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# Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ACSM</td>
<td>Advocacy, Communication and Social Mobilization</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
</tr>
<tr>
<td>AKJ</td>
<td>Azad Jammu and Kashmir</td>
</tr>
<tr>
<td>BCC</td>
<td>Behaviour Change Communication</td>
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<tr>
<td>CBOs</td>
<td>Community-Based Organizations</td>
</tr>
<tr>
<td>CDR</td>
<td>Case Detection Rate</td>
</tr>
<tr>
<td>CNR</td>
<td>Case Notification Rate</td>
</tr>
<tr>
<td>DCO</td>
<td>District Coordination Officer</td>
</tr>
<tr>
<td>DOTS</td>
<td>Directly Observed Treatment Short-course</td>
</tr>
<tr>
<td>DTC</td>
<td>District TB Coordinator</td>
</tr>
<tr>
<td>EDO (H)</td>
<td>Executive District Officer-Health</td>
</tr>
<tr>
<td>EQA</td>
<td>External Quality Assurance</td>
</tr>
<tr>
<td>FLDs</td>
<td>First Line Anti-TB Drugs</td>
</tr>
<tr>
<td>GFATM</td>
<td>Global Fund to Fight AIDS, Tuberculosis and Malaria</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>IUATLD</td>
<td>International Union Against TB and Lung Diseases</td>
</tr>
<tr>
<td>KPK</td>
<td>Khyber Pakhtoonkhwa</td>
</tr>
<tr>
<td>LHWs</td>
<td>Lady Health Workers</td>
</tr>
<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
</tr>
<tr>
<td>MCI</td>
<td>Mercy Corps International</td>
</tr>
<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>NAs</td>
<td>Northern Areas</td>
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<tr>
<td>NTP</td>
<td>National TB Control Program</td>
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<tr>
<td>PPM</td>
<td>Public-Private Mix</td>
</tr>
<tr>
<td>PPP</td>
<td>Public-Private Partnership</td>
</tr>
<tr>
<td>PR</td>
<td>Principal Recipient</td>
</tr>
<tr>
<td>PTP</td>
<td>Provincial TB Control Program</td>
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<tr>
<td>SLDs</td>
<td>Second Line Anti-TB Drugs</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>TB-CAP</td>
<td>Tuberculosis Control Assistance Program</td>
</tr>
<tr>
<td>TCH</td>
<td>Tertiary Care Hospital</td>
</tr>
<tr>
<td>MoH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
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</table>
The landscape of public health in Pakistan is dotted with numerous challenges, Tuberculosis (TB) control being one of them. The country harbours the 8th highest burden of TB in the world, accounting for 63% of the total disease burden in the Eastern Mediterranean Region. According to a report published by the World Health Organization (WHO) in 2010, the annual incidence of TB in Pakistan is 231/100,000 population for all types of TB.

TB is responsible for 5.1% of the national disease burden in Pakistan. Recognizing the serious socioeconomic implications of the disease, the Government of Pakistan responded to the situation by endorsing the WHO-recommended DOTS (Directly Observed Treatment Short-course) Strategy and achieved universal DOTS coverage in health facilities within the public sector health delivery system in 2005. Prior to that, TB was declared a national health emergency in order to accelerate efforts for its control. Moreover, the adoption of the Islamabad Declaration and endorsement of the global TB control targets also demonstrate the country’s resolve to continue the battle against TB, which in fact is a battle against time.

This annual report presents a snapshot of TB control activities undertaken during 2010. Our plan of action for the future focuses on key components and sub-components of the New Stop TB Strategy. Having achieved 100% DOTS coverage, NTP’s current and future interventions revolve around improved DOTS through quality-assured smear microscopy, increased awareness through Advocacy, Communication and Social Mobilization (ACSM) activities and involvement of all health care providers in TB control by virtue of Public-Private Mix. Added challenges such as TB/HIV co-infection and growing incidence of Multi Drug Resistant (MDR) TB will be also addressed through Global Fund support.

I take this opportunity to acknowledge the valuable contributions of the Ministry of Health, the Provincial TB Control Programs, and the international community including bilateral and multilateral agencies and the private sector in strengthening our resolve against TB. The achievements made by NTP during the year under review would not have been possible without their support.

As we forge ahead in this struggle, we must concede that a lot still remains to be done—with greater momentum and precision—so that the suffering that comes with TB can be brought to a grinding halt.

Dr. Ejaz Qadeer
National Program Manager,
National Tuberculosis Control Program,
Ministry of Health, Government of Pakistan.
Executive Summary

TB continues to be a major public health challenge in Pakistan. Even though the country adopted the DOTS Strategy in 1995, major breakthrough was achieved only after revitalization of the dormant National TB Control Program (NTP) in 2001, when the government decided to tackle TB on war footing.

TB is the second most common cause of death from infectious diseases in the world. Eight million new TB cases are estimated to occur every year, more than 95% of these in the developing countries. Furthermore, 80% of the cases occur amongst people in the age bracket of 15-59 years, representing a major economic burden for patients and ultimately for countries. This aspect is particularly relevant to the context of Pakistan. A major chunk of the country’s fast-growing population comprises youth. According to data gathered in 2004, 40.2% of the country’s population is aged up to 14 years, 55.7% falls in the 15-64 years bracket and only 4.1% constitutes the 65 years and above category.

The 22 countries referred to as high-burden countries account for 80% of the total TB burden worldwide. Although Sub-Saharan Africa has the highest incidence rate, highly populous countries of Asia namely, India, China, Indonesia, Bangladesh and Pakistan are home to the highest number of cases, and together, account for more than half of the global burden.

The HIV pandemic has led to a dramatic increase in the number of cases and worsening of treatment outcomes. MDR-TB also represents a major challenge for TB control.

Public health system

An estimated 924 hospitals, 4,712 dispensaries, 5,336 Basic Health Units (BHUs), 560 Rural Health Centres (RHCs) and 906 Mother and Child Health (MCH) Centres are functioning in the public health sector of Pakistan. A total of 117,973 doctors are registered with the Pakistan Medical and Dental Council (PMDC). The private sector comprises 42,700 registered facilities providing formal and informal medical services.

TB services have been integrated into the primary health care system and are delivered by chest clinics in tertiary hospitals, district hospitals and BHUs. Currently, 27 public and private hospitals are linked with the National and Provincial TB Control Programs. The NTP has leveraged the support of the private sector in TB diagnosis and care. Efforts are also underway to link TB services in parastatal organizations such as prisons and the police force.

The TB control targets of NTP are aligned with the Millennium Development Goals (MDGs), which are “to cure 85% of the detected new cases of Sputum Smear Positive (SS+) pulmonary TB and to detect 70% of the estimated cases upon achievement of 85% cure rate.”

The impact targets are “to halt and begin to reverse the incidence of TB by 2015, and to reduce by 50%, prevalence and mortality rates by 2015, relative to the 1990 levels.” The ultimate goal of eliminating TB, defined as the occurrence of less than 1 case per million population per year by 2050, was stipulated by the Stop TB Partnership.

According to latest WHO estimates based on surveillance and survey data, approximately 420,000 TB cases (all types) occur in Pakistan every year, with an incidence of 231 per 100,000 population. Of these, around 175,000 cases are SS+. TB prevalence is estimated at 673,000 cases while the mortality stands at 68,000. According to the Global Tuberculosis Control Report 2010 of WHO, the incidence of MDR-TB is 2.8 % among new TB cases and 35% among retreatment TB cases.
The NTP has planned to conduct a nationwide community-based Prevalence Survey during 2010-11 to gather concise estimates of the TB burden. This USAID-funded survey will be the largest ever of its kind in the region, with a sample size of around 0.17 million people. It will be conducted with technical support from various partners including WHO.

A total of 269,290 TB cases (all types) were notified during 2010. Of these, 104,263 cases were SS+. The number of notified cases has increased from last year.

The Case Notification Rate (CNR) for all types of TB cases increased from 16/100,000 in 2001 to 153/100,000 in 2010 and from 5/100,000 to 59/100,000 for new SS+ cases. The NTP has successfully treated more than 1.5 million TB patients free of cost. From 7% in 2001, the Case Detection Rate (CDR) of SS+ cases showed a rapid increase of 74% during the period between 2001 and 2008, remaining steady between 2008 and 2010.

The Treatment Success Rate (TSR), which stood at 77% in 2001, progressively increased from 78% in 2002 to 79% in 2003, 82% in 2004, 83% in 2006, 88% in 2007 and 91% in 2007 and 2009.
1

Epidemiology
The TB control targets of the NTP are aligned with the Millennium Development Goals (MDGs), which are “to cure 85% of the detected new cases of Sputum Smear Positive (SS+) pulmonary TB and to detect 70% of the estimated cases upon achievement of 85% cure rate.”

The impact targets are “to halt and begin to reverse the incidence of TB by 2015, and to reduce by 50%, prevalence and mortality rates by 2015, relative to the 1990 levels.”

The incidence target is part of target 6.c of the MDGs, while targets for reducing prevalence and death rates are based on a resolution passed in the 2000 meeting of the Group of Eight (G-8) industrialized countries in Okinawa, Japan.

The outcome targets i.e., “to achieve a case detection rate of at least 70% for new SS+ cases and to reach a treatment success rate of at least 85% for such cases,” were first established by the World Health Assembly in 1991. Within the MDG framework, these indicators are defined as the proportion of cases detected and cured under DOTS.

The ultimate goal of eliminating TB, defined as the occurrence of less than 1 case per million population per year by 2050, was stipulated by the Stop TB Partnership.

Incidence, prevalence and mortality

According to WHO estimates based on surveillance and survey data, approximately 420,000 TB cases (all types) occur in Pakistan every year, with an incidence of 231/100,000. Of these, around 175,000 cases are SS+.

TB prevalence is estimated at 673,000 cases while the mortality stands at 68,000. According to the Global Tuberculosis Control Report 2010 of WHO, the incidence of MDR-TB is 2.8% among new TB cases and 35% among retreatment TB cases.
Only recently, the WHO has revised the incidence, prevalence and mortality estimates for TB in the high-burden TB countries. Table 1 presents a comparison of the previous estimates reflected in the Global Tuberculosis Control Report 2009, alongside the revised estimates for 2010. The revised figures indicate that the earlier data might have been an underestimation. It is, therefore, important not to conclude that the burden of TB has registered an increase from where it stood in 2009.

Table 1: WHO estimates on TB burden

<table>
<thead>
<tr>
<th>TB burden per 100,000 population</th>
<th>Previous estimates*</th>
<th>New estimates**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidence</td>
<td>181</td>
<td>231</td>
</tr>
<tr>
<td>Prevalence</td>
<td>223</td>
<td>373</td>
</tr>
<tr>
<td>Mortality</td>
<td>29</td>
<td>38</td>
</tr>
</tbody>
</table>

*Global Tuberculosis Control Report, WHO Geneva, 2009
**Global Tuberculosis Control Report, WHO Geneva, 2010

The NTP is carrying out a nationwide TB Prevalence Survey in 2010-11 to calculate the prevalence of bacteriological confirmed pulmonary TB among the adult population (≥15 years) in Pakistan. The results of the survey will be available in 2012, following which estimates will accordingly be revised.

Case Notification Rate

A total of 269,290 cases of TB (all types) were notified during 2010. Of these, 104,263 were SS+. Although the number of notified cases has increased when compared to 2009, the case notification trend has somehow remained stagnant over the last few years as indicated in Graph 1.

Graph 1: Absolute number of TB cases notified (2001 to 2010)
Graph 2 shows the contribution of various provinces and regions to notification of TB cases (all types) during 2010. Maximum cases were registered in Punjab (163,971), followed by Sindh (50,754) and Khyber Pakhtoonkhwa (35,224).

According to gender-based disaggregated data, the Case Notification Rate (CNR) for SS+ cases was higher among males (male-female ratio: 1.04) and that for all types of TB cases was higher among females (male-female ratio: 0.97).

In Balochistan, FATA and Gilgit-Baltistan (GB), case notification remained significantly higher among females.

**Graph 2: Contribution of various provinces/regions to CNR of all types of TB cases (2010)**

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**Case Detection Rate**

The World Health Organization and The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM; hitherto referred to as The Global Fund) have replaced the Case Detection Rate (CDR) with CNR, which can directly be measured and reported with greater accuracy. The CDR is measured on the basis of incidence.

In countries with high-quality TB surveillance systems and well-performing health systems, almost all incident TB cases are rapidly diagnosed and documented through mandatory notification. Such notifications can be considered a proxy for incidence.

In all other countries, surveillance systems do not capture all incident cases in a timely manner. As a result, incidence has to be estimated indirectly, using notification data, data on the performance of TB programs and, more widely, information about the health systems within which they operate.

The CDR for all types of TB cases* declined from 86% in 2009 to 85% in 2010, while that for new SS+ cases remained static at 73% as indicated in Graph 3.

*B (Based on old estimates)
Since indirect estimation of incidence is imprecise, as reflected in the uncertainty intervals published by WHO (TB Impact Measurement, World Health Organization, 2009), NTP recommends the use of CNR at the sub-national levels i.e., in the provinces and districts. At the national level, CDR may be also used along with CNR to track progress towards the MDGs. However, NTP will start using revised estimates from 2011 onwards; that will affect the CDR as well.

**Treatment outcome through DOTS**

The Treatment Success Rate (TSR) increased from 77% in 2001 to 88% in 2006, and remained static at 91% for three consecutive years (2007 to 2009). The default rate registered a gradual decline. From 14% in 2001 and 2002 and 13% in 2003, it plunged to 11% in 2004, 9% in 2005, 6% in 2006, and 4% in 2007 before slightly increasing to touch the 5% mark in 2008 and 2009.
As reflected in Graph 5, which presents the province-wise TSR for 2010, Gilgit-Baltistan topped the list with a percentage of 97, followed by AJK (96%), KPK (94%), Punjab (92%), Sindh and FATA (88%), and Balochistan (85%). The default rate was 0% in the Northern Areas and AJK, and highest in Balochistan (8%), followed by FATA (7%) and Sindh (6%).

Graph 5: Province-wise TSR and default rate in 2010 (%)

Progress achieved in meeting CDR and TSR targets

Data reflected in Chapter 1 makes it evident that despite an improvement in CNR during 2010, the gains achieved are not significant when viewed from the lens of population growth. This is evident in the decline in CDR from 86% in 2009 to 85% in 2010. In view of the foregoing, NTP is working on harnessing the strengths of the private sector to foster partnerships that will lead to an increase in the case notification and detection rates.

There has been an improvement in the case holding and default rates. Moreover, most of the provinces and regions achieved good treatment outcomes. As for the default rate, while the overall percentage in 2009 was within the targeted 5%, it exceeded the said target in three provinces/regions.
Role of The Global Fund
Pakistan succeeded in mobilizing substantial financial support for TB control from The Global Fund under Rounds 2, 3 and 6. The Rounds 2 and 3 TB grants, which were aimed at supporting reduction of TB morbidity and mortality through expansion of TB DOTS strategy through public health facilities and the private sector, ended in December 2008.

The Round-6 proposal was designed to bridge the gaps resulting from: a) Lack of quality laboratory services for quality-assured bacteriology including sputum smear microscopy, culture and DST; b) Inadequate community awareness and participation in TB care seeking and treatment compliance due to lack of a coordinated ACSM strategy; and c) Weak public-private service delivery vis-a-vis involvement of tertiary care hospitals in DOTS.

In view of the rising incidence of TB, the Round-9 proposal has been designed with the goal of reducing the burden of TB in Pakistan by improving access to quality DOTS and MDR-TB care services. The proposal aims at scaling up MDR diagnosis and treatment to cover 11,000 patients by 2015. It is consistent with the Stop TB Strategy and the Beijing Declaration for rapid scale-up of MDR programs.

The Global Fund Consolidated Grant (Rounds 6 and 9) TB Program titled ‘Reducing the burden of TB in Pakistan by improving access to quality DOTS and MDR-TB care services’ is being implemented by NTP as the public sector Principal Recipient (PR) for objectives 1, 2, 4, 5 and 7, which are being implemented through four non-governmental organizations and NTP in all 134 districts of the country. Objectives 3 and 6 are being implemented by Mercy Corps, the private sector PR for the grant.

The targets enshrined in the objectives being implemented by NTP, and the progress achieved during 2010, is briefly described in the following paragraphs.

Objective 1: Pursuance of high-quality DOTS through countrywide quality-assured bacteriology. The TB laboratory network comprises peripheral, intermediate, provincial and national facilities with defined roles and responsibilities. The objective’s scope includes strengthening and upgradation of infrastructure, uninterrupted provision of supplies, strengthening of the
EQA system, and enhancement of knowledge and skills for sputum microscopy and culture and sensitivity. The objective has cumulatively achieved more than 80% of the stipulated targets in different service delivery areas.

**Objective 2: Involvement of tertiary care hospitals in TB control through implementation of DOTS strategy.** Twenty-seven teaching hospitals across Pakistan have been strengthened for provision of DOTS care to ordinary TB patients and difficult-to-diagnose/complicated adult TB cases in year 2 of the grant. The objective has attained more than 100% of the stipulated yearly targets for detection of new SS+ cases.

**Objective 4: Management of TB/HIV co-infection.** The provincial TB and AIDS control programs have established coordinating bodies with representation of private and civil society stakeholders. Sixteen sentinel sites have been established with the support of partners and linkages have been developed among stakeholders. Almost 90% of the registered TB patients as well as People Living with HIV and AIDS have received testing and counseling for HIV and screening for TB symptoms, respectively.

**Objective 5: Management of MDR-TB.** This objective covers the following targets: a) Capacity building of public and private sector partner hospitals for detection and management of smear positive MDR-TB incident cases through strengthening of their BSL 2 and 3 laboratories; b) Strengthening and enhancement of national technical capacity for airborne infection control; c) Design, engineering and external quality assurance for culture and DST; d) Strengthening of treatment hospitals for management of MDR-TB cases and extension of social support services to MDR-TB patients; e) Enhancement of program capacity for procurement and management of SLDs; f) Coordination and monitoring of the implementation of MDR-TB case management; and g) Establishment of National MDR-TB Control Centre at NTP and MDR-TB Control Units at the Provincial TB Control Programs.

**Objective 7: Strengthening and enhancement of the capacity of NTP for effective program implementation.** The PR’s office has been established at NTP and staff hiring has been completed. In order to enhance the knowledge, skills and managerial capabilities of staff working at the diagnostic and treatment centres, new refresher course modules have been developed through a consultative process and are being used in program trainings.

The Global Fund Round-8 grant titled ‘High quality DOTS expansion and enhancement’ is being implemented by NTP and Greenstar as PRs under dual track financing mechanism of The Global Fund. The total project life of the Round-8 grant is five years beginning from September 1, 2009; phase 1 of the project will end on September 30, 2011 while phase 2 will cover the period between October 1, 2011 and September 30, 2014. The objectives of this grant are: 1) High quality DOTS expansion and enhancement (PR: NTP); and 2) Health Systems Strengthening (PR: Greenstar).

Being the public sector PR for Objective 1, NTP is implementing the grant in all 135 districts and territories across the country with the support of its provincial counterparts. Greenstar, the implementing PR from the private sector in Objective 2, is implementing the grant in all districts through three Sub-Recipients (SRs).

Fifty percent of the country’s total need for First-Line Drugs (FLDs) for the next five years will be met through this grant. The scope of the program is nationwide; all notified patients and the health system are its beneficiaries.

The key responsibilities of NTP are:

- Procurement of FLDs through the Global Drug Facility of WHO;
- Management of warehousing, distribution and quality assurance at the national, provincial and district levels;
- Strengthening and upgrading of the national, provincial and district warehouses to ensure storage of drugs in line with international standards;
- Regular supervision, monitoring and evaluation of the drug management system.

Despite numerous challenges and constraints during the period under review, the performance of NTP as the implementing PR ranged above 80% against agreed targets for almost all indicators.
The Tuberculosis Control Assistance Program (TB-CAP) was awarded to the Tuberculosis Coalition for Technical Assistance (TBCTA), a five-year USAID-funded program (2005-2010) for international TB control. The Royal Netherlands Tuberculosis Foundation (KNCV) was the lead partner of TB-CAP; it also hosted the Program Management Unit (PMU) on behalf of the Coalition.

TB-CAP is working in collaboration with WHO, the International Union Against Tuberculosis and Lung Disease (The Union), and Management Solution for Health (MSH).

In 2008, USAID funds for TB control were channeled through TB-CAP Pakistan, which complemented the program components included in and financed through The Global Fund and the government Project Cycle 1 (PC-1). TB-CAP’s areas of support in Pakistan include holding of a TB Prevalence Survey, development of the National TB Strategic Plan 2010-2015, formulation of National Infection Control Guidelines and Drug Management Guidelines, development of the National HRD Strategic Plan, strengthening of monitoring and evaluation through the NPO system, and strengthening of the management skills of the staff through the Management and Organizational Sustainability Tool (MOST) for TB.

One of the key outputs of the project is the TB Prevalence Survey, which has been initiated with funding from TB-CAP. One of the key outputs of the project is the TB Prevalence Survey, which has been initiated with funding from TB-CAP and is expected to be completed with the support of TB CARE I, another USAID-funded project which will be extending support from 2011 onwards. The KNCV Tuberculosis Foundation is the prime coordinating partner for the survey.

Some of the key achievements made during 2010 are:

- Development and printing of National TB Strategic Plan (2010-2015);
- Development and printing of National Infection Control Guidelines;
- Development of National HRD Strategic Plan;
- Strengthening of the drug management system through development of Guidelines for FLDs, SLDs and a Dispensing Manual;
• Provision of support to NTP for the ‘MOST for TB’ workshop and its follow-up;
• Provision of support for the TB Prevalence Survey in terms of development of protocols/SOPs, survey procurements, development of training modules, hiring/training of survey HR, piloting of survey, TA missions by international consultants from KNCV Tuberculosis Foundation and The Union;
• Initiation of survey field work on December 6, 2010 and its completion in 8 out of 95 clusters at the end of the year;
• Scaling up of NPO support with recruitment of National Technical Officer, Research Coordinator, PPM Coordinator and Federal NPO at the central level.

Way Forward

TB CARE I will come into effect from 2011. Survey field work as per the revised plan will be completed by November 2011. Data analysis and report writing will be completed within 3 to 4 months.
TB Prevalence Survey
Pakistan has carried out only three disease and infection prevalence surveys ever since its inception. The first was conducted in 1960, the second in 1970 and the last one in 1987-1989. Since no such survey has been conducted over the last two decades, existing TB control strategies are essentially based on estimates of disease burden calculated by WHO rather than on the actual disease burden.

The WHO strongly recommends high-burden countries to conduct TB disease prevalence surveys to ascertain the exact burden of disease for evidence-based planning and implementation. With the USAID offering financial assistance, the plan for conducting a nationwide TB Prevalence Survey in Pakistan—the largest-ever in the country’s history—was formalized during a workshop organized by WHO in Geneva in 2008.

The household survey, which is being conducted with the assistance of several national and international partners led by KNCV and including WHO, The Union, Japan Anti-Tuberculosis Association, and the Aga Khan University, will help NTP to determine the actual prevalence of bacteriological confirmed pulmonary TB among the country’s adult population of 15 years and above during 2010-11. The survey has a representative sample of approximately 133,000 adults in 95 clusters (1400 adults in each cluster) and will take approximately 12 months to complete.

**Methodology**

**TB case detection methods:** For the purposes of screening, all eligible adults included in the survey have to answer a questionnaire and undergo a chest X-ray at a central location within the field cluster.

**Symptom screening questionnaire:** All eligible adults have to answer a short symptom screening questionnaire, which is presented to them at the survey site by a Lady Health Worker. Individuals with cough lasting over 2 weeks, individuals currently on TB treatment, and individuals with cough for any duration of time but without a chest X-ray result are entered in the suspect register.

**Screening through chest X-ray:** All eligible adults are invited for a chest X-ray. Pregnant women and patients
who decline the X-ray are excluded from X-ray examinations. The X-rays are read on the spot by a medical officer. Individuals with any abnormality on the X-ray, with or without symptoms, are considered as TB suspects.

**In-depth interviews of TB suspects:** All TB suspects have to undergo an in-depth interview for collection of necessary background information.

**Laboratory investigation for TB suspects:** Two sputum specimens, (a spot and morning sample) are collected from each TB suspect. The spot sample is examined in the field laboratory for AFB direct smear while the morning sample is transported to the National Reference Laboratory for sputum smear examination and culture.

**Methodology for conducting the survey**

1. **Preparation visit**
2. **Pre-survey visit**
3. **Census**
4. **Informed consent**
5. **Eligible adult**
6. **Symptom screening**
7. **X-ray**
8. **TB suspect**
9. **NOT TB suspect**
10. **Affirmative TB suspect**
11. **In-depth questionnaire**
12. **Sputum exam**
13. **Spot (smear)**
14. **Morning (smear + culture)**

**Cluster household**

**Field survey site**
Case management: Treatment is arranged for all individuals diagnosed as TB cases during the course of the survey.

Survey organization: Survey organization takes place through a central survey team and six field teams. While the central survey team is responsible for all managerial, advisory and monitoring functions, the field teams are entrusted with the task of data collection. Each team is supervised by a team leader and works in the field cluster for two consecutive weeks, followed by one-week off.

Survey work plan: The survey teams will visit 95 clusters (16 clusters per team), each requiring two weeks of active field work and a week for pre-survey logistic arrangements and break time. Allowing for national holidays and servicing pauses for vehicles, the duration of the field work will be approximately 12 months and will be completed by November 2011.

Data management: All data collected is verified for completeness. On completion of a given cluster, the data is sent to a central Data Management Unit (DMU) where it is instantly entered into a relational database, using pre-designed data entry screens with automated range and consistency checks. Care is taken to maximize confidentiality of the data, which is entered into an EPI data entry file.

Data analysis: Data analysis will be conducted in accordance with a pre-defined analysis plan and with technical support from experts of KNCV, WHO and other international agencies. The analysis will be done with the help of statistical software (SPSS, SAS or STATA). Descriptive and analytical statistics will be presented after correction of standard errors for the observed design effect.

Survey monitoring: In addition to regular monitoring by the central survey team and the provincial program staff, a number of monitoring visits by international experts were undertaken to Pakistan during 2010 as indicated in Table 2.

Table 2: International monitoring visits

<table>
<thead>
<tr>
<th>Year</th>
<th>Visiting experts</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 2010</td>
<td>Masja Straeteman, epidemiologist, Research Unit, KNCV</td>
</tr>
<tr>
<td>December 2010</td>
<td>Marieke J. van der Werf, senior head, Knowledge, Research and Policy Unit, KNCV</td>
</tr>
<tr>
<td></td>
<td>Dr. Ammal Bassili: epidemiologist, WHO EMRO</td>
</tr>
<tr>
<td></td>
<td>Dr. Dato Chorgoliani: senior consultant, KNCV</td>
</tr>
</tbody>
</table>

Survey highlights:

Some of the achievements made in connection with the Prevalence Survey during 2010 are:

- Preparations for the survey;
- Finalization of survey protocols, data collection forms, SOPs and training manual;
- Finalization of Data Management Plan;
- Recruitment of staff for central and field teams;
- Procurement of X-ray machines and other equipment;
- Training of survey staff;
Pilot survey: The first pilot was conducted in Kalyam Awan, district Rawalpindi, from August 9-23, 2010. In view of low participation in the first pilot, strategies like incentives for survey participants were adopted before organization of the second pilot in November 2010.

Survey Update

Table 3: Distribution of cluster sites, clusters completed, and ongoing clusters

<table>
<thead>
<tr>
<th></th>
<th>Punjab</th>
<th>Sindh</th>
<th>KPK</th>
<th>Balochistan</th>
<th>AJK</th>
<th>GB</th>
<th>Total</th>
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<td>23</td>
<td>9</td>
<td>4</td>
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<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>61</td>
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<tr>
<td>Ongoing</td>
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<td>0</td>
<td>0</td>
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<td>0</td>
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</tbody>
</table>

Survey launch

The survey was launched on December 13, 2010 with initiation of field data collection in the first six clusters from December 6-23.

The launching was celebrated by a select gathering at a ceremony that also packaged the unveiling of the National Guidelines for TB Infection Control. Minister for Health Mr. Makhdoom Shahabuddin was the chief guest on the occasion, and was accompanied on the head table by the Deputy Chief of Mission of the US Embassy Dr. Stephen Engelken, Director General Health Dr. Assad Hafeez, leadership of NTP, and USAID health officer Ms. Janet. Representatives of USAID, WHO, KNCV and the Ministry of Health were also present.

Addressing the gathering, Mr. Makhdoom Shahabuddin expressed confidence that a lot can be achieved if we forge ahead together to strangle diseases where they occur, as has been witnessed in areas hit by the 2010 flashfloods. He commended the US leadership for being extremely forthcoming in enabling Pakistan to rise above challenges in various disease domains.

Dr. Stephen Engelken congratulated the Ministry of Health and NTP for significantly improving the quality of TB care in Pakistan over the last 10 years. Reiterating the commitment of the US government to support the public health sector in Pakistan, he informed that his government, through USAID, will be implementing projects worth over $130 million to assist the Ministry of Health in improving access to and quality of health care services throughout the country.

Earlier, the gathering was informed about the objectives of the survey.
Laboratory Network
The National TB Control Program continued to adhere to its policy of diagnosis of pulmonary TB through direct smear microscopy on three sputum specimens collected over two days, and monitoring of treatment through single smear examination at the end of the second, fifth and seventh months, this being the established protocol for detection of infectious TB.

Microscopy coverage

The TB laboratory network consists of 1,181 laboratories. Each Diagnostic Centre (DC) serves an average population of 147,710, with the population coverage per microscopy laboratory ranging from 52,147 in Gilgit-Baltistan to 194,568 in Punjab. Table 4 reflects coverage of microscopy services during 2010.

Table 4: Coverage of microscopy services during 2010

<table>
<thead>
<tr>
<th></th>
<th>DHQ</th>
<th>THQ</th>
<th>RHC</th>
<th>BHU</th>
<th>TCH</th>
<th>Others</th>
<th>NGOs</th>
<th>Total</th>
<th>Population</th>
<th>Average pop. cov./DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punjab</td>
<td>32</td>
<td>73</td>
<td>286</td>
<td>6</td>
<td>14</td>
<td>50</td>
<td>25</td>
<td>486</td>
<td>94,560,504</td>
<td>194,568</td>
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<tr>
<td>Sindh</td>
<td>20</td>
<td>46</td>
<td>96</td>
<td>14</td>
<td>8</td>
<td>36</td>
<td>50</td>
<td>270</td>
<td>39,277,913</td>
<td>145,473</td>
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<td>KPK</td>
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<td>15</td>
<td>72</td>
<td>8</td>
<td>4</td>
<td>58</td>
<td>21</td>
<td>202</td>
<td>22,908,729</td>
<td>113,409</td>
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<tr>
<td>Balochistan</td>
<td>24</td>
<td>3</td>
<td>38</td>
<td>26</td>
<td>1</td>
<td>14</td>
<td>2</td>
<td>108</td>
<td>8,487,548</td>
<td>78,588</td>
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<td>FATA</td>
<td>7</td>
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<td>0</td>
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<td>52,127</td>
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<tr>
<td>AJK</td>
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<td>13</td>
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<td>10</td>
<td>0</td>
<td>67</td>
<td>4,039,652</td>
<td>60,293</td>
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<tr>
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<td>115</td>
<td>147</td>
<td>530</td>
<td>70</td>
<td>27</td>
<td>190</td>
<td>102</td>
<td>1181</td>
<td>174,445,527</td>
<td>147,710</td>
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</table>

Quality assurance of microscopy services

External Quality Assessment (EQA) of microscopy services coverage expanded to 90 percent, covering 1,106 DCs in 127 districts by end-2010. EQA by blinded rechecking remained the cornerstone for provision of quality-assured microscopy services. Support continued to be extended to facilitate the participation of laboratory staff at the peripheral and district levels in quarterly meetings, to promote human resource development, and to provide training opportunities for laboratory supervisors at the provincial level as reflected in Table 5.
Impact of EQA on laboratory performance indicators

The efficiency of microscopy services is gradually improving, with a decline in the proportion of false positive and false negative reporting. However, 40% of the centres are yet to achieve the level of acceptable performance.

EQA by panel testing of intermediate laboratories

Panel testing was conducted to assess the proficiency of intermediate level supervisors and controllers. All panels (10 stained and 10 unstained slides) prepared at the National Reference Laboratory (NRL) were dispatched to the provincial reference laboratories, wherefrom senior laboratory supervisors carried the panels to the district laboratories for proficiency testing of staff. Table 6 presents a summary of panel testing analysis.
Despite tremendous expansion in coverage of quality-assured TB microscopy services, the basic capacity for accurate and reliable culture for diagnosis of MDR-TB remained limited in 2010. Efforts are, however, underway for strengthening and establishment of a network of TB culture and Drug Susceptibility Testing (DST) laboratories at the provincial level to upscale the currently limited capacity for these services within the public sector. An assessment of 12 TB culture and DST laboratories at the provincial and district levels has been completed, with the process of tendering underway. Five more DST laboratories (one national and four provincial) and four TB culture laboratories (one in each province) will be established during the initial phase.

Table 6: Summary of first round of panel testing

<table>
<thead>
<tr>
<th>Provinces/Regions</th>
<th>No. of Panels</th>
<th>No. of slide results analyzed</th>
<th>Total negative slides</th>
<th>No. of HFP</th>
<th>Total positive slides</th>
<th>No. of HFN</th>
<th>HFN (%)</th>
<th>Total low +ve slides</th>
<th>No. of LFN</th>
<th>LFN (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Punjab</td>
<td>32</td>
<td>636</td>
<td>252</td>
<td>2</td>
<td>256</td>
<td>61</td>
<td>23.8</td>
<td>128</td>
<td>74</td>
<td>57.8</td>
</tr>
<tr>
<td>Southern Punjab</td>
<td>26</td>
<td>519</td>
<td>207</td>
<td>4</td>
<td>208</td>
<td>28</td>
<td>13.5</td>
<td>104</td>
<td>60</td>
<td>57.7</td>
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<tr>
<td>Sindh</td>
<td>28</td>
<td>559</td>
<td>224</td>
<td>0</td>
<td>223</td>
<td>17</td>
<td>7.6</td>
<td>112</td>
<td>37</td>
<td>33.0</td>
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<tr>
<td>KPK</td>
<td>45</td>
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<td>359</td>
<td>25</td>
<td>7.0</td>
<td>180</td>
<td>61</td>
<td>33.9</td>
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<td>4</td>
<td>80</td>
<td>32</td>
<td>0</td>
<td>32</td>
<td>1</td>
<td>3.1</td>
<td>16</td>
<td>3</td>
<td>18.8</td>
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<tr>
<td></td>
<td>135</td>
<td>2,692</td>
<td>1,074</td>
<td>6</td>
<td>1,078</td>
<td>132</td>
<td>12.2</td>
<td>540</td>
<td>235</td>
<td>43.5</td>
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</tbody>
</table>

Graph 7: Proficiency of district controllers

TB culture and DST laboratory network

Despite tremendous expansion in coverage of quality-assured TB microscopy services, the basic capacity for accurate and reliable culture for diagnosis of MDR-TB remained limited in 2010. Efforts are, however, underway for strengthening and establishment of a network of TB culture and Drug Susceptibility Testing (DST) laboratories at the provincial level to upscale the currently limited capacity for these services within the public sector. An assessment of 12 TB culture and DST laboratories at the provincial and district levels has been completed, with the process of tendering underway. Five more DST laboratories (one national and four provincial) and four TB culture laboratories (one in each province) will be established during the initial phase.
National Reference Laboratory for Tuberculosis

The National Reference Laboratory (NRL), which was operationalized in October 2009, participated in the 16th round of panel testing coordinated by SNRL Antwerp, Belgium, for EQA of DST in 2010 and achieved a milestone by attaining 100% proficiency for FLDs. The laboratory has expanded its patient management services to include hospitals and is now receiving specimens from hospitals in Rawalpindi, Islamabad, AJK and Murree.

The responsibility of providing laboratory support for the Disease Prevalence Survey, which was initially assigned to the Aga Khan University Hospital, was taken over by NRL. Table 7 presents data on culture and DST specimens processed by NRL.

Table 7: NRL workload during 2010

<table>
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<th>Specimens processed for culture</th>
<th>2009 (Oct.-Dec.)</th>
<th>2010</th>
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<tbody>
<tr>
<td>Routine</td>
<td>285</td>
<td>1,316</td>
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<tr>
<td>Pre-survey pilot</td>
<td></td>
<td>2,047</td>
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<tr>
<td>Survey</td>
<td></td>
<td>1,200</td>
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<tr>
<td>Total</td>
<td></td>
<td>4,553</td>
</tr>
<tr>
<td>Specimens processed for DST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New cases</td>
<td>112</td>
<td>252</td>
</tr>
<tr>
<td>Previously treated</td>
<td>23</td>
<td>118</td>
</tr>
<tr>
<td>Total</td>
<td>135</td>
<td>370</td>
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</table>

Table 8: Drug resistance pattern at NRL

<table>
<thead>
<tr>
<th></th>
<th>New cases</th>
<th>Retreatment cases</th>
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</thead>
<tbody>
<tr>
<td>DST performed</td>
<td>112</td>
<td>252</td>
</tr>
<tr>
<td>Resistant to H but not R</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Resistant to R but not H</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Resistant to R+H (%)</td>
<td>5 (4%)</td>
<td>8 (3%)</td>
</tr>
</tbody>
</table>

EQA of DST services by panel testing

In 2010, the NRL, along with the AKUH laboratory and Indus Hospital TB laboratory, participated in the 16th round of proficiency testing. The NRL also organized National EQA Scheme for public and private sector laboratories during the year under review.

Table 9: Microscopy, EQA coverage and performance of Diagnostic Centres (2005-2010)

<table>
<thead>
<tr>
<th>Year</th>
<th>Punjab</th>
<th>Sindh</th>
<th>KPK</th>
<th>Balochistan</th>
<th>AJK</th>
<th>NA</th>
<th>FATA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>445</td>
<td>237</td>
<td>163</td>
<td>63</td>
<td>35</td>
<td>11</td>
<td>28</td>
<td>982</td>
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<tr>
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<td>445</td>
<td>237</td>
<td>181</td>
<td>80</td>
<td>35</td>
<td>18</td>
<td>28</td>
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<tr>
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<td>472</td>
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<td>102</td>
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<td>473</td>
<td>262</td>
<td>203</td>
<td>102</td>
<td>62</td>
<td>22</td>
<td>24</td>
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<td>473</td>
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<td>108</td>
<td>67</td>
<td>22</td>
<td>26</td>
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<td>486</td>
<td>270</td>
<td>202</td>
<td>108</td>
<td>67</td>
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<td>26</td>
<td>1,181</td>
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### Table 9: Continued

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<td>29</td>
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<td>11</td>
<td>0</td>
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<tr>
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<td>81</td>
<td>40</td>
<td>18</td>
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<td>0</td>
<td>360</td>
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<tr>
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<td>420</td>
<td>234</td>
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<td>57</td>
<td>13</td>
<td>2</td>
<td>14</td>
<td>940</td>
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<td>441</td>
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<th>FATA</th>
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### Table 10: TB laboratory performance indicators (2006-2010)

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<th>KPK</th>
<th>Balochistan</th>
<th>AJK</th>
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<td>17.1</td>
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<td>16.6</td>
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<td>18.9</td>
<td>18.6</td>
<td>13.3</td>
<td>19.9</td>
<td>8.8</td>
<td>15.4</td>
<td>16.2</td>
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<td>21.5</td>
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<td>18.0</td>
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<th>AJK</th>
<th>NA</th>
<th>FATA</th>
<th>National</th>
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</thead>
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<td>3.1</td>
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<td>4.1</td>
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<th>Year</th>
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<th>KPK</th>
<th>Balochistan</th>
<th>AJK</th>
<th>NA</th>
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Hospital DOTS Linkage
Hospital DOTS Linkage

Hospital DOTS Linkage (HDL) is an initiative supported by Round-6 of The Global Fund grant to facilitate the implementation of DOTS in tertiary care hospitals in the public sector. The initiative contributes towards achievement of the goal to drastically reduce the burden of TB in Pakistan by 2015 in consonance with the objectives enshrined in the MDGs and the Stop TB Partnership.

The NTP is working in 27 tertiary care hospitals (TCHs) across Pakistan. Aside from strengthening DOTS implementation in these hospitals, the program has successfully initiated a set of interventions for implementation of difficult-to-diagnose adult and childhood TB cases in line with the national guidelines. This is being achieved with the support of two implementing partners namely, the Association for Social Development (ASD) and Mercy Corps (MC). While ASD is working in 22 TCHs (15 in Punjab, 5 in KPK and 2 in the federal capital), MC is engaged in five hospitals (4 in Sindh and 1 in Balochistan).

Key implementation areas

Core DOTS: The strengthening of DOTS at the tertiary care level is one of the focus areas of HDL. This objective is achieved through provision of free diagnostic and treatment facilities to TB patients, which is preceded by regular capacity building of staff working at the HDL sites. Contact screening and suspect management are done at TCHs.

Adult difficult-to-diagnose and complicated TB cases: These cases are mostly referred by the departments of gastroenterology, orthopedics and general surgery within the tertiary care setup and from other secondary and primary health care facilities at the peripheral level.

Childhood TB management: Childhood TB management at the tertiary care level was taken up as a new initiative in The Global Fund Round-6 grant. Previously, it was implemented at the secondary care level i.e., within DHQs through Round-2 of the grant. These cases are diagnosed and treated free of cost. Pediatric drug formulations for free treatment of children with TB, and PPD for free diagnosis and screening are provided to select TCHs.
Capacity building: Regular trainings are organized for doctors, paramedics and laboratory technicians to ensure the provision of high-quality services to TB patients. Doctors and paramedics are trained on core TB DOTS; adult difficult-to-diagnose and complicated TB case management; and childhood TB management. Laboratory technicians, on the other hand, are trained on AFB Sputum Smear microscopy.

Human resource: Human resource is supported through the availability of HDL mobilizers in TCHs. These mobilizers assist DOTS facilitators in TB case management, recording and reporting, contact screening, and suspect management. Moreover, they also assist in tracing default TB cases through regular follow-up.

Monthly meetings: Monthly meetings are held at TCHs for planning, coordination and review of DOTS implementation and HDL activities.

Strengthening of the referral system: A proper mechanism is in place for strengthening of the referral system. Patients received from peripheral health care facilities for diagnosis and treatment are diagnosed at the TCH and referred to their nearest treatment centre, which is identified by the DOTS facilitator from an available directory. The DTC of the located district is contacted and informed about the patient. Whether the patient has reached the identified treatment centre or not is subsequently followed-up by the HDL mobilizer.

Some of the key achievements made during 2010 are:

- Reporting of 12,096 difficult-to-diagnose adult TB cases, as well as complicated cases;
- Diagnosis of 4,361 childhood TB patients and their management in line with the national guidelines;
- Holding of trainings for doctors, paramedics and laboratory technicians on Core TB DOTS, and management of difficult-to-diagnose adult and childhood TB cases, as well as complicated cases;
- Holding of advocacy workshops on Core TB DOTS prior to implementation of the intervention; workshops for difficult-to-diagnose adult and childhood TB cases are in the pipeline;
- Holding of monthly hospital review meetings to identify and surmount challenges and gaps in DOTS implementation;
- Provision of pediatric drugs and PPD for management of childhood TB cases in tertiary and secondary care hospitals.

Way Forward

The Round-6 grant of The Global Fund has been merged with the consolidated Round-9 grant. By the end of the project life, this intervention is expected to enable the management of 13,920 difficult-to-diagnose adult TB patients, and 11,800 childhood TB cases. The NTP plans to expand the HDL initiative by working in another 5 tertiary care hospitals with the support of Bridge Consultants Foundation, a new implementing partner. It also plans to upscale secondary care hospitals, which are DHQ hospitals, in 30 districts across four provinces and three regions. The objective is to provide TB treatment services in line with the national guidelines to ordinary TB patients, complicated and difficult-to-diagnose adult TB patients, and children with TB. The said intervention will be implemented by NTP.
TB/HIV Co-Infection
Sixteen sentinel sites have been selected and strengthened for screening, care and support of TB/HIV co-infected patients through collaborative efforts of the TB and AIDS control programs and non-government partners.

The HIV epidemic presents a major challenge to the control of TB in countries with concentrated epidemics of HIV. TB is one of the most common causes of morbidity and one of the leading causes of mortality in People Living with HIV (PLHIV). In addition, there is a mutual interaction between M. tuberculosis and HIV. The immune suppression induced by HIV modifies the clinical presentation of TB and hence its management. On the other hand, TB influences the prognosis of HIV infection. In view of the foregoing, addressing TB/HIV co-infection is a high priority in most settings.

Ever since the achievement of countrywide DOTS coverage in 2005, NTP has been expanding the scope of its activities to include TB/HIV co-infection and MDR-TB interventions as recommended in the New Stop TB Strategy. This has been made possible through The Global Fund Round-6 support, which has now been consolidated with Round-9.

Sixteen sentinel sites have been selected and strengthened for screening, care and support of TB/HIV co-infected patients through collaborative efforts of the TB and AIDS control programs and non-government partners. These hospitals are providing coverage to all the four provinces. In total, 22,024 TB patients were tested for HIV and 412 PLHIV were tested for TB during the period under review.

Some of the key achievements made in this direction during 2010 are:

- A joint Coordinating Board for TB/HIV and MDR-TB has been constituted under the Federal Ministry of Health for development of policy guidelines to address these challenges. The board is chaired by the Federal Health Secretary.
- A National Technical Working Group to address TB/HIV co-infection has been formulated for development of national guidelines and manuals for screening and management of TB/HIV co-infected cases.
- TB/HIV guidelines and manuals have been developed for screening and management of TB/HIV co-infected patients in consultation with the Technical Working Group.
- Provincial TB/HIV Collaborative Committees have
been constituted in consultation with NTP. These committees include managers of the provincial TB and HIV programs and are chaired by the respective Director Generals Health of the provinces.

**Way Forward**

Future interventions will focus on increased political commitment and involvement of major partners to ensure sustainability of the National DOTS-Plus Project. Moreover, physicians, counselors and laboratory staff will be trained on TB/HIV co-infection after endorsement of guidelines developed by the Technical Working Group. Strengthening of linkages and up scaling the intervention in Round-11 of The Global Fund will also be on the cards.
Management of MDR-TB
Pakistan ranks 4th among 27 high burden countries of Multi Drug Resistant (MDR) TB in the world. According to a WHO report released in 2009, the country annually reports an estimated 7,939 culture positive MDR-TB cases among SS+ cases and 13,218 among all cases. In response to the Beijing Call for Action, NTP has adopted an ambitious plan envisaging the treatment of 80% of the estimated cases of MDR-TB by the end of 2015.

Some of the key achievements of the MDR-TB Management Unit during 2010 are:

- Formation of a Coordinating Board for TB/HIV and MDR-TB;
- Development of National Drug-Resistant TB Guidelines for the management of MDR-TB cases;
- Securing long-term political commitment;
- Ensuring implementation of regulatory documents including legislation for SLDs;
- Formation of a National Technical Working Group to assist in the development of National Guidelines for the Management of Drug Resistant TB; the group has been formed in collaboration with experts representing public and private organizations;
- Development of Mycobacterium Infection Control Guidelines and their endorsement by the Infectious Diseases Society of Pakistan to address TB and MDR-TB;
- Approval of application by the Green Light Committee (GLC) for management of 1,500 MDR-TB patients over the next two years (2010-2011);
- Approval of Pakistan’s grant application to The Global Fund Round-9 for its TB component. The grant will be utilized to reduce the burden of TB in Pakistan by improving access to quality DOTS and MDR-TB care services.
- A total of 30 hospitals will be strengthened across the country for management of MDR-TB by 2014. The project will be implemented through five NGOs under a public-private partnership arrangement;
Identification, preparation and upgradation of three pilot sites for management of MDR-TB though community- and hospital-based models. These sites are:

a) Indus Hospital, Karachi (community-based model; GLC approved site with BSL-III laboratory);
b) Ojha Institute of Chest Diseases, Karachi (a public sector hospital with an 80-bedded MDR-TB ward); and
c) Gulab Devi Chest Hospital, Lahore (a private hospital with a 50-bedded MDR-TB ward).

All treatment sites have been selected to enable treatment and management of MDR-TB patients in line with GLC approval;

- Procurement of SLDs for the treatment of MDR-TB patients;
- Receipt of SLDs for 400 MDR-TB patients. More than 200 patients have already been enrolled and are undergoing treatment.

Geographical spread of treatment sites

1. Gulab Devi Chest Hospital, Lahore
2. Ojha Institute of Chest Diseases, Karachi
3. Indus Hospital, Karachi
4. Institute of Chest Diseases, Kotri
5. Leprosy Hospital, Rawalpindi
6. Lady Reading Hospital, Peshawar
7. Jinnah Hospital, Lahore
8. Fatima Jinnah TB Hospital, Quetta
9. Nishter Hospital, Multan
10. Abbottabad Teaching Hospital, Abbottabad
Way Forward

The NTP has decided to enhance the capacity of the public and private sectors for the detection and management of 80% of the estimated SS+ MDR-TB incident cases by the year 2015.

The following interventions need to be prioritized to strengthen the hospitals that have been identified for the provision of MDR-TB care:

- Infection control for outpatient and inpatient care of MDR-TB cases;
- Access and ability to manage SLDs;
- Provision of role-specific training to senior and mid-level doctors, paramedics and laboratory staff, and development of tools for delivery of care in line with national guidelines;
- Development of effective linkages with a strong network of functioning DOTS clinics in the public and private sectors to promote community-based delivery of MDR-TB care;
- Availability of social support arrangements (food baskets and travel incentives) for patients enrolled on quality-assured SLDs.

With the initiation of MDR-TB interventions, 9 reference laboratories, 30 teaching or specialized public and private sector hospitals and an expanding network of health facilities will be in a position to offer laboratory diagnostics, community-based and inpatient treatment and social support to 14,826 MDR-TB cases by the end of 2015, as indicated in Table 11.

Table 11: Number of hospitals and peripheral facilities envisaged to provide treatment to MDR-TB cases

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<thead>
<tr>
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<td>10</td>
<td>15</td>
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<td>DOTS Clinics</td>
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Health Systems Strengthening
Contributing to health systems strengthening is a key component of the WHO Stop TB Strategy and the National TB Control Strategy. This objective is being met through implementation of the National Strategy for Health Systems Strengthening, which envisages:

- Integration of communicable disease care delivery including diagnostics, coordinated drug management and joint implementation planning at the district level;
- Sharing of program learning through development of linkages between hospitals and primary health care facilities, tackling human resource challenges through better training/supervision and engagement of private providers in disease control interventions;
- Addressing program needs such as disease prevalence and drug resistance survey/study, and making the best use of devolution for disease control and implementation of Practical Approach to Lung Health (PAL) interventions.

Progress

The NTP has taken the lead in sharing the responsibility of health systems strengthening. Multiple approaches have been developed for the purpose.

The program is also contributing to health systems strengthening by promoting the development and sustained availability of trained human resource. The NTP is designed to rely on general health services staff (i.e., doctors, paramedics, laboratory staff and community health workers) for delivery and management of TB care. This approach, though desirable and sustainable, increases the human resource challenges related with lack of direct program control on staff recruitments, transfers, performance appraisals, etc.

The involvement of multiple general cadre staff in the delivery of TB care at the facility level implies the need for clear responsibilities, operations and capacity building. The coordination and monitoring of TB care delivery by the district level health manager also poses challenges related
with technical competence, time-sharing and program support. A concerted effort is being made to overcome the aforementioned challenges in a bid to contribute to health systems strengthening.

In view of the forthcoming devolution, NTP has hired a consultancy firm for the development of Provincial Strategic Plans. This has been done to enable each provincial program to review its strategies in light of the Global Stop TB Strategy; to plan implementation of the six key elements enshrined in the Strategy; and to clearly define priorities, requirements and plans for continued TB control activities in the post-devolution scenario. The Provincial Strategic Plans will provide the framework for the program and its partners to prepare their respective projects and budgets for the achievement of established targets.

Some of the key achievements made in the direction of health systems strengthening during 2010 are:

- Coordination with various national health programs for adoption of the health systems strengthening approach. The NTP is collaborating with the Lady Health Workers Program whereby LHWs are working as treatment supporters by providing Directly Observed Treatment to TB patients. LHWs have been trained on DOTS earlier on as well. A total of 2,550 LHWs were trained for IPC during 2010. Collaboration is also underway with the National AIDS Control Program for the control of TB/HIV co-infection and the Malaria Control Program for microscopy.

- Rising above key human resource challenges through clear-cut articulation of roles and responsibilities of general cadre staff for TB care, development of a set of operational guidelines, holding of role-specific staff trainings, empowerment of local institutions (i.e., District Health Development Centres) for staff trainings, development and implementation of refresher trainings, and structured monitoring of TB care to facilitate the district managers in field activities. These trainings have been made possible with the help of resources from the federal and provincial PC1s and The Global Fund.

Funding from The Global Fund has been utilized to bolster the implementation capacity of NTP. A Program Support Unit (PSU) has been established at the national level to assist NTP in appropriate utilization of funds from The Global Fund and to enable effective project implementation. The PSU has enhanced the financial, administrative and managerial capacity of NTP. Moreover, aside from carrying out capacity building and refresher training activities, it is also responsible for monitoring of the program.

Objective 7 envisages two cardinal interventions i.e., strengthening of NTP for effective program implementation and capacity building of the staff, inclusive of development of refresher courses. A total of 4,947 doctors, 469 managers and 6,843 paramedics were trained during 2010.

Enhancement of the drug management capacity, including warehousing and distribution as a health systems strategy, is also underway. This includes training of managers (EDOs, DTCs) and health care workers in the public and private sectors on drug management and drug management information system.

A variety of approaches such as the franchising model, the NGOs model and the GPs model have been developed to promote effective partnerships with private providers. To this end, NTP has developed a set of operational guidelines and materials for transparent selection and monitoring of private providers. Being a program priority, public-private partnership is being expanded through public sector funding as well as financial support from partners.

Efforts in the direction of quality assurance of TB laboratories also exemplify successful application of the health systems approach to TB care. Each district has a laboratory which is managed by a Laboratory Supervisor who carries out External Quality Assurance (EQA) activities in all diagnostic facilities in the district. Most districts have the same laboratory staff and district supervisor for TB as well as malaria microscopy. Around 1,000 peripheral laboratories were under EQA during 2010.
Way Forward

Following the consolidation of Rounds 6 and 9 grants, the three indicators of Objective 7 have been squeezed to include refresher trainings on TB DOTS for doctors (including managers) and paramedics. These trainings commenced in January 2011 and will continue till December 2012. As many as 3,122 doctors (including managers) and 4,617 paramedics will be trained during this period.

The NTP is planning to develop an Infection Control Policy for implementation in health care settings. Moreover, it will work on conducting a situational analysis of PAL, which is a syndromic approach to the management of patients who attend primary health care services for respiratory symptoms. TB diagnosis can become part of the overall strategy for diagnosis of lung diseases through the adoption of PAL. TB, ARI, asthma and chronic obstructive pulmonary disease can be managed through an integrated approach. The PAL strategy is used for Health Systems Strengthening in primary health care settings.
Public-Private Mix
As is true of other low-income countries, a majority of the patients in Pakistan also initially attend a private provider before they are suspected of harbouring TB. There are some 42,700 private, registered facilities involved in provision of health care to the country’s population; the largest are clinics and chemist shops (69 percent) and medical stores (27 percent); there are also 550 private hospitals in the country. There are doctors who simultaneously work in the public and private sectors (Planning Commission, Government of Pakistan, 2005). It is generally believed that about 70% of the population visits private sector practitioners.

International studies corroborate this:

"Without engaging private providers, poor quality and sometimes harmful care will continue; they show that private providers can help expand access in rural as well as urban areas; and they point to the need for careful institutional design. Other analyses have found—and this is a critical point—some evidence that well-managed networks of private providers can offer a service that has a positive impact on the quality of the public sector." (Travis & Cassels)

Having achieved 100% DOTS coverage in 2005, NTP initiated the involvement of the private sector in selected districts in the year 2006. The PPM initiative launched by virtue of public resources (PC-1) targeted 70 districts, providing mobility support to the District TB Coordinator and PPM field officers. Even though implementation remained limited to 14 districts, an increase of about 15 to 16% was evident in case detection. This experience not only provided constructive insights into PPM but also taught valuable lessons to the program.

The current PPM project targets 60 selected districts of Pakistan and is supported by The Global Fund through its Consolidated Grant. Private providers have been involved in delivering quality DOTS services through interventions carried out under The Global Fund Round-3 grant in five major cities.

The experience of the Round-3 grant will further be refined and expanded through interventions in urban areas of 60 selected districts including further expansion in five metropolitan cities.
metropolitan cities (Karachi, Lahore, Peshawar, Quetta and Rawalpindi) already targeted through Round-3. The proposed interventions will focus on urban areas targeting 25-27 private healthcare providers and an average of four laboratories per district, mainly targeting populations with poor or no access to TB care.

A number of parastatal organizations are also delivering independent healthcare services and free care to their employees and their dependents through hospitals, where DOTS is yet to be implemented. Each autonomous organization has multiple health facilities, primarily in urban settings. The organization provides these services through hospitals under their own administrative control. These hospitals do not fall under the domain of the federal or provincial health departments. The NTP has initiated a collaborative process with three of these parastatal organizations namely, Social Security, Pakistan Railways, and Fauji Foundation. In total, 29 hospitals run by these three institutions in various parts of the country will be engaged in the provision of quality care to a population of 8.5 million people. The proposed intervention will improve access to quality DOTS care for about 5% of the country’s population, benefiting about 13,000 TB patients every year.

Punjab and Sindh have been the pathfinders in interventions targeting prisons and urban slums. The experience of PPM in KPK has proved highly beneficial in designing and implementation of similar interventions in other parts of the country.

Some of the major achievements made in the realm of PPM during 2010 are:

- Adaptation and development of PPM modules for different cadres of health care providers;
- Development of guidelines and tools for project implementation;
- Completion of mapping of private providers; selection of GPs currently underway;
- Initiation of the development of District Implementation Plans.

**Graph 8: Contribution of the private sector to case notification (All types of TB cases)**
TB REACH project

The objective of this PPM project is to increase the case detection of SS+ TB through active case finding among TB suspects invited for free diagnosis in chest camps established in the urban slums of five selected districts of Sindh i.e., Thatta, Sanghar, Larkana, Dadu and Karachi West.

The project applies frontloading strategy and LED-based fluorescence microscopy to reduce initial defaulting and to increase the sensitivity of direct smear microscopy, respectively. This intervention is being implemented through the engagement of private General Practitioners (GPs) through training and management of identified suspects and detected cases—whether by referral from chest camps or during routine medical practice. The project relies on the same recording and reporting system as NTP, with a focus on regular supervision and collection of reports by district coordinators.

Through this project, NTP is implementing an integrated intervention for active case finding among high-risk groups, alongside the introduction of new diagnostic strategies and technologies, as well as engagement of GPs.

Project activities
Activity 1: Mapping and training of GPs;
Activity 2: Holding of chest camps in the catchments area of each urban slum;
Activity 3: Training of laboratory staff on quality diagnosis for TB;
Activity 4: Holding of community awareness activities;
Activity 5: Formation of community coalition for treatment support and follow-up;
Activity 6: Development of health care services and linkage of the target population with the district health system

Work plan activities: Some of the key activities completed during 2010 are:
- Ethical clearance in the intervention districts;
- Recruitment of national coordinator, M&E officer, data manager, field officers and laboratory technicians;
- Training of field officers and laboratory technicians on project activities;
- Procurement of motorbikes, laptops and LED microscopes; the process is currently underway and will be completed soon.
- Mapping of the area for identification of GPs, NGOs/CBOs, and nearest health facilities; the activity is currently underway.

Challenges:
- Low utilization of health facilities on account of lack of community awareness about TB and availability of TB care services;
- Wide network of GPs/informal providers that do not notify their cases to NTP;
- Wide network of private laboratories with suboptimal/unknown quality of diagnosis;
- Suboptimal follow-up on registration of diagnosed TB cases and referred TB suspects for diagnosis;
- Health care seeking behaviour of the community whereby more than 60% of the population seeks initial care from GPs or informal providers.

Results:
Mapping results are expected soon.
Drugs and Drug Management
Uninterrupted supply of high-quality ATT drugs is the cornerstone of the DOTS Strategy. Improvement in drug procurement and supply management has been identified by NTP as the most urgent and critical challenge to be addressed through The Global Fund Round-8 support.

In support of the objectives of the National Strategic Plan for TB Control in Pakistan, NTP and Greenstar Social Marketing have proposed a multi-dimensional five-year program for the procurement of essential anti-TB drugs, upgrading and refurbishment of drug warehouses at the national, provincial and district levels, and strengthening of the Drug Management Information System (DMIS) for TB.

The procurement of requested drugs and strengthening of DMIS is essential to:
- Prevent critical shortages of anti-TB drugs,
- Support successful implementation of the Stop TB Strategy and The Global Fund Round-6 award;
- Ensure continued progress towards achievement of the MDGs.

The gradual increase in TB case finding has increased the demand for anti-TB drugs. This has strained the current drug management system.

In view of the foregoing, the program will build on the existing constructive partnership between NTP and Greenstar to engage both public and private sector partners in improving the DMIS. The program design capitalizes on the comparative advantage and core competencies of NTP and Greenstar to achieve beyond expected results, and to effectively engage both the public as well as the private sectors in drug management.

For clarity of purpose, Graph 9 presents the hierarchy of the Drug Management Information System. Moreover, the goals and objectives of The Global Fund Round-8 support and performance against targets have been described in Tables 10 and 11, respectively.
Graph 9: Hierarchy of the Drug Management Information System

Table 12: Goals and objectives of The Global Fund Round-8 support

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<td>Outcome Indicator</td>
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<td>1. Pursue high-quality DOTS expansion and enhancement</td>
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<td>2. Health System Strengthening</td>
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<td>SDA 1.1. Procurement and supply management: Procurement, storage and distribution of First Line Anti-TB Drugs (PR: NTP for activities 1.1.1, 1.1.2 and 1.1.3.1; Greenstar for activity 1.1.3.2)</td>
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<td>SDA 1.3. Management and supervision. Improving strategic coordination for regulation of quality anti-TB drugs (PR: NTP for activity 1.3.1; Greenstar for activity 1.3.2)</td>
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<td>SDA 2.1. HSS. Incorporating TB DMIS into national, integrated DMIS (PR: Greenstar)</td>
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Table 13: Performance against targets (October 1, 2009 to December 31, 2010)

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<th>Indicators</th>
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<td>Number of new SS+ TB patients reported to the national health authority</td>
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<td>(national number; non-cumulative)</td>
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<td>Number of new SS+ TB patients reported to the national health authority</td>
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<td>through the private sector (national number; cumulative per calendar year)</td>
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<td>Number of new SS+ TB cases successfully treated, (national number;</td>
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<td>92,506</td>
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<td>cumulative per calendar year)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Number of new SS+ TB cases successfully treated, (national number;</td>
<td>22,803</td>
<td>21,760</td>
<td>95.43</td>
</tr>
<tr>
<td>non-cumulative)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of new SS+ TB cases successfully treated among those managed in</td>
<td>14,594</td>
<td>12,805</td>
<td>87.74</td>
</tr>
<tr>
<td>the private sector (national number; cumulative per calendar year)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number and percentage of districts reporting no stock-out of First Line</td>
<td>134 (100%)</td>
<td>134 (100%)</td>
<td>100</td>
</tr>
<tr>
<td>Anti-TB Drugs on last day of the quarter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of warehouses refurbished at the national/provincial/regional/district levels for appropriate drug storage</td>
<td>71</td>
<td>1</td>
<td>1.41</td>
</tr>
<tr>
<td>Number and percentage of districts submitting timely reports in line with the National Guidelines on Drug Management</td>
<td>66 (49%)</td>
<td>66 (49%)</td>
<td>100</td>
</tr>
</tbody>
</table>

Graph 10: Overall performance against targets
Way Forward

Significant achievements have been made in a majority of the indicators due to strengthening of the program, enhanced coverage, promotion of public-private partnerships, global grants’ support and involvement of partners, irrespective of the country’s volatile security situation. The program has identified the bottlenecks in indicators requiring improvement and will address these on priority.

Lengthy drug procurement procedures, insufficient drug storage capacity and a weak DMIS pose serious challenges to NTP and the overall health system. Standard procurement procedures and standardized specifications for anti-TB drugs need to be developed to reduce procurement delays and to prevent stock-outs. Additional efforts also need to be made to regulate the availability of poor quality FLDs in the open market.

Available drug storage facilities of the National and Provincial TB Control Programs are in the process of being upgraded in phase 1 so that the national buffer stock can appropriately be housed at the national level and the integrated PTP drug warehouses can have sufficient space to appropriately store anti-TB drug supplies until these are dispatched to the districts. The SOPs and protocols for this will be developed and implemented as per WHO good warehousing practices. A computerized DMIS also needs to be properly implemented to keep track of the drug inventory and to quantify needs.

Aside from the above-mentioned operational challenges, the following issues need to be addressed on priority:

- Replacement of the 8-month treatment regimen, which is no longer recommended in recent WHO guidelines. The NTP and its partners will be shifting to the 6-month treatment regimen by virtue of a transition plan marked by phasing out of the existing quantity of EH and introduction of HR. A phase out plan is being developed for smooth execution of the plan.
- Replenishment of drug stocks. The stock level is low in most areas due to loss of drugs during the monsoon floods of 2010 and the diversion of around two-thirds of the provincial funds allocated for anti-TB drugs towards post-flood relief activities. Funds should urgently be released to allow for procurement of drugs. Different mechanisms are currently under consideration for the purpose; these include mobilization of government resources through PC-1, Japanese grant, GDF grant and Global Fund Round-8 budget.
- Implementation of Drug Management trainings and their outcomes. By recruiting qualified staff at the provincial level during Phase 2 (logistician pharmacist), the implementation of Drug Management trainings will appropriately be monitored and the outcomes documented.
- Development and capacity building of local pharmaceutical companies for production of quality ATT drugs as per WHO guidelines. Efforts are underway to resolve issues pertaining to WHO prequalification, BA/BE issues, and certification of WHO prequalified laboratories.
- Coordination with National Drug Testing Laboratory to upgrade its standards in line with WHO and ISO 17025 specifications.
- Identification, capacity building and certification of an institute carrying out bio-equivalence activities and bio-availability studies. The NTP and its Drug Management Unit are in contact with different institutions conducting indigenous bioavailability studies and are planning to choose one of them to upgrade the capacity of the institute in line with ISO and WHO standards.

With the induction of qualified staff at the provincial level during Phase 2, the successful implementation of DMIS will be ensured. All the above-mentioned interventions have the potential to strengthen and improve the overall drug management system.
Operational Research
The expansion and consolidation of DOTS, along with the addition of new intervention areas with the help of a continuously expanding partnership network, has unfolded new challenges in its wake, one of them being evidence-generation. All public health programs generate evidence for decision-making and test new initiatives and interventions with scientific rigor. Evidence generation remains incomplete unless feasibilities are put to test and overall program performance subjected to appropriate monitoring and surveillance.

Operational research is a core component of NTP’s National Strategic Plan as well as the Stop TB Strategy. Locally-relevant operational research can help in identifying problems, devising workable solutions, field-testing interventions and developing plans to upscale activities.

The Operational Research Unit of NTP performs the following tasks:

- Provides research leadership for establishment of national research/development agendas; attracts resources, new researchers and research groups; and develops institutional networks;
- Enhances management capacity for carrying out specific research projects;
- Develops a critical mass of personnel with up-to-date research and development skills;
- Secures the means and opportunities to participate in international research and development activities.

Some of the key achievements of the Operational Research Unit during 2010 are listed below.

**Implementation of TB Prevalence Survey**

The Research Unit has initiated the process of impact measurement through the TB Prevalence Survey—one of the largest studies of its kind in Asia, with a sample size of 133,000 adults aged 15 years and above and 33,250 children aged 5-9 years in 95 clusters across the country. All necessary protocols, SOPs and training materials for the survey have been developed. Staff hired for the survey was trained in July 2010.
The survey was piloted in August 2010. This was followed by implementation of survey activities in six selected clusters per round, the first of which was completed in 2010. The survey activities are well in line with the target; participation level of 81%, as desired, was achieved in the first round. The suspect ratio was 14% while percentage of SS+ cases stood at 37%. The survey will be completed in 2011.

**Implementation of TB REACH Project**

The NTP qualified for the highest grant from the Stop TB project (TB REACH) through a competitive process. Implementation of the project began in October 2010 with active case detection in the urban slums of five selected intervention tehsils of Sindh namely, Karachi, Larkana, Dadu, Sanghar and Thatta. Case detection was performed with new diagnostic tools such as LED fluorescence microscopy, and front-loaded strategies for sputum investigation.

**IUATLD conference**

The NTP presented 20 posters at the annual conference of the International Union Against Tuberculosis and Lung Disease (IUATLD). The conference was held in Berlin in November 2010. The program’s Research Unit conducted a successful post-graduate course on hospitalized vs. community-based MDR-TB treatment. The course was coordinated by Dr. Ejaz Qadeer and Dr. Razia Fatima from NTP and chaired by Dr. Sieta from WHO EMRO.

**TDR-supported research studies**

Data collection for two studies supported by TDR (Total Drug Resistance) and one by The Union is in progress. These studies are titled ‘Barriers against DOTS implementation,’ and ‘Vital registration and initial default in tertiary care hospitals vs. peripheral health facilities.’

The Research Unit will begin the landmark study of indirect estimation of the disease burden through Capture Recapture Analysis after piloting of the same; this will be complementary to estimation of disease burden through the TB Prevalence Survey.

**Way Forward**

Future activities of the Research Unit include completion of the TB Prevalence Survey, implementation of TB REACH Project, and preparation of manuscripts of the two TDR-supported and one Union-supported studies.

The Research Unit will arrange an Operational Research Workshop to build the capacity of its national and provincial staff in the said domain and to develop research proposals for implementation of studies and publishing of their findings. An indirect estimation of the disease burden will be done through the Capture Recapture Study, a unique technique for measuring disease incidence.
Advocacy, Communication and Social Mobilization
Advocacy, Communication and Social Mobilization (ACSM) is a critical feature of any health-related intervention that aims to set agendas, raise public awareness, increase knowledge, and alter public attitude towards risk behaviours. In the context of TB control, the objective of the ACSM strategy is to upscale advocacy, communication and social mobilization for all DOTS components to achieve the targets enshrined in the MDGs.

The ACSM Unit of NTP has shown great leadership in designing, planning and executing ACSM interventions and further institutionalizing health communications for TB. It has introduced the vision of eliminating differential of quality of health communication products, services and information between the public and private sectors. The NTP is now recognized as a leader in producing high-quality ACSM material and products. Its ACSM Unit has also modeled public-public and public-private partnerships with numerous health institutions across the country.

The NTP has developed a Strategic Behavior Change Communication (BCC) Strategy for designing and implementation of mass media campaigns, awareness seminars and advocacy activities at the national, provincial, district and grass root levels. ACSM cuts across all components of NTP. These activities predominantly focus on setting agendas, enhancing awareness and shaping public perception within the overall context of creating high demand for TB services.

The current funding plan of NTP envisages enhanced social mobilization so that maximum patients are able to utilize TB services through private sector partner organizations operating within communities.

Service Delivery Area (SDA) 1 Activities

In line with the decision taken at the CCM meeting, the ACSM Unit is implementing The Global Fund Round-6, Objective III, SDA 1 activities in 10 districts of Punjab namely, Nankana, Okara, Sahiwal, Mandi Bahauddin, Khushab, Bhakkar, Mianwali, Bahawalpur, Muzaffargarh and Dera Ghazi Khan.
Table 14 presents a brief description of the successful interventions carried out in Phase 1 and continuing through Phase 2 at the district level.

### Table 14: Achievement of SDA 1 activity targets

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Target</th>
<th>Achievements</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Community-based ACSM events: a variety of community-based events including theatrical performances, concerts, community gatherings, funfairs, walks, school-based competitions, poetry sessions, ‘milads,’ family infotainment shows, sport events, and chest camps have been organized to support advocacy and social mobilization by virtue of an interpersonal, dialogue-based approach.</td>
<td>826</td>
<td>814</td>
<td>99%</td>
</tr>
<tr>
<td>Orientation sessions/trainings for journalists: numerous trainings and orientation sessions have been arranged for the media to promote advocacy through health journalists and reporters at the district level.</td>
<td>2,295</td>
<td>2,972</td>
<td>129%</td>
</tr>
<tr>
<td>Orientation/sensitization sessions for policy makers, opinion leaders and celebrities: orientation sessions have been conducted for policy makers, opinion leaders and celebrities; incentives are offered, where appropriate, to leverage advocacy opportunities.</td>
<td>4,143</td>
<td>5,197</td>
<td>126%</td>
</tr>
<tr>
<td>Community coalition meetings: community coalitions comprise representatives of local NGOs/CBOs/FBOs as well as community leaders who provide support for detection, screening and treatment of TB. These coalitions also raise awareness on TB DOTS, contribute to improvement of the referral system, provide treatment supporters and organize community mobilization activities in their respective areas.</td>
<td>73</td>
<td>91</td>
<td>124%</td>
</tr>
<tr>
<td>Refresher courses for service providers in Interpersonal Communication (IPC): Regular trainings on IPC have been arranged for district level health care providers including Lady Health Workers, medical officers and DOTS facilitators to ensure that they play an active role as a committed group of service providers working for TB DOTS, resulting in enhanced KAP representation of communities through focused IPC messaging.</td>
<td>5,320</td>
<td>6,521</td>
<td>123%</td>
</tr>
<tr>
<td>Refresher Quality Assurance (QA) workshops for health care providers: the target participants of these workshop include policy makers, senior health officials and health service managers at the district level. The objective of these workshops is to help the health program at the district level to define clinical guidelines and standard operating procedures, to assess performance against pre-defined standards, and to take tangible steps for improvement and enhanced effectiveness.</td>
<td>3,344</td>
<td>4,097</td>
<td>122%</td>
</tr>
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</table>

**SDA 2 Activities**

Under SDA 2, the ACSM Unit has been involved in the production and airing of television commercials, radio spots and tele-dramas relevant to the theme of TB control. Moreover, it has been highlighting the achievements and challenges of NTP and disseminating key public messages through long-duration talk shows on television and radio. The Unit has also harnessed the outreach of the print media by developing various press advertisements and supplements over the past year to promote TB care. These efforts have not only raised awareness among the
poverty-struck segments of the society, where a majority of the TB patients reside, but have also increased the demand for TB services.

The ACSM Unit also facilitated other technical departments of NTP by creating their advocacy kits, posters, banners and IEC material. It was also actively involved in holding IPC workshops throughout the country to train service providers (within the public and private sectors) on DOTS.

Under SDA 2, NTP has constituted an ACSM Steering Committee for policy guidance and oversight. Following comprehensive consultations with a range of stakeholders, the program has developed a National Strategic Framework for ACSM activities. It has also developed a set of operational guidelines and materials for multiple ACSM activities at different hierarchical levels.

Some of the major achievements made under SDA 2 during the year under review are summarized in the following paragraphs.

**Steering Committee meetings**

One national and four provincial Steering Committees have been constituted to foster greater coordination between the Ministry of Health, NTP, and its partners. These committees meet on a quarterly basis to provide leadership and direction, facilitate collective decision-making, and monitor the implementation of agreed policies, plans and activities of the ACSM Unit. A total of six meetings were convened, four at the national and two at the provincial levels, during the period under review.

**Capacity building workshops**

One of the key ACSM interventions focuses on capacity building of the ACSM staff as well as partner NGOs. Details of important workshops organized during 2010 have been summarized in the subsequent paragraphs.

**Workshop on writing oral testimonies of TB patients:**
Recognizing the importance of patient empowerment, the ACSM Unit organized a three-day training workshop on ‘Writing oral testimonies of TB patients’ in Ayubia from October 22-24, 2010.

The objective of the workshop, which was the first-ever activity of its kind in Pakistan, was to train the participants on collecting, recording and writing oral testimonies of TB patients. National and provincial ACSM staff, sociologists, as well as representatives of partner NGOs attended the workshop.

The workshop familiarized the participants with basic techniques of conducting and transcribing interviews. They also learnt the importance of getting the informed consent of the patient to be interviewed.

The interactive workshop offered a platform for the participants to share their experiences as they conducted and transcribed interviews. This was followed by the development of an action plan for collection of oral testimonies by the participants in their respective provinces. These stories were eventually published in the form of a booklet, which was launched by TB patients themselves at a ceremony organized in connection with World TB Day 2010.
Workshops on public relations: With the Public Relations (PR) Strategy of NTP providing strategic direction, the ACSM Unit organized a series of training workshops on PR during 2010. These workshops were organized to build the capacity of the staff of the National and Provincial TB Control Programs on PR techniques, thereby enabling them to establish sustainable relations with the media. The workshops also apprised the participants of various media products and strategies.

Facilitated by a qualified professional trainer, the workshops were held in Islamabad (October 29), Lahore (November 4) and Karachi (November 5).

Capacity building workshop on ACSM: A three-day capacity building workshop for ACSM staff was held at NTP from January 12-14, 2010. The aim of the workshop was to build the capacity of the participants on issues relevant to communication skills, empowerment of TB patients, emerging threats like TB-HIV co-infection and MDR-TB, development of checklists, work plans and reports, and the techniques and importance of pre-testing.

Workshop on proposal writing: The ACSM Unit organized a two-day facilitation workshop for representatives of partner NGOs on February 2-3, 2010. The objective of the workshop was to facilitate the partners in writing proposals for TB Reach and Challenge Facility for Civil Society Fund. The workshop empowered the participants to incorporate innovative approaches while writing proposals.

Capacity building workshops on operational guidelines: Two five-day capacity building workshops were organized for the national, provincial and district level staff of NTP from June 14-18, 2010 in Lahore, and from June 21-26, 2010 in Islamabad. These trainings aimed to build the capacity of the ACSM staff vis-à-vis the revised ACSM standardized material for effective implementation of SDA 1 activities at the district and provincial levels, and to train them on new initiatives including Patients Charter and effective engagement of the media in ACSM activities.

Advocacy seminars with the media
A series of advocacy seminars were arranged at the national, regional and provincial levels to inform media and health professionals, as well as other key stakeholders, about the current situation on TB in Pakistan and to share the initiatives being taken by NTP at the national and provincial levels.

One of the objectives of the three seminars held in 2010 was to motivate the participants to prioritize TB control on their reporting agendas in order to help create a conducive environment for implementation of ACSM activities. The seminars were held in Mirpur (October 16), Mardan (November 3) and Islamabad (November 5).

Development and dissemination of ACSM resource material
The ACSM Unit developed various types of ACSM resource material including newsletters, posters and brochures, fact sheets, badges, T-shirts, key chains, pens, caps and bags. These materials and mementos were widely distributed at the national, provincial and district levels during different activities including World TB Day 2010.

Exhibition booth on Mothers’ Day: Like other health programs of the Ministry of Health, NTP also participated in a two-day family entertainment gala organized by Lok Virsa on May 8, 2010 in connection with World Mothers Day. The occasion presented an excellent opportunity to raise awareness on TB among people from different walks of life and age groups. To this end, NTP set up an exhibition booth, where a variety of ACSM material including brochures, guidelines, posters and handouts were available for the public to benefit from. The event offered a unique chance for NTP to establish direct interaction with community members and to answer their queries.

The TB Song, as well as TB-related commercials, was aired on a huge screen put up at the exhibition booth. People turned up in good numbers to get information about TB. The overall impact of the activity was positive.
**International exhibition booth:** The ACSM Unit set up an exhibition booth offering resource material including posters, brochures, training guides, manuals and policy documents prepared by NTP at the annual conference of the International Union Against TB and Lung Disease (IUALTD) in Mexico. It was one of the busiest and most frequented booths.

**Visit of Global Stop TB Ambassador Ms. Anna Cataldi**

The Global Stop TB Ambassador Ms. Anna Cataldi landed in Islamabad on April 4, 2010 for a five-day official visit to Pakistan. The objective of her visit was to promote TB care, to harmonize actions for scaling up of MDR-TB care and to seek advocacy support from the Ministry of Health, donors and partners in the fight against TB. During the trip, she visited various MDR-TB care facilities and had in-depth meetings with representatives of the Ministry of Health, members of the Stop TB Partnership Board, NTP staff and communities affected by MDR-TB.

Some of the key activities undertaken by Ms. Cataldi during her visit to Pakistan are summarized in subsequent paragraphs:

**Meetings at the Ministry of Health and NTP:** A high-profile meeting was convened at the Ministry of Health on April 5, 2010, for an interaction between Ms. Cataldi and Minister for Health Mr. Makhdoom Shahabuddin. Secretary Health Mr. Khushnood Akhtar Lashari and Director General Health Dr. Rashid Jooma also attended the meeting. The visiting delegate was accompanied by the leadership of NTP and Mr. Wasiq Mehmood Khan from WHO.

During an exchange of thoughts, Ms. Cataldi spoke about the stigma associated with TB the world over and regretted the discrimination which patients have to endure if they declare their health status vis-à-vis TB. She also recommended fortification of efforts to address the emerging threat of MDR-TB in Pakistan. The Minister for Health briefed Ms. Cataldi on the initiatives and achievements of NTP.

The same day, Ms. Cataldi visited the office of NTP where she interacted with the leadership, the unit heads, and the ACSM team of the program. The meeting featured a presentation focusing on key components of the program and the overall implementation strategy.

Sharing her thoughts, Ms. Cataldi recollected her past experience of visiting Pakistan. She appreciated the efforts of NTP and urged the team to prioritize the prevention and control of MDR-TB.

**Meeting with Stop TB Partnership Pakistan:** Ms. Cataldi attended a board meeting of the Stop TB Partnership (STP) Pakistan at Dow University of Health Sciences, Karachi. The meeting, which was chaired by chair of STP Prof. Dr. Masood Hameed Khan, was arranged to apprise the Global Stop TB Ambassador of the achievements and future plans of STP.

Ms. Cataldi expressed how pleased she was to have been able to attend the meeting. “I have learnt a lot from listening to the participants,” she remarked. Appreciating Pakistan’s efforts in the domain of TB control, she said, “I have been travelling to many countries but Pakistan is doing a great job and approaching the MDG targets better than other countries.”
Visit to Ojha Institute of Chest Diseases and Indus Hospital:

Included in Ms. Cataldi’s itinerary were visit to the Ojha Institute of Chest Diseases and the Indus Hospital.

At the Ojha Institute of Chest Diseases, which has been acknowledged as a centre of excellence for the treatment of TB and chest diseases by the Global TB Unit of WHO, Geneva, and the SAARC TB Centre, Kathmandu, Ms. Cataldi was welcomed by Dr. Iqbal Pirzada and officials of NTP. She visited the MDR-TB ward for a friendly interaction with patients. She encouraged patients to continue their treatment in order to revert to a healthy life and not be daunted by stigma.

At the Indus Hospital, a community-based model health facility, Ms. Cataldi was briefed on the hospital’s achievements. She also watched a documentary portraying the sufferings of a family whose bread-winner is a 16 year-old girl suffering from TB. Ms. Cataldi then visited the MDR-TB laboratory being constructed by Indus Hospital.

Lucky draw at McDonalds: Ms. Cataldi, along with officials of NTP and the management of McDonalds, participated in a lucky draw to determine the winners of a TB quiz organized in collaboration with the fast food franchise to promote public awareness about the disease.

Ms. Cataldi drew coupons of 20 lucky winners and appreciated NTP’s one-of-a-kind partnership with McDonalds. “There is a strong link between nutritious food and TB treatment. A poor patient with an empty stomach throws out medicines and is unable to continue treatment, predisposing himself to the threat of MDR-TB. Moreover, malnourished individuals, on account of their impaired immunity, are more vulnerable to contracting infectious diseases like TB,” Ms. Cataldi informed.

The Global Stop TB Ambassador suggested that food baskets be provided to TB patients in primary health care facilities as an incentive to improve compliance with treatment.

Ms. Cataldi’s interactions with the media

Press conference: The NTP organized a press conference with Ms. Cataldi on April 8, 2010. During her interaction with the media, Ms. Cataldi appreciated the efforts of the government of Pakistan in the area of TB control and identified lack of awareness as the key impediment in way of preventing TB-related deaths.

“There is greater awareness about HIV because glamorous people are dying of AIDS today. TB, on the other hand, is seen as a shameful disease. People consider it uncivilized to have TB in an age of satellite communications, mobile phones and computers. It is, therefore, essential for us to engage and empower TB patients in the management of the disease,” Ms. Cataldi advised.
The Global Stop TB Ambassador recollected her experience of visiting Pakistan with gratitude. “The government of Pakistan, through NTP, is going a great job in eliminating the disease,” she remarked before moving on to acknowledge the efforts of the program in addressing MDR-TB and TB-HIV co-infection.

**Exclusive interview in ‘The News’:** ‘The News,’ a leading English newspaper of Pakistan, published an interview of Ms. Cataldi, who communicated a strong message for TB patients. “Don’t be ashamed if you have been diagnosed with TB. Speak about the disease, be responsible and follow your treatment every single day for eight months to obtain complete cure,” Ms. Cataldi advised patients through the interview. She warned against discontinuation of treatment as that could lead to MDR-TB, which has its own side-effects and is far more costly to treat.

**Interviews on FM 91 and Aaj TV:** Leading radio channel FM 91 and popular news channel Aaj TV interviewed Ms. Cataldi during her visit to Pakistan. The opportunity enabled the Global Stop TB Ambassador to share the purpose of her visit and to underline the significance of engaging policy makers and other key stakeholders in addressing the emerging threat of MDR-TB.

**Advocacy and consultative meetings**

**Consultative meeting on ‘Standardization of ACSM Resource Material’:** A consultative meeting on ‘Standardization of ACSM Resource Material’ was held at NTP. Chaired by the country head of KNCV, Dr. Abdul Ghafoor, the meeting was attended by the national and provincial staff of NTP and representatives of partner agencies including Mercy Corps, Basic Development Needs, Aga Khan Foundation and Association of Social Development.

The meeting called for standardization of ACSM resource material on TB. The participants endorsed the idea of establishing a technical committee for the purpose. They suggested that all content be approved by the said committee, which should also exercise power to determine whether additional resource material on a given subject is truly required. The meeting recommended revision of the National ACSM Strategy, based on lessons learnt.

**Consultative meeting with partners on World TB Day 2010:** A consultative meeting with partners and Provincial TB Control Programs was organized on February 13, 2010 in order to devise an action plan for commemoration of World TB Day 2010.

The meeting developed consensus on holding a week-long awareness campaign from March 23 to 29, and press conferences at the federal and provincial levels to bring the media on board for publicizing various activities. While partners were encouraged to engage young people by organizing various sport events, the provincial programs were advised to hold symposiums showcasing the success stories of cured TB patients.

**Advocacy meeting with media partners:** The importance of the media as a tool for raising awareness, shaping perceptions, forming opinions and influencing policy-makers in favour of sound public health interventions can hardly be over-emphasized.

Recognizing the importance of media engagement, NTP organized an advocacy meeting with its media partners on September 9, 2010 to garner support for their continued engagement in TB care and control activities and to highlight their role as partners in the fight against TB.

The participants shared details of their contributions to the success of the World TB Day 2010 campaign and extended assurances of support to NTP in the future as well.
World TB Day 2010
‘On the Move Against TB – Innovate to Accelerate Action’

World TB Day is commemorated worldwide in March every year. This year’s international theme for the observation was ‘On the Move Against TB – Innovate to Accelerate Action.’ The regional theme was ‘Together: Singing the Song of Stop TB.’ The campaign focused on individuals who have found new ways to stop TB and can serve as an inspiration to others. The campaign, which put a spotlight on TB patients who have embraced cure upon completion of treatment, utilized innovative means like singing, street theatres, etc., to raise awareness.

Some of the key activities carried out in connection with World TB Day 2010 have been summarized in subsequent paragraphs:

Musical gala: Inspired by the regional theme of World TB Day ‘Singing the Song of Stop TB,’ NTP organized a musical evening titled ‘Ghazla-e-Huay Rehna’ in collaboration with Atv, one of the largest terrestrial television networks of Pakistan.

The event featured a scintillating performance by Shabnam Majeed, who also utilized the platform disseminate messages on TB. The singer offered voluntary services for Stop TB activities, and with her motivational remarks, encouraged TB patients not to hesitate consulting a doctor or apprising their family members of the disease.

The program’s anchorperson Noor-ul-Hassan also shared basic information about TB and the options available for its diagnosis and treatment. “Although curable, TB kills two million people every year, mostly in the developing countries,” he said. Noor termed public awareness as the key to TB control. He encouraged patients to complete the 8-month treatment which is available free of cost. The venue of the event was branded with messages on TB symptoms and treatment.

MoU signing between NTP, STP and McDonalds: The National TB Control Program, the Stop TB Partnership Pakistan and McDonalds entered into a long-term public-private partnership, which was formalized through signing of a Memorandum of Understanding in Lahore.

Speaking on the occasion, the managing director of McDonalds pledged all-out support in lending impetus to the fight against TB. He committed that all outlets of the international fast food chain would be branded with TB messages during World TB Day 2010 campaign, and that a special corner would be designated for display and distribution of TB-related advocacy material among clients. It was also agreed that the entire staff of McDonalds would wear Stop TB badges during the campaign.

Islamabad Traffic Police as a partner: The National TB Control Program organized an orientation session for officers of Islamabad Traffic Police (ITP) at the ITP Headquarters to bring them on board as partners in the fight against TB.

As many as 40 police officers attended the training, learning basic facts about the symptoms, causes and treatment of TB and the initiatives being taken by NTP for control of the disease. They were informed that
diagnostic services and treatment of TB is available free of cost throughout the country at health facilities established by the government.

The orientation session was followed by development of an action plan detailing ITP’s participation in World TB Day 2010 activities. All ITP officers wore Stop TB badges and distributed IEC material among the general public during the World TB Day campaign. A special float displaying messages on road safety and TB moved around the city to disseminate information on the issues. A special radio program on TB was aired on ITP’s official radio station on March 24, 2010.

**Partnership with the media**

Recognizing the importance of the media, NTP engaged numerous television channels and publications as partners in the World TB Day 2010 campaign.

**Samaa TV:** The channel aired a special report and a documentary on TB. Aside from basic facts about TB, the programs included interviews of relevant public and private representatives and nationwide coverage of McDonald’s outlets, which were branded with TB messages as a mark of solidarity on World TB Day. Samaa TV also conducted interviews of the deputy manager (technical) of NTP and the Chair of STP. The channel’s morning show titled “Morning with Nadia Jamil,” featured an exclusive segment on the prevention and control of TB. Another talk show captured the views of representatives of all the four Provincial TB Control Programs.

**PTV:** The channel interviewed an NTP representative in a bid to sensitize viewers on the myths and misconceptions associated with TB and to apprise them of the availability of free diagnostic and treatment services throughout the country.

**Dawn TV:** The channel interviewed the National Program Manager of NTP during its live morning show.

**ATV:** ATV, Pakistan’s largest privately operated terrestrial television network with the second largest national viewership base, aired two programs on TB. Both programs served well to raise public awareness about the stigma associated with TB.

**CNBC:** Pakistan’s premier business channel CNBC stood by NTP through its active participation in the media campaign. The channel aired extensive coverage of the National Symposium of Stakeholders and the McDonald’s lucky draw event. It also aired the interviews of the National Program Manager of NTP and Ms. Anna Cataldi.

**Mehran TV:** A series of musical events were organized in collaboration with Mehran TV and Zong to raise public awareness in different districts of Sindh including Badin Thatta, Hyderabad and Larkana. Each event was attended by approximately 4,000 people.

**Medical Review:** A special supplement on World TB Day 2010 was published by Medical Review, a leading medical magazine of Pakistan. The supplement focused on the achievements and future plans of NTP.

**Ghazi magazine:** An exclusive interview of the National Program Manager of NTP was published by Ghazi Magazine. The interview highlighted the achievements of NTP in TB care and control.
Shifa Magazine: A detailed report on an activity organized by NTP at the Shifa College of Medicine was published in Shifa Magazine, a publication of Shifa International. The magazine also carried several articles and reports on TB.

Cricket for a cause

The global experience of using sport as a tool for promotion of health-seeking behavior motivated NTP to organize a twenty-20 cricket tournament between different universities of Islamabad and Rawalpind from March 24 to 31, 2010.

The participating universities were Hamdard University, Riphah International University, SZABIST, Preston University, Comsats, FAST University, Bahria University, COMWAVE (Sarhad University), National University of Modern Languages, Iqra University, Federal Urdu University, and Mohammad Ali Jinnah University.

The purpose of the matches was to sensitize youth about TB. The cricket ground was branded with banners and streamers flashing TB-related messages. Information, Education and Communication (IEC) material was also distributed among students, players and spectators.

Empowering TB patients: national symposium

Like every year, a national event was organized to commemorate World TB Day on March 24, 2010. Since the focus of the ‘National Symposium of Stakeholders’ was on engagement and empowerment of TB patients, an effort was made to bring the stories of cured TB patients to the limelight.

In an emotionally-charged voice, Mohammad Afzal from Quetta shared the sweet and sour memories of his journey—from health to illness, followed by complete recovery, with a rapt audience.

“When diagnosed with TB, my suffering was not confined to enduring the trauma that accompanies compromised health; I was also kicked out of my job. Suddenly, life came to a grinding halt. Even though I initially had no clue about how I would feed and clothe my children and manage the household expense, I seized the opportunity of recovering from the disease by strictly adhering to the 8-month treatment short-course. Today, I am a healthy man who owns a bicycle repair shop, and above all, stands tall as a beacon of hope for all patients who are currently suffering from the disease,” Afzal recollected amidst thundering applause.

Director General Health Dr. Rashid Jooma was the chief guest on the occasion. Addressing the ceremony, he commended NTP for contributing to strengthening of the health system. He said NTP is one of the few programmes of the Ministry of Health which is horizontally aligned with primary health care.

“The people of Pakistan must have access to a uniform standard of health services that are delivered to uphold the objectives of justice and equity. This cannot happen in the absence of a system that has the capacity to deliver services,” Dr. Jooma said, adding that it is issues like these which the National Health Policy aspires to address.
Key stakeholders including bilateral and multi-lateral donors, national and international NGOs, policy makers, development partners, academia and the media attended the event. In the end, the chief guest presented shields to acknowledge the efforts of partners including health reporters, theatre group artists and other stakeholders in the fight against TB.

**Launch of booklet on success stories of TB patients**

The ‘National Symposium of Stakeholders’ also packaged the launching of a compilation of success stories focusing on the lives and events of four TB patients who have obtained complete recovery from the disease and have reverted to a healthy and normal life.

The booklet was launched by Director General Health Dr. Rasheed Jooma and two TB patients. The booklet encourages TB patients to have their voices heard and to encourage other patients to complete their treatment.

**Launch of TB song at Al-Hamra**

The video of TB Song ‘Aao Irada Karain, Mil Key Yeh Wada Karain,’ was launched at the release of eminent singer Mr. Tariq Tafu’s new audio album ‘Mapian Da Shan Wakhra.’ The song also has been included into the album, which will be released worldwide.

The event was held at Al-Hamra, Lahore, on June 3, 2010, with approximately 4,000 people in attendance. Many celebrities came forward on the stage to communicate messages on TB. Prominent among the artists were Ghulam Ali, Rahat Fateh Ali Khan, Abrar-ul-Haq and Shahida Mini.

The TB Song was first developed and launched on World TB Day 2009. Written by Mr. Amjad Islam Amjad, the song has been sung by eminent artists including Jawad Ahmed, Amanat Ali Khan, Shabnam Majeed and Tariq Tafu, who is also its composer.

A stall offering IEC material and boards with messages on DOTS and availability of free diagnostic and treatment services in centres established by the government were prominently placed at the venue.

**City branding**

All major cities of the country were branded with streamers, banners and billboards inscribed with messages dispelling the myths and stigma associated with TB.

**Fundraising qawwali night**

In continuation of its efforts to improve the quality of life of people suffering from TB, the Stop TB Partnership Pakistan (STP) organized a fundraising ‘Qawwali Night’ in collaboration with Kay & A (Pvt.) Limited, Zong and the Faisalabad Chamber of Commerce, with NTP providing technical support.

The event featured a scintillating performance by Mr. Amjad Sabri, who disseminated relevant TB-related messages during the show alongside anchorperson Mr. Tauseeq Haider. Leading industrialists, representatives
of NTP, private sector NGOs, board members of STP and people from different walks of life attended the show, with celebrities like Khalid Abbas Dar, Kanwal Naseer and Stop TB Ambassador Behroz Sabzwari adding colour with their presence. Generous donations were made to enable STP to work for the elimination of TB in Pakistan.

Established with the assistance of the Stop TB Partnership EMRO, the Stop TB Partnership Pakistan is a non-governmental body comprising representatives of National and Provincial TB Control Programs, TB patients, multilateral agencies, donors, media, private sector, academia and NGOs. The STP is an indigenous means of resource mobilization and advocacy for TB control activities in Pakistan and is chaired by the Vice Chancellor of Dow University of Medical Sciences, Karachi.

The Stop TB Partnership Pakistan convened three meetings during 2010. These meetings were held on February 24, April 6 and July 31, 2010.

Fundraising movie show

Sixty percent of Pakistan’s population consists of youth, who are one of the key target audiences of NTP. Recognizing the role of young people in saving the lives of millions dying of TB, a fund-raising movie show was organized by STP in collaboration with NTP and the Shifa College of Medicine.

The movie show was preceded by an awareness session in which the participants were briefed about the work of NTP and the prevalence of TB at the global and national levels. The event offered a unique blend of education and entertainment.

The premises of Shifa International were branded with banners inscribed with messages highlighting the role of youth in TB control. Information material including brochures and posters were also disseminated among students.

Empowerment of TB patients

Pakistan, like many other developing countries in the region, has little experience of directly working with TB patients. A large population of TB patients, therefore, is not connected with TB control services. While there are numerous factors that have contributed to the existing disconnect, the absence of TB Patients’ Groups or an organization of TB patients is seen as one of the major impediments.

Identifying TB patients, bringing them together in the shape of groups or under an organization, and linking them with health care services in the public and private sectors can play a significant role in improving access to TB care and control. To this effect, NTP initiated a number of patient empowerment activities during 2010; these are summarized in the subsequent paragraphs.
Orientation workshops for TB patients: A series of orientation workshops for TB patients were organized in all four provinces as indicated in Table 15.

Table 15: Orientation workshops for TB patients

<table>
<thead>
<tr>
<th>Dates (2010)</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 22</td>
<td>KPK</td>
</tr>
<tr>
<td>July 1</td>
<td>Lahore</td>
</tr>
<tr>
<td>September 22</td>
<td>Quetta</td>
</tr>
<tr>
<td>September 24</td>
<td>Karachi</td>
</tr>
<tr>
<td>September 28</td>
<td>Lahore</td>
</tr>
</tbody>
</table>

These workshops were organized for the establishment of TB Patients’ Groups and development of an action plan for strengthening of these groups. The sessions also served to empower TB patients. Alongside acquiring basic TB-related information, the participants learnt about their own roles and responsibilities as TB advocates. The workshops offered a unique platform for TB patients to share the problems that they encounter in their daily lives, as well as during the course of their treatment.

Development of IEC material on patient empowerment: The ACSM Unit developed posters on the TB Patients’ Charter and brochures on the roles and responsibilities of TB patients. These posters and brochures were intended for patients as well as health care providers. The material was widely disseminated to empower patients on the one hand, and to inform people about the rights of TB patients and other related issues, on the other.

Provision of technical assistance

The ACSM Unit takes pride in being able to offer technical assistance to other countries in the region. Like previous years, the Unit provided technical assistance to WHO Cairo in Jordan for preparing its ACSM Proposal for Global Fund Round-9 grant.

Way Forward

Empowerment of TB patients: The empowerment and involvement of current and former TB patients and affected communities in the delivery of TB services is still an underdeveloped area in the fight against TB. Patient empowerment is a phenomenon defined as “enabling TB patient to take control of their lives, making right, healthy and timely decisions by understanding their rights and responsibilities, starting from initiation to monitoring and evaluation of actions, programs and policies.” The term encompasses the transfer of knowledge and power to TB patients; filling of service delivery gaps; and development of patient-friendly environment and policies so that patients are in a position to assume greater control of their lives.

The NTP’s future activities will focus on enhancing the capacity of marginalized TB patients, their families and communities. This will be pursued in order to enable them to effectively participate in meeting their practical and strategic needs, and to contribute to and benefit from the society.

Engagement of youth volunteers: The engagement of youth volunteers is another key strategy for social mobilization. Opportunities will be created to motivate and engage young people in health-related programs. To this end, NTP is envisaging the establishment of a structured national youth volunteers program. Once established, it will launch a massive campaign for induction of youth volunteers from across the country.
Building of partnerships: The significance of promoting partnerships in health can hardly be over-emphasized. Since it is unrealistic to expect existing public health facilities to shoulder the delivery of effective health care to all, partnerships need to be promoted to ease the burden on the health care system and to increase access to services.

The NTP plans to expand linkages with various vertical programs, parastatal organizations, educational and medical institutions, as well as non-traditional partners as part of its efforts to rid Pakistan of TB. These partnerships have already played a key role in: a) Informing people on where to seek help, b) Influencing people to come forward for diagnosis; and c) Sharing information about those who may be suffering for want of appropriate guidance.

Measuring the impact of ACSM interventions: A critical review of ongoing ACSM interventions will be conducted to assess the impact of these activities on TB care and control in Pakistan.
Picture Gallery
The Global Stop TB Ambassador Ms. Anna Cataldi during a meeting with the Minister for Health Mr. Makhdoom Shahabuddin.

Ms. Anna Cataldi, Minister for Health Mr. Makhdoom Shahabuddin and Federal Secretary Health Mr. Khushnood Akhtar Lashari during a meeting at the Ministry of Health.

Ms. Cataldi attending a meeting of the Board of the Stop TB Partnership (STP) Pakistan at Dow University of Health Sciences, Karachi.

The Chair of STP Prof. Dr. Masood Hameed Khan presenting a memento to Ms. Anna Cataldi at the end of the STP Board meeting.

Ms. Cataldi being briefed during a visit to the Ojha Institute of Chest Diseases, Karachi.

Ms. Cataldi, along with officials of NTP, visited McDonalds for a lucky draw to determine the winners of a TB quiz organized to promote public awareness about the disease.

Director General Health Prof. Dr. Rasheed Jooma presenting a shield to WHO Country Representative Dr. Khalif Bile at the World TB Day symposium.

Director General Health Prof. Dr. Rasheed Jooma presenting a shield to eminent media personality Kanwal Naseer at the World TB Day symposium.

Director General Health Prof. Dr. Rasheed Jooma presenting a shield to an officer of the Islamabad Traffic Police at the World TB Day symposium.

A view of the audience attending the National Symposium of Stakeholders organized in connection with World TB Day 2010.

A TB patient launching a compilation of success stories focusing on the lives of TB patients at the National Symposium of Stakeholders.
A KNCV delegation led by its Country Head in Pakistan Dr. Abdul Ghafoor during a meeting with the National Program Manager of NTP Dr. Ejaz Qadeer.

Participants of a training session on TB culture and Drug Susceptibility Testing (DST).

Doctors attending a three-day training on management of childhood TB in line with NTP’s national guidelines.

Laboratory technicians attending a training session on Core TB DOTS at the Rawalpindi Leprosy Hospital.

A staff member at work at the National Reference Laboratory for Tuberculosis located at the National Institute of Health in Islamabad.

A view of sample storage facilities at the National Reference Laboratory for TB.
A training workshop on Drug Management Guidelines underway at the WHO Country Office.

A WHO official presenting a certificate to one of the participants at the conclusion of the workshop on Drug Management Guidelines.

Participants of the 6th meeting of the Sub-group on Public-Private Mix for TB Care and Control held in Istanbul, Turkey, from February 16 to 18, 2010.

Participants of a post-graduate training course organized by the Research Unit of NTP at the IUALTD Conference held in Berlin in November 2010.

Inspired by the global experience of using sport as a tool for promotion of health-seeking behaviour, the ACSM Unit of NTP organized an inter-university cricket tournament from March 24 to 31, 2010.

Officers of Islamabad Traffic Police (ITP) at the close of an orientation session organized by NTP to bring them on board as partners in the fight against TB.
Minister for Health Mr. Makhdoom Shahabuddin addressing the launching ceremony of the TB Prevalence Survey in Islamabad on December 13, 2010.

People included in the TB Prevalence Survey arrive at the field survey site for TB symptoms’ screening.

Director General Health Dr. Assad Hafeez, Deputy Chief of Mission of the US Embassy Dr. Stephen Engelken and Minister for Health Mr. Makhdoom Shahabuddin at the launching ceremony of the TB Prevalence Survey.

An in-depth interview of TB suspects is conducted for collection of necessary background information for the TB Prevalence Survey.

Review meeting of the TB Prevalence Survey pilot cluster in progress.

Laboratory technicians attending a capacity-building training organized in connection with the TB Prevalence Survey.