 (47.6)	6.9 (26.7)
Total	19.1 (100)	25.8 (100)

In 2016, most of the funds for overall TB spending (57.3 million roubles, slightly less than 70%; $28.65 million) were used for inpatient TB health care; 19.9 million roubles (about 30%; $9.95 million) was used for outpatient (polyclinic) TB health care; and, less than 1% was used for TB prevention. A further 2.2% was used for other activities, such as equipment procurement, staff training and research.

In 2017, the cost of a TB compulsory isolation unit was 100 roubles per day, the cost of a hospital bed-day was 65.30 roubles and the cost of an outpatient visit was 17.50 roubles ($50, $32.65 and $8.76, respectively). All stakeholders visited by the WHO consultants acknowledged that overreliance on expensive inpatient care was contributing to inefficiencies and that this situation was one of the unintended consequences of a financing mechanisms in which hospitals are paid according to number of beds occupied. Almost 100% of TB patients are hospitalized: the average hospital stay for a TB patient is 60 days and the average hospital stay for a DR-TB patient is 120 days.

As well as increasing the risk of cross-infection, use of a hospital bed-based financing mechanism is also the reason why, despite a 25% reduction in TB diagnosis between 2016–2018, the number of occupied beds remains steady.

TB case notification decreased by 25% between 2016 and 2018; the number of beds also reduced from 3929 in 2016 to 3248 at the beginning of 2018. However, a high risk of cross-infection is fuelled by suboptimal hospital conditions, an oversupply of beds (despite a reduction), the existing TB care model, and incentives associated with bed-based financing.

The Government of Belarus also covers the cost of financial incentives for health care workers. Such incentives are given to nurses delivering DOT in outpatient facilities (equivalent to $17–34 per month per patient seen) and depend on the number of patients treated and whether patients come to the health facility or the nurse makes house calls, with a maximum payment of $68 per nurse per month.

[14] Figures presented here are in old Belarusian roubles, before denomination in July 2016.

In 2017, the salaries and extra fees for health care workers represented the greatest share of TB expenditure: 50.2% and 73.0% for inpatient and outpatient (polyclinic) health care, respectively; 33.15% and 14.71% for drugs provided in hospitals and polyclinics, respectively; and 10.6% for patient meals.[15]

An allocative efficiency study of the TB response in Belarus was conducted in 2016–2017 by World Bank using the Optima TB model in results were published in the Optima TB report[16]. The report found that the current level of spending on TB (based on the figure of $61.8 million from 2015) and the current allocation of resources to different TB response interventions would lead to a moderate decline in TB incidence, prevalence and deaths would in Belarus continuing until 2035, but that the Health 2020 national targets and global milestones, as well as the targets and goals of the End TB Strategy 2016–2035, would be missed.[17]

In addition to presenting alternative programme scale-up scenarios and service delivery modalities to improve outcomes for the TB response, the Optima TB report made recommendations for an optimized approach to TB in Belarus and advised how the Government of Belarus could optimize the budget allocation accordingly. The Optima TB report states that in an optimized system the allocation to several programme areas would decrease by more than 50%, including involuntary isolation , hospital-based treatment modalities, mass screening and palliative care. Funds would be reallocated to ambulatory care, new MDR-TB and XDR-TB drug regimens, rapid molecular testing, and enhanced/incentivized contact tracing and active case-finding in key populations. Under this reallocated system, the optimized allocation of resources would reduce adult TB prevalence by 45% by 2035 compared with current allocations. In addition, the optimized allocation would reduce TB-related deaths by 60% compared with current allocations and by 70% compared with 2015 levels.

Given the irrefutable evidence that the current hospital-based treatment regimen, involuntary isolation and mass screening programmes are inefficient, the country has embarked on two key pilot projects in the Mogilev and Brest oblasts. These pilot projects aim to determine the probable impact on programme performance of providing food packages for patients and financial incentives for providers, along with transitioning from bed-based to outcome-based financing.

The pilot project in Mogilev failed to achieve stakeholder support, largely because of disincentives to participation: in the year following the first improvement in bed allocation, funds attached to TB beds were removed from the hospital when bed numbers were cut. More positively, in the Brest oblast, where beds will be reduced by 30% and hospitals can reinvest the funds attached to those beds, the pilot project has been well received so far. The MoH plans to scale up the project in 2019: for this, national guidance for local authorities on how to operationalize changes in financing and delivery will be required.

[15] Additional high-calorie food packages are available to inpatients with pulmonary tuberculosis. A standard food package is also available for each TB patient presenting for DOT as an outpatient (as specified by Ordinance no. 21 of the MoH and endorsed by the MoF).

[16] Optimizing investments in Belarus' tuberculosis response (English). In: Documents and reports [website]. Washington (DC): The World Bank; 2018 (http://documents.worldbank.org/curated/en/915061498581699905/Optimizing-investments-in-Belarus-Tuberculosis-response, accessed 1 August 2018).

[17] Optimizing investments in Belarus' tuberculosis response. Washington (DC): The World Bank; 2017 (https://openknowledge.worldbank.org/bitstream/handle/10986/27475/116896-WP-PUBLIC-27–6-2017–11–32–4-BelarusTBreportfinalJun.pdf?sequence=1&isAllowed=y, accessed 1 August 2018).

2.1. Donor support

GFATM support for the TB programme began in the 2006–2007 period: to date, $47 409 297 has been applied for, $46 784 145 has been committed and $45 829 386 has been disbursed. The current grant covers the period from 1 January 2016 to 3 December 2018, with the principal recipient being the Republic Scientific and Practical Center of Medical Technologies, (RSPCMT) of the MoH of Belarus. Thus, the recently requested amount of $6 677 941 to cover the three-year period spanning 2019–2021 outlined in the GFATM programme continuation letter represents a significant reduction in allocation size. It represents an immediate call to action for the MoH to clearly define a budgeted action plan with timelines for takeover and allocation of responsibilities.

The original GFATM allocation of $15 million was supposed to cover both TB and HIV programmes (a 50:50 split between the two programmes). However, the Optima TB report highlighted serious inefficiencies in TB care, in particular, misallocation of funds to the TB mass screening programmes. As a result, the GFATM wish to readjust the division of the total $15 million to provide $8.7 million to the HIV programme and $6.3 million to the TB programme).

In terms of financing for drug procurement:

- linezolid – domestic funding is already in place.
- clofazimine (Cfz) – domestic funding will commence next year. A bid has been announced. Currently, Cfz is not yet registered in Belarus and this must be rectified as a matter of urgency.
- Bdq – USAID and Johnson & Johnson's signed agreement donates 30 000 courses of Bedaquiline worldwide, including Belarus. There is an expectation that the USAID/Johnson & Johnson donation program will end in 2019, thus a gap in Bdq procurement and affordability will likely emerge. This issue is not currently addressed in any state takeover document.
- There is a significant gap in financing for treatment courses containing delamanid. The number of courses ordered for 2017 and 2018 (270 and 250, respectively) are sufficient to cover only a third of the real need.

In-country stakeholders have voiced the opinion that the TB programme could have achieved better results if there were better access to the best available treatments. Currently, the programme only covers the needs of 40% of XDR-TB patient; the remaining 60% receive palliative care only.

Given the reduced GFATM contribution, it will be nearly impossible for the Government of Belarus to provide access to the best available treatment for all TB patients in need. Currently, the Government is attempting to purchase Bdq for treating 500 XDR-TB patients. The Government is also planning to finance 50% of the costs of TB consumables in 2019 and 100% in 2020.

Recommendations

Recommendations for the WHO Regional Office for Europe:

- Provide national guidance for all affected local authorities on how to operationalize changes in financing and delivery.
- Assist the Department of Organizational and Methodological Work to help devise and implement an action plan based on the findings and recommendations of the Optima TB study, in particular, how to reallocate resources to achieve allocative efficiency for the NTP.
- Support resource mobilization efforts to increase the political will to ensure that potential savings resulting from improved efficiencies in other areas are reallocated to more effective (Bdq-containing) treatment regimens. The scale-up and sustained provision of treatment regimens will require financial and political commitment from the Government of Belarus.

Recommendations for the NTP and MoH:

- Substantially reduce inpatient treatment and duration of hospitalization in line with WHO recommendations; at the same time, enhance support to basic ambulatory DOT service points to ensure patient outcomes are maximized.
- Build capacity and provide guidance for all necessary stakeholders (MoH, NTP) on procuring drugs on the international market so that drugs can be purchased more cost-effectively (in collaboration with GFATM and WHO).
- Renew and update the current Action plan on sustainability (which covers 2016–2018) so that it considers the next three years of GFATM support (2019–2021).

Recommendation for the Red Cross Society:

- Help to implement the patient-centred model of care by increasing coverage for video-observed treatment, psychological support and case management of patients with comorbidities.

4. Medicine and laboratory consumables procurement

Currently, all first- and second-line anti-TB drugs (FLDs and SLDs, respectively) are procured by the Government of Belarus. New and repurposed anti-TB drugs for treating XDR-TB and pre-XDR-TB patients are provided by the GFATM. Bdq is provided by a USAID donation programme in partnership with Johnson and Johnson. Treatment for 270 and 250 XDR-TB and pre-XDR-TB patients was provided by the GFATM In 2017 and 2018, respectively. According to the NTP, this covers only 40% of in-country needs. As a result, the remaining patients with similar bacteriological patterns receive palliative treatment.

Drugs to treat the side-effects of anti-TB treatments are also procured from domestic funds. However, the Government provides these drugs for inpatients only; therefore, patients must make out-of-pocket payments once they have moved to outpatient forms of TB treatment.

The laboratory network provides smear microscopy, sputum culture testing, drug-susceptibility testing for FLDs and SLDs, Xpert MTB/RIF testing (to identify *Mycobacterium tuberculosis* (MTB) DNA and

resistance to rifampicin (RIF)), and line probe assays for FLDs and SLDs at each oblast-level laboratory. Currently, 30 Xpert MTB/RIF platforms are available in the country. Until the end of 2018, the costs of all laboratory consumables for rapid diagnostic tests – including Xpert MTB/RIF, line probe assays and liquid media examinations – are covered by the GFATM grant.

According to the Concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care (and the corresponding Implementation plan), procurement of all anti-TB drugs and diagnostic tests, including rapid tests, should be taken over by the Government from 2019.

Currently, procurement of medicines and medical goods is regulated by Law No. 2/1971, On public procurement of goods (works, services) of 21 July 2012, and Presidential Decree No. 46, On public procurement of medical products, medicines and therapeutic nutrition of February 28 2017. Current regulations restrict the procurement of the drugs and other medical products from sources other than local manufacturers. Most drugs procured with domestic funds are produced by local manufacturers: these have by Good Manufacturing Practice certification but are not WHO prequalified. However, not all drugs recommended for XDR-TB treatment are available on the local market (e.g. Cfz) or registered in the country.

The Concept of sustainable development emphasized that Government-provided TB and HIV (antiretroviral) drugs purchased through the centralized procurement system are twice as expensive than GFATM-provided drugs procured via the GDF. As another example, a GeneXpert cartridge can be purchased on the international market for $10, but due to the law on domestic procurement, the MoH/NTP is required to pay $84.

The major concern regarding a shift to full state procurement of drugs and rapid diagnostics is ensuring low prices (and thus affordability and sustainable access). An alternative option would be to procure these items through GDF mechanisms; however, the current legislation does not allow the use of state funds for direct procurement from the GDF. Another concern expressed by national stakeholders was a lack of experience in procuring anti-TB drugs and laboratory consumables from the GDF and other international platforms.

The Implementation plan includes several important actions to ensure a smooth transition of procurement from donor to domestic funding.

- development of regulations to allow the procurement of anti-TB drugs and laboratory consumables from international platforms with domestic funds;
- development of a mechanism for procurement of anti-TB drugs and laboratory consumables from international platforms/manufacturers; and
- assistance with the registration of the anti-TB drugs not yet available in the country.

Recommendations

Recommendations for the MoH:

- Consider taking the actions envisaged in the Implementation plan for the concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care during revision of the

Implementation plan for the concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care (listed above).

- Define new, exact time frames for each action while developing plans for the 2019–2021 period.
- Revise the practice of medicine registration in order to simplify the procedure and remove barriers to importing high-quality drugs.
- Ensure an adequate budget for drugs to treat side-effects in all DR-TB patients, irrespective of the patient profile or model of care.

Recommendations for the GFATM, MoH, RSPCPT/NTP and WHO:

- Coordinate and discuss the process of drug and laboratory supply procurement for 2019 to avoid interrupting the provision of treatment and diagnostics.
- Support capacity-building for local stakeholders involved in forecasting and procurement of drug and laboratory consumables.

Recommendation for WHO:

- Assist local drug manufacturers in applying for WHO prequalification.

5. Quality, safety and standards

Most anti-TB drugs used in Belarus are manufactured domestically, except for the newer anti-TB drugs: these are procured through the GFATM, as outlined elsewhere in Section 2.2). The MoH Department of Pharmaceuticals does not support the import of unregistered drugs, although Cfz is an exception to this rule. Despite this, unregistered drugs are often allowed to enter Belarus if they are WHO prequalified, certified by the International Council for Harmonization or manufactured in the Russian Federation. Questions have been raised about the consistency and quality of anti-TB drugs procured from the Russian Federation.

In Belarus, the local procedure for drug registration takes 180 days and is modelled on the European Medicines Agency's approach to ensuring quality and safety.

Domestic manufacturers have met with WHO to discuss their ability to supply medicines listed on the Essential Medicines List and pursue prequalification status to supply vaccines to the United Nations Children’s Fund.

In 2011, the MoH Department of Pharmaceuticals ran a project to assess drug quality. Staff randomly selected drugs for testing from different manufacturers; when quality standards were not met, the manufacturer was approached and measures taken to improve the quality up to acceptable standards. The project uncovered the issue of low-quality locally manufactured drugs for treating XDR-TB combined with low adherence, low technical capacity of health care workers and poor-quality exchange between physicians and patients.

Recommendations

The WHO Regional Office for Europe is recommended to:

- Build capacity and provide guidance for all necessary stakeholders (MoH, NTP) for procuring drugs on the international market so that drug quality and consistency can be assured.
- Assist local drug manufacturers in applying for WHO prequalification.

6. Communications and advocacy

The Belarussian Red Cross Society is a well-resourced, capable and effective partner in delivering TB activities in Belarus. They have a nationwide network that includes a central office in Minsk, seven regional offices and 68 district offices, all operating under direct lines of accountability. A total of 26 staff members are involved in the project with TB patients, including penitentiary, psychology and psychosocial support experts. Additionally, approximately 120 active volunteers focused on TB are operating across Belarus. The Society also collaborates with another nongovernmental organization (NGO): Fight TB Together.

The Society receives funding from the GFATM and implements projects allocated to them by the Country Coordinating Mechanism, most of which focus on TB outpatient care and outreach. The GFATM identified socially maladapted M/XDR-TB patients with (about 500 people in total) as the risk group that the Society should focus its efforts on.

The Society's leadership felt they would benefit from training in how to implement their services and improve patient compliance through their psychosocial and outreach work. The Society's leadership emphasized the need for professional and personal-capacity development.

Amendments to Belarusian laws related to social/public contracting have been an enabling factor for NGOs to deliver the social care and counselling aspects of TB care. However, they do not currently have the human resources or technical capacity to do this. Stakeholders raised the relevant point that if TB patients had access to best available drugs, the number of patients on palliative care and in involuntary confinement treatment rooms would be reduced, as would the demand for this aspect of their services.

Recommendations

Recommendation for the WHO Regional Office for Europe:

- Provide technical assistance and in-field (not lecture-based) capacity-building support for the Belarussian Red Cross Society.

Recommendation for the Red Cross and Fight TB Together:

- Form an advocacy coalition and develop decision-maker-focused materials to communicate the cost–effectiveness of upstream action in terms of early diagnosis and treatment with best available anti-TB drugs.

7. Supervision and monitoring

The RSPCPT is the central institution responsible for the operational planning, implementation, monitoring and evaluation of NTP interventions.

A monitoring team comprising RSPCPT staff visits all regional and district TB facilities every month and supervises routine TB activities. Belarus has established a strong national system of drug-safety monitoring for patients treated with new anti-TB drugs based on close collaboration between the monitoring team and the Center of Pharmacovigilance. Regular communication takes place between the regional pharmacovigilance coordinator and monitoring team regarding patients receiving treatment with new anti-TB drugs.

The GFATM supports supervisory visits by covering the costs of fuel and supervisor's accommodation.

Since 2010, Belarus has used a comprehensive electronic Internet-based TB registry. This functions countrywide and allows the retrieval of all necessary data related to the TB programme. A pharmacovigilance component has recently been added to the registry: expenses for the module development were covered by the GFATM. Currently, the GFATM pays the rent for the building housing the server and the wages of the operator responsible for entering the pharmacovigilance data. A gradual takeover of expenses related to maintaining the uninterrupted function of the electronic TB register is envisaged in Implementation plan for the concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care.

The NTP is currently using the QuanTB tool to calculate FLD and SLD requirements.

Recommendations

Recommendation for the MoH:

- Incorporate the expenses of supervision/monitoring visits into the TB budget and reflect government takeover of funding in the Implementation plan for the concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care.

8. Health system strengthening: service delivery, links with other interventions, and evidence-based TB policy and practice

The current Belarusian health system is based on the Soviet Semashko health system model. The country remains committed to the principle of universal access to health care, provided free at the point of use (predominantly through state-owned facilities) and organized hierarchically on a territorial basis.

Incremental change, rather than radical reform, has been the hallmark of health care policy in Belarus. The MoH has overall responsibility for the health system, although the funding and purchasing of primary and secondary care is devolved to the regional level (six oblasts, plus the independent administrative entity of Minsk, the capital city). Highly specialized tertiary care hospitals are funded

directly from the MoH budget. Very few privately-owned service providers are included in the system and few NGOs are engaged in providing services. Some line ministries and large enterprises have their own parallel health systems, which are often perceived as of better quality but are not well coordinated with the main health system. Since 2005, these parallel systems are being gradually absorbed into the main health system.[18]

The MoH has the main regulatory role at all levels of the health system, although regional and district governments are also key stakeholders since they are responsible for financing at their level.

Belarus has an extensive network of PHC providers but an uneven distribution of health care workers. The PHC network has two forms of service provision: (i) traditional polyclinics in the cities; and (ii) rural outpatient clinics led by general practitioners and small feldsher-midwife points in remote rural areas. The secondary health care level is based on district hospitals, which provide general secondary care services, and regional hospitals, which deal with more complex cases and offer a wider range of services. All hospitals also offer outpatient services. The tertiary health care level is provided by specialized hospitals located in the main cities.

Hospitalization is still preferred to ambulatory TB care from the first day of treatment, including for smear-positive TB patients and for most smear-negative and extrapulmonary TB patients.[19] Despite this, there remains an excess of TB beds in the country. A total of 21 TB facilities provide hospital care: 19 in the civilian sector and two in the prison system. The total number of TB beds in the civilian sector is 3828: in addition, eight facilities with total of 425 beds provide palliative care and another eight facilities (500 beds total) for the involuntary isolation of TB patients.[20] PHC involvement in TB care remains inadequate.

Regarding human resources, a total of 425 TB doctors and about 1200 nurses provide TB services, with some differences across the oblasts. Salaries are determined by the Ministry of Labour and Social Protection, while bonuses related to the occupational risk of TB are decided by the MoH. TB doctors and nurses work for a maximum of 35 hours per week (instead of the 38.5 hours worked by all other medical staff) and can retire on a pension five years early. The MoH compensates for the staff shortage by allowing TB doctors and nurses to work a 1.5 full-time equivalent (and being paid for 50% more hours). Unfortunately, despite these incentives (i.e. payment bonus for occupational TB risk, shorter working week, early retirement and overtime) new doctors and nurses are still not being recruited in sufficient numbers to replace retiring TB health care workers or those close to retirement.[21] A possible solution is to merge the TB and pulmonology specialities ; however, no definite decision has been made on the issue.

[18] Richardson E, Malakhova I, Novik I, Famenka A. Belarus: health system review. Health Systems in Transition. 2013;15(5):1–118 (http://www.euro.who.int/__data/assets/pdf_file/0005/232835/HiT-Belarus.pdf?ua=1, accessed 1 August 2018).

[19] Review of the national tuberculosis programme in Belarus. 8–18 December 2015 (2016). Geneva: World Health Organization; 2016 (http://www.euro.who.int/en/countries/belarus/publications/review-of-the-national-tuberculosis-programme-in-belarus.-818-december-2015-2016, accessed 1 August 2018).

[20] Green Light Committee for the WHO European Region. Technical assistance mission report Republic of Belarus, 22–26 January 2018. Copenhagen: WHO Regional Office for Europe; 2018.

[21] Review of the National Tuberculosis Programme in Belarus. 8–18 December 2015 (2016). Copenhagen: WHO Regional Office for Europe; 2016 (http://www.euro.who.int/__data/assets/pdf_file/0006/325959/Belarus-NTP-review-2015.pdf?ua=1, accessed 1 August 2018).

In acknowledging the important role of PHC in TB care, health authorities in Belarus piloted a new model of care in the Mogilev oblast in 2014. With WHO assistance, the working group for the Mogilev pilot project developed criteria for hospital discharge, standard operating procedures for treatment follow-up (including daily DOT), contracts with ambulatory care providers, and administrative documentation. The budget of the regional TB dispensary for five beds was reassigned to generate savings and provide financial incentives for PHC nurses and feldshers caring for TB patients.

The pilot project resulted in the closure of five hospital beds (1.2% of the total number in the oblast), corresponding to a decrease in annual hospital costs of 169.9 million roubles, as incurred by services (meals, laundry) and staff salaries (0.25 of a doctor position, 1.25 of a nurse position and two assistant nurse positions), and generation of financial incentives for ambulatory service providers. These incentives were fixed at $1 per patient visit to the TB dispensary and $4 per visit to the patient's home (i.e. significantly less than the $27 cost of a one-day hospital stay).

A total of 13 patients were enrolled in this pilot project, including nine with MDR-TB. All non-MDR-TB patients and six MDR-TB patients were cured and no cases were lost to follow-up. The Mogilev local budget saved the equivalent of $11 000 in a single year. As outlined elsewhere in this document, despite these achievements, the pilot project was not continued because the TB budget for the Mogilev oblast was cut by an amount equivalent to the funds saved; as such, the local health authorities were not motivated to further reduce the number of TB beds.

As discussed in Section 2.1, the World Bank conducted the Optima TB study.[22] The study results showed an obvious need to change the Belarussian model of TB care. According to the study, national TB spending in 2015 was equivalent to $61.8 million and almost half of the funds (48.9%) was spent on involuntary isolation and palliative care. The treatment cost per-person was almost 50% less with the ambulatory model of care compared with involuntary isolation. By moving from mass screening to contact tracing and active case-finding, the same number of TB cases could be identified with a significantly smaller budget.

The optimized budget, as suggested in the Optima TB report, supports switching from mass screening to active case-finding, along with an ambulatory model of care and new treatment regimens. The transition from hospital-focused to ambulatory treatment modalities would make savings of approximately 40% of the current programme costs, which could be reallocated to higher-impact interventions.

Based on the lessons learned from the Mogilev pilot project and the Optima TB study, and with support from the WHO TB-REP, health authorities recently started a new pilot project in the Brest oblast. The roadmap on implementation of the project contains details of planned activities within four main sections:

1. reorganization of TB services in the Brest oblast;
2. improving the financing mechanisms for TB services in the Brest oblast (introduction of results-based financing);

[22] Optimizing investments in Belarus' tuberculosis response (English). In: Documents and reports [website]. Washington (DC): The World Bank; 2018 (http://documents.worldbank.org/curated/en/915061498581699905/Optimizing-investments-in-Belarus-Tuberculosis-response, accessed 1 August 2018).

3. provision of social support to patients with TB in outpatient settings; and
4. organizational arrangements.

A reduction in the number of TB beds in the Brest oblast by 30% is planned to shorten hospitalization period and promote an ambulatory model of care from the first day of treatment. The pilot project is supported by the GFATM (in the form of incentives for DR-TB patients to receive ambulatory treatment and psychosocial support). Results of the Brest pilot project will be analysed and discussed for further expansion throughout the country.

Since 2017, MSF has been implementing a pilot project of patient-oriented care targeting rifampicin-resistant TB patients with a high risk of loss to follow-up at involuntary treatment facilities in Minsk. The project combines the elements of harm reduction and pharmacotherapy for alcohol dependence with medication, detoxification and rehabilitation. MSF also plans to develop a treatment protocol for TB patients with alcohol dependence. In collaboration with MSF, the NTP is participating in the END TB observational study and the TB PRACTECAL clinical trial. The latter started in December 2017 with the aim to develop more effective, shorter and better-tolerated rifampicin-resistant TB treatment regimens.

Recommendations

Recommendations for the MoH and RSPCPT:

- Consider the lessons learned from the Brest pilot project and introduce point-of-care services for patients with TB, HIV, hepatitis C and substance abuse.
- Consider the experiences of the Mogilev pilot project, the Optima TB study results and the expertise available from the WHO TB-REP in implementing the pilot project in the Brest oblast.
- Consider the experience of MSF in improving TB treatment adherence among patients with alcohol abuse issues.
- Conduct a full assessment of the possible implications of merging TB and pulmonology specialities.

Recommendations for WHO:

- Provide technical assistance according to the TB-REP-developed Blueprint on a people-centred model of TB care[23] in:
  - calculating the optimal number of TB beds for each oblast, with involvement of representatives from each oblast;
  - defining the services given by service providers; and
  - implementing results-based financing for TB services.

[23] WHO Regional Office for Europe, A People-centered model of TB care (2017); http://www.euro.who.int/en/health-topics/communicable-diseases/tuberculosis/publications/2017/a-people-centred-model-of-tb-care-2017

- Provide expertise and recommendations to inform diagnosis-related groups, as defined by the MoH.
- Develop a case study on the pilot projects under way in the Brest and Mogilev oblasts to highlight the lessons learned, particularly the unintended consequences of dis/incentives linked to financing mechanisms.

9. TB care in the penitentiary system

The MoI Medical Department is responsible for TB prevention, treatment and care in Belarus' penitentiary system. An obligatory screening procedure is in place for all new arrivals entering the system (at a SIZO, i.e. a pre-trial facility of the penitentiary system) and twice-yearly routine screening in all penitentiary facilities in the country. Patients diagnosed with TB in a SIZO have the opportunity to commence treatment immediately and all sentenced prisoners with TB are transferred to colony 12, the TB hospital for prisoners.

The prison TB hospital is equipped with 700 beds and modern X-ray and laboratory facilities, and can perform all necessary tests, including rapid molecular tests. In other detention centres, specimens from presumptive TB cases are tested in the civilian laboratory network. Information is entered in the TB e-register in the TB hospital.

TB notification has dropped drastically from 1650 incident cases in 2000 to 134 in 2017; thus, there is a surplus of TB beds. The prison administration along with relevant authorities of the penitentiary system are planning to reorganize the TB hospital's capacity.

All anti-TB drugs and laboratory consumables are procured by MoI, except for new and repurposed TB drugs and consumables for rapid molecular testing, which are provided by the GFATM. Newly released TB patients are followed up by the national Red Cross Society, which is also supported by the GFATM.

Problems noted by the MoI include a need for staff training, a high rate of cases lost to follow-up among released patients (about 30%) and a high number of TB cases among prison staff.

Recommendations

Recommendations for the MoH and MoI:

- Engage and involve representatives of the MoI Medical Department in revising the Implementation plan for the concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care.
- Reflect the transition of funding from the GFATM to the MoI in a new implementation plan for 2019–2021.

Recommendations for the GFATM:

- Continue providing support for staff training in the penitentiary system to enhance support for and follow-up of released prisoners.
- Assess intensive care measures in the prison TB hospital and address any identified problems with the support planned in the new grant.

10. Overview of key recommendations

Area	Action	Timeline	Responsible Agency
Socioeconomic and geopolitical context in Republic of Belarus	Begin open dialogue between the MoF, MoH and NTP to ensure budget allocations and priorities are aligned, sustainable and realistic in light of country's economic situation	Commence immediately, ongoing until complete (ASAP)	MoF, MoH, NTP
	Revise the activities and resources planned in the strategic documents (National strategy for sustainable social and economic development; TB subprogramme; and Concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care) and reprioritize the activities in light of the country's changed economic and donor landscape	Commence Q4 2018, ongoing until complete (ASAP)	MoF, MoH, NTP
	Develop new, budgeted action plans to address the 2019–2021 period aligned with the new GFATM grant for the same period	Commence Q4 2018, ongoing until complete (ASAP)	MoH, NTP
Policy and strategies pertaining to TB	Update strategic documents and develop and endorse an additional strategic document on laboratory service development. Additionally, update and consolidate a single document that includes the TB subprogramme, Plan on M/XDR-TB and laboratory service development, which should include all aspects of TB prevention, treatment and care in the country	Commence Q4 2018, ongoing until complete (ASAP)	MoH
	Recalculate the TB budget, considering the new funding	Q1 2019	GFATM PIU, MoH,

	from GFATM for 2019–2021 ($6 677 941)		NTP
	Revise the Implementation plan for the concept of sustainable development regarding TB and HIV/AIDS prevention, treatment and care to illustrate the extent of implementation to date. The new plan should be developed for the 2019–2021 period, considering the new GFATM grant for the same period	Q4 2018	GFATM PIU, MoH, NTP
Financing and planning			
	Assist the Department of Organizational and Methodological Work in devising and implementing an action plan based on the findings and recommendations of the Optima TB study, in particular, how to reallocate resources to achieve allocative efficiency, NTP	Ongoing	WHO Regional Office for Europe
	Support resource mobilization efforts to increase the political will to ensure that potential savings resulting from improved efficiencies in other areas are reallocated to more effective (Bdq-containing) treatment regimens	Commence Q4 2018	WHO Regional Office for Europe
	Substantially reduce inpatient treatment and duration of hospitalization in line with WHO recommendations at the same time, enhance support to basic ambulatory DOT service points to ensure patient outcomes are maximized	Commence Q4 2018	MoH, NTP

	Build capacity and provide guidance for all necessary stakeholders (MoH, NTP) for procuring drugs on the international market so that drugs can be purchased more cost-effectively	Commence Q4 2018	GDF, MoH, NTP, WHO Regional Office for Europe
	Renew and update the current Action plan on sustainability (for 2016–2018) so that it considers the three remaining years of GFATM support (2019–2021)	Q4 2018	MoF, MoH, NTP
	Utilize the Optima TB report to advocate for significant shifts away from inpatient and palliative care towards upstream (early diagnosis, treatment and health maintenance) efforts	Commence Q4 2018, build efforts around key parliamentary dates	MoH
Supervision, monitoring and surveillance	Consider expenses of supervision/monitoring visits in the TB budget and reflect takeover of funding by the Government in the Implementation plan	Q4 2018	MoH
Medicines procurement	Consider actions envisaged in the Implementation plan during the revision of the plan (listed above)	Q4 2018	MoH
	Define new and exact time frames for each action, while developing plans for the 2019–2021 period	Commence in line with the previous action	MoH
	Revise medicine registration practice to simplify the procedure and remove barriers to importing high-quality drugs	Q1 2019	MoH
	Ensure an adequate budget for drugs addressing side-effects for all DR-TB patients, irrespective of	Q1 2019	MoH

	the patient profile or care model		
	Coordinate and discuss the process of drug and laboratory supply procurement for 2019 to avoid interrupting the provision of treatment and diagnostics	Commence immediately, conclude Q4 2018	GFATM, MoH, RSPCPT/NTP, WHO
	Support capacity-building for local stakeholders involved in the forecasting and procurement of drug and laboratory consumables	Commence immediately, continue support until Q3 2019	GFATM, MoH, RSPCPT/NTP, WHO
Quality, safety and standards	Build capacity and provide guidance for all necessary stakeholders (MoH, NTP) on procuring drugs via GDF so that drug quality and consistency can be assured.	Commence immediately, continue support until Q3 2019	WHO Regional Office for Europe
	Assist local drug manufacturers in applying for WHO prequalification	Ongoing	WHO Regional Office for Europe
Service delivery and linking with other interventions; health system strengthening; and evidence-based policy and practice	Consider the experiences of the Mogilev pilot project, the Optima TB study results and available expertise from the WHO TB-REP in implementing the pilot project in the Brest oblast	Commence Q1 2019, ongoing	MoH, RSPCPT
	Consider the lessons learned from the Brest pilot project and introduce point-of-care services for patients with TB, HIV, hepatitis C and substance abuse	Commence Q1 2019, ongoing	MoH, RSPCPT
	Consider the experiences of MSF in improving TB treatment adherence among patients with alcohol abuse issues	Commence Q4 2018	MoH, RSPCPT

	Provide technical assistance according to TB-REP-developed Blueprint on People-Centred Approach of TB Care in: • calculating the optimal number of TB beds for each oblast, with the involvement of representatives from each oblast; • defining the services given by service providers; and • implementing results-based financing for TB services	Commence Q4 2018, ongoing	WHO Regional Office for Europe
	Provide expertise and recommendations to inform diagnosis-related groups, as defined by the MoH	Commence Q1 2019, ongoing	WHO Regional Office for Europe
	Develop a case study on the pilot projects unfolding in the Brest and Mogilev oblasts to highlight the lessons learned, particularly the unintended consequences of dis/incentives linked to financing mechanisms	Q1 2019	WHO Regional Office for Europe
	Conduct a full assessment of the possible implication of merging TB and pulmonology specialities	Commence Q1 2019, complete ASAP	MoH, NTP
	Scale up rapid molecular diagnostics, including whole genomic sequencing	Commence Q4 2018, ongoing	MoH, NTP
	Strengthen links between HIV and TB services	Commence Q4 2018, ongoing	MoH, NTP
	Improve contact tracing, active case-finding and care for patients with latent TB infection	Commence Q4 2018, ongoing	MoH, NTP

	Improve care for TB patients with alcohol and illegal drug abuse	Commence Q4 2018, ongoing	MoH, NTP
TB care in penitentiary system	Engage and involve representatives of the MoI Medical Department in the revising the Implementation plan	Q4 2018	MoH, MoI
	Reflect the transition of funding from the GFATM to the MoI in the new plan for 2019–2021	Commence Q4 2018, complete ASAP	MoH, MoI
	Continue support for staff training in the penitentiary system to enhance support for and follow-up of released prisoners	Q1 2019	GFATM
	Assess the intensive care measures in the prison TB hospital and address any identified problems using support planned in the new grant	Q1 2019	GFATM
Communications and advocacy	Provide technical assistance and in-field (not lecture-based) capacity-building support with the aim of improving physician/patient interaction	Q1 2019	WHO Regional Office for Europe, in-country partner (TBD)
	Form an advocacy coalition and develop decision-maker-focused materials to communicate the cost–effectiveness of upstream action in terms of early TB diagnosis and treatment with the best available drugs	Q4 2019	Fight TB Together, Red Cross

ASAP: as soon as possible; Q1: first quarter; Q2: second quarter; Q3: third quarter; Q4: fourth quarter; TBD: to be determined.

Annex 1. Health expenditure for 2016 in accordance with the system of health accounts

Governmental statistical reporting form 1-сс3 of the MoH Report on health care revenues and expenditures

In 2016, the total health expenditure was 5612.00 roubles ($3018.80), or 5.95% of the national GDP (5.9% in 2015, 5.1% in 2014, 5.7% in 2013 and 5.3% in 2012), including:

- public sector expenditures: 3981.2 million roubles ($2141.6 million), or 4.2% of the GDP (4.3% in 2015, 3.7% in 2014, 4.1% in 2013 and 4.1% in 2012); and
- private sector expenditures: 1607.2 million roubles ($864.6 million), or 1.7% of GDP (1.6% in 2015, 1.4% in 2014, 1.6% in 2013 and 1.1% in 2012).

The total health expenditure included:

- the public sector: 70.94% (73.0% in 2015, 73.2% in 2014, 71.8% in 2013 and 77.9% in 2012);
- the private sector: 28.64% (26.6% in 2015, 26.5% in 2014, 27.7% in 2013 and 21.6% in 2012), including:
  - by individuals: 25.59% (28.2% in 2015, 24.1% in 2014, 24.4% in 2013 and 18.5% in 2012);
  - by employers: 2.07% (2.1% in 2015, 1.9% in 2014, 2.9% in 2013 and 2.8% in 2012); and
  - by insurance companies: 0.98% (0.8% in 2015, 0.5% in 2014, 0.4% in 2013 and 0.3% in 2012); and
- international organizations: 0.42% (0.4% in 2015, 0.4% in 2014, 0.5% in 2013 and 0.6% in 2012).

Further information is given in Tables A1.1–A1.3.

Table A1.1. Internal expenses for TB-related activities, Belarus, 2014–2017[a]

	2014	2015	2016	2017
Total budget used for the NTP and/or TB-related services (except for external sources)	67 615.6	72 062.7	80 870.0	97 044.0
Total budget used by the health sector (except for official donor support provided directly to the health sector)	2 912 790.0	3 652 283.4	3 981 200.0	4 277 012.1
Percentage of total governmental health expenditure (%)	2.3	2.0	2.0	2.3

[a] **In 1000 roubles.**

Table A1.2. Cost of health care services, Belarus, 2017[a]

Service	Cost per bed-day	Cost per visit	Cost per ambulance team visit
Overall MoH system	93.7	19.2	61.6
TB services	65.29	17.47	–
Salaries and extra fees (% share)	32.80 (50.24)	12.76 (73.04)	–
Drugs and medical equipment (% share)	21.64 (33.14)	2.57 (14.71)	–
Patient food (% share)	6.90 (10.6)	–	–
Other expenditure (% share)	3.95 (6.0)	2.14 (12.2)	–

[a] In roubles.

Table A1.3. Funding sources for treating TB patients, Belarus, 2016[a]

Expenditure	Public	Private	Donors	Total
Inpatient health care	56 100.6	135.7	1 092.8	57 329.1
Hospital treatment	53 709.2	135.7	1.092.8	54 973.7
Intensive care	703.8	–	–	703.8
Day care (in day care centres)	366.7	–	–	366.7
Other surgical services	1288.9	–	–	1288.9
Transfer to the population	32.0	–	–	32.0
Share of costs, %	97.9	0.2	1.9	–
Outpatient health care (polyclinic)	14 703.3	382.3	4859.0	19 944.6
Counselling	14 508.0	356.7	4859.0	19 723.7
Rehabilitation	195.3	25.5	–	220.9
Share of costs, %	73.7	1.9	24.4	100.0
Prevention	226.2	0.0	509.2	735.4

TB prevention	226.2	0.0	509.2	735.4
Occupational health care services	0.0			0.0
Share of costs, %	30.8	0.0	69.2	100.0
Total treatment expenses (medical expenses)	71 030.1	518.0	6461.1	78 009.1
Share of costs,	91.1	0.7	8.3	100.0
Other	1.032.6	0.0	1.828.5	2861.0
Grant management	–	–	1420.7	1420.7
Training	2.0	–	346.6	348.5
Science (research)	0.0	–	57.7	57.7
Equipment procurement	1630.6	–	3.5	1034.2
Share of costs, %	36.1	0.0	63.9	100.0
Total	72 062.6	518.0	8289.5	80 870.1
Share of costs, %	89.1	0.6	10.3	100.0

[a] **In 1000 roubles.**

Annex 2. List of persons met during the mission

WHO Country Office

Batyr Berdyklychev
WHO Representative in Belarus, Head of WHO Country Office

Viacheslav Grankov
WHO National Professional Officer

Valentin Rusevich
WHO National Professional Officer

Meeting at the National Center for Pulmonology and Tuberculosis

Henadz Hurevich
Director

Alena Skrahina
Scientific Deputy Director

Andrei Astrauko
Deputy Director, Department of Organizational and Methodological Work

Viktorya Kralko

Head of Organizational-Methodical Department

Meeting at the National Center for Medical Technologies (primary recipient of GFATM grant)

Irina Novik
Deputy director

Tatiana Makarevich
Head of the GFATM Grant Management Group

Inna Niakrasava
Head, TB Unit, Department of GFATM grant management

Vasily Akulau

Monitoring and Evaluation Specialist, TB Unit, Department of GFATM Grant Management

Meetings at the MoH

Tatyana Migal
Head, Department of Organization of Medical Care

Elena Tkacheva
Head, Department of Economic Analysis and Health Care Development

Elena Krutova
Deputy Head, Department of Economic Analysis and Health Care Development

Anzhelika Pavlushchik
Head, Department of Analysis, Planning and Financing

Lyudmila Reutskaya
Head, Department of Pharmaceutical Inspection and Organization of Medicinal Supply

Meeting with representatives of the MoI

Andrei Dailida
Deputy Head, Department of Execution of Punishments

Pavel Martsenkyan
Head, Department of Medical Support of Special Contingent of the Department of Execution of Punishments

Sergey Vashilov
Head and Chief Physician, Republican Hospital for the Maintenance and Treatment of Convicts Affected by Active Tuberculosis

The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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