



Final Assessment and Evaluation Report

Tuberculosis Program

Implementation in the Central Asian Republics

Kazakhstan – Kyrgyzstan – Tajikistan – Turkmenistan - Uzbekistan

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Project HOPE

The People-to-People Health Foundation, Inc.

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Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
BCC	Behavioral Change Communication
CAR	Central Asian Republics
CDC	U.S. Centers for Disease Control
DOT	Directly Observed Treatment
DOTS	The WHO-recommended strategy for effective TB control
DRS	Drug Resistance Survey
DST	Drug Susceptibility Testing
EQA	External quality assurance (laboratory)
FDC	Fixed dose combinations of anti-TB drugs
GDF	Global Drug Facility
GFATM	Global Fund to fight AIDS, Tuberculosis and Malaria
GLC	Green Light Committee
HIV	Human immunodeficiency virus
HLWG	High level working group
HRD	Human resource development
IEC	Information, Education, Communication
ICRC	International Committee of the Red Cross/Red Crescent
IDA Foundation	International Dispensary Association
JHU/CCP	Johns Hopkins University/Center for Communication Programs
JSI	John Snow, Inc.
KfW	German Development Bank
M&E	Monitoring and evaluation
MDR TB	Multi-drug resistant TB, resistance to at least isoniazid and rifampicin
MoH	Ministry of Health
MSF	Medecins Sans Frontieres
NCS	National Communication Strategy
NJMS-GTBI	New Jersey Medical School – Global Tuberculosis Institute
NTBC	National Tuberculosis Center
NTP	National Tuberculosis Program
OR	Operational Research
PHC	Primary Health Care
QA	Quality assurance
TB	Tuberculosis
TB/HIV	Tuberculosis plus HIV infection
ToT	Training of trainers
TWG	Thematic working group, or Technical working group
USAID	United States Agency for International Development
WFP	World Food Program
WHO	World Health Organization

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SUMMARY FINDINGS, CONCLUSIONS AND FUTURE PRIORITIES

USAID provided US\$15 million in financial support to Project HOPE for a period of five years, to assist the governments of the five Central Asian Republics (CAR) in strengthening political commitment, upgrading clinical capacity, improving the quality and availability of services for tuberculosis control and increasing public awareness. The cost sharing amount that the award recipient (Project HOPE) agreed to expend of \$2,721,929 at the time of the evaluation had already been exceeded and was already more than \$2,858,110.35 million USD (see *Annex 10*). Project HOPE acted as lead agency for a Consortium that included John Snow, Inc. (JSI), John Hopkins Bloomberg School of Public Health/Center for Communications Programs (JHU/CCP), New Jersey Medical School Global Tuberculosis Institute (GTBI) and local NGOs, plus CAMRIS International and Chemonics International for the initial part of the project. Project implementation started on 1 April 2004 and was scheduled to end on 31 March 2009. A No Cost Extension was received for all countries except Tajikistan. The final closing date of the project will be October 14, 2009.

An evaluation team (see *Annex 1*) analyzed data and visited four of the countries on February 6-21, 2009, and reached the following conclusions.

All the national partners and the staff of other organizations interviewed by the members of the evaluation team stated great satisfaction with the support of Project HOPE, and noted that the active cooperation and coordination provided were essential for the progress of the TB control programs in the region.

The major achievements identified in the region during the project were:

- Increased political commitment and government funding for TB control;
- Improved coordination of partner support through the national High Level Working Group (HLWG) (or equivalent organizations) and Thematic Working Groups (TWG);
- Development of National Tuberculosis Program (NTP) capacity and authority;
- Increased national capacity for human resource development and program management and mobilization of financial resources for TB control;
- Project contributed to development of the capacity of the health system for disease control and health management;
- Gradual acceptance of the DOTS Strategy;
- Expansion of case detection activities integrated into general health facilities, with ownership and monitoring by the NTP;
- Gradual acceptance of technical and operational procedures towards current international standards, with update of NTP manuals;
- Implementation of the TB laboratory network, including quality assurance and development of national capacity for drug resistance surveys;
- Implementation of appropriate TB drug management, including a system of information and logistics;
- Increased capacity for community mobilization activities;
- Reduction of stigma; and
- Reduction of the burden of TB disease and death.

The main regional priorities for future action are:

- To establish a rational balance between the investment in the effective DOTS strategy intervention and the additional development of interventions such as for MDR TB.
- To promote international standards of TB care, such as diagnosis of laboratory-confirmed cases by the family doctors (PHC) without reconfirmation by specialists; change from systematic to selective hospitalization; and appropriate diagnosis and management of TB/HIV and drug resistance.
- To promote elimination of ineffective practices, such as MMR and mass tuberculin testing, and formalizing this through government prikazes.
- To support integration of TB control into the general health facilities.
- To monitor progress toward achievement of TB-related Millennium Development Goals.
- To intensify efforts for improved infection control.
- To increase knowledge about the magnitude of drug resistance, to develop an appropriate strategy for case management of MDR TB, and to support rational implementation of patient care for MDR TB in the health system.
- To improve coordination between TB control and HIV/AIDS control programs to achieve joint management of care for TB/HIV patients.
- To improve the regional and national capacity for operational research, including:
 - development and piloting of standard protocols for operational research on essential program areas for TB (e.g., real prevalence of suspects among outpatients) and training national staff to replicate and use the information for action;
 - identification of problem areas and development of appropriate studies (e.g., reasons for high failure in Kazakhstan, excessive radiological diagnosis in culture negative retreatment patients in Kazakhstan);
 - Interventions to reduce stigma, particularly gender-specific to protect women.

INTRODUCTION

Project HOPE supported implementation of the DOTS strategy for TB control from 1997-2001 in Kazakhstan and in the Central Asian Republics from April 2001 to March 2004, with funding from USAID grants. An evaluation of the second project was carried out in March 2004¹. Implementation of the current project² started in April 2004, a mid-term evaluation was carried out in January 2007³, and the final evaluation was conducted in February 2009. The final evaluation was carried out by Shalva Gamtsemlidze, Kayt Erdahl, Fabio Luelmo (team leader) and Stefan Talevski, from 6 to 21 February 2009. Two teams of two persons each visited respectively Kazakhstan plus Kyrgyzstan and Tajikistan plus Uzbekistan. In each country the teams interviewed national authorities and staff of Project HOPE and partner organizations, and visited specialized and general health facilities. A list of the main persons interviewed and institutions visited is attached as *Annex 3*. Discussion of the findings and recommendations and debriefing took place in Project HOPE's regional office from 16 to 21 February.

USAID provided US \$15 million in financial support to the Project HOPE Consortium, for a period of five years, to assist the governments of the five Central Asian Republics (CAR) in strengthening political commitment, upgrading clinical capacity, improving the quality and availability of services for tuberculosis control and increasing public awareness. Project HOPE acted as lead agency for a Consortium that included John Snow, Inc. (JSI), John Hopkins Bloomberg School of Public Health/Center for Communications Programs (JHU/CCP), New Jersey Medical School Global Tuberculosis Institute (GTBI) and local NGOs, plus CAMRIS International and Chemonics International for the initial part of the project. Project implementation started on 1 April 2004; the final closing date will be October 14, 2009.

The project's three general objectives were essential to increase the national capacity to implement effective TB control programs and so reduce the burden of disease in the CAR region. These objectives included the following strategies:

1. Build political commitment

- Establish high level working groups (HLWG)
- Establish thematic working groups (TWG)
- Support oblast roundtables
- Assess the TB program's current burden of disease and policies
- Support the HLWG in deciding policy and program options in each country

¹ Final Assessment and Evaluation Report, Project HOPE Tuberculosis Program. Implementation in the Central Asian Republics. Grant #115-1-00-01-001-00, USAID.

² USAID/Project HOPE Cooperative agreement 176-A-00-04-00006-00

³ Report of a mid-term evaluation, Project HOPE's Central Asia TB Program. USAID Cooperative Agreement 176-A-00-4-00006-00. Almaty, 3 February 2007.

- Promote sustainable financing of the NTPs
 - Consolidate the findings and recommendations into National Plans
 - Convene a regional meeting to discuss country assessments and policies
 - Support meetings of national donor committees to improve coordination
2. Build human and systems capacity for TB control
- Recommend plans to integrate vertical TB control activities into the general health care services
 - Strengthen the TB laboratory network in each country
 - Strengthen human resource capacity for TB control through training, ToT, developing of training tools, continuous education and pre-service education
 - Create rational TB drug management systems in each country
 - Improve program management
3. Raise community awareness and encourage care seeking behavior
- Develop Behavioral Change Communication (BCC) strategies for TB and build capacity among stakeholder agencies
 - Raise awareness and conduct outreach to the general population and in clinical settings
 - Support ACSM in targeted communities, with small grants when appropriate
 - Advocate for a change of attitudes and priorities among policy makers

BACKGROUND

The WHO-estimated incidence of tuberculosis in the region in 2004, when the current project started, was 74 000 new and relapse cases (129 per 100 000). In that year 61 000 TB cases were reported by the five countries⁴. However, only 17 000 new smear positive cases were reported of the estimated 33 250, a rate of 30 per 100 000 and a smear positive case detection rate of 51%. The reasons for this low case detection of sources of infection included very limited integration of TB program activities in the general health care facilities; uncertain quality of microscopy; and generalized use of radiology for diagnosis of pulmonary tuberculosis with negative or unknown bacteriological results. The total TB cases reported included a high proportion of extra-pulmonary forms (22–32 %), except in Kazakhstan, and of pulmonary cases with unknown smear results. The proportion of smear positive among all diagnosed cases was under 30%.

In 2003, the baseline year for this evaluation, the new smear positive TB case detection rates varied from 8% in Tajikistan to 81% in Turkmenistan. Reported treatment outcome was good in most countries already in 2003, from 77% success in Turkmenistan to over 80% in Kazakhstan, Kyrgyzstan and Uzbekistan (Tajikistan did not provide data to WHO for 2002). The TB control strategy was in different stages of change; from the vertical specialized system of the old Soviet Union to the DOTS strategy with services integrated in general health delivery. TB diagnosis

⁴ Global Tuberculosis Control. WHO Report 2006.

and indication of treatment is still performed by specialized professionals, with hospitalization of the large majority of TB patients at least during the intensive phase of treatment. The first two Project HOPE/USAID-supported projects in the region found major resistance to implementation of the DOTS strategy in practice, even after formal adoption by the governments. This resistance has diminished rapidly in Kyrgyzstan (helped by Health Sector Reform), Tajikistan and Uzbekistan. Old practices such as mass screening have been abandoned in those countries in favor of more effective interventions. In Kazakhstan and Turkmenistan old practices are still maintained, but there is now a firm government commitment in Turkmenistan to support expansion of the DOTS strategy which was done rapidly and completed in the whole country in 2008.

In all countries, except Uzbekistan where the DOTS Centre is directly under the Ministry of Health (MOH), the TB control program activities are under the umbrella of a National TB Center or National TB Institute. Except in Uzbekistan, focal points for the key components of the NTP work in different areas of the National Tuberculosis Centre (NTBC), usually do not function as a team and have neither financial resources nor direct access to the officer responsible for TB control in the MoH. In contrast, Project HOPE staff in each country constitutes a well-defined team, and they collaborate with each of the focal points with variable degrees of ownership of activities by the national counterparts.

Establishment of the NTP unit (i.e., a managerial team) responding directly to the head of TB control in the Ministry of Health is the first basic operation for DOTS implementation in a country⁵. The absence of this unit weakens national ownership of TB control and the capacity to plan, implement, monitor and supervise the program. As a result, Project HOPE continues implementing some activities that should by now have been transferred and absorbed by the NTP, although many activity areas have been transferred to national staff in the last two years. In addition, except in Uzbekistan, NTP staff is part of the TB Center/Institute and not functionally under the NTP. The TB Center/Institute is the highest specialized institution in TB but in addition to tertiary level care it provides specialized care to TB patients that could be managed by the general health facilities. The NTP as a public health program should have independence to promote integration of TB activities in the general health system and rationalization of the use of resources. In Uzbekistan the unit (DOTS Center) is based in the National TB Institute but functionally responds directly to the responsible officer in the MoH: this seems an appropriate model for the region. As in other countries of the former Soviet countries, the TB Centers/Institutes are reluctant to depart from ineffective practices such as mass fluorography, individualized treatment and long hospitalization, and NTP staff needs independence from the formal structure and lines of authority of the Centers to promote change.

In all countries the basic TB-control documents such as TB or DOTS national strategies, guidelines and manuals were either adopted by the governments or are currently being prepared. Project HOPE played an important role in the development and dissemination of these documents.

⁵ An expanded DOTS framework for effective tuberculosis control. WHO/CDS/TB/2002.297, page 9.

Donors play a very significant role in financing TB control in the region. In 2000-2003 the two principal agencies financing TB in the region were USAID and KfW. The Global Fund for AIDS, TB and Malaria (GFATM) is now very active in the region and plays a strong role in further funding of activities for host governments who apply successfully for grants. The Global TB Drug Facility (GDF) has become a critical player in ensuring that the poorer countries of the region who meet strict program criteria are able to be supplied with sufficient quantities of quality TB drugs. It is hoped that this will continue. The present donors and NGOs in the region have their particular goals, objectives and specific activities. However all of them are aiming to assist the institutional capacity of CAR NTPs to control the TB epidemic. Better coordination and synchronization of these efforts will yield positive benefits for the future.

Implementation of the current project started in April 2004. The Project HOPE Consortium included Project HOPE and five agencies supporting various aspects of project implementation. A mid-term evaluation of strategies, achievements, and of the status and progress of the national programs took place from 18 January to 3 February 2007. Key recommendations of the mid-term evaluation were the following:

1. Strengthen national TB control program management in all countries by:
 - Strongly advocating the consolidation of national TB management teams, with staff based in the TB Center but responding functionally to the TB authority in the Ministry of Health, to increase responsibility for managing the TB program.
 - Advising on terms of reference for the NTP central unit staff to ensure clear lines of authority, responsibility and supervision. Additional training and mentoring in their managerial functions is urgently needed.
2. Give priority to strategic planning aimed to increase the national capacity to manage TB control, by
 - Gradually transferring routine managerial activities now carried out by Project HOPE staff to trained, mentored and qualified national staff, particularly in areas of training, supervision and quality assurance of microscopy. Project HOPE staff could complement the national unit in the planning, implementation and monitoring of managerial activities to provide on-the job training in appropriate methodologies.
 - In collaboration with other partners (WHO, Gorgas, Caritas, CAPACITY, etc.), concentrate on partner agreement on and promotion of appropriate national policies, joint planning of support, compatible training and information materials and monitoring indicators.
3. Advocate for a TB budget line in national health budgets, with at least minimum funding for the managerial activities of the NTP (supervision, training, monitoring, drug distribution), to be complemented by external support.
4. In Kazakhstan, promote a sustainable, good quality TB drug supply by advocating that the national authorities maintain national funding and centralized procurement of TB drugs as for other essential supplies for priority health programs, such as vaccines.
5. In Turkmenistan, use the opportunity of the current government commitment to expand DOTS rapidly to guide and support a rational plan of expansion, in close collaboration with WHO.
6. Develop a Project HOPE strategy and medium term plan to gradually prepare countries for full NTP implementation and management of TB control; update Project HOPE staff on the

final structure desired (including health sector reforms such as changes in the funding and use of TB hospitals and specialists); and strengthen their capacity to monitor progress.

Most of these recommendations were carried out in the past two years, with substantial increase in national staff ownership of the TB control program and capacity to carry out and monitor activities.

FINDINGS OF PROJECT HOPE ACTIVITIES AND RESULTS, BY OBJECTIVE

Project HOPE conducted many activities under the three program objectives. Key activities and the contribution of Project HOPE to some of the changes in TB control in the region are described in more detail by objective below. A summary table of activities conducted in each country is listed in *Annex 4*.

Project HOPE conducted a number of activities that were not included or explicitly stated in the original program plan, but were determined to be beneficial for improving TB control. These include trainings requested by the NTPs, developed by Project HOPE, and conducted in several different countries. They included training on epidemiology; on operational research to increase the capacity of local counterparts to assess and interpret epidemiological data; on culture and drug sensitivity testing (DST) for drug resistance; on infection control in response to increasing MDR TB and TB/HIV cases identified. In Uzbekistan, training for supervision at rayon level was developed so that the system of supervision from National to oblast and from oblast to rayon would be more efficient - and rayons are now responsible for supervision and monitoring of facilities in their areas. Drug management training for the rayon level was also developed and conducted as a result of LMIS reviews and Project HOPE's introduction of TB drug kit systems. Also as a result of findings from an operational research study, training on patient counseling for TB nurses was developed to reduce default rates. In Turkmenistan, additional funding was provided by USAID to add activities to help the MOHMIT in achieving of 100% coverage of the county by DOTS and a training centre was refurbished and equipped to increase the capacity of the NTP in trainings.

Due to changes in the partnership structure during the second year of the project, activities planned under Objective 1 were modified. Country policy assessments were conducted in 2 countries and determined to be unnecessary for the remaining countries given available information. A migrant study was added to collect information on targeting this group, and a financing study was added for Kyrgyzstan, which has just recently been completed. LMIS for second line drugs and management training for MDR TB were also added.

Some activities originally planned under the cooperative agreement were not conducted. These activities include development of a High Level Working Group in Tajikistan that was unnecessary since a National Coordinating Committee to prevent and fight HIV/AIDS, TB and Malaria chaired by the Deputy Premier Minister was already functioning in this role. A burden of disease study was also planned but was already conducted by the World Bank in 2005, Small

Grants programs were not allowed under the laws of Uzbekistan and Turkmenistan; and several activities planned for Turkmenistan were not approved by the MOH.

OBJECTIVE 1. BUILD POLITICAL SUPPORT

- **Political commitment for TB in the CAR countries**

All MOHs fully support the NTP implementation of the Stop TB partnership strategy and TB control in all Central Asia countries, and have increased national funding for the TB program. Tajikistan and Turkmenistan were the last countries where DOTS coverage reached 100%, in 2007. For Kazakhstan, the President of the Republic declared TB as a high priority in 2007.

The NTP teams are well staffed and are recognized, but frequent staff turnover is a problem in Tajikistan and Uzbekistan. Although all elements of the TB strategy are in place, the quality of DOTS services provided (work performed) is still not at a satisfactory level. All the countries need further technical support. There are many challenges related to TB control that have been recognized recently, such as TB in prisons, MDR/XDR TB, TB in Migrants, TB/HIV, and Health System Reform. The MOHs show visible awareness of the need to solve these problems. The initial phases of DOTS implementation have been done and policy makers should concentrate their financial, human capacity to address new problems and strengthen the quality of the current system.

The MOH awareness of DOTS strategy is visible everywhere, but real concerns still exist regarding the persistence of old strategies for TB control (mass x-ray screening, tuberculin diagnosis, long hospitalization, long term follow-up of the “chronics” category of patients) and of legal instruments that help maintaining them. All positive results from the Project HOPE pilot sites (see *Annex 2*) were accepted by the local NTP and approved by MOH for further implementation countrywide.

Project HOPE provided all NTPs with sufficient support to build their organizational structure to effectively address local needs, and to clearly define the responsibilities of different levels of management. Kyrgyzstan has already begun integration of TB into the overall health system through the Manas Taalimi health system reform project. Uzbekistan successfully started to shift the main program activities and responsibilities from a vertical to horizontal system, presenting a useful example for other countries. The supervision / monitoring structure and training are shifting from the national to oblast level, and also from oblast to rayon and PHC. Many activities could be done independently with less international assistance (for example Uzbekistan) but the countries need additional technical support, especially Tajikistan and Turkmenistan. There is a lot of work to be done and room for improvement.

There are differences in flexibility of the political will (more flexibility in Uzbekistan and Kyrgyzstan, but less in other countries). However, the DOTS strategy was more easily accepted in some cases at the periphery level than at the central level (for example in Tajikistan and Uzbekistan). With Project HOPE support and assistance, and with good leadership of the TB program, stakeholder collaboration and MOH support, effective implementation of TB control

happened in Uzbekistan. This could be an example of successful implementation and building sustainability of TB programs for the future.

All countries have increasing funding for the NTP program. Because of different economic situations, the financial input to the NTP varies between the countries. It is more evident in Kazakhstan, Uzbekistan and Kyrgyzstan where governments invest more in the NTP, in comparison with Tajikistan, where the program is mainly dependent on support from international donors. For Kazakhstan and Uzbekistan a potential risk for the future of the TB program is that large influx of external funds (mainly from GFATM grants, see *Annex 9*) might divert efforts from the most effective interventions in primary health care to prevent TB transmission. Also, some GFATM projects (both existing and pending approval) for Tajikistan could reduce the focus on financial commitment from the government. Very useful collaboration between Project HOPE, the MOH, the DOTS Centre and KfW in funding and activities has been established in Uzbekistan.

Complete budget and expenditure data for the NTP program is not available. Specific information about the cost effectiveness of the interventions is not available for all countries. A costing study was conducted in Kyrgyzstan for some interventions.

Project HOPE has continued to play a leading role in advocating and assisting the NTP to develop policy documents for Uzbekistan and Tajikistan, and in partner coordination.

Evidence of political commitment is seen in the strong cooperation between the MOH, NTP and Project HOPE in all countries and in the active work of TWGs that were started by Project HOPE and continue with strong input from other stakeholders in different thematic areas in all countries. The number of the TWGs is different in each country, ranging from 2 in Turkmenistan to 5 in Uzbekistan and 8 in Kyrgyzstan. The effective work of TWGs made possible to achieve advanced results in many areas and the collaboration between national, local and international groups has strengthened capacity for continuation of this work in the future. The topic areas of the TWG are Laboratory, Training, Prisons, Drug management, Monitoring DOTS, IEC/BCC, MDR TB and TB/HIV.

The importance of MoH political commitment is evident through the large number of prikazes (executive orders) issued over the last several years, but the appropriate implementation and follow-up for some of these prikazes is weak. The Project HOPE team has strongly supported and assisted the NTP/MOH in preparation of many policy documents. New national policy documents are ready (KAZ), already updated (Uzbekistan), or in process of development (Tajikistan), all aiming to fully incorporate the Stop TB Strategy and Millennium Development Goals for the period of 2010-2015.

With technical support from Project HOPE, TB technical manuals were developed in all countries. However some of them should be updated according to international standards and evidence-based medicine. Some of the new manuals, guidelines and protocols created during the last two years are listed below:

- Monitoring/ Evaluation
- EQA for laboratory

- Treatment of MDR TB
- TB program manual
- Infection Control
- National Communication strategy (Oblast-level strategy in Kazakhstan pilot areas)

Integration of DOTS at the PHC level is still in process. However it has been started and gradually improvement of implementation is visible. The area of health system strengthening for diagnosis and treatment is not fully integrated in the PHC.

There is insufficient data showing the results of this integration. The leaders of the process of integration are Kyrgyzstan and Uzbekistan. All policy document and projects (mainly applications to GFATM) contain activities and a national strategic plan for implementation of integration of the TB program to PHC. The process of integration of the TB program is fully supported by Project HOPE and evidenced by training materials developed; multiple trainings for General Practitioners, ToT and local trainers; supervision; transfer of knowledge to the periphery levels; and ACSM activities for volunteers, Mahalla and other community leaders, and women' societies.

Project HOPE strengthened the mechanism of building links between NTPs, health care providers and communities. However the community-based approach, public- private mix and PAL strategies are still under consideration. Kyrgyzstan is the first country in the region piloting PAL, to be followed by full implementation in the whole country. The first phase of Health Sector Reform, which created Family Doctors in the general health facilities and the change in funding of hospitals to a per patient basis and not by bed, is a positive factor to help incorporate TB activities in the general health system. The Kyrgyzstan government received support from Project HOPE, John Snow, Inc. and WHO to develop and test different methodologies for integration.

OBJECTIVE 2. BUILD HUMAN AND SYSTEMS CAPACITY FOR TB CONTROL

- **Integration of vertical control into general health care**

Integration is taking place slowly as described above, and has lost momentum in most countries. The main obstacle is that technical guidelines still reserve for TB specialists and TB hospitals activities in patient care that can be done by general facilities more efficiently, with better population access and with less interference with the life of the patient and the family. Some examples are systematic hospitalization (no longer an international standard of care) and reconfirmation of the microscopy diagnosis in smear positive patients found by the general facilities. An opportunity to be used rapidly is the process of Health Sector Reform in Kyrgyzstan; that could transfer many actions to the Family Doctor and insert the TB hospital as a tertiary level of the general health system (possibly not only for TB but for lung or chest diseases), to make best use of the available medical and nursing human resources.

- **Strengthening the laboratory network**

Project HOPE conducted baseline laboratory assessments, trained lab technicians and trainers on both basic and advanced methods, conducted routine monitoring visits, created checklists, developed guidelines and revised standards, and introduced an external quality assurance system (EQA) for smear microscopy in the pilot sites. The EQA, based on double-blinded re-checking of an annual sample of smears with statistical analysis seems to be working well and was expanded country-wide by the national programs with support from Project HOPE and CDC. In Kazakhstan, sample selection using the Lot Quality Assurance Sampling (LQAS) methodology was used for slide sampling for blinded rechecking with good results, and a poster on this topic was presented at the International Union Against Tuberculosis and Lung Disease (IUATLD) World TB Conference in Paris in 2008. Support for the laboratory component included provision of equipment, supplies and training in new methods and rational use of resources.

Since drug resistance was identified as a potentially significant program in the region, pilot drug resistance surveys (DRS) were carried out to test and to train national staff in the methodology of DRS. Training packages were prepared in local languages. Advanced training was provided in all the CAR countries, including management of the laboratory network. A list of equipment and supplies necessary for culture and DST examination was developed for Tajikistan and materials procured for the DSRS with GFATM funding.

In Kazakhstan, Almaty oblast served as a model pilot and training area. Culture training was introduced country-wide by Project HOPE as sub-recipient of GFATM Round 6 grant. In Kyrgyzstan, with multiple donor partners, Project HOPE filled gaps, assisted in implementation of training on microscopy, culture and DST and collaborated with the TB Centre in monitoring and the production of national guidelines, policies, EQA and DRS. The main partners involved were US/CDC, the National TB Institute, GFATM, and MSF and ICRC for the prisons. A laboratory assessment in Kyrgyzstan in the initial years of the project showed poor results and low workloads, and as a result the number of TB microscopy laboratories in that country was reduced and smear positivity increased; a good example of rational planning. Field observation in the central laboratory of Kyrgyzstan during this mission showed that the building facilities are inadequate and that infection control measures seem insufficient for the higher risk procedures. A new laboratory is planned, to be built with KfW funding, but the timing and plans are not yet decided so improvement of infection control in the present laboratory is a priority.

In Tajikistan the laboratory network was supported since its establishment in 2002. Project HOPE is the primary recipient of the GFATM Round 3 grant that started in 2004; this facilitated the coordinated use of resources and technical assistance to the country. EQA is now established country wide and the central lab was equipped and received continued training on management. There are bridge funds from GFATM and a pending request for an extension; there are funds from Round 6 through UNDP and an approved Round 8 GFATM proposal that is not yet signed – all these inputs will require very careful planning and coordination to avoid duplication of activities, inefficient use of resources and reduction of the financial commitment of the national governments. In Turkmenistan, microscopy covers all oblasts and in one oblast, Balkan Velayat, the central laboratory was specially supported with additional funding from USAID. The national reference laboratory was equipped and staff trained, including on advanced technology.

A strategic plan was approved by the Ministry. In Uzbekistan training was provided at oblast and local levels and a pilot area was developed in Samarkand; but an EQA CDC pilot project was interrupted after one year highlighting the problem of sustainability.

Project HOPE also focused on capacity building of the National Reference Laboratories (NRL), to increase skills, recognition of the NRL role in the laboratory network, and to assist the NRLs with certification. Links and coordination with Supranational Reference Laboratories have been developed in Kazakhstan, Kyrgyzstan and Uzbekistan, and are in process in Tajikistan.

Field visits to four countries showed that the microscopy network and EQA are well developed. However there is a risk that most additional resources will go to new technologies not yet appropriate for TB control and with little impact on transmission. Priority should be maintained for microscopy in the integrated health facilities; and culture and DST implemented in selected laboratories but ensuring that the results are well used by the program. Operational research by the laboratory and the program should be used to find out if the number of suspects examined by microscopy is sufficient to reduce the duration of transmission; to find out what is the contribution of cultures to the diagnosis of pulmonary smear negative (KAZ) and extra-pulmonary cases and to the confirmation of cure in patients that have completed treatment; and to find out why sputum conversion is very slow in Kazakhstan.

Current Status of laboratory activities:					
Component	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
Lab assessment	completed	completed	completed	completed	completed
Rationalization	completed	completed	In process	In process	In process
Training	ongoing (EQA)	ongoing: Basic and Culture - DST planned: Advanced (Y4)	ongoing: Basic and Culture – DST planned: Advanced Y4)	ongoing: Basic planned: Advanced (Y5)	To be discussed
Monitoring strategy revision	revised	In process	In process	In process	revised
MDR TB capacity	in place	in place	in process	planned (Y5)	Partially achieved
NRL certification	yes	yes	no	no	in process
Lab equipment	GFATM	GFATM; KfW	GFATM-Project HOPE	Project HOPE/USAID	KfW

- **Creating a rational drug management system**

An uninterrupted and efficient TB drug supply is a priority for all NTPs. At the beginning of the current project, a variety of drug supply issues confronted each country and a lack of drug management was present in varying degrees in all countries. Project HOPE and JSI experts recognized problems related to rational drug use in drug management in the region and took a lead role in assisting the NTPs to establish a rational system of drug management essential for ensuring a stable drug management system required for TB control in the region.

In Tajikistan a situational analysis was done based on recently conducted monitoring visits in 52 (79%) districts by Project HOPE drug management specialists. There were a number of challenges identified during the monitoring visits and recommendations were provided by Project HOPE.

To strengthen drug management, Logistic Management Information Systems (LMIS) were developed jointly with JSI, adapted to each country-specific situation, pilot tested and implemented in all countries. Tools developed for use in the LMIS include TB drug recording and reporting forms for all levels, and an LMIS manual. Trainings and workshops were conducted for medical staff of different levels, and local training teams were prepared to support nationwide roll-out of LMIS. Regular monitoring and evaluation has followed up all previous activities, and as problems are identified, solutions are developed and implemented.

In Uzbekistan, positive results were shown and the LMIS was scaled up by the DOTS Centre throughout the country, with assistance and training provided by Project HOPE and JSI. The MOH recognized that the LMIS model is useful not only for TB drugs management, but also for management of other drugs. In addition Project HOPE facilitates drug registration and certification of TB drugs in the country.

Specialists trained on drug management provide medical facilities with TB drugs regularly and ensure that patients have a sufficient amount of drugs for the entire course of treatment. One possible future approach would be closer collaboration with the MOH drug policy department to incorporate all the developed and piloted forms in one Prikaz, with approved recording and reporting forms. LMIS forms were introduced and distributed, but may not yet be properly used countrywide in Tajikistan and Turkmenistan. Trained staff, with well-defined responsibilities, and forms for drug recording and reporting are in place. However, the NTP team is not yet fully prepared to lead drug management for the country.

Project HOPE facilitated drug registration, certification of TB drugs, and trained staff in procedures to estimate drug needs. In Kyrgyzstan, Tajikistan and Uzbekistan, first line drugs are currently purchased with GFATM funds from the GDF and second line drugs through IDA with GLC involvement. The LMIS for second line drugs needs still major improvements. GDF has provided a grant for Tajikistan. All GDF drugs are registered in the countries (except Turkmenistan and Kazakhstan). Some problems have been identified in Kyrgyzstan related to second-line drugs registration. The pediatric formulations are not registered in any country but they are in use through permission of the MOH, and these are the only TB drugs received by

Kazakhstan from GDF. The expected date for registration of all GDF drugs (including pediatric formulation) in Turkmenistan was mid-February 2009.

In Tajikistan, GDF has provided TB drugs since the first DOTS pilot opened. First line drugs were procured under the GFATM R3 grant for the entire country by Project HOPE, and on-going drug procurement will be covered under the GFATM R6 grant. TB drugs in Kazakhstan are procured through use of national funds only, and Uzbekistan purchased first line TB drugs through GFATM Round 4.

Specifically in Tajikistan, Project HOPE assisted with development of the drug management system first developing Stop TB Kits and then ordering these kits from GDF to ensure access to a full course of treatment for each patient. They also assisted in registration of GDF drug formulations in Tajikistan. The Stop TB kits were introduced in the country in from the start of this project in 2004, and rayon training on use of the kits for the full length of TB treatment was developed. Currently the MOH has changed its strategy and advocates procurement of the majority of TB drugs as separate drugs rather than in kits with fixed dose combinations; stating that this is less expensive and will make it easier to adjust treatment when there are side effects. This is not in accordance with Project HOPE or international recommendations and could create problems with a move back toward individualized treatment and increased mono-therapy. Although patient kits may not be the best alternative for the current system which hospitalizes most patients, the presentation of drugs as FDC in blister packs is the most appropriate. A small quantity of loose drugs should be sufficient for the occasional patients with drug toxicity that need regimen adjustment.

An important issue on drug procurement in Kazakhstan was noted in the mid-term evaluation: the country intended to decentralize TB drug procurement, with the risk of increased cost, lower quality assurance and more difficult monitoring. The initiative was abandoned by the government after information on potential impact was supplied. A current problem in Kyrgyzstan is that some second line drugs are not yet registered but were used under special dispensation; the central drug control agency has objected and supply to patients was in risk of interruption. The problem is temporarily in abeyance, but opportune drug registration is a priority.

GDF is present in all countries in the region. The funding situation with TB drugs presented a problem a few years ago and continuous external assistance is still needed to ensure a consistent drug supply. Kazakhstan provided all TB patients with drugs purchased through government funding. Over the last three years, with the exception of Uzbekistan and Kazakhstan, counties have utilized the GDF for provision of TB drugs. With close collaboration between local and international partners, GDF has provided direct technical support to the countries, mainly in the areas of monitoring and evaluation, assessment, training and problem solving. All 5 countries are on the GDF eligibility country lists.

Green Light Committee (GLC): All countries in CAR are faced with MDR and XDR TB challenges. Some DST surveillance (Kazakhstan, Uzbekistan, Kyrgyzstan) and a DST study (Tajikistan) have been undertaken but there is not valid data available yet to show the true magnitude of the problem of drug resistance. However, high rates of treatment failure and slow

smear conversion, mainly in Kazakhstan, may be due to MDR and misclassification of previously treated patients for cohort analysis. Recognizing MDR as a problem for the future, Project HOPE is assisting all NTPs (except Turkmenistan) in planning collection of information on drug resistance. Kazakhstan, Uzbekistan and Kyrgyzstan have applied for GLC missions, and pre-assessment missions were conducted last year. Tajikistan is planning to apply soon; Turkmenistan is not yet at that stage.

Child formulations: GDF provided grants of TB drugs of confirmed quality to all CARs. It included pediatric formulations in line with drug estimations done by NTPs supported by Project HOPE specialists. The grant plan was for one year with intension of continuing to supply drugs for the next two years. The drugs came by the middle or last quarter of 2008 and they are gradually started to be used. There is no information or experience yet about their efficacy or side effects.

Prikazes: The MOHs in CAR support the drug management systems that have been developed, and political will for implementation of the system was visible through many prikazes related to drug control issues. Some prikaz topics are listed below:

- Examination of drugs used by patients (Tajikistan, Kyrgyzstan)
- Use of TB drugs is forbidden in other health institutions, outside of TB services (Tajikistan)
- Sale of TB drugs forbidden without prescription of TB specialists. (Tajikistan)
- Education of medical staff in TB for periphery for three months (only for these regions without doctors) (Tajikistan)
- Development and introduction of LMIS forms (all countries)
- Law for drugs (Kyrgyzstan)

As can be noted, some of these resolutions may have a positive effect to reduce inadequate use of TB drugs, but also the undesirable consequence of blocking integration of activities into general health facilities (e.g., prescription restricted to specialists and to specialized institutions).

- **Human resource capacity building**

Project HOPE has taken the lead in drafting the national policy for TB control and in capacity building of health providers. There is a very active role of the Project in the preparation of training materials, training of trainers, direct training activities, as well as monitoring and evaluation. Basic training was provided for TB specialists, PHC staff, nurses, laboratory specialists, and training was also done on BCC and drug management. Training in cohort analysis was provided to oblast managers and on DOTS for epidemiologists of SES. Various training courses included: advanced DOTS training, peculiarities of the prison TB program, M&E training, laboratory external quality assurance, IEC training, LMIS design workshop, drug management training, workshop for journalists, drug susceptibility testing, Epi Info, MDR TB, counseling skills, pharmaco-vigilance (monitoring for TB drug side-effects), TB Management training for Heads of Oblast and Rayon Health departments (see *Annex 5* for examples of people trained). Ad-hoc materials were developed for special program challenges. Many of the training materials are based on WHO modules. There is a need to strengthen national managerial

capacity for TB control to facilitate national ownership, implementation and sustainability of the TB control program.

Project HOPE organized a ToT on clinical and case management for MDR TB that was conducted in 2008 in Uzbekistan by a consultant from the Latvia Training Centre. Training materials were adapted for Uzbekistan and the first training by Project HOPE and oblast-level TB specialists was conducted in February 2009. Given the high estimates of MDR TB for Tashkent and the national plans for expansion of MDR TB treatment in Uzbekistan, training is needed; but the quality of the training and implementation of the activities should be monitored to ensure a high level of quality in the early stages of the training.

In the Karaganda Oblast in Kazakhstan, Project HOPE has worked closely with the prison system to improve TB control. Project HOPE established a training center at the Karaganda prison, trained staff there, and that team has provided training to prison staff from other areas of Kazakhstan, as well as to staff from all CAR countries that participated in trainings and study visits to learn about methods to strengthen TB control in prisons for use throughout the region. A conference on TB in prisons organized by WHO, KNCV and Project HOPE was conducted in Astana, Kazakhstan in the first half of 2008., The lead facilitator and some presentations were provided by Project HOPE, with participation of other national and international organizations, and was enthusiastically received. A follow-up conference has already been requested by several organizations and countries.

As in other former soviet countries, there is a recurrent complaint that the number of TB specialists is insufficient and, because of their advanced average age, the problem will worsen. This is true in some cases, but in general the specialists carry out many functions that could be carried out by general physicians and also activities of low or no impact, such as post-treatment controls and hospitalization of inactive TB cases. For instance, there is no reason to require a specialist to diagnose or to initiate treatment with the national standard regimens for untreated, uncomplicated pulmonary TB cases that were confirmed by the laboratory (two positive smears, or positive culture); or to follow up cured patients without symptoms. International recommendations and global general practice outside the former soviet countries reserve the specialists (as for any disease) for difficult diagnosis (smear negative and extra-pulmonary TB), and for follow up of patients with complications and associated diseases. The change of the TB specialists' role will take time, but it should be an area for advocacy and training activities of future projects.

In general, although physicians in training receive teaching on TB, some of the curricula are not in accordance with international standards and do not have a public health approach. Outdated training materials (guidelines elaborated and published in 1960s) are still in use. Modern materials need to be included in the curricula of advanced training institutes and replace the old ones.

Currently a separate discipline of Phthisiology deals with TB – globally this specialty has been incorporated into lung diseases. In Kazakhstan, the NTBC is not involved in development of curricula, but rather provides training in practical skills. Its perspective is that education is the responsibility of the Ministry of Education. Every five years, physicians must receive

continuing education certification. The Kyrgyz State Medical Institute for Continuing Education has incorporated basic issues in the DOTS strategy in the training curricula approved by the Ministry of Health. Project HOPE helped the Institute to revise the curricula and adapt educational content to the needs of particular groups of trainees (TB specialists, PHC physicians and nurses).

The main activities of Project HOPE at regional and country levels are included in *Annex 4*, and additional detail on human resource development activities is provided in *Annex 6*.

The following HR development issues should be given priority in future USAID-supported projects:

- Increase the national managerial capacity through on-the-job training (mentoring), especially at the national level. Promote teamwork at the national and intermediate (oblast) levels to plan, implement and monitor program activities.
 - Delegate selected activities to national management staff and supervise and jointly monitor the results (for instance organization and running of HLWG and TWG meetings, QA of microscopy, training activities).
 - Provide (in Russian and English) and discuss evidence-based sources to advocate for changes in policy and practices.
 - Translate training and IEC materials into the national languages and support dissemination.
 - Provide forums for peer evaluation at the national level (for instance, for country staff to present and discuss their activities and results) and for oblast level within countries.
 - Continue support to medical and nursing teaching institutions to revise and update curricula and to include DOTS as part of the educational program, following the example of Kyrgyzstan.
- **Improve program management, reporting system and surveillance**

Information system, monitoring and supervision

The activities have been covered in previous sections of the report. The data available has increased and improved in quality, particularly in the area of laboratory. DOTS coverage expansion, use of standard protocols and forms, training of national managerial staff, and coordination among the partner agencies have contributed to improve the information on the TB control program and TB epidemiology. Project HOPE collaborated with the US/CDC in training on the use of the reporting forms. WHO has systematically collected and analyzed the data provided by the countries and published it in the Global TB Reports. Some of this information was used by the evaluation team to draw conclusions; the most important indicators used are included in *Annex 8*.

Currently the weakest point, and the priority for the future, is the capacity of national staff at all levels to analyze the information and use it for operational and budgetary decisions.

Linked interventions and system strengthening

The lack of a comprehensive health sector strategy to better respond to the current challenges, including TB, HIV/AIDS, and malaria was recognized throughout the region. Different MoH identified development of a comprehensive health sector strategy as one of the top priorities.

All TB interventions conducted by Project HOPE during the project address not only strengthening TB control, but also general health system strengthening. Effective contribution to health system strengthening depends on developing a national strategy of joint activities and responsibilities between different ministries and different health sectors (HIV, TB, lung diseases etc.).

There are many constraints in all countries related to health strengthening. Some of these challenges are listed below:

- Lack of integration between the TB program and PHC
- Lack of coordination between different ministries, oblast, district and regional health managers and stakeholders
- Lack of funding for the health system in general; and in particular for primary health care. Rational use of the funds is not coordinated by the national program.
- The registration system works but the data is not being used in MOH planning, no analysis and forecasting system is established that could impact the MoH funding system and quality of services.
- Poor quality of the health statistics and information exchange.

The interventions conducted by Project HOPE focus on supporting and assisting country TB programs to ensure equal access to TB services for both men and women, and risk groups. These interventions also aim to bring services close to the rural community, to contribute to faster integration of TB into the PHC facilities, as well as promotion of community based DOTS.

A few fields of possible exploration for further improvement of the TB and health system in general are creating well-functioning health information systems, strengthening health management systems with involvement of all levels of health protection, and building of drug management systems.

Lung Health: The Practical Approach to Lung health (PAL) strategy is not implemented in Central Asian countries, except in Kyrgyzstan. Kyrgyzstan piloted PAL implementation during the last few years and positive results achieved could serve as a model for other countries in the region. Assuming that PAL could be an appropriate solution for further improvement in the general health system and TB program as well, Uzbekistan and Tajikistan applications for GFATM Round 8 contain activities related to PAL implementation. Exploring the possibility to implement PAL in all CAR countries presents a real challenge for the health system in general in the region. The following results would be expected:

- Contribution to improving TB case detection, and quality of TB diagnosis
- Maintaining the high profile of TB among respiratory conditions in daily practice
- Strengthening the integration of TB control into PHC services
- Improvement of the referral system for respiratory conditions and TB

- Strengthening PHC services (increasing PHC attendance for respiratory conditions)
- Reduction in unnecessary prescription of drugs, particularly antibiotics

External technical assistance will be required to develop the PAL strategy, conduct a needs assessment, planning, piloting the plan, creation of a National Guideline on PAL, followed by the gradual expansion of PAL country-wide. Looking for possibilities of PAL implementation in the countries and strategy development with support of an international expert is strongly suggested.

MDR TB: The NTPs are showing improvement in TB control program performance, with trends showing either a decrease or stability in some key indicators. However there is increased recognition of the problem of development of drug resistance and the impact on TB control. According to a WHO report released in February 2008, drug resistance estimates are high in Central Asia, and better information is needed on the real situation. In Tajikistan, with funding from the GFATM, Project HOPE has assisted the NTP in training and conducting a small DST study. Results show high levels of resistance. There are plans for DST studies in other countries as well, primarily under GFATM funding. Uzbekistan currently has two DOTS+ programs being implemented by MSF and the GFATM PIU in Karakalpakstan and Tashkent.

HIV: Reliable statistics on HIV are not available in any of the countries, but available data shows that the region is one of the hot spots in the world where the HIV epidemic is still growing. The countries have policies on TB/HIV that do not include clear guidance on collaborative TB/HIV activities, or the methods and benefits of collaboration between the programs. Organizational structures for joint work were set up; however the collaborative activities are not yet functional in most places. Not all HIV-positive individuals are screened for TB, which means no proper chemoprophylaxis or treatment for TB is being provided for those not detected; and VCT for HIV is not offered for all TB patients nor is cotrimoxazol preventive therapy (CPT) used routinely. VCT and TB screening exist in some countries at different stages of implementation. For Tajikistan, VCT is starting to be implemented under the GFATM grant Round 6. In Uzbekistan, HIV testing is provided on an opt-in basis, only with permission from the TB patients.

Management capacity building: The current National TB Strategies may not be able to achieve and sustain scaled up interventions to appropriately respond to TB threats. Human resources at the top level in the National level have weaknesses in planning, program management, financial management, monitoring of program implementation, prioritization of needs, and interventions. There is also a problem in lack of qualified medical staff. Capacity building activities in the area of management and leadership would help to better integrate the currently fragmented processes of budget formulation, budget execution, and financial reporting.

Operational research

The information systems for tuberculosis control have progressed substantially, and now provide ample data to monitor the program and its impact on the epidemic. However, the capacity of the NTPs to interpret the data and in particular to use it for planning and corrective action is still

limited. An example is the limited use of microscopy and general outpatient data to monitor case detection in all countries; the lack of clinical and operational analysis of the diagnostic criteria for smear and culture negative re-treatments cases and the reasons for very high failure rates in Kazakhstan; and of the results and cost-effectiveness of long term follow-up of cured TB patients.

Several operational research studies have been conducted in Central Asia as part of this project, with a focus on formative research to design and target interventions appropriate for each country or population, on programmatic research to determine what factors are influencing TB control activities and to help develop appropriate interventions, and research to collect epidemiological information to determine what the real situation is in the country (see *Annex 7*). In most countries the first study was a KAP survey of health providers and TB patients (and of the population in Tajikistan) which is described in more detail under Objective 3. The results were used to help inform the design of National Communication Strategies and to target activities to address gaps in knowledge, attitudes and practices. Follow-up KAP surveys are being conducted in each country to check progress among groups surveyed.

Additional studies have been done, including reasons for TB patient default, rational drug use, adverse reactions to first-line TB drugs, and TB among migrants. The results of these studies have been shared with national and international organizations working in TB and the data is used to adjust program activities to address the issues found in the studies to strengthen the TB program.

All of the studies have been done in collaboration with the NTPs and TWGs. Training on how to design, conduct and analyze operational research studies was developed by Project HOPE and conducted with staff from the DOTS Centre in Uzbekistan, and then both groups worked together on operational research in Uzbekistan. The training was expanded to all CAR countries. Additional strengthening and support is still needed for national programs to comfortably conduct operational research independently.

Priorities for future programs are:

- To develop the national capacity to use information for action, through joint preparation of national and oblast plans and analysis of the results (workshops of the oblast managers are a good method for peer education).
- To select key areas for operational studies directly aimed to improve detection and treatment outcomes and population and patient access to TB care.
- To prepare standard regional protocols and support for the NTPs to adapt and implement them in different geographical areas as necessary. This research would also complement ACSM activities to change specialist criteria on the adequacy of prevalent old practices. Major areas of interest have been mentioned above and include operational analysis of interventions to reduce stigma, a particular problem for women.

Resource mobilization

Project HOPE has collaborated closely throughout the implementation of this project with both national and international partners, focusing on development of national capacity to conduct TB control programs. They have also provided support to NTPs in development of proposals for external funding, such as GFATM and GDF grants. Project HOPE served as the Principal Recipient for the Tajikistan Round 3 TB grant, and as a sub-recipient for other GFATM TB grants in Tajikistan, Uzbekistan and Kazakhstan, scaling up activities to additional areas or conducting activities complementary to this USAID-funded grant. Additional information on GFATM grants in Central Asia is in *Annex 9*.

Project HOPE and the World Food Program (WFP) have been implementing an incentives and enablers program for TB patients since 2002 as a complement to the USAID TB program. This includes Institutional feeding for the inpatient phase of treatment and regular distribution of take-home rations for TB patients and family members during the continuation phase. The focus of the program is to improve treatment adherence and reduce default. Based on the results of the program, the WFP have expanded this project to include other NGO's and the National TB Program.

Project HOPE has actively encouraged collaboration and communication with other international organizations working in TB in the region, inviting them to collaborative meetings, to participate in TWGs, conducting joint activities or trainings and providing technical input on TB issues as needed. Other international and local NGOs provided very positive feedback about cooperation with Project HOPE and also about this project's impact on TB control and the NTPs.

OBJECTIVE 3: RAISE COMMUNITY AWARENESS

The Stop TB Strategy, introduced in 2006, recommends conducting activities to empower communities and people with TB through advocacy, communication and social mobilization activities and community participation in TB care. These activities were included in objective three of this project, and several important contributions to improve TB control were made through Project HOPE activities and cooperation with local, national and international partners. These include collaborative development and implementation of National Communication Strategies; Thematic Working Groups (TWG) for IEC/BCC; Knowledge, Attitudes and Practice (KAP) surveys; IEC materials for TB; training for journalists; communication training for health providers; a small grants program for local civil society groups; education and outreach for community leaders; and an incentives program for TB patients.

As reported in the mid-term project evaluation, (National) Communication Strategies (NCS) were developed in all countries and adopted at the national level in Kyrgyzstan, Tajikistan, and Uzbekistan. The strategies were approved by the NTP/MOH or included in a TB prikaz for approval in all countries, and have been used to guide and coordinate integrated, comprehensive communication approaches to advocacy, communication and social mobilization (ASCM) activities for key populations. These strategies were developed in collaboration with TWGs on

IEC/BCC, which are active in planning, review, development, coordination and monitoring activities for increasing awareness of TB among health providers and the population and for advocating for BCC activities.

As part of the development of NCS, KAP surveys were conducted in each country (except Turkmenistan) among health providers and TB patients, and a larger study was conducted including the general population in Tajikistan in 2005 and 2008. The IEC/BCC TWGs were involved in analysis of the information collected with analysis of the TB situation in each country. Follow-up surveys are being conducted in 2009 among the same groups, and data is being analyzed. The largest KAP survey was conducted in Tajikistan with the follow-up survey conducted jointly in December 2008 by Project HOPE and WHO. Initial results of this survey were presented to the MOH in February, 2009 and the results were well received and plans are being reviewed for adjustment in light of this information to address issues identified in the survey.

To improve knowledge, behaviors and services for TB in each country, several strategies were used, including training for health providers, TB patients and their families, journalists, Healthy Lifestyle Centers, community groups and community leaders. Project HOPE first focused on health providers, to improve TB services before conducting activities to bring more patients into the system. Interpersonal Communication Skills (IPC) training was provided for health providers to improve patient communication and reduce stigma, and additional communication training for nurses was provided on patient counseling using a flip book developed by Project HOPE and the TWG, to increase patient knowledge about TB and the importance of treatment adherence. This last training was developed in response to an operational research study in Uzbekistan examining reasons for TB patient treatment default, which determined that the main reason for default was lack of knowledge about TB treatment.

In addition to training for health providers, training on how to report on TB was done for journalists in all countries. This two-day training included journalists from print media, TV and radio, and gave them an overview of the TB situation in each country, explained how to correctly describe the situation and gave them an opportunity to speak with health providers and patients. A wide range of stories came out in both national and regional media as a result of these trainings, with concrete information on TB and the importance of community mobilization for TB.

In Tajikistan, volunteers were trained for Treatment Support Groups (TSG). These groups are led by a volunteer doctor, and work with TB patients in the community, visiting them in their homes and providing DOT as needed, education on TB to patients and family members, checking on patients with treatment interruption, and distributing IEC materials. These groups are enthusiastic and active in their communities, and well-received by patients, increasing openness in discussion about TB.

Another means of social mobilization and population education was through Healthy Lifestyle Centers, and training for Community groups and leaders. The Healthy Lifestyle Centers already operate throughout the former soviet countries, and provide education and outreach in health facilities and during outreach sessions to patients and community members on important health

issues. Project HOPE provided training, support and IEC materials for them to include TB in their education sessions, and they have reached a large number of people, and provided responses to questions on TB, as well as referring people to available services. Training of community groups, such as Mahallas in Uzbekistan, and community leaders (done through the MOH Press Centre in Turkmenistan, and other groups in the other countries) has had a significant impact on knowledge and behavior related to TB in communities. In Uzbekistan, evidence of behavior change has been identified. Mahallas have small funds available for people sick with TB or other diseases that can have an impact on their ability to work, and most people were not accessing these funds through fear of informing other people in the community about their TB disease status. Now people speak more openly about TB and are not afraid to disclose that they have TB. Some areas of stigma remain, especially related to TB in young single women who are afraid that if it is known they have TB they will not be considered for marriage.

Development and adaptation of IEC materials for health providers and the general population was also a focus of this project, with regional training provided for local organizations and TWG members on how to review, pre-test and develop effective IEC materials to target different groups. Materials available prior to this project were developed independently by different groups and not always tested for effectiveness or accuracy of messages. An important consideration is that all TB materials are developed in collaboration with the IEC/BCC TWGs so they obtain experience in determining what is appropriate for each country.

Public Service Announcements (PSA) were also developed in each country in collaboration with the TWG, MOH and other local groups, and were widely distributed on local television stations with hotline numbers for the local population. In Turkmenistan, collaboration has been strengthened with the MOHMIT Press Centre, and they developed the PSA for Turkmenistan in addition to jointly conducting trainings for mass media and community outreach with the general population.

World TB Day is a focal point for providing information on TB to the general population. This day has always been observed in Central Asia and Project HOPE was very active in collaborating with national and local partners in conducting IEC/BCC activities in each country.

To increase involvement of local NGOs in TB community mobilization, small grants programs were conducted by Project HOPE in 3 countries: Kazakhstan, Kyrgyzstan and Tajikistan. In each country, NGO proposals on interventions to educate and promote behavior change in target populations were solicited, and each country conducted 2-3 rounds of annual competitions. A board involving local and international organizations reviewed and selected proposals for implementation and Project HOPE provided training for the NGOs selected on TB and how to monitor and evaluate small grant implementation and report on activities and outcomes. In Tajikistan 10 grants were awarded and included theater performances, radio and television spot development and distribution, and an intervention for railway workers to provide information and education to labor migrants in-transit. Six grants were awarded in both Kazakhstan and Kyrgyzstan. This program increased NGO awareness and activities in TB and the projects reached additional groups in the population with information and advocacy.

Special populations that have been targeted by program activities are prisoners and migrants. Project HOPE has conducted training and strengthening of TB services in prisons in Kazakhstan and Kyrgyzstan, and developed IEC materials for prisoners. In 2008, Project HOPE conducted an operational research study on migrants in Uzbekistan and Kazakhstan, conducting qualitative focus group discussions to gather information and identify barriers for accessing TB services for migrants. Lack of information and legal status were identified as key problems, and information on TB services has been provided to these groups.

Since 2002, Project HOPE has been implementing a project for TB patients in Tajikistan in collaboration with the World Food Programme that provides nutrition to inpatients and food packages to outpatients. The objective was increasing patient compliance with TB treatment, and food packages for outpatients are provided at key points in treatment when patients are being given sputum tests and checked for treatment adherence. A comparison between patients with and without food support in 2005 showed substantial differences in treatment outcomes (improved success and reduced failure, default and death). An additional OR study is being conducted in 2009 to determine impact of the program for treatment adherence. Results of the study are not yet available.

EPIDEMIOLOGICAL IMPACT OF THE TB CONTROL PROGRAMS

The results of Project HOPE cooperation with the national governments can be measured by the achievement of the planned activities; the changes in the national program policies and capacity for TB control implementation; the improvement of TB control shown by operational indicators; and the changes in epidemiological indicators. The first three have been described above, under project activities. Except for the achievement of planned activities, it is not possible to assign full responsibility for the outcomes exclusively to the national efforts or to any one of the supporting partners. The achievements are the result of common work, with varied involvement according to the intervention. Thus the epidemiological impact is the result of the NTP and MoH actions, plus partner support, plus other development factors.

The main epidemiological indicators relate to TB transmission, measured through studies of prevalence of infection in children; TB incidence, measured through case reporting; TB prevalence, that requires costly population surveys and provides no data for program planning; and TB mortality in the general population, measured through death certification provided by the national statistics offices. Of these, TB case reporting and TB mortality data are usually available during the implementation of projects. Mortality is a sensitive indicator, rapidly influenced by control activities; however data is not always timely available. Cases reported and the rate per 100 000 can be compared with estimates of total and smear positive TB incidence, periodically updated by the WHO. The changes in reported incidence can be due to improvement in case detection (increase), reduction of the TB prevalence in the community, or a combination of both. An indicator of improvement in case detection of the main sources of infection (pulmonary smear positive cases) is the number of persons examined by microscopy for diagnosis. At a constant level, the trend of reported infectious cases corresponds to the trend of TB disease. The total reported cases is influenced by the prevalence of TB, the access of the

population to health services and to TB diagnosis and also by the medical criteria and technical resources to diagnose cases with negative bacteriology results. The expected result of improvement in a TB control program is an initial increase of the number and rate of reported smear positive cases (improve in case detection) and an increase in the proportion of cases confirmed by smear or culture (due to improvement of diagnostic quality); followed by a decrease of smear positive cases and total cases (decrease of TB prevalence in the community).

In addition, the epidemiological impact becomes evident quite late and after project completion, because wide coverage of activities is only reached after mid-term of the project.

For 2003, before the start of the project, WHO estimated a total TB incidence of 127 per 100 000 (approximately 73000 new and relapse cases) and a pulmonary smear positive incidence of 57 per 100 000 (approximately 33000 cases) for the CAR. This year was used as baseline for this report (*Annex 8*). The data on diagnosed cases for 2003 - 2006, and the outcomes for the cohort of new smear positive cases were published in the WHO Reports on the TB epidemic of 2005 - 2008. Preliminary data for 2007 sent to WHO for publication in the 2009 Report was obtained from the national programs. Mortality data to evaluate trends was available for some of the countries.

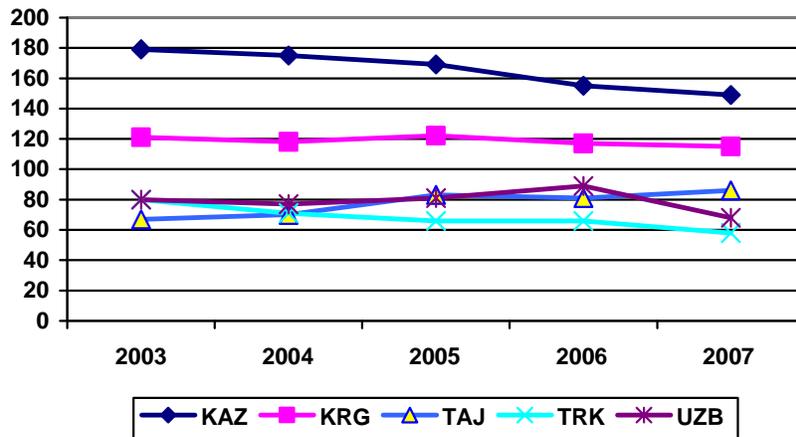
By 2006 the CAR population was estimated at 59 million. The total number of cases reported kept pace with the population increase, maintaining the reported incidence at 108 per 100 000. The rate for smear positive went from 28 to 31 per 100 000, the case detection rate (CDR) from 50 to 54% and the proportion of smear positive cases from 26 to 29%. The global target for CDR is 70% of the estimated new smear positive incidence and the expected proportion of total cases confirmed by sputum microscopy is about 50%. Thus on the average there was a modest increase in case detection and in confirmation of cases (suggesting changes in medical diagnostic criteria and improvement in the laboratory capacity), but far below the global targets.

There were important differences by country. In Kazakhstan the rate of total cases has decreased by 20% and the smear positive cases by 10% from 2003 to 2007 (four years), indicating a reduction in TB. The reduction was less in cases confirmed by smear because more cases are found by general health facilities and the specialist criteria for diagnosis is slowly improving. In Kyrgyzstan the total case rate diminished from 138.2 to 107.7 from 2003 to 2008 (22% in 5 years) including prisons, and from 123.2 to 107.0 (13%) excluding prisons. The rates for smear positive and case detection rate excluding prisons were relatively stable, and the proportion of cases confirmed by microscopy increased. The TB mortality rate in general population diminished by 31% in the same period, an average reduction of over 6% per year. In Uzbekistan the estimates of incidence changed upwards; the program reported an expansion of the DOTS strategy coverage from 56 to 100% of the population and a large increase in total and in smear positive cases; the proportion of cases confirmed by smear increased from 23 to 30% but is still low. The CDR increased to 49% but it is still quite far from the global target. All these factors suggest that the program is still finding only a fraction of the infectious cases in the community and that the reported incidence does not yet represent the TB epidemiology. However, the TB mortality diminished from 11.5 in 2003 to 8.3 per 100 000 in 2007 (28% in 5 years), indicating that TB treatment is making a significant impact. In summary, a reduction in TB seems evident in these three countries.

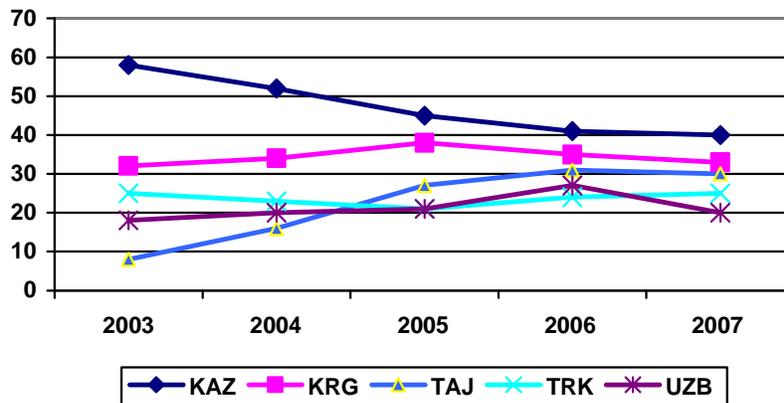
The information provided by case reporting in Turkmenistan is less representative of the burden of TB, as the DOTS coverage was still only 46% of the population in 2006 and although the CDR is over 80% the denominator (estimate of real incidence) may not be accurate. The total and smear positive cases reported have diminished from 2003 to 2006. In Tajikistan DOTS coverage increased from 13 in 2003 to 79% in 2006; the incidence estimated by WHO increased substantially from 168 to 204 and for smear positive from 76 to 92 per 100 000, suggesting that not enough is known about the burden of TB; the notification rate increased from 4260 to 6672 total cases and from 342 to 2051 smear positive cases; the CDR grew from 8 to 31% in spite of the change in denominator. All this impedes estimating the epidemiological impact of TB activities at the present time.

Summary epidemiological charts:

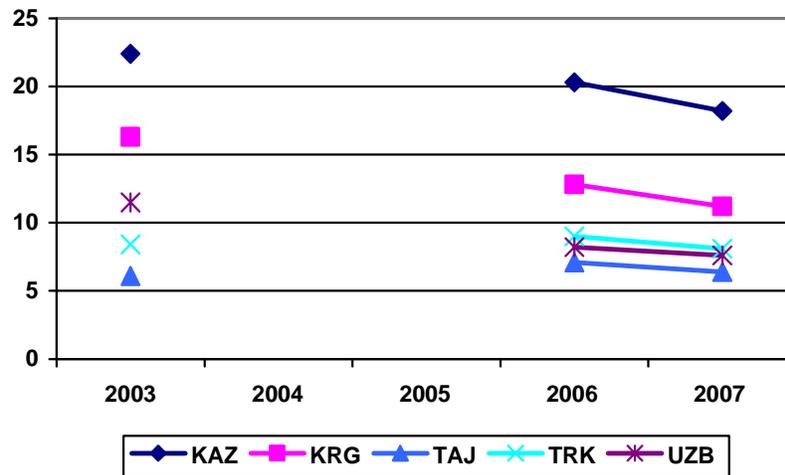
TB Notification rate, new + relapse



TB Notification rate, new SS+



TB Mortality rates, preliminary data



COUNTRY-SPECIFIC KEY FINDINGS

KAZAKHSTAN

All persons interviewed considered the support of Project HOPE very useful to guide and implement national TB program activities. The collaboration of Project HOPE to develop national capacity to implement the DOTS strategy covers the whole country, with emphasis on laboratory, training, drug management and monitoring and evaluation. Implementation of activities concentrated in the Almaty oblast and a prisons project in Karaganda; these became models for the rest of the country and other countries in CAR. ACSM activities included IEC/BCC, small grants to develop community involvement and support to local NGOs. While development in the pilot oblasts is very good, there are areas of the country that are difficult to access, and need further support.

There was evident improvement in political commitment to DOTS after the Mid-term Evaluation mission. The President of the Republic identified TB as a high priority in 2007. Budgetary resources for the program have increased. The NTP team is well staffed and has recognition. New program and monitoring manuals are available. Drug procurement has been centralized as recommended and drug management, based on the model of Almaty, was expanded by the NTP to achieve national coverage. Coordination between the central and oblast levels of the program has improved.

A potential risk for the future of the TB program is that the large influx of external funds (mainly GFATM) and international emphasis on new laboratory technologies may divert efforts from the essential elements of TB control: detecting and curing the sources of infection as rapidly as

possible, and integrating TB activities in the general health delivery system to improve patient access to diagnosis and treatment.

Regarding diagnosis, cases found by the PHC facilities have increased but the proportion of suspects detected and examined with microscopy is still low, and diagnosis of smear positive patients requires reconfirmation by the specialists and repetition of the microscopy (plus culture) in the specialized facilities.

The specialized facilities over-diagnose patients with abnormal pulmonary x-rays. In a series of nearly 800 patients diagnosed, 60% were smear negative; of these only 21% (one in five) were confirmed by culture. Nationally reported data show the same problem: in 2006 there were about 5000 retreatment cases classified according to WHO guidelines and 11 000 classified as “other re-treatments” - probably without laboratory confirmation. As previously treated cases often have radiological lesions for life and may have symptoms due to other infections, radiology is a poor predictor of active TB and confirmation by culture should be the rule.

Use of MMR techniques has been reduced but has not yet disappeared, and the use of mobile units is still common. Mass screening of children (most of them vaccinated once or twice with BCG) with tuberculin testing may lead to excessive diagnosis of TB infection or disease.

Regarding treatment, the main (and very serious) problem is a very high and growing proportion of treatment failures (16%), so far unexplained and not well studied. This coincides with very slow conversion and low conversion rates in the cohort of new smear positive cases. Treatment success has diminished from 81.6% the 2002 cohort to 72.1% in the 2005 cohort, due mainly to increased failure rates, but also due to some changes that have improved reporting according to international standards. Quality of DOT seems satisfactory; staff training and procedures in the TB hospitals observed were good. All patients are hospitalized during the initial treatment phase and until smear negative. The issue requires clinical, pathological and operational research. One possibility is misclassification of patients with previous treatment (and therefore, with higher chance of MDR) as new – repeated questioning of a sample of patients on treatment could give some information on this factor.

The sites observed had sufficient first line drugs (mostly loose pills, some FDC2, FDC3 and FDC4), and good drug management. Second line drugs are available in loose pills, in insufficient quantities for the estimated load but enough for the current low coverage of detection of MDR TB patients.

In the area of laboratory Project HOPE provided equipment and training, supported a model quality assurance program to be expanded to the rest of the country and participated in a drug resistance survey (DRS). The national central laboratory has qualified and trained staff and is coordinated with a supranational laboratory for quality assurance.

Training centers were developed in Almaty and Karaganda, and has expanded to 9 locations under full ownership of the NTP. Project HOPE supported training and ToT for the whole country.

Infection control was seen as acceptable for normal patient care but insufficient for culture/DST TB laboratories and management of MDR patients. The use of surgical masks by hospital and laboratory staff is common, this seems an acceptable habit as long as the staff know that it does not protect them from TB infection.

Project HOPE has collaborated with the CAPACITY project to implement pilot TB/HIV interventions in Almaty, providing some IEC materials, review of materials developed and monitoring support.

Project HOPE collaborated with KNCV in a program for TB control in prisons. Project HOPE and ZdravPlus prepared protocols for follow up of patients after release, monitoring and cohort analysis.

Community mobilization activities received high priority from Project HOPE. They included a small grants program carried out in collaboration with other partners.

Epidemiological and operational data suggest a significant impact of the program. TB mortality per 100 000 decreased from 22.4 in 2003 to 18.2 in 2007 (19% in four years). The total new case notification rate diminished by 21% between 2003 and 2007, and notification of pulmonary smear positive by 10%; the smaller decrease was probably due to better diagnosis and detection of smear positive sources of infection by general health facilities. The proportion of new cases confirmed by microscopy increased from 27.7% to 31.4%.

KYRGYZSTAN

The national authorities interviewed consider Project HOPE a key technical cooperation agency and as a facilitator of linkages with other partners. Collaboration to support implementation of the DOTS strategy covers the whole country, with emphasis on laboratory and training.

Improved political commitment is evidenced by active Thematic Working Groups (TWG) with Project HOPE participation, improved acceptance of DOTS by the authorities and specialists, and new TB manuals.

The first phase of Health Sector Reform which created Family Doctors in the general health facilities and the funding of hospitals per patient and not by bed are positive factors to help incorporate TB activities in the general health system. The government received support from Project HOPE, John Snow, Inc. and WHO to develop and test the methodology. At present the government is appraising the role and financial requirements of TB facilities with the intention of integrate them in the system by 2011. USAID, Project HOPE, WHO, the London Imperial College, ZdravPlus and CAPACITY collaborate in this activity which will also consider HIV/AIDS.

Case detection is implemented in outpatients in general health facilities, identifying persons with 2 weeks or more of cough for microscopy examination of sputa (3 samples). However, diagnosis still needs to be reconfirmed by the specialized facilities with repeated microscopy and diagnosis

by specialists. Culture (countrywide) and DST (in Bishkek) is also carried out in these facilities for all smear-positive cases. Identification of suspects is done by the physician (in general facilities the family doctor) with very low intensity. Observation during the visit showed slightly more than 100 suspects examined in one year in a facility with over 100 000 adult outpatient visits; as a result the positivity was high and the microscopy laboratory underutilized, with less than 10 smears per week. A simple study of the real prevalence of cough over two weeks in a sample of patients in these facilities would allow better evaluation of the effectiveness of identification of suspects and help determine if corrective measures are required, such as information to outpatients or systematic query regarding cough by the non-medical staff at reception. National data confirms the observation: 13 654 persons were examined by the PHC facilities in 2008 with 9.2% positivity; while 5898 were examined by the specialized facilities with 27% positivity. This suggests that a large number of patients in the community arrive late at the specialized facility; and probably visit general facilities several times for other reasons than respiratory symptoms before being identified as suspects.

Case finding through mass radiology has been largely abandoned, but mass tuberculin testing in children, once a year, continues; with an induration of 5 mm or more defined as positive although most children are vaccinated with BCG in the first year of life. As a consequence it is probable that many children are identified as TB infected and receive preventive or curative treatment without need.

The laboratory network has received substantial support. Training and ToT was carried out at all levels. A revised edition of the laboratory manual is in preparation; it will include rapid tests. Quality assurance of microscopy was implemented in the whole network and is now the responsibility of national staff, with Project HOPE providing monitoring and support when required. A drug resistance survey was carried out in a small sample of patients in Bishkek with Project HOPE and WHO assistance, to test and teach the methodology so the NTP can carry out a national survey.

The national central laboratory has qualified and trained staff and is coordinated with a supranational laboratory for quality assurance. It has modern equipment and is testing high level technologies. However, the facilities are too small to separate the high risk areas, infection control measures do not seem sufficient for culture and DST, and the routine workload of the two microscopy readers is excessive. A new laboratory is planned for construction with KfW financial support but the timing and building plans are not yet defined. Improvement of the working conditions in the current lab seems urgent, in particular, for infection control measures.

Case management practices are changing very slowly. All cases are hospitalized in TB facilities for the intensive phase of treatment, and longer in some cases with social problems. There are plans to test ambulatory treatment from the start in smear negative and extra-pulmonary cases. At the same time there are plans to build new sanatoria for MDR patients, which may not be a cost-effective use of resources in view of the Health Sector Reform (current facilities could be adapted if the hospitalization policy changes liberating TB beds and experienced staff).

Treatment success rate has increased from 82% (2003) to 85% (2006) and default rate was maintained in the range of 4-5%

Drug management was given high priority. A logistics management information system (LMIS) was piloted, approved by the MoH in 2006 and implemented at the national level and in all oblasts, including training and training of trainers to achieve national ownership. Project HOPE facilitated registration and certification of TB drugs. Operational research on treatment practices was carried out by the NTP, in collaboration with Project HOPE and IUATLD. Project HOPE participated and trained staff in procedures to estimate drug needs. First line drugs are currently purchased with GFATM funding from GDF and second line drugs through IDA Foundation (IDA) with GLC involvement. The LMIS for second line drugs needs still major improvements.

MDR management was piloted in 2005 on 100 patients; then expanded to 530 including patients from prisons. Project HOPE collaborated with other partners in organizational support and training. Patients are hospitalized for up to 18 months in 3 sites (six month in each); the total treatment duration is two years. Patients can be released for ambulatory treatment if culture negative, but may remain until the end of treatment depending on living conditions. Success so far has been around 62%.

TB/HIV is not yet a major problem in the country. Although 7% HIV infection was detected in injecting drug users in prisons, systematic testing in TB patients has found prevalence under one per thousand.

Community mobilization activities received high priority from Project HOPE. They included a small grants program started after the midterm evaluation. Activities included: supporting local NGOs to implement activities such as railway workers providing information for migrants, child theater performances with audience of about 10 000, video spots for transmission by local authority stations, mosque attendance and training in methodology to develop educational materials. ACSM included workshops for community leaders.

Training and ToT on the DOTS strategy and all interventions (diagnosis, treatment, management, drugs, laboratory, monitoring and evaluation) was supported at all levels. It included training of nurses on methods to counsel patients. Participation in the TWG on TB Education was important for activities in formal post-graduate education of specialists, family physicians, nurses and laboratory staff, including certification to stimulate participation. There is a high turnover of staff, in particular nurses, requiring a program of continuous training.

The main advances in monitoring were a change from the previous focus on punishment to on-the-job training support, involving all stakeholders and improving the contact between the central and oblast levels and development of checklists. A remaining problem is to achieve similar results with DOTS-Plus, which is still complex and unclear.

TB in prisons (Ministry of Justice) activities were mainly in cooperation with partners: MSF and ICRC, to provide technical guidance for policy. Incidence in prisons has decreased rapidly, in part due to TB control interventions and in part because of a large reduction in the prison population. An ongoing problem is high turnover of the prison staff.

The epidemiological and operational data suggest a significant impact of the program. TB mortality rate for all TB cases per 100 000 population decreased from 16.3 in 2003 to 11.2 in 2007 (31% in 4 years). The total case notification rate diminished by 8% between 2003 and 2007

and notification of pulmonary smear positive by 2%; the smaller decrease was probably due to better diagnosis and case detection by general health facilities. The proportion of new cases confirmed by microscopy increased from 27% to 30.6%.

TAJKISTAN

The national authorities interviewed consider Project HOPE a key technical cooperation agency and a facilitator of linkages with other partners. Collaboration to support implementation of the DOTS strategy now covers 13 rayons or cities in Tajikistan under the USAID grant, with emphasis on training on all components of the DOTS strategy, monitoring and evaluation, adapting and developing documents for support of DOTS implementation and strengthening of the NTP.

Evidence of political commitment is seen in the strong cooperation between the MOH, NTP and Project HOPE, and in the active work of TWGs that were started by Project HOPE and continue with strong input from other stakeholders in the different thematic areas. Tajikistan and Turkmenistan were the last countries in the region to have complete coverage of the population by DOTS. Implementation of DOTS started in early 2002 and reached all regions of Tajikistan by the end of 2007.

The TB program structure in Tajikistan is still vertical, so patients suspected of having TB are sent to TB service locations to be diagnosed. There is no clear process for TB diagnosis or treatment by PHC health providers at this time, though some TB specialists are based within the PHC system.

Case detection is implemented in the general facilities, with the suspects identified by the doctor, so probably restricted mostly to patients presenting with respiratory or chest symptoms. TB suspects are referred to TB services for diagnosis, which is done through sputum, clinical examination or x-ray examination. Emphasis on use of x-ray screening, the preferred method of detection under the soviet system, is contributing to a low rate of confirmation of pulmonary TB through smear microscopy, especially among new cases. The definition of “chronic” and “other” TB cases is unclear, and there is no proper evidence of previous treatment for these cases. The intensive phase of treatment is conducted as inpatient treatment for usually 2-3 months. Some rayons are stronger in implementation of DOTS than others. The Deputy Minister of Health suggested conducting additional activities in some weak areas to strengthen TB control. Testing using culture and DST will only be performed in two locations, Dushanbe rayon and Macheton Republican TB Hospital. A small DST study conducted by Project HOPE with Global Fund support showed a very bad situation with MDR in some parts of the country, confirmed by the Gauting Supra-national laboratory.

Case finding through mass radiology is still supported by the NTP on different levels and in the prison system, though microscopy is also used. At the national level, they are interested in using tuberculin, especially with children and contacts, but it is not clear who is providing tuberculin or what the quality is. BCG vaccination is nationally recommended for use in all children in

Tajikistan, at birth especially, but sample testing of children showed a low level of coverage indicating a potential problem with the vaccination program.

The total new case notification rate grew constantly, increasing by 43.7% between 2003 and 2007, in part due to expansion of coverage of activities and the DOTS strategy. Notification of pulmonary smear positive cases is increasing. It was 51% in 2004 and 62% in 2006, a positive change suggesting a progress in use of smear confirmation of TB cases for TB diagnostics.

The laboratory network has received substantial support during the current USAID grant, and starting from the beginning of DOTS implementation in 2001. Training and ToT was carried out at all levels. Quality control for smear microscopy has been done throughout Tajikistan, but needs additional strengthening and support for improvement. The national staff is responsible for the laboratory network, with Project HOPE providing technical assistance to the laboratory through local laboratory staff and the regional laboratory specialist as needed. There is a problem with retaining qualified laboratory staff in Tajikistan, due to low salaries and lack of other professional opportunities for these staff members.

Culture examination is performed only by the National Reference Laboratory (NRL), based in the NTP in Dushanbe, under supervision of the supranational laboratory from Germany. In the Machedon Republican TB Hospital near Dushanbe, renovations are being done and this will be a special center for treatment of MDR TB cases and also the NRL will be relocated there. KfW will provide all equipment for this laboratory. Staff from the NRL is currently participating in a study visit to the NRL in Uzbekistan to gain more experience in culture and DST testing.

There is no culture or DST currently conducted in the rest of the country. A DST study was performed by Project HOPE under funding from the GFATM Round 6 grant for a small portion of patients. Preliminary findings raise concern about potential high levels of drug resistance in the country – even higher than previously estimated.

Infection control (IC) in all TB facilities is not being done appropriately in any of the three areas: administrative, environmental and personal. There are no IC guidelines, no separation of patients currently in Machedon, and no personal protection in active use in high risk TB settings.

Case management practices are changing very slowly. Most cases are hospitalized in TB facilities for the intensive phase of treatment, for 2-3 months or in some cases for longer. However, some cases are now treated on an outpatient basis with regular DOT at health facilities near their homes. DOT may not be performed fully in accordance with international standards during the continuation phase, because not all proper management processes are followed.

Over the period of the project, DOTS coverage increased from 13% in 2003 to 100% by the end of 2007. Treatment success over the period was reported at between 84-86% from 2003-2005, and for the first time in 2006 this was reported by the NTP to WHO as 84.4% (new smear positive). It was noted that an incorrect definition is being used for differentiation between treatment completed and cured. Usually, at the national and regional level, no patients were classified in the treatment completed category – all were categorized as cured. Under closer review, the final smear examination is not being conducted at the end of treatment, but the patient is still categorized as cured.

Project HOPE has taken the lead in Tajikistan for drug management, developing policy, standards, an LMIS system with JSI, training and follow-up. Specifically in Tajikistan, Project HOPE assisted with development of the drug management system (no system existed before) using Stop TB Kits provided by GDF. Project HOPE assisted in registration of GDF drug formulations in Tajikistan. Funding from both USAID and GFATM has been used for development of the drug management system, and first line drugs were procured under the GFATM Round 3 grant for the entire country by Project HOPE.

Stop TB Kits, containing FDC anti TB drugs, were introduced in the country in 2005, and rayon training was developed and done throughout the country. This system has worked well for maintaining access to quality drugs for the full length of treatment for each patient. However, now the MOH is advocating a change to a majority of drugs being procured as loose drugs rather than kits (Fixed dose combination drugs), saying that this will make it easier to adjust treatment when there are side effects, though no study on side effects has been done. This is not in accordance with Project HOPE recommendations and could create problems with a move back toward individualized treatment.

Trained staff is in place with clear responsibilities, and forms for drug recording and reporting are in place. However, the National TB team is not yet fully prepared to lead drug management for the country.

Project HOPE assisted the NTP for TB drug needs calculation for child formulas for a GDF application.

An operational research study was conducted in Tajikistan and Uzbekistan on Rational Drug Use (RDU), which was the first study of its kind in the region. The results identified that even with free treatment for TB, prescription of additional drugs for TB patients creates a financial barrier for patients access to treatment. There are also non-GDF TB drugs in the country from other former Soviet countries used for treatment of TB provided through the pharmacies and can be purchased, potentially without prescription. However a new prikaz just introduced restricts sale of TB drugs to those with prescriptions.

NTP staff participated in training in the Latvia WHO training center for MDR TB case management in October 2008. DST is available only for a limited number of patients. They are not currently implementing a DOTS+ program, though preparation is underway for this at Macheton. The preliminary results of the small DST study found MDR TB in about 15% of new TB patients and in more than 50% of retreatment cases. The criteria of patients included in the study may not have been properly followed.

Second line TB drugs will be provided by GFATM Round 6 and 8 grants (if Round 8 final negotiations are approved). At the beginning, drugs will be provided only for 50 patients, and then will expand to provide treatment for up to 200 additional patients.

TB/HIV has not been identified as a major problem in the country. There is not appropriate data about HIV prevalence among TB patients, or vice versa, and no systematic testing is being

conducted. Under the HIV GFATM grant, VCT is starting to be implemented. There is not yet a link between these two vertical programs, especially in recording and reporting of patients.

ACSM activities have played a very important role in the Project HOPE program in Tajikistan. Initial activities focused primarily on health care providers and patients in both TB services and PHC, and then on the general population, including training, development of a TWG and National Communication Strategy, KAP surveys, health education and a small grants program.

The TWG on IEC/BCC has been very active in Tajikistan, from development of the National Communication strategy through development and implementation of education and BCC activities. All materials, trainings and plans are discussed with this group.

In Tajikistan, a larger baseline and final KAP survey was conducted than in the other countries. This included both TB patients and health providers in both TB services and PHC, and members of the general population. The first survey was conducted by Project HOPE in early 2006 and the final survey was conducted jointly with WHO at the end of 2008. Preliminary findings have been analyzed and were presented in early February 2009 to the MOH. The information from this study is very useful for the MOH and NTP to plan activities for the future, and already discussions are taking place to make changes to address findings.

Interpersonal communication skills training to improve patient communication and reduce stigma was conducted with health providers. Patronage nurses were also trained to work with patients. Later in the program, flipcharts were developed regionally and adapted for use in all countries, and patient consultation training for nurses including use of the flipcharts was conducted.

A Small Grants program was conducted for 3 years working with 10 local NGOs in pilot regions, and Project HOPE provided technical assistance and IEC materials. Some of the activities have included community initiatives, mass media outreach through public service announcements and radio broadcasts, theater performances on TB, and railway outreach with migrant workers.

Treatment Support Groups (TSG) have been organized and trained to conduct patient outreach and DOT in pilot regions to support health care workers and patients with good success and much enthusiasm from participants. Journalists have been trained on how to report on TB issues in the mass media. Healthy Lifestyle Center staff were trained through cascade trainings on TB education and provided with IEC materials, and include this in their health outreach and education sessions. Community leaders were also trained on TB.

Public and private collaboration is not a focus of the program, due to the nature of the vertical TB system in Tajikistan. The policy is that TB can only be treated in the public health sector.

One of the main activities of the project in Tajikistan was TOT and training on all areas of the DOTS Strategy (diagnosis, treatment, management, drugs, laboratory, supervision, monitoring and evaluation) to build capacity of the NTP and health providers at all levels of the TB program. Funding for trainings came from both the USAID and the GFATM Round 3 grants. As a result of these trainings and TOT, the country has a cadre of trainers and qualified staff to

conduct activities nationally. The teams of trainers have been participating regularly in seminars to provide updated information and refresher trainings. The NTP and TB staff have requested additional trainings for more staff to build more capacity. In spite of training focused on international standards, some remnants of the previous system still exist, such as interest in tuberculin testing and extra-pulmonary TB clinical interventions.

The main advances in monitoring were a change from the previous focus on punishment to on-the-job training support activity; involving all stakeholders and improving the contact between the central and oblast levels; and development of checklists. TB staff are very open to monitoring visits and see them as an opportunity to get questions answered. The NTP has gained much experience in monitoring and stated that they are ready to conduct monitoring independently and have been doing so for the last year.

TB in prisons is not addressed under this grant in Tajikistan.

RDU and DST operational research studies have been conducted in Tajikistan as mentioned above.

Project HOPE has been implementing an incentives and enablers program for TB patients since 2002 as a complement to the USAID TB program. The program started in 2 regions and expanded to 7 under Project HOPE, and also other regions under the support of additional program implementers. This includes Institutional feeding for the inpatient phase of treatment and regular distribution of take-home rations for TB patients and family members during the continuation phase. The focus of the program is to improve treatment adherence and reduce default. A case study was published and several presentations have been given on this project at international conferences. At this time a study on the impact of this project is being conducted.

Project HOPE has been implementing Global Fund program activities in Tajikistan, as the Principal Recipient of Round 3 from 2004-2008, and also as a sub-recipient for Round 6 in training, monitoring and conducting the DST survey. The advantage of implementing both USAID and GFATM grants is the chance to increase the scope and scale through leverage of both programs and to work both in pilot areas as well as nationally. Project HOPE is continuing Round 3 activities under bridge funding from GFATM pending the results of the Rolling Continuation Channel GFATM proposal submission.

When asked about the continuation of the TB control program after this project is completed, the deputy Minister of Health stated that there will be a vacuum, especially in the areas of laboratory, management and drug management and asked that this project continue.

TURKMENISTAN

The Republic of Turkmenistan was not visited during the final evaluation mission. The information on the country TB program and results, and on Project HOPE activities was collected during the visit for the Medium Term Evaluation in January 2007 and updated with national reported data and information provided by the Project HOPE Regional staff.

UZBEKISTAN

The national authorities interviewed consider Project HOPE a key technical cooperation agency and a facilitator of linkages with other partners. Collaboration to support implementation of the DOTS strategy covers the whole country, with emphasis on laboratory and training.

Improved political commitment is evidenced by active Thematic Working Groups (TWG) with Project HOPE participation, improved acceptance of DOTS by the authorities and specialists, active collaboration between Project HOPE and the DOTS Center/MOH/Republican TB Institute and new TB manuals. A new policy document, an update from the previous National Program for 2002-2008 that Project HOPE assisted with, has been prepared in Uzbekistan with participation of the DOTS Centre and is pending MOH approval. It defines the NTP strategy for 2010-2015, and incorporates the Stop TB Strategy and Millennium Development Goals.

Integration of the TB program in PHC is still in early stages in Uzbekistan, but there is an understanding among the national teams that it will be needed to improve access to TB services in the future. TB centers are located in general policlinics in every district where TB patients are treated under DOT during the continuation phase of treatment. At the village level there are PHC facilities with TB ambulatory treatment provided.

For case detection, patients identified as TB suspects are sent to TB services from PHC for diagnosis using smear microscopy. Culture and DST testing are done only in the NRL (and culture also done in Nukus related to MSF MDR project), which is certified by the Supranational laboratory in Borstel, Germany. There is a plan to build 5 additional culture testing laboratories at the oblast level, however the positive culture results will be sent for DST in the NRL only. Labs will be built by the MOH, equipped by KfW, and the staff will be trained first by Project HOPE until the end of the project, and then by national trainers.

Project HOPE has worked with laboratories at the oblast and rayon level since 2001 and continued to strengthen them under the current grant. Monitoring and on-the-job training is conducted jointly with NRL staff and has resulted in increased quality. There are more than 300 laboratories for smear microscopy in the country. Staff turnover is still a challenge. Plans for the future are linked with GF, KfW and local funds. Plans for laboratory training and monitoring were developed together with the DOTS Center. Training for EQA was done by Project HOPE for the NRL and oblast level labs in 2006-2007, and the oblast labs monitor rayon-level laboratories, while they are monitored by the NRL.

MDR - The NRL will perform DST for first and second line TB drugs. This means that MDR TB treatment will be individualized.

Infection Control training was developed and provided by Project HOPE for TB staff in pilot regions and under GFATM for the rest of the country. Topics included administrative, environmental and personal protection. Plans for infection control have been developed, especially in relation to MDR TB treatment. Project HOPE has provided input in this area since the prior grant, including provision of masks.

Case finding through mass radiology has decreased, but is still in use. BCG vaccination and revaccination is done in children.

The total new case notification rate increased from 77 in 2003 to 84.5 in 2007, and notification of pulmonary smear positive increased from 21 in 2003 to 26 in 2006, suggesting better diagnosis and case detection.

Case management practices have improved significantly due to training provided by Project HOPE, which gave a good base for TB control improvement. Only some cases are hospitalized in TB facilities for the intensive phase of treatment. In Tashkent city patients can go to the nearest PHC facility to their home for DOT during treatment.

Treatment success has been maintained at around 80-81% from 2003 to 2006 and national default rate has stayed between 7 and 9%. Deaths during treatment have remained stable at 5-6% and the failure rate also has stayed at 6%.

Drug management was given high priority. A logistics implementation system (LMIS) was developed with JSI and piloted in 3 rayons. Positive results were shown and the LMIS was scaled up by the DOTS Center throughout the country, with assistance in training from Project HOPE. Importantly, the MOH recognized that the LMIS model is useful not only for TB drug management, but also for management of any drugs. Project HOPE facilitated registration and certification of TB drugs in the country. TB drugs are available in all TB facilities free of charge, and are also distributed to PHC for DOT throughout Uzbekistan.

The DOTS Center is reviewing programs for drug management of second line drugs with assistance from JSI and Project HOPE. Second line drugs will be procured under the new Round 8 GFATM grant. Small amounts of second line drugs were procured under the previous GFATM grant for a limited number of patients in Tashkent pilot.

Addressing MDR TB is a high priority for Uzbekistan. In the global Drug Resistance report released by WHO in February 2008, Tashkent city had some of the highest rates of drug any resistance among both new and retreatment cases in the world. Two DOTS+ pilots are being conducted in Karakalpakstan by MSF and in Tashkent city by the DOTS Center PIU Round 5 GFATM grant. Through support of Project HOPE, a 2-week TOT training was conducted in Uzbekistan for oblast Chief TB managers and their deputies on clinical and case management of MDR cases by trainers from Latvia. A team of trainers led by Project HOPE and oblast trainers conducted the first training by local trainers in mid-February 2009, and trainings will cover staff working in both civilian and prison sector. A guideline for treatment of MDR TB was developed in May 2008. An Interagency group is being restarted on the initiative of the DOTS Centre and the first meeting topic is MDR TB.

For TB/HIV, there is no systematic process for registration or testing of suspected TB/HIV patients, though a program is reportedly in development in Tashkent city. No additional data was available for this site or the country. VCT is provided for patients only with their permission.

Community mobilization activities have played an extremely important role for TB knowledge and behavior change in Uzbekistan. Activities focused on health providers included IPC training

for health providers and communication training for nurses, with the use of a flip book developed for the project. An OR study on defaulters in Tashkent identified a lack of patient education as one key reason for default, so a training was developed to address that issue and reduce default rates. Monitoring and supportive supervision activities have also contributed to behavior change among health providers. Through supervision training and by observation of Project HOPE staff using on-the-job training and explanations of problems found, rather than focusing on punishment as under the prior system, supervisors have realized the effectiveness of this approach and changed their style of monitoring.

Many IEC materials were developed in Uzbekistan, in collaboration with the NTP and TWG on IEC/BCC, including the flipbook mentioned above, information for patients, information for migrants, and a Public Service Announcement in both Uzbek and Russian which was broadcast throughout the country with referral of questions to a hotline in the DOTS Centre. World TB Day activities were conducted jointly with the NTP and other partners. No small grants program was conducted in Uzbekistan due to restrictions under local laws. Previously, reporting on TB was considered taboo, but training of journalists in collaboration with the Centre for Preparation of Journalists, raised interest and understanding and several stories about TB have come out in the local and national news, with the journalists receiving many questions in response to these articles.

Additional community mobilization activities included conducting a talk show with well-known singers and students to talk about TB and encourage people to discuss it openly, which was well-received. Training for Mahallas, community leaders and women's groups is increasing openness and awareness of TB issues and services, and reducing stigma among the population. Even customs officials at the border crossing openly asked questions about TB and the link with HIV. More work in this area is still needed in Uzbekistan, since there is still a stigma attached to young women, and concern about acceptability for marriage remains a barrier to seeking treatment.

Training and ToT on the DOTS strategy and all interventions (diagnosis, treatment, management, drugs, laboratory, monitoring and evaluation) was done at all levels by Project HOPE. It included training of nurses on methods to counsel patients. There is turnover of staff, in particular laboratory staff, requiring a program of continuous training.

Training is also transferring responsibilities from Project HOPE to the national team and trainers, trainers from one oblast going to other oblasts to provide training and support. There were many training seminars, with great input received. Teams of trainers were developed in pilots and used in other parts of country, and supportive supervision for oblast and rayon level using a cascade methodology was prepared by Project HOPE and strongly accepted by the NTP.

The main advances in monitoring were a change from the previous focus on punishment to on-the-job training support activity. Supportive supervision and monitoring done by Project HOPE helped change behaviors among TB specialists doing monitoring as well as among the physicians being monitored. These physicians know they will not be punished for mistakes as in the past, but will get support and training to improve their knowledge and skills. Also Project HOPE at the beginning of the project, found that checklists used for monitoring were not

standardized and took the initiative to work with the TWG to develop a single checklist for each area that is now used by all organizations for TB control.

TB in prisons – no work has been done in this area except inclusion of prison health staff in some training, due to lack of access to the prison system.

Project HOPE conducted additional training and monitoring activities as a sub-recipient under the current GFATM grant in Uzbekistan, which has contributed to scale-up of activities to additional parts of the country and the ability to train a larger number of health providers.

CONCLUSION

In summary, the evaluation team concluded that the project was successful in implementing the planned activities, executed additional work as required and achieved most of the objectives. The support of USAID through Project HOPE was considered essential for the national and regional programs and for coordination among the partners and with the national institutions at all levels. The joint efforts have achieved substantial improvement in the quality and coverage of the national programs and there is evidence of epidemiological impact on the burden of TB.

The countries still require additional input to adopt the international standards for TB control, in particular integration of TB care into the general health facilities and more rational use of TB specialists and TB beds; to abandon obsolete and ineffective practices; and to develop their capacity to manage the programs and use the information for action. Major challenges for the future are increased use of general health facilities to diagnose and treat cases; efficient prevention and management of MDR TB and TB/HIV; and rational use of the external financial resources to avoid inappropriate use of funds and technologies and the diversion of the NTP staff time from the key interventions of the DOTS strategy.

Final Evaluation team members

Fabio Luelmo, Consultant, TB Control Programs (team leader)

Stefan Talevski, National TB Program Manager, Macedonia

Shalva Gamtsemlidze, Regional Technical Director, Project HOPE

Kayt Erdahl, Program Specialist, Infectious Diseases, Project HOPE

Regional and country maps and USAID/Project HOPE pilot sites

Central Asia



Kazakhstan



Project HOPE pilot sites: Almaty Oblast, Prison System in Karaganda Oblast.

Kyrgyzstan



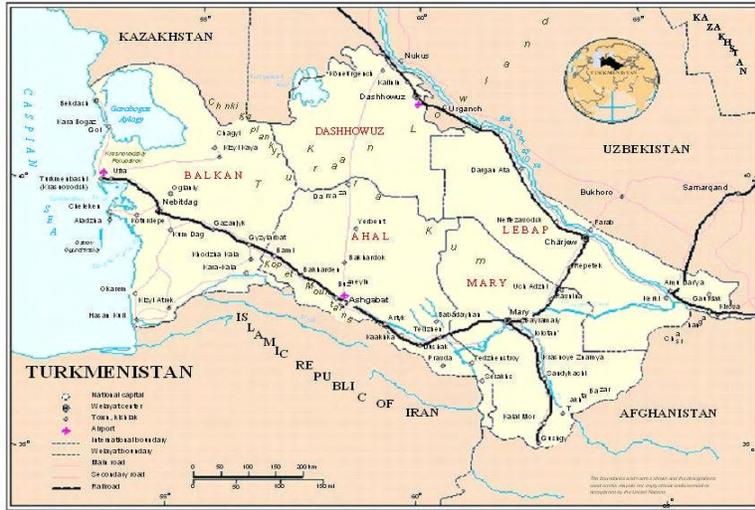
Project HOPE supports the whole country.

Tajikistan



Project HOPE pilot sites: Dushanbe City, Rudaki rayon, Vosse rayon, Kulyab City, Kulyab rayon, Farhor rayon, Hamadoni rayon, Mominobad rayon, Taimur Malik rayon, Shourobad rayon, Nurek rayon, Khowaling rayon, Baljuwan rayon.

Turkmenistan



Project HOPE pilot sites: Ashgabat city, Mary city, Balkan velayat (oblast).

Uzbekistan



Project HOPE pilot sites: Chilarzar rayon of Tashkent city, Shayhontohur (Akmal-Ikramov) rayon of Tashkent city, Samarkand city, Urgut rayon of Samarkand Oblast, Yangier city in Syrdarya Oblast, Syrdarya rayon of Syrdarya Oblast, Fergana city, Fergana rayon of Fergana Oblast, Andijan city, Namangan city.

Final Evaluation meetings: Countries visited and main persons interviewed
February 9-13, 2009

Kazakhstan		
Name	Position	Affiliation
Almaty oblast		
Maralbek Meirbekov	Head	Health department of Akimat of Almaty oblast
Maira Egemberdiyeva	Deputy of Head	Health department
Salavat Sarsembayev	Head doctor	Oblast TB dispensary
Kenzhe Bektursynova	Deputy head doctor	Oblast TB dispensary
Smailova Aigul	Deputy head doctor	Oblast TB dispensary
Maya Kusemisova	Head of microbiology laboratories	Oblast TB dispensary
Inna Khvan	Head of TB pulmonary department	Oblast TB dispensary
Manat Suleimenova	Head of drugstore	Oblast TB dispensary
Tleuberdi Zhansengirov	Head doctor of PHC (policlinic #1)	Taldykorgan city
Bakhyt Zhapparkhanova	Deputy of Head doctor of PHC (policlinic #1)	Taldykorgan city
Gani Agibayev	Head doctor, Koksu rayon, Almaty oblast	Balpyk Bi village
Bibigul Zheldikova	TB specialist	Balpyk Bi village
Almaty City		
Shakhmurat Ismailov	Director of National TB Center	National TB Center
Klara Baymukhanova	Head of department	National TB Center
Venera Bismilda	Head of National Reference Laboratory	National TB Center
Arman Toktabayonov	Manager of PIU GFATM (TB component)	National TB Center
Bakhtiyar Babamuradov	Manager	Project HOPE Kazakhstan
Daribek Assemgaliyev	TB/Drug management specialist	Project HOPE Kazakhstan
Bekzat Toksanbayeva	Lab specialist	Project HOPE Kazakhstan
Madina Aitukenova	IEC/BCC Coordinator	Project HOPE Kazakhstan
Kyrgyzstan		
Name	Position	Affiliation
Avtandil Alisherov	Director	National Center of Phthisiology
Altyn Asanbekova	Director	Family Medical Center №9
Valentina Sorokina	Curator	Bishkek TB center
Mairapat Moydunova	Director	Bishkek TB center
Irina Gubankova	Chief of monitoring department	Bishkek TB center
Elmira Abdrahmanova	Senior Scientific Specialist	National Center of Phthisiology
Ainura Esenalieva	Chief of Reference Lab	National Center of Phthisiology
Atyrkul Toktogonova	Chief of MDR Department	National Center of Phthisiology
Kybanych Mamatov	Manager	Global Fund TB Component
Baktygul Akkazieva	Health Reform Department	MoH
Timur Aptekar	TB Program Manager	Project HOPE
Anvar Beisembaev	TB Specialist	Project HOPE

Jibek Cholokova	IEC/BCC Specialist	Project HOPE
Tatiana Bobkova	Lab Specialist	Project HOPE
Totugul Murzabekova	Monitoring Specialist	Project HOPE
Jyldyz Ysykeeva	TB Drug Specialist	Project HOPE
James Bates	Consultant	JSI
Trisha Long	Consultant	JSI
Tajikistan		
Name	Position	Affiliation
Sohibnazar Rahmonov	Deputy Minister of Health	Ministry of Health Tajikistan
Oktam Bobokhodjaev	Director of Medical Services Department	Ministry of Health
Sadullo Saidaliev	Director National TB Program	Republican TB Center
Umrinisso Sirojiddinova	Chief of TB department, National coordinator for training component	Tajik State Medical University
Asliddin Rajabov	National coordinator for drug management	Republican TB Center
Zebo Boronova	Medical nurse	Family Health Centre # 7, Dushanbe
Tanzilija Abdurahimova	Nurse	Family Health Centre # 7, Dushanbe
Aziz Mirzoev	TB Coordinator	DOTS Centre, Family Health Centre # 1, Dushanbe
Turakhon Nabiev	Chief	Healthy Life Style Centre, Dushanbe
Davron Pirov	Deputy Head	Republican Healthy Life Style Centre
Begidjon Saidrahmonov	Head of rayon TB centre	Rudaki Rayon TB centre
Zebo Burieva	TB Coordinator	Rudaki Rayon DOTS # 3
Muzafar Akhmedov	Treatment Support Group Coordinator	Rudaki rayon
Alexei Korobitsyn	TB Program Manager	Project HOPE
Mavlyuda Makhmudova	Regional Drug Specialist	Project HOPE
Jurahon Rajabov	Drug Management Officer	Project HOPE
Mavjigul Azizulloeva	Deputy Program Manager	Project HOPE
Jamilya Ismoilova	Regional Social Mobilization/ small grants Specialist	Project HOPE
Malika Omonova	Chief Laboratory Specialist	Project HOPE
Saodat Kasimova	Social Mobilization/small grants coordinator	Project HOPE
Jemma Yusupjanova	Educator	Project HOPE
Obidjon Norov	TB Specialist, Monitoring and evaluation coordinator	Project HOPE
Fozil Mamadjanov	Training coordinator	Project HOPE
Parviz Tabarov	Incentives/ Enablers program coordinator	Project HOPE
Zumrad Maksumova	TB grant manager	GFATM Program Implementation Unit/ UNDP
Sayohat Hasamova	Country Program Coordinator for STIs/ HIV/ AIDS	Tajikistan WHO country office
Mavjuda Kasymova	Head of NGO	"Nabzi Solim", healthy generation (TJK NGO)
Numon Abdulhamedov	Head of public organization	"SVAST" (TJK Public organization)
Bahrinisso Isaeva	Deputy Health Program Manager	Mercy Corps

Firuz Saidova	National Coordinator for IEC/BCC, head of local NGO 'Nekroi'	Republican TB Centre
Jahongir Dehkonov	Deputy Program Manager, community health program	Japan Fund for Poverty Reduction
Carolyn (Teddy) Bryan	Tajikistan Country Director	USAID
Kevin Dean	Tajikistan Deputy Country Director	USAID
Malika Makhkambaeva	Project Management Specialist/Health and Education	USAID
Uzbekistan		
Name	Position	Affiliation
Prof. Abdulla Ubaydaliev	Director	Republican Institute for TB Research
Dr. Marat Khodjibekov	Deputy Minister	Ministry of Health
Gulnoza Uzakova	Director	PIU GFATM
Gulnoza Murmusaeva	Head	National Reference Laboratory
Lazis Tiraev	Lab. Specialist	National Reference Laboratory
Hursand Ismatrulaeva	Head	City TB Dispensary. Tashkent
Artur Niyazov	Program Manager/ Deputy Country Representative	Project HOPE
Shakhnoza Usarova	TB Specialist	Project HOPE
Umida Yuldashova	Drug Management Specialist	Project HOPE
Umid Asamidinov	Clinical Monitoring Specialist	Project HOPE
Gulandom Elmuradova	Laboratory Specialist	Project HOPE
Rano Kurbanova	DOTS Trainer	Project HOPE
Marhabo Rakhimova	Social Mobilization Assistant	Project HOPE
Andreas Brunder	Head of the Mission	Medecins Sans Frontiers (MSF)
Nana Zarkua	Medical Coordinator	MSF
Fozil Khasanov	Medical Officer	MSF
G.Tsogt	Regional TB Specialist	WHO
Mishel Tailhades	Head	WHO Uzbekistan
Jamshid Gadoev	National Professional Officer, TB Control	WHO Uzbekistan
Benjamin Mills	Health Adviser	USAID
Gulnara Babajanova	Director	Centre of Journalist Education
Feruz Mamanazarova	Health Promotion Manager	ZdravPlus
Elena Tsoy	Medical Education Program Specialist	ZdravPlus

Activities by Country

OBJECTIVE	ACTIVITY	KRG	KAZ	TKM	UZB	TAJ
Building political support	Support and participate in HLWG	X	X	X		
	Support interagency meetings					X
	Support laboratory TWG1 meetings	X	X		X	X
	Support training TWG2 meetings	X			X	
	Support prison TWG3 meetings	X	X		X	
	Approved policy/prikaz prisons	X				
	Support drug management TWG3	X	X	X	X	X
	Support monitoring DOTS TWG5	X	X	X	X	
	Approved policy/prikaz	X	X	X		
	Support IEC/BCC TWG6 meetings	X	X	X	X	X
	Approved policy/prikaz	X	X			
	Support MDR TB TWG7 meetings	X	X		X	
	Draft TOR TB/HIV TWG8	X	X			
	Support TB/HIV TWG8 meetings	X			X	
	Support round tables in 2 oblasts	X	X	X	X	X
	Initial policy assessments	X	X			
	Sustainable financing-analyze resource generation	X				
	Assist in GFATM applications	X	X	X	X	
	Assist establishing donor committees					
Conduct policy/operational research	X	X		X		
Integration of TB control into health system	Develop strategy, revise roles		X		X	
	Monitor integration	X		X		
	Report results	X	X	X		
	Provide training in pilot sites		X	X		
	Update DOTS materials	X		X	X	
	Strengthening laboratory – assess inventory			X		X
	Strengthening labs – rationalization			X		
	Laboratory – situation analysis		X		X	
	Laboratory – EQA for microscopy		X	X	X	X
	Laboratory – EQA responsibility shifted to oblast staff		X	X	X	X
	Laboratory – develop training plan	X		X	X	
	Laboratory – training	X	X	X		X
	Laboratory – advanced training	X	X	X	X	
	Laboratory – cadre of trainers			X	X	
Laboratory – training in culture/DST	X	X				

OBJECTIVE	ACTIVITY	KRG	KAZ	TKM	UZB	TAJ
	Laboratory – monitoring and supervision	X		X	X	X
	Lab monitoring /supervision shifted to NTP	X	X	X	X	X
	DST survey protocol		X			
	Monitor DST implementation	X	X			
	National reference lab (NRL) certification				X	
	Procurement of equipment			X		X
Strengthen human resource capacity	Needs assessment and training plans	X				X
	Training of trainers (TOT)	X	X	X	X	
	Basic DOTS training for PHC	X	X	X		X
	Advanced DOTS training		X		X	
	Training of nurses	X	X	X	X	
	Follow up of released prisoners	X				
	On the job training	X		X	X	
	NTP Management training				X	X
	Pre service education curricula			X		
	Training in operational and epidemiological research		X	X	X	
	Participation of national staff in international meetings	X		X	X	
Training in infection control for TB specialists				X		
Creating rational drug management systems	LMIS training	X	X	X	X	X
	Develop indicators for logistics			X	X	
	Collect and analyze information	X	X	X	X	X
	Pharmacological surveillance for TB drugs					X
	Operational research on side effects	X				
	Operational research on RUD				X	
	TB drug formulary				X	X
	TB drug pipeline manual, training and monitoring				X	
LMIS for second line drugs				X		
Improve program management and treatment outcomes	Training in cohort analysis		X			X
	Evaluate data, analyze performance		X	X		
	Quarterly report review w/ NTP staff		X	X		X
	Supervisory skills training		X	X	X	
	Improving surveillance – assist in DST surveys	X	X			
	Support monitoring and supervision visits	X	X	X	X	X
	Training in cohort analysis for oblast level					X
	Management training for oblast level				X	

OBJECTIVE	ACTIVITY	KRG	KAZ	TKM	UZB	TAJ
	TB program manual	X	X	X	X	
MDR TB	Support drafting of manual and monitoring	X				
	Training in Tashkent				X	
TB/HIV	Monitoring indicators development and training	X	X			
	Development of management protocol				X	
	Assess training (with CAPACITY)		X		X	
	Study tour to Karaganda		X		X	
TB in prisons	Participate in TWG, develop work plan	X	X		X	
	Training and protocols	X	X			
	Operational research	X				
	Participation in program “before release”	X				
Communication	National strategies: develop IEC/BCC materials		X	X	X	X
	Regional workshop and training of journalists	X	X	X	X	X
	Develop Library for IEC/BCC				X	
	Support mass media & World TB Day	X	X	X	X	X
	Support KAP survey	X	X		X	X
	Develop video spots	X	X	X	X	
	Arrange broadcasting	X	X	X	X	X
	Non medical staff: education materials, training for community leaders, monitoring/evaluation	X		X		X
	Tool kit for providers		X	X	X	X
	Training providers in IPC	X		X	X	
	Monitoring use of tool kit		X	X	X	X
	Refresher training for social workers and nurses	X				X
	Train in health education-tool kit for nurses		X	X	X	
	Training of trainers in counseling	X	X	X	X	
	Train providers, monitoring and assessment	X	X	X	X	X
	Advocacy for policymakers		X			
	Develop small grants program	X	X			X
Enablers/ incentives implementation and operational research					X	
Administrative	Quarterly reports, success stories, closing	X	X	X	X	X

Examples of training activities, by country

KAZAKHSTAN

#	Component name	Date	City	Participants (Male/Female)
1	Advanced DOTS training	27-29 Oct 2004	Karaganda	22 (3/19)
2	Refresh DOTS training	15-17 Mar 2005	Taldykorgan	22 (3/19)
3	TOT training	11-15 Apr 2005	Karaganda	17 (4/13)
4	Peculiarities of the Prison Program	18-20 Apr 2005	Karaganda	11 (2/9)
5	TOT training	3-7 May 2005	Taldykorgan	8 (0/8)
6	DOTS strategy training (audit)	1-3 June 2005	Taldykorgan	11 (2/9)
7	DOTS strategy training (audit)	22-24 June 2005	Taldykorgan	11 (1/10)
8	Peculiarities of the Prison Program Realization	20-24 June 2005	Karaganda support AED for participants	15 (7/8)
9	Peculiarities of the Prison Program (audit)	8-11 Aug 2005	Karaganda	11 (9/2)
10	DOTS strategy training (audit)	24-26 Aug 2005	Taldykorgan	15 (14/1)
11	Peculiarities of the Prison Program Realization (audit)	26-29 Sep 2005	Karaganda	11(9/2)
12	DOTS strategy training (audit)	23-25 Nov 2005	Taldykorgan	12 (2/10)
13	DOTS strategy training (audit)	13-15 Dec 2005	Taldykorgan	14 (4/10)
14	DOTS strategy training (audit)	25-27 Jan2006	Taldykorgan	15 (3/12)
15	Advanced DOTS training	06-09 Feb 2006	Taldykorgan	16 (2/14)
16	DOTS training (Local TB Team)	06-11 Feb 2006	Karaganda	12(8/4)
17	DOTS strategy training (audit)	01-03 Mar 2006	Taldykorgan	15 (1/14)
18	DOTS training (Local TB Team)	10-13 Apr 2006	Karaganda	13(5/8)
19	DOTS training (Local TB Team)	12-14 April 2006	Taldykorgan	15 (2/13)
20	TOT training	24-28 Apr 2006	Almaty	19 (3/16)
21	DOTS training for PHC	02-04 May 2006	Almaty	21 (3/18)
22	DOTS training (Local TB Team)	17-19 May 2006	Taldykorgan	13(5/8)
23	Advanced DOTS strategy training	23-26 May 2006	Almaty	15(1/14)
24	DOTS training (Local TB Team)	29 May-01 June,2006	Karaganda	13 (7/6)
25	M & E training	05-09 June 2006	Taldykorgan	18(1/17)
26	DOTS training (Local TB team)	19-21 June 2006	Taldykorgan	15 (7/8)
27	Laboratory (External Quality Assurance)	20-22 June 2006	Taldykorgan	10 (0/10)
28	IEC training	21-23 June 2006	Almaty	18 (3/15)

29	Advanced DOTS strategy training	18-20 July 2006	Almaty	15(6/9)
30	LMIS design workshop	18-20 July 2006	Taldykorgan	15 (0/15)
31	DOTS strategy training	16-18 Aug 2006	Talgar	15 (6/9)
32	M&E training	21-25 Aug 2006	Karaganda	15 (6/9)
33	DOTS training (Local TB Team)	12-14 Sep 2006	Taldykorgan	16 (6/10)
34	Monitoring & Evaluation training	25-29 Sep 2006	Almaty	14 (5/9)
35	M&E of BCC Activities workshop	03-04 Oct 2006	Almaty	15 (4/11)
36	Workshop for journalists	05-06 Oct 2006	Taldykorgan	11 (2/9)
37	LMIS workshop	23-24 Oct 2006	Taldykorgan	30 (0/30)
38	DOTS training (audit)	01-03 Nov 2006	Issyk	13 (3/10)
39	DOTS training (Local TB Team)	06-09 Nov 2006	Karaganda	13 (8/5)
40	Monitoring training	13-17 Nov 2006	Karaganda	8 (1/7)
41	DOTS training	15-17 Nov 2006	Taldykorgan	13 (2/11)
42	Monitoring training	04-08 Dec 2006	Taldykorgan	7 (0/7)
43	DOTS training (audit)	06-08 Dec 2006	Almaty	10 (3/7)
44	DOTS training (audit)	07-09 Feb 2007	Almaty oblast	15 (1/14)
45	Drug management workshop	19-20 Feb 2007	Almaty	36 (6/26)
46	DOTS training (Local TB Team)	26 February-01 March	Karaganda	10 (3/7)
47	DOTS training (audit)	27 February-02 March 2007	Almaty oblast	13 (5/8)
48	DOTS training	09-11 Apr 2007	Karaganda	4(2/2)
49	Drug management workshop	19-20 Apr 2007	Almaty	36 (10/26)
50	Advanced DOTS training	25-27 Apr 2007	Almaty oblast	14 (1/13)
51	Monitoring workshop	02-04 May 2007	Almaty	19 (6/13)
52	DOTS training	14-17 May 2007	Karaganda	10(5/5)
53	EQA training	04-08 Jun 2007	Taldykorgan	9(0/9)
54	Advanced DOTS training	06-08 Jun 2007	Almaty oblast	14 (2/12)
55	EQA training	18-22 Jun 2007	Taldykorgan	9(0/9)
56	Advanced DOTS training	27-29 Jun 2007	Almaty oblast	12 (1/11)
57	DOTS training	12-14 Sep 2007	Almaty oblast	14(1/13)
58	Monitoring & Evaluation training	24-28 Sep 2007	Almaty	15 (5/10)
59	EQA training	19-23 Nov 2007	Taldykorgan	14(0/14)
60	EQA implementation	13 Dec 2007	Taldykorgan	13(3/10)
61	Drug resistance test (introduction on operational research)	14 Dec 2007	Taldykorgan	14(0/14)
62	DOTS training	13-15 Feb 2007	Almaty oblast	15(1/14)
63	DOTS training	12-14 Mar 2007	Almaty oblast	15(3/12)
64	Epi Info training	14– 17 Apr 2007	Almaty	11 (4/7)
65	Monitoring & Supervision	21 – 25 Apr 2007	Almaty oblast (Sought region)	16 (4/12)
66	Monitoring & Supervision	05– 09 May 2007	Almaty oblast (North region)	15 (5/10)

67	DOTS training	12.05 – 14.05	Almaty oblast, Issyk	13 (2/11)
68	LMIS training observation	26.05 – 30.05	Almaty oblast	216 (2/214)
68	EQA introductory training	19 – 20 Jun 2007	Almaty oblast	25 (0/25)
69	DOTS training	16 – 18 Jul 2007	Almaty oblast, Kapshagai	14 (0/14)
70	Laboratory advanced training	28 Jul-1 Aug 2008	Almaty oblast, Taldykorgan	8 (1/7)
71	Monitoring & Supervision	06 – 10 Oct 2008	Karaganda	15 (2/13)
72	DOTS training	22 – 24 Dec 2008	Almaty oblast, Kaskelen	13 (0/13)

KYRGYZSTAN

Number of specialists trained by Project HOPE 2004 - 2008

Period	Total No of participants	TB physicians	Primary care physicians	Lab. Specialists	Nurses	Others
Total	2987	479	1996	30	347	135

TAJIKISTAN

Number of specialists trained by Project HOPE (USAID+GFATM) in 2004-2008

Total participants	TB physicians	Primary care physicians	Lab. Spec.	Nurses	TSG IPC/C Nurses and HLSC workers	BCC TWG members	Monitoring Specialist	Others
3501	415	723	110	709	252	33	32	350

TURKMENISTAN

Number of specialists trained by Project HOPE in April 2004 – December 2008

Total participants	TB physicians	Primary care physicians	Lab. Specialists	Nurses	Others
1468	275	345	44	580	224

UZBEKISTAN
Number of specialists trained by Project HOPE in 2004–2008

Period	Total participants	TB physicians	Primary Care physicians	Lab. Specialists	Nurses	Others
April 2004 – March 2006	546	88	147	10	294	7
March 2006 funded by PIU/GFATM	28	14	0	1	13	0
April - June 2006	162	0	89	0	73	0
April - June 2006 funded by PIU/GFATM	53	53	0	0	0	0
July - September 2006	271	0	33	0	238	0
October – Dec. 2006	117	0	0	0	117	0
January - March, 2007 funded by PIU/GFATM	63	63	0	0	0	0
January - March, 2007	17	11	0	1	5	0
April - June, 2007	146	130	0	0	14	2
July - September, 2007 funded by PIU/GFATM	88	88	0	0	0	0
July - September, 2007	9	0	0	9	0	0
October- Dec. 2007	49	19	0	0	26	4
January - March, 2008	197	130	0	0	30	37
January - March, 2008 funded by PIU/GFATM	1054	186	0	0	868	0
April- June, 2008	28	0	0	0	28	0
April - June, 2008 funded by PIU/GFATM	426	20	0	0	405	1
July - September, 2008	178	90	53	0	32	3
July - September, 2008 funded by PIU/GFATM	64	33	31	0	0	0
October - December, 2008	176	82	17	2	37	38
October – Dec. 2008 funded by PIU/GFATM	30	15	15	0	0	0
Total:	3702	1022	385	23	2180	92

Activities carried out in human resource development

Regional:

- Development of Training of Trainers (TOT) program utilizing adult learning methodologies was implemented in all 5 countries.
- Training curricula and materials were developed for training in DOTS for Primary Health Care, TB Specialists, Nurses, and Laboratory Specialists in all 5 countries.
- Overall, a considerable knowledge and human resource base has now been created in the region through the many persons trained.. The wealth of training materials and trained trainers now available in the region will permit faster progress.
- Two Program Managers Workshops were held in conjunction with WHO, IUATLD, CDC and other partners. These two week training sessions were held in the style of the WHO Warsaw program managers' workshop held every year.
- Assistance to local universities for training of medical students in the DOTS strategy and modern TB control was provided in all of the countries.
- An International Conference was held in Bishkek for all CAR and other countries in the Euro region for dissemination of the USAID evaluation of funded TB programs in the region.
- KAP studies were conducted in two of the countries, utilizing results to improve education and motivation of the general population on TB.
- Assistance to governments in all countries for review of TB guidelines, laws and orders for TB control.
- Collaboration with CDC on laboratory training activities in all countries.
- Establishment of Internet libraries in all five countries. The project provided the computer equipment necessary using funds donated by the US National Library of Medicine. The Internet Libraries provide access to the internet, Medline, and links to Tuberculosis information around the world.
- Poster presentations and lecture sessions on results of the project. These presentations have been provided by HOPE teams and counterparts from all five countries at regional and international conferences such as IUATLD and other international and regional meetings, also the WHO Collaborative on Training and others.

Kazakhstan:

- 7 Training Centers were developed for 7 oblasts, this included the TOT for trainers in the oblasts, funding for 10 additional monitored trainings by Project HOPE mentors and the equipping of a training center. This activity provides sustainability for continuous education for each of the oblasts.
- Drug Management principles was taught at the regional level. Because Kazakhstan buys all its anti-TB drugs the local staff was taught how to calculate buffer stock and in-service training provided at the time of monitoring visits.

Kyrgyzstan:

- Training of PHC specialists was integrated with programs of the Kyrgyzstan post-graduate institute branches located in the regions. Faculty of the oblast branches were trained in DOTS strategy and the training was integrated into the curriculum to build ongoing training capability in the country for the TB program.

Tajikistan:

- Developed a cohort analysis training program to utilize with pilot and national managers.

Turkmenistan:

- Fellowship to the New Jersey Medical School National TB Center was provided for MOH counterparts and HOPE Staff. The team was introduced to US TB control procedures.

Uzbekistan:

- Training Center for TB control was opened at the Republican Research Institute for TB, established by CDC and Project HOPE, to provide good educational conditions for training in all aspects of the DOTS strategy.
- Developed and implemented management program for directors and managers of TB facilities and hospitals and clinics. The program provided six 5-day trainings (split 3 days and then 2 days two to three months later), each for 20 people, to introduce them to organizational design, strategic planning, budgeting, human resources etc. with focus on improvement of effectiveness and efficiency of the TB system. Each institution's team developed as part of the course a plan for solving a management problem at their institution. The program culminated in a national conference in December 2003, where selected plans and solutions were shared with all teams.

Operational Research studies conducted by Project HOPE with national partners

Kazakhstan

1. Drug Resistance survey, 2007- ongoing.
2. Initial Knowledge, Attitude and Practice survey, 2005.
3. Knowledge, Attitude and Practice survey, 2008.
4. Low conversion rate among new SS+ TB cases – ongoing.

Kyrgyzstan

1. Impact of socio-demographic factors on treatment compliance among TB patients in Bishkek, 2004.
2. Knowledge, attitude, and practices survey regarding tuberculosis, health professionals and TB patients in Kyrgyzstan, 2006.
3. Adverse reactions to the first-line anti-tuberculosis drugs under DOTS-based program, 2007.
4. Drug Resistance Survey in Kyrgyzstan, 2008.
5. Operational research on reasons for high failure and defaulter rates in new TB smear+ cases in Bishkek, 2008.
6. Knowledge, Attitude and Practice survey, 2008.

Tajikistan

1. Knowledge, Attitude and Practice survey, 2005.
2. Rational Use of TB drugs in Tajikistan, 2007.
3. Drug Resistance survey, 2008- ongoing.
4. Knowledge, Attitude and Practice survey, 2008.
5. Food Impact on treatment outcomes of TB patients in Tajikistan, 2008- ongoing.

Turkmenistan

No operational research studies were conducted in Turkmenistan.

Uzbekistan

1. Knowledge, Attitude and Practice survey, 2005.
2. Case finding, 2006.
3. “Defaulters” quantitative study, 2006.
4. “Defaulters” qualitative operational research. 2007.
5. Rational Use of TB drugs in Uzbekistan, 2007.
6. Study on TB among Migrants from Uzbekistan, 2008.
7. Knowledge, Attitude and Practice survey, 2009.

Tuberculosis in the Central Asian Republics

TOTAL CAR

Year	2003	2006
Population in millions	57.1	59
Estimated TB incidence per 100 000	127	128
Estimated incidence of smear + TB per 100 000	57	58
New TB cases reported	61839	63696
TB notification rate	108	108
New sputum smear positive	16195	18455
New sputum smear positive rate per 100 000	28	31
Case detection rate (CDR) for smear + (%)	50	54
% of smear positive among new TB cases	26	29
Persons living with HIV (UNAIDS estimate for 2007)		42700

NOTES: Reported data for 2003 and 2006 was extracted from WHO TB Global Report 2005 and 2008. The treatment outcomes correspond to patients reported in the previous year. Preliminary data for 2007 was provided by the NTPs to WHO, to be published in the WHO TB Report 2009.

TUBERCULOSIS IN KAZAKHSTAN

Year	2003	2006	2007
Population in millions	14.9	15.3	15.4
Population covered by DOTS (%)	100	100	100
Estimated TB incidence per 100 000	145	130	130 ¹
Estimated incidence of smear + TB per 100 000	65	59	59 ¹
New TB cases reported	23 943	23728	19584
TB notification rate	160.4	155.0	127.2
New sputum smear positive	6 627	6205	6140
New sputum smear positive rate per 100 000	44.5	41.0	39.9
Case detection rate (CDR) for new smear + (%)	68.5	69.5	67.6
% of smear positive among new TB cases	27.7	26.2	31.4
TB mortality rate per 100 000	22.4	20.3	18.2
Treatment success rate (%)	81.6	71.0	72.1
Died during treatment (%)	4.8	5.0	4.4
Failure rate (%)	11.2	12	16.0
Persons living with HIV (UNAIDS estimate 2007)	--	--	12000

¹ WHO estimates for 2006

TUBERCULOSIS IN KYRGYZSTAN

Year	2003	2006	2007
Population in millions	5.0	5.2	5.3
Population covered by DOTS (%)	100	100	100
Estimated TB incidence per 100 000	124	123	123
Estimated incidence of smear + TB per 100 000	56	55	55
New TB cases reported	6172	6174	5623
TB notification rate	123.2	117	107.0
New sputum smear positive	1671	1833	1720
New sputum smear positive rate per 100 000	33.4	35	32.7
Case detection rate (CDR) for new smear + (%)	57	63	59
% of smear positive among new PTB cases	27	30	30.6
TB mortality rate per 100 000	16.3	12.8	11.2
Treatment success rate (%)	81.9	85	82.2
Died during treatment (%)	4.4	3	4.5
Failure rate (%)	7.1	5	5.4
Persons living with HIV (UNAIDS estimate 2007)	--	--	4200

TUBERCULOSIS IN TAJIKISTAN

Year	2003	2006	2007
Population in millions	6.2	6.6	NA
Population covered by DOTS (%)	13	79	100
Estimated TB incidence per 100 000	168	204	NA
Estimated incidence of smear + TB per 100 000	76	92	NA
New TB cases reported	4260	6671	NA
TB notification rate	68	81	NA
New sputum smear positive	342	2051	NA
New sputum smear positive rate per 100 000	6	31	NA
Case detection rate (CDR) for new smear + (%)	8	34	NA
% of smear positive among new TB cases	8	38	NA
TB mortality rate per 100 000	6.1	7.1	6.4
Treatment success rate (%)	NA	86	NA
Died during treatment (%)	NA	4	NA
Failure rate (%)	NA	6	NA
Persons living with HIV (UNAIDS estimate 2007)	-	-	10000

¹ Data for 2005

TUBERCULOSIS IN TURKMENISTAN

Year	2003	2006	2007 ¹
Population in millions	4.9	4.9	5.1
Population covered by DOTS (%)	36	46	NA
Estimated TB incidence per 100 000	67	65	NA
Estimated incidence of smear + TB per 100 000	30	29	29
New TB cases reported	3771	3223	NA
TB notification rate	77	66	NA
New sputum smear positive	1197	1155	1288
New sputum smear positive rate per 100 000	25	24	25
Case detection rate (CDR) for smear + (%)	81	81	86
% of smear positive among new TB cases	31.7	35.8	NA
TB mortality rate per 100 000	8.4	9.0	8.1
Treatment success rate (%)	77	81	NA
Died during treatment (%)	5	7	NA
Failure rate (%)	13	5	NA
Persons living with HIV (UNAIDS estimate 2007)			<500

1 Preliminary data

TUBERCULOSIS IN UZBEKISTAN

Year	2003	2006	2007
Population in millions	25.3a	27.0	27.0
Population covered by DOTS (%)	52	100	100
Estimated TB incidence per 100 000	115	121	121
Estimated incidence of smear + TB per 100 000	52	55	55
New TB cases reported	20700	23900	17042
TB notification rate	79	89	63
New sputum smear positive	4690	7211	5333
New sputum smear positive rate per 100 000	18	27	20
Case detection rate (CDR) for new smear + (%)	35	49	36
% of smear positive among new TB cases	23	30	31
TB mortality rate per 100 000	11.5	7.7	7.6
Treatment success rate (%)	80	81	NA
Died during treatment (%)	5	6	NA
Failure rate (%)	8	6	NA
Persons living with HIV (UNAIDS estimate 2007)	--	--	16000

GFATM TB grants status

COUNTRY	ROUND #	AMOUNT (US\$ million)	RECIPIENT	STATUS
KAZAKHSTAN	6	9.8	Nat. TB Center (P. HOPE sub-recipient)	Start Sep 2007. Phase 1 disbursed
	8	69.9*	Nat. TB Center (proposed)	Approved, not yet signed. Phase I approved \$37.6m
KYRGYZSTAN	2	2.7	Nat. TB Center	Start Mar 2004. Total disbursed.
	6	10	Nat. TB Center	Start July 2007. First phase till June 2009, 3.2m disbursed
TAJIKISTAN	3	2.76	Project HOPE	Start Sep 2004. Disbursed \$2.27m. Bridge funds received. Continuation requested to GFATM RCC
	6	14.6	UNDP (P. HOPE sub-recipient)	Start Aug 2007. Disbursed \$6.5m, phase I
	8	22.3	Pending	Not yet signed
UZBEKISTAN	4	13.27	DOTS TB Center (P. HOPE sub-recipient)	Start Feb 2005. Disbursed 9.57m, phase II
	8	56.1*	Pending	Not yet signed

Source: www.theglobalfund.org

(*) Indicates that the total approved may be reduced, depending of GFATM available funds.

Matching program funding provided by Project HOPE

Non-federal funding promised in original program budget: \$2,721,929

Gift In Kind provided by Project HOPE, through April 2009: \$2,858,110.35