



Annual Report 2013



National TB Control Program
Ministry of National Health Services Regulations &
Coordination
Islamabad, Pakistan



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Acronyms

ACSM Advocacy, Communication and Social Mobilization

AIDS Acquired Immunodeficiency Syndrome

AJK Azad Jammu and Kashmir

AKHSP Aga Khan Health Services Pakistan

BCC Behavior Change Communication

BDN Basic Development Needs

CBOs Community-Based Organizations

DCO District Coordination Officer

DFID Department for International Development

DOTS Directly Observed Treatment Short-course

DTC District TB Coordinator

EDO (H) Executive District Officer-Health

EQA External Quality Assurance

GFATM Global Fund to Fight AIDS, Tuberculosis and Malaria

GLRA German Leprosy and TB Relief Association

GS Green Star

GTZ Gesellschaft für Technische Zusammenarbeit

HIV Human Immunodeficiency Virus

IACC Inter-Agency Coordination Committee

IUATLD International Union Against TB and Lung Diseases

JATA Japan Anti-Tuberculosis Association

JICA Japan International Cooperation Agency

KPK Khyber Pakhtunkhwa

LHWs Lady Health Workers

M&E Monitoring and Evaluation

MCI Mercy Corps International

MDGs Millennium Development Goals

NAs Northern Areas

NTP National TB Control Program

PHC Primary Health Care

PPM Public-Private Mix

PPP Public-Private Partnership

PR Principal Recipient

PTP Provincial TB Control Program

TAF The Asia Foundation

TB Tuberculosis

TGF The Global Fund

UC Union Council

UN United Nations

MoNHSR&C Ministry of National Health services Regulations & Coordination

WHO World Health Organization

Message of Director General National Health Services Regulations & Coordination



TB is a public health problem across the globe which is more marked in developing countries. WHO declared TB is global emergency in 1993 recommending DOTS strategy to combat this threat. Government of Pakistan declared TB as national emergency in 2001.

National TB Control Program started implementation of DOTS strategy across the country through PHC and in year 2005 program was able to provide TB diagnostic and management services in 100% public sector, health outlets keeping in view the health seeking behavior of masses the role of private sector becomes more pivotal hence program is actively involving the private sector in the management of tuberculosis.

Multi Drug Resistance is another emerging threat and NTP is striving hard to combat this threat both with indigenous resources and donor support.

Provision of services to marginalized and vulnerable groups is another land mark achievement of program. Strengthening of supportive services like laboratories at various levels focusing on quantity and quality as per international standards by NTP is commendable.

I on behalf of Ministry of National Health Services Regulation and Coordination acknowledge the concerted efforts of program along with national and international partners and expect the same commitment and contribution from all the stakeholders. I would also like to extend my gratitude to provincial and district teams. I wish NTP team for success in their future endeavors.

Message of National Program Manager



We Pledge Zero TB Deaths till 2020

The landscape of public health in Pakistan is dotted with numerous challenges, Tuberculosis (TB) control being one of them. The country harbors the 5th highest burden of TB in the world, accounting for 65% of the total disease burden in the Eastern Mediterranean Region. According to National Prevalence Survey report, the annual incidence of TB in Pakistan is 276/100,000 population for all ages and forms.

TB is responsible for 5.1% of the national disease burden in Pakistan. Recognizing the enormous socioeconomic implications of the disease, the Government of Pakistan responded to the situation by declaring TB a national health emergency in 2001 and endorsing WHO recommended DOTS (Directly Observed Treatment Short course) Strategy to accelerate efforts for its control. 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.

100% universal DOTS coverage in health facilities within the public sector health delivery system was achieved in 2005 followed by implementation of Stop TB Strategy in 2006, pledging to put extensive efforts to encompass all components of TB including improved diagnostics, MDR-TB, PPM, ACSM and TB/HIV.

This annual report presents a snapshot of TB control activities undertaken during 2013. Our plan of action for the future focuses on key components of the Post 2015 Global TB Strategy as envisaged in NTP Strategic Plan "Vision 2020". NTP envisions "Universal Access to TB Care" and aspires for "Zero TB Death" in Pakistan.

I take this opportunity to acknowledge the commitment of the Ministry of National Health Services, Regulations & Coordination (formerly, the Ministry of Inter-Provincial Coordination), the Provincial TB Control Programs, national and 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 move forward in this struggle, we must concede that a lot still remains to be done—with greater momentum, precision and dedication—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, Pakistan.

Executive Summary

Tuberculosis (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 15-59 age bracket, representing a major economic burden for patients and ultimately for countries. This aspect is particularly relevant to the context of Pakistan.

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

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

HEALTH SITUATION:

In Pakistan the distribution of years lost by causes is mainly due to communicable diseases (64%) followed by non-communicable disease (26%) and injuries (9%). The under-5 mortality rate (per 1000 live births) is 72, whereas the maternal mortality ratio (per 100,000 live births) is 260 in 2011. The prevalence of HIV (per 100,000 population) is 72. Pakistan ranks as the 5th highest TB burden country in the world, 7th globally among the highest number of people living with diabetes and 9th globally in terms of tobacco use among men, which is continuously increasing.

Health infrastructure: Public sector

The health system is generally weak and services are highly unregulated. Communicable diseases are still the leading causes of morbidity and mortality and non-communicable diseases are on the rise. The public sector is the main source for the provision of preventive care and hospital care to the urban and rural populations. In the provision of curative care for minor ailments, the public sector caters services to around 25% of the population. Health services in the public sector are provided by various types of general and specialized hospitals. There is also a network of primary health care outlets including Rural Health Centers (RHCs), Basic Health Units (BHUs), dispensaries and Maternity and Child Health (MCH) centers, which are mainly under the control of the provincial departments of health. Other organized semi-public sectors include health care institutions established and run by armed forces, police, railways, fauji foundation, municipal authorities, and employees' social security institution. Under the constitutional devolution process in 2001, districts were the implementing units and Executive District Officer Health was in charge of all preventive, promotional and curative health programs and services. In each district usually there is one District Headquarter (DHQ) Hospital, three to four Tehsil Headquarter (THQ) Hospitals, 10 to 15 Rural Health Center (RHC) and 50 to 100 Basic Health Units (BHU). RHC and BHU are first level Primary Health Care facilities and generally deal with uncomplicated routine cases, in addition to preventive and promotional activities. DHQ and THQ level hospitals are secondary level facilities and are involved in the treatment of less complicated cases. There are Tertiary Level Hospitals in Provincial capitals and in some large districts, which deal with referred and complicated cases. According to MoH data, the statuses of the various health facilities are as under:

Status of health facilities

	DHQ	THQ	RHC	BHU	TCH	Others	NGO	PPM (GF)	Total	Population	Avg.p op/B
Punjab	32	75	286	7	14	58	25	113	610	100,348364	164,5
Sindh	15	48	96	16	9	40	43	57	324	41,682035	128,6
KPK	24	16	74	9	5	51	25	30	234	24,310,927	104,3
B.Tan	28	1	40	29	1	10	2	6	117	9,007,53	76,98
FATA	7	2	5	0	0	9	0	0	23	4,270,231	185,6
GB	4	0	2	1	0	11	4	0	22	121,7469	55,33
AJK	7	7	21	6	0	11	0	5	57	4,286,911	75,20
ICT	0	0	2	0	4	1	0	2	9	200,000	222,2
Total	117	149	526	68	33	191	99	213	1396	18,51,22989	132,7

Health infrastructure: Other health sector outlets

This mainly includes; Hospitals and health care centers being managed by organizations such as the Pakistan Armed Forces, which has more than 50 hospitals with mostly specialized facilities, Social Security having a chain of 50 hospitals and health centers in the country, and Fauji Foundation with almost 70 hospitals and health centers. In addition, there are many health facilities in the country, which are being managed by the department of Police and Jails, Railway, etc. These health facilities have an enormous potential to contribute to TB care delivery in the country.

Health infrastructure: Private sector

The private sector is large and unregulated comprising both qualified and unqualified service providers in the disciplines of Allopathy, Homeopathy and *tibb*(Traditional Herbal Medicine). The private sector caters to about 75% of the population's curative primary healthcare needs in addition to low cost hospital care. Qualified providers include the not-for-profit NGOs as well as for-profit private sector institutions and individual practitioners. The not-for profit NGOs range from small-scale local setups to a countrywide network of health outlets such as PRSP/PPHI (managing about 4,000 primary health care facilities in the country). The technical and managerial capacity of the NGOs varies widely. In context of TB control services there is a vast network of health centers country-wide, being managed by the Pakistan Anti-TB Association (PATA), which are exclusively providing TB care services.

1. Epidemiology

TUBERCULOSIS CONTROL: BURDEN AND EPIDEMIOLOGY

Tuberculosis (TB) is a serious, debilitating and highly contagious disease affecting millions of people worldwide and if treated properly, is curable. Until the mid-20th century, it remained a leading cause of death in the developed world, and still a public health problem in many developing countries. Treating TB is challenging, even in developed countries where there is a modern health care system and infrastructure.

Pakistan ranks 5th amongst the 22 HBCs and 4th among 27 MDR high burden countries in the worldⁱ. Pakistan contributes about 65% of the tuberculosis burden in the Eastern Mediterranean Region. According to national prevalence survey results (2010-11), the incidence of 'all type' TB cases in Pakistan is 276/100,000 per year or around 420,000 new cases each year. The prevalence of the disease is much higher and is estimated at 348/100,000 population or 670,000 casesⁱⁱ. In 2012, 285,410 TB cases (all types) were notified in Pakistan. According to the WHO Global report 2013 estimates based on surveillance data, the estimated prevalence was 670, incidence 410, HIV positive TB incident cases 3.8 TB is responsible for 5.1 percent of the total national disease burden in Pakistan and its impact on socio economic status is substantialⁱⁱⁱ as about 75% of TB cases fall in productive age (15-45 year) group.

Globally, 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 Kinawa, 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 (WHA) 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.

According to Drug Resistance Survey (2012-13), the estimated incidence of DR TB was 4.3% among new TB cases and 19.4% among retreatment TB cases.

The NTP has addressed the reduction of death rate i.e. the number of cases that died during the course of treatment out of the total number of cases under treatment was 2% in 2012. However, the case fatality rate i.e. the number of cases that died due to TB out of the total number of incident TB cases in the country is not possible to measure in Pakistan due to the unavailability of vital registration data in the country. The mortality rate i.e. the number of total deaths due to TB per 100,000 population annually was 34/100,000 in 2012.

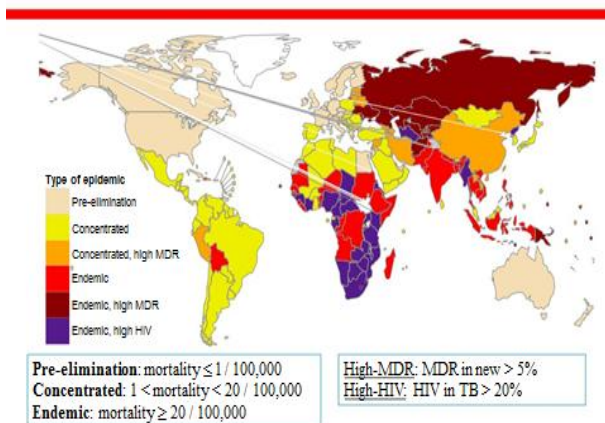
2. NATIONAL TB CONTROL PROGRAM

MISSION: “A TB Free Pakistan”

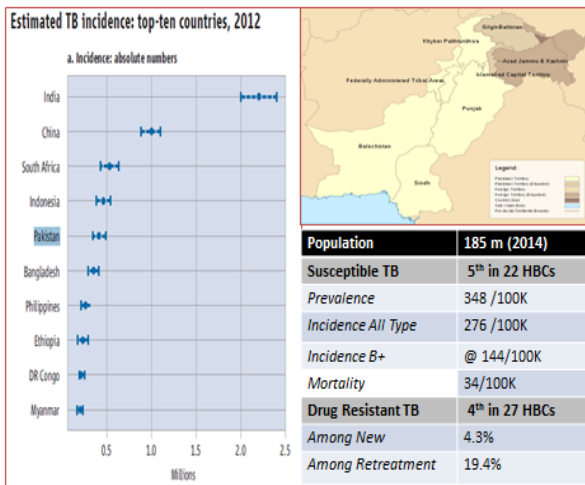
VISION: “Universal Access to TB Care achieving Zero TB Death”

GOAL: “To reduce the prevalence of TB by 50 % by 2025 in comparison to 2013”

TB EPIDEMIC GLOBAL



Situation of TB in Pakistan



Tuberculosis is a major public health problem in Pakistan. Every Year 420000 new persons develop TB and 38000 die due to the disease. Tuberculosis is more common in slums, prisons, refugee camps and marginalized populations. Poverty, Malnutrition, overcrowding and poor living conditions are major cause of TB.

Government of Pakistan has declared TB as a National Emergency and adopted DOTS Strategy in 2001. The National and Provincial governments allocated resources for the TB Program.

The objective of the Program is to stop the spread of TB and start decreasing the no of cases National TB Control Program has performed following functions.

- National TB Control program (NTP), working under the Ministry of National Health Services, Regulation & Coordination, is fighting against Tuberculosis in the country to reduce mortality, morbidity and spread of TB infection. TB control program is integrated with Primary Health Care (PHC) system implemented by the district health authorities with the support of Provincial TB Control Programs (PTPs).
- NTP provides national stewardship to fulfill global commitment towards the MDGs. NTP acts as a collaborating body at the central level for development of uniform policies and strategies, facilitating the donor liaison at national and international levels. NTP at this point in time is implementing Global Fund supported grant through a mechanism of single stream of funding (SSF) as Principal Recipient.

NTP AND MDG TARGETS:

National TB Control Program is standing out as one of the programs achieving MDG targets regarding TB prevalence, mortality, case notification and treatment success in Pakistan.

Major achievements of NTP:

- More than 2.1 million TB patients have been diagnosed and treated **free of cost** with quality assured anti TB drugs in both public and private sector across the country since 2001 through a network of 1500 quality assured microscopy centers and 5000 treatment centers.
- Approx. 300,000 TB cases were notified to National TB Control Program and Treatment Success Rate remained at 91% during 2013.

Drug Resistance -TB:

- 3140 MDR-TB patients were enrolled in 18 PMDT sites during 2013 and 2100 are under treatment. 100% DR TB patients are getting social support to ensure treatment adherence and increase treatment success.
- 15 Gene-Xpert and have been installed till 2013 and rapid expansion is in progress.

Pediatric TB:

Country wide expansion on management of pediatric TB in 2013. 28113 childhood TB cases were detected and put on treatment in 2013.

E -Surveillance system:

Availability of case based online data of TB patients through electronic surveillance system.

Monitoring & Evaluation:

The programmatic interventions are regularly monitored by all tiers of the program management

to ensure quality implementation, reinforced by national and international review missions

TB Drug Management:

- Availability of first line drugs (FLD) and second line drugs (SLD) till 2017
- Electronic Drug/Logistics/Warehouse management information system (TB-DMIS)

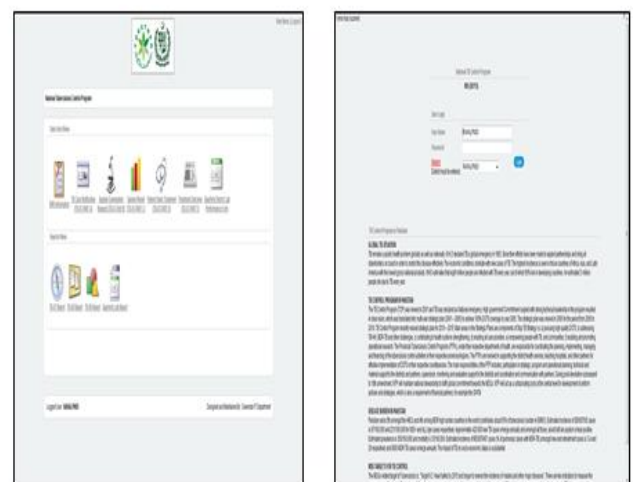
Legislative Work:

- Preparation and presentation of *Bill for TB as notifiable disease*
- Preparation and presentation of *Bill for over the counter (OTC) sale of ATT drugs*

Drug Resistance Survey:

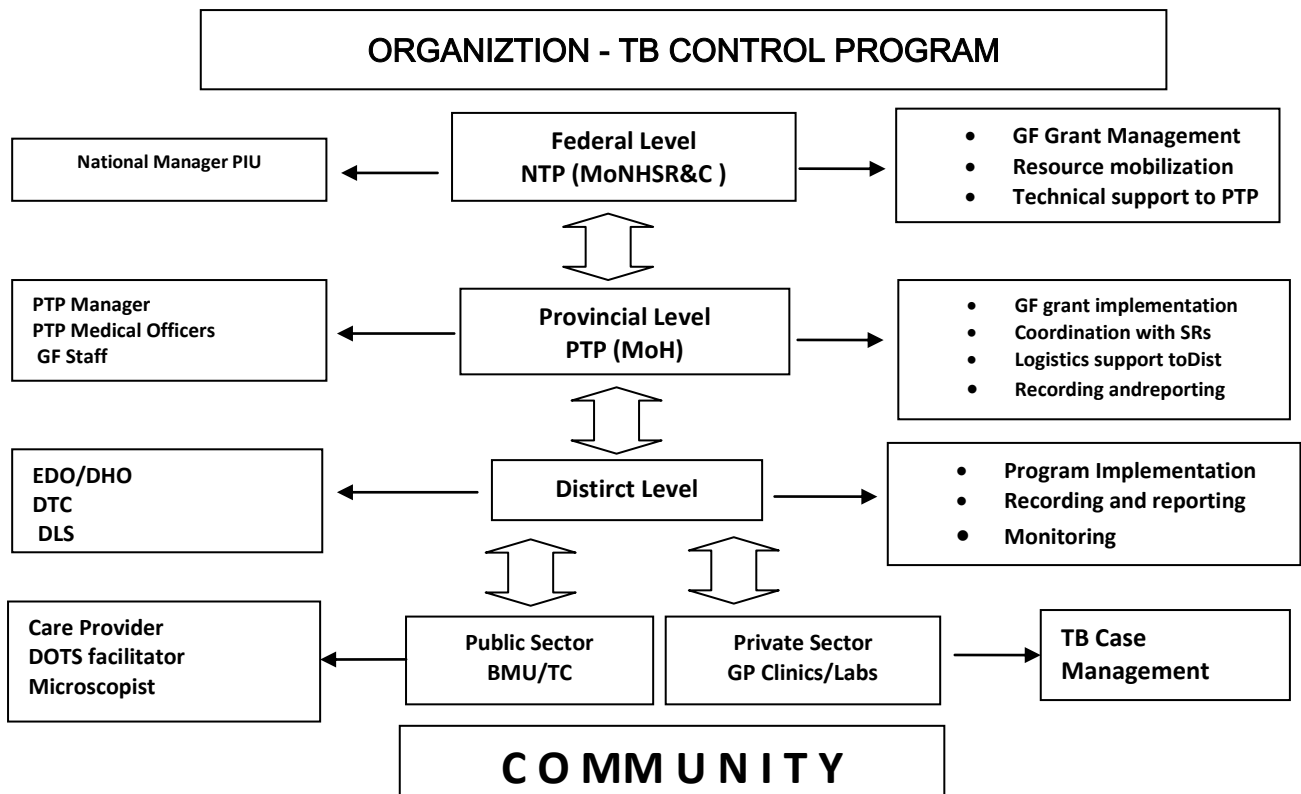
NTP has started drug resistance survey in 2012 to assess the disease burden of drug resistant TB cases in the country.

E SUREVEILLANCE – MIS DOTS



NTP arrangements for coordination of TB control activities in the country

NTP has the stewardship role in TB control efforts in the country. The figure below reflects the organization of TB control activities in the country.



OIG VISIT OCTOBER 2013

The Inspector General, Office of the Inspector General, Global Fund, Audit Manager, OIG GFATM, OIG Team leader and Fund Portfolio Manager GFTAM visited Pakistan in October 2013. The Inspector General in his address said that his visit to Pakistan within Five weeks of assumption of his duties reflects the importance of Pakistan. He also thanked the three PRs for extending hospitality, cooperation and facilitation. The team had nothing but compliments for the PRs the way they engaged with them. He termed his visit to Leprosy Center as fascinating. Regarding the visit he said that three things struck him– the facility was immaculate, it was very well organized and the third is the pride with which the people were working there, which you could see and feel. He said this is a good example of how TB needs to be tackled.

OIG Team leader told that there are five objectives for carrying out this audit:

- Queries identified and properly assessed and correctively arrived
- Main Contributing factors identified and properly assessed,
- Key mitigating actions for queries implemented adequately, effectively and timely
- Resultant assessment applied in the decision making related to the grant

He told about the review process

- Conduct an assessment tool at the GF Secretariat - review of documents and discussions with country team
- In country: Validation, Interviews, site visits and the big meeting.

He told that GF has categorized risks in four main areas –

- Programmatic and Performance risks,
- Financial and Fiduciary risks,

- Health Services Products risks
- Governance, Oversight and Management risks.

National TB Program and Mercy Corps: The key mitigating actions which are in place:

- New medicine warehouse and a commitment to reserve funds for buffer stock
- No stock-out reported
- Giving his general assessment he very specifically said that the TB Program in Pakistan is very good.
- National TB guidelines for TB and MDR TB are aligned to latest WHO guidelines.
- Guidelines are available at facilities and the knowledge of doctors about the guidelines is good
- Regular meetings are being held at national, provincial and district levels as well as between public and private sectors. Inter-provincial and intra-district meetings are also held
- Mechanism to oversee the MDR TB is in place
- No stock outs in the last two years
- Availability of drugs in the private sector
- Role of health workers especially for Mercy Corps and Greenstar in helping General Practitioners

Challenges:

- There is no incentive for GPs to follow the guidelines. PR cannot instruct the GP to follow the guidelines. He also informed the house that out of 7 GPs visited only one was not following the guidelines.
- The PRs should hold regular meetings with SRs to enhance mechanism to ensure adherence of GPs to the national guidelines.



INTERNATIONAL TB REVIEW MISSION: NOVEMBER, 2013

In a recent international review of TB care activities in the country, several set of recommendations are given to the program in order to address the TB control challenges in the country. The major set of recommendations are towards developing long-term plan for sustainable financing of the different components of the TB program and the need of a strong NTP to support the various TB interventions in the country like, active case finding & contact tracing as per WHO recommendations, re-examine role of Xpert MTB/RIF in TB case finding, especially SS- and extra-pulmonary and introducing the revised WHO TB definitions and reporting framework. In addition, there are several recommendation to address major program components such as; laboratory by adopting SOPs for culture & DST and infection control and Strengthen supervision, childhood TB by improving case detection in children (eg, symptomatic screening at school entry; use of gastric aspirate) and systematic contact screening, interventions in monitoring and evaluation, PMDT interventions such as procurement of GeneXpert machines to match the continued roll-out of PMDT centres and consideration of short-term regimen and interventions in infection control, TB/HIV and ACSM.



The NSP Vision 2020 has ensured that the strategic interventions proposed in the plan should be in-line with the major recommendation of the international review mission.

NATIONAL STRATEGIC PLAN FOR TB “VISION 2020”

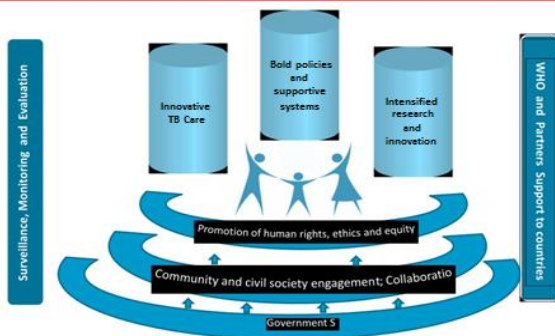
NTP has initiated to review and develop national strategic plan for effective TB care and control in the light of Post-2015 *Global Stop TB Strategy*. The targets set for the next seven years (*Vision-2020*) may appear challenging, but the demonstrated capacity and ability of the National TB Control Program under Government stewardship and strong collaboration of partners duly justifies these targets to be feasible and achievable.

Goal: To reduce the prevalence of TB by 50 % by 2025 in comparison to the prevalence of TB in 2013.

Proposed Pillars:

- 1 – Innovative TB care
- 2 – Bold Policies and Supportive Systems
- 3–Intensified research and innovation

POST 2015 GLOBAL TB STRATEGY – PROPOSED 3 PILLARS



2nd National Consultative Meeting
NATIONAL / PROVINCIAL / REGIONAL STRATEGIC PLANS
“VISION 2020”
July, 2013 - Islamabad



Objectives:

- To increase the contribution of public sector TB control program funding at least 3 times by 2016 onwards in comparison to 2013
- To increase the number of notified bacteriologically confirmed pulmonary TB cases from 122679 in 2013 to at least 330,000 by 2018 while maintaining the treatment success rate at least 93%
- To reduce, by at least 5% per year from 2018 onwards, the prevalence of MDR-TB among TB patients who have never received any TB treatment
- To optimize and sustain the programmatic deliverables (technical and managerial) at operational level by 2018

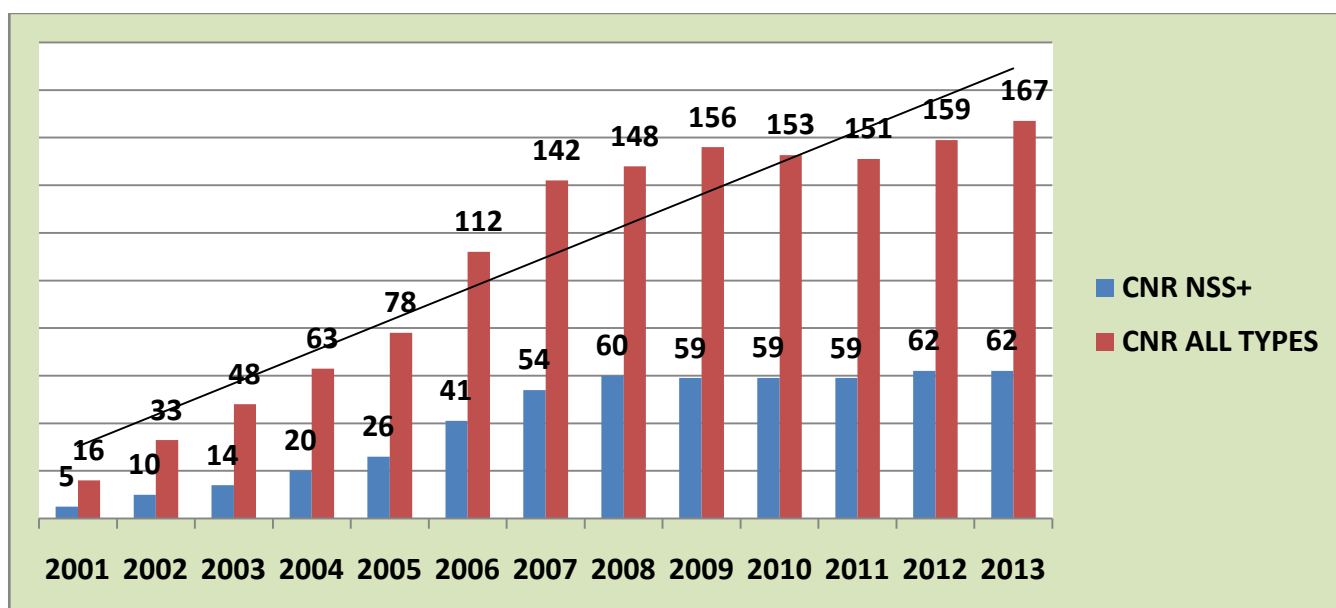
Global Consultative Workshop
NATIONAL / PROVINCIAL / REGIONAL STRATEGIC PLANS
“VISION 2020”
November, 2013 - Italy



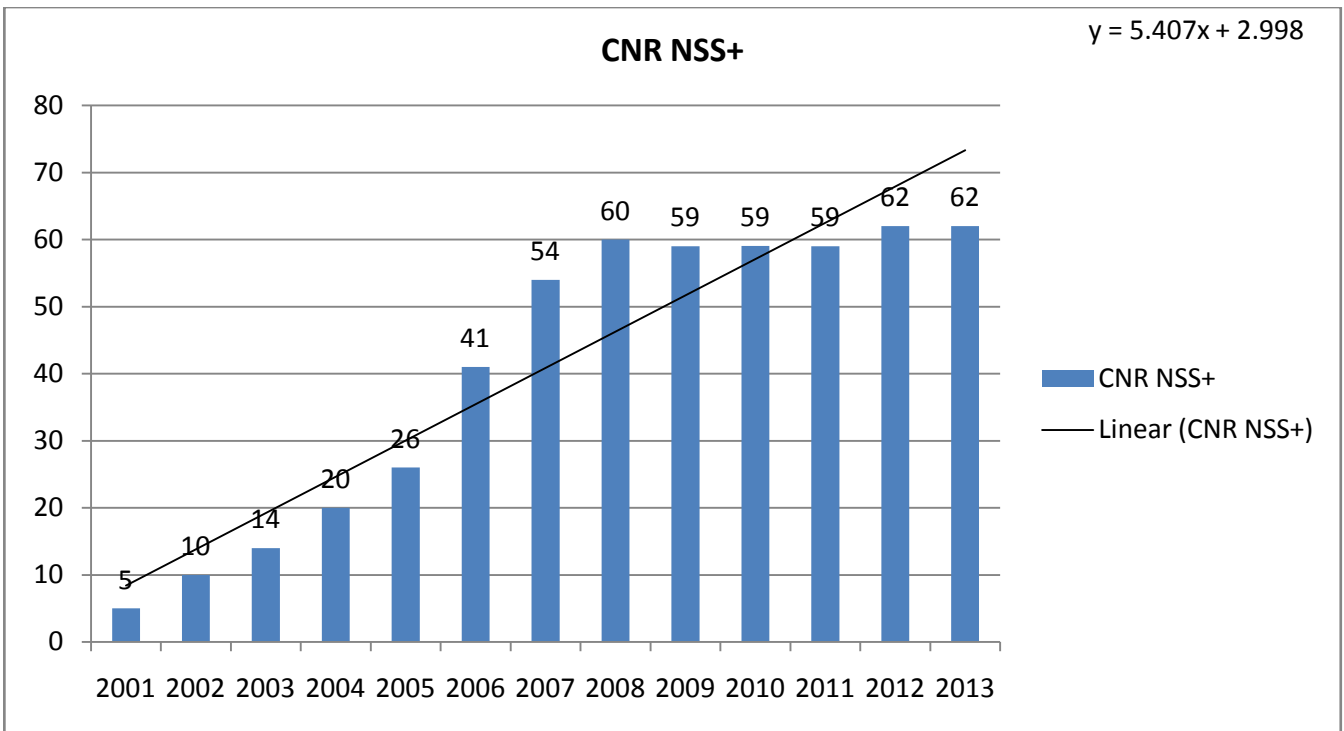
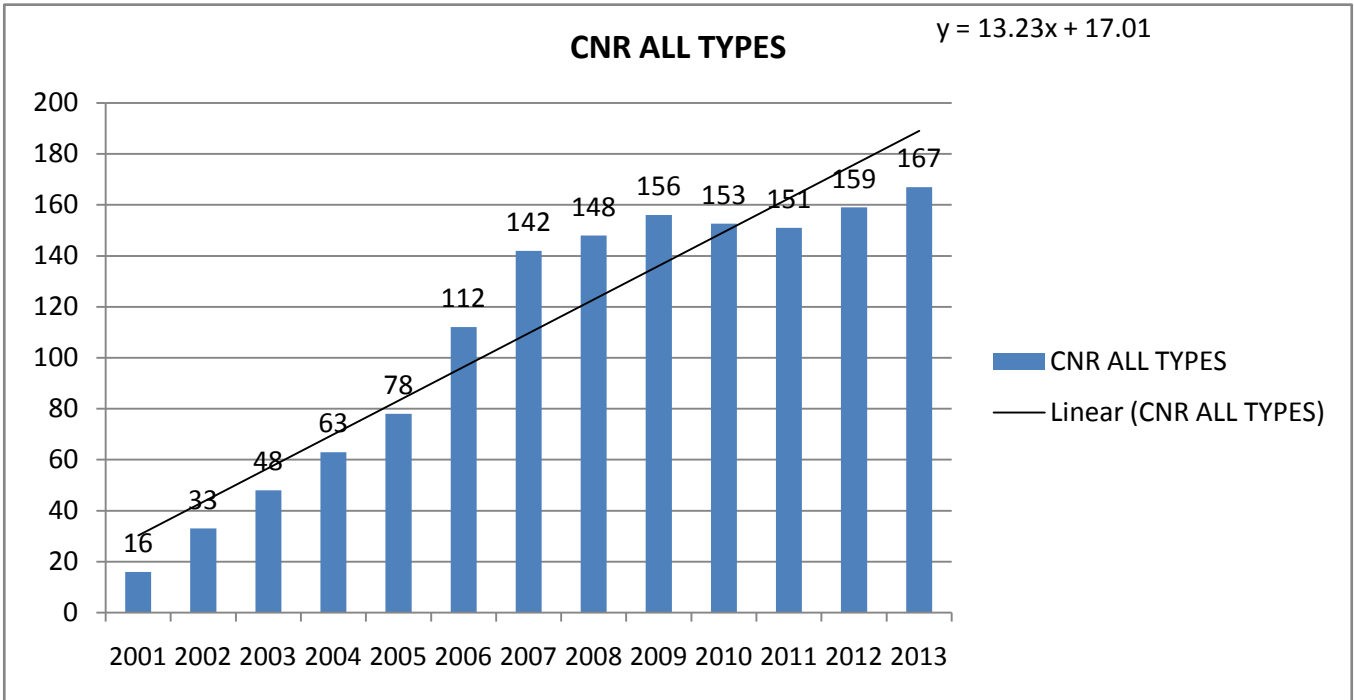
REPORTING PROFILE – TB CONTROL PROGRAM

PROVINCE	DISTRICTS	BMUs	PMDT SITES	SENTINEL SITES	Rx CTR	GPs ENGAGED	GPs REPORTING
AJK	10	60	-	-	110	52	8
BALUCHISTAN	30	107	01	01	140	124	28
FATA (FR/AGENCY)	10	26	-	-	34	-	-
GB	7	19	-	-	38	34	-
KPK	24	232	03	02	810	213	160
PUNJAB	36	537	07	05	3006	1130	527
SINDH	23	265	06	07	950	669	442
ICT	1	8	01	01	15	22	14
PAK	141	1254	18	16	5103	2244	1179

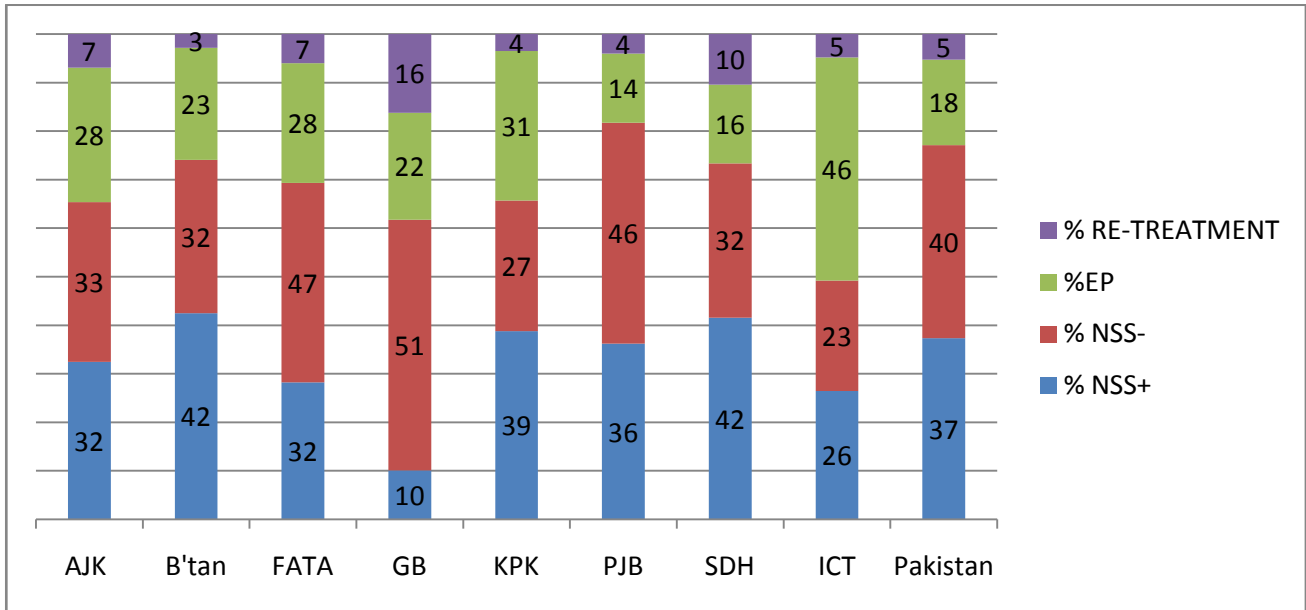
CASE NOTIFICATION – PAKISTAN (over the year)



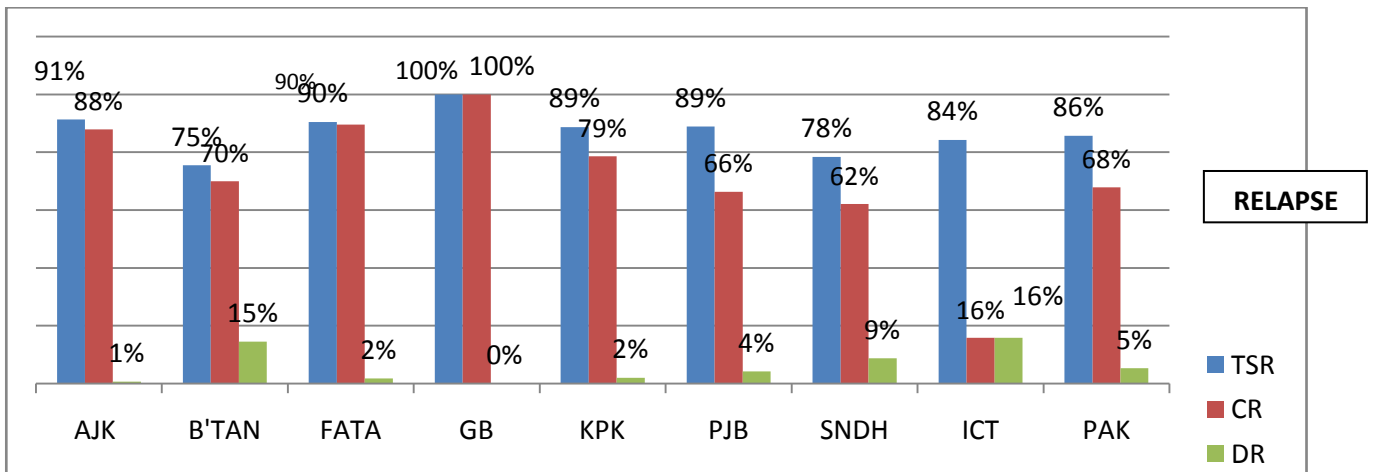
CASE NOTIFICATION – PAKISTAN (target:101/193)



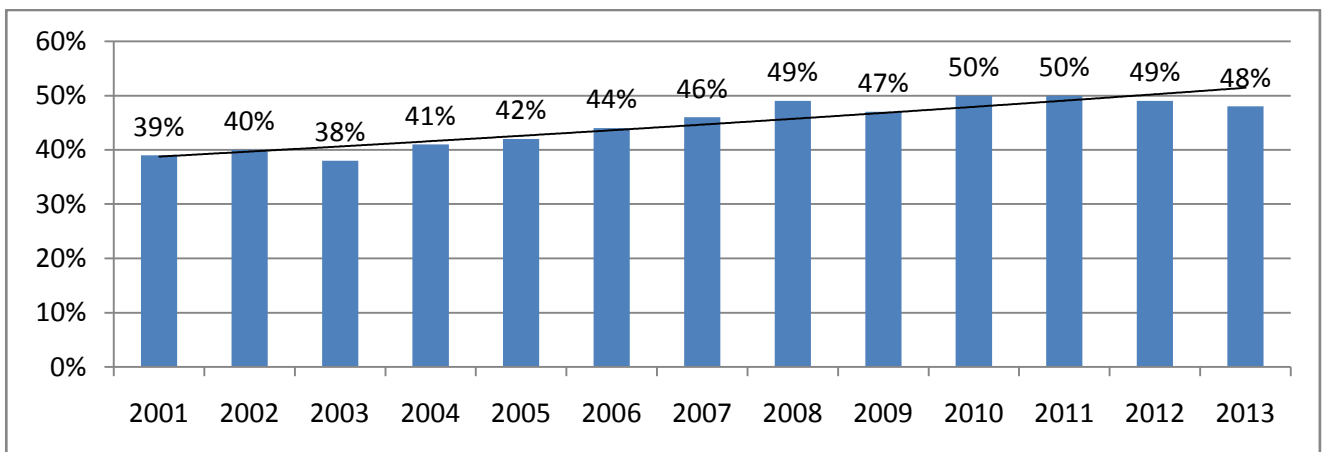
CASE NOTIFICATION – TYPE OF CASES



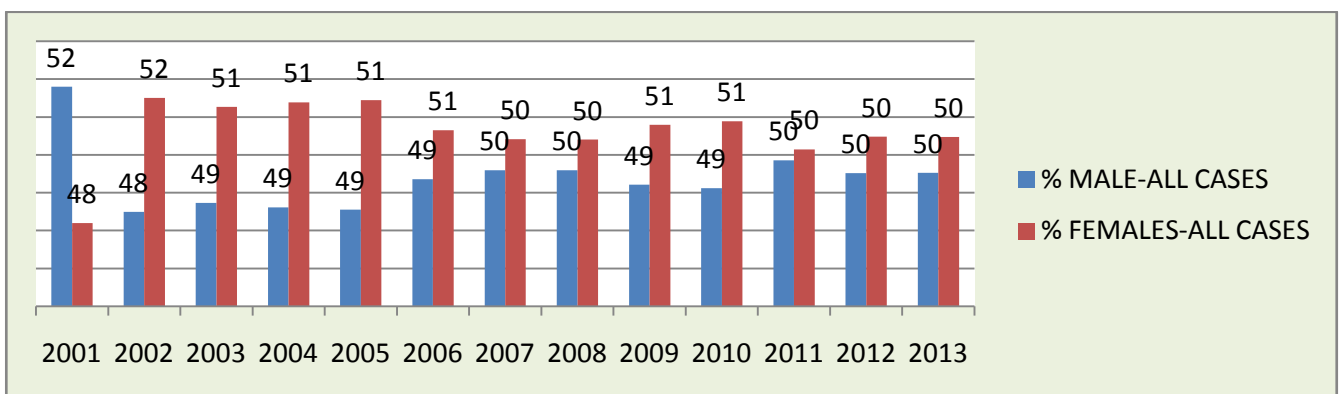
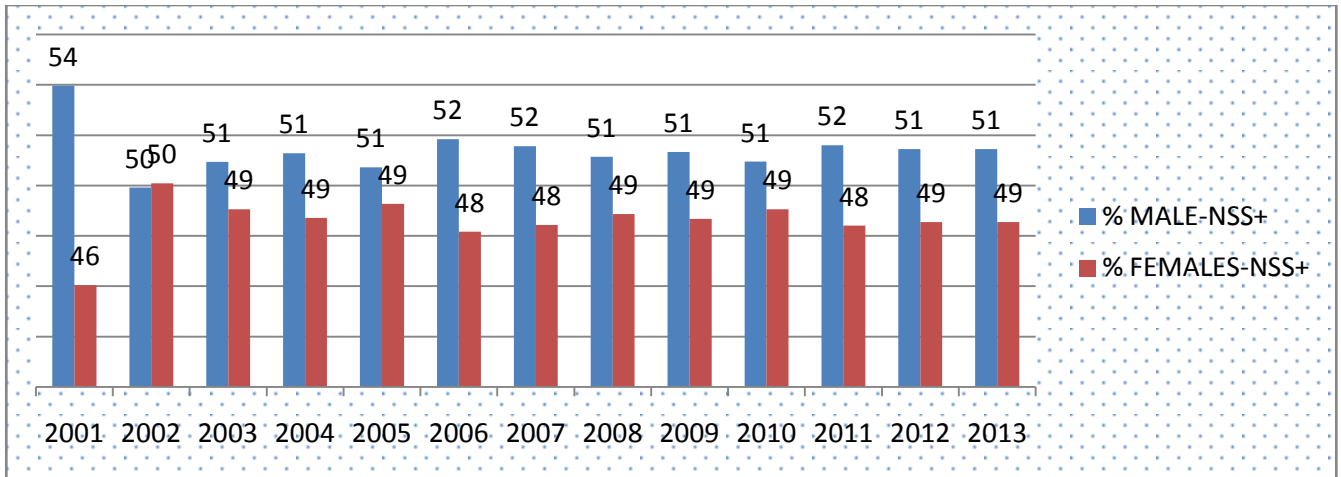
TREATMENT OUTCOME (CAT-II) PAKISTAN 2013



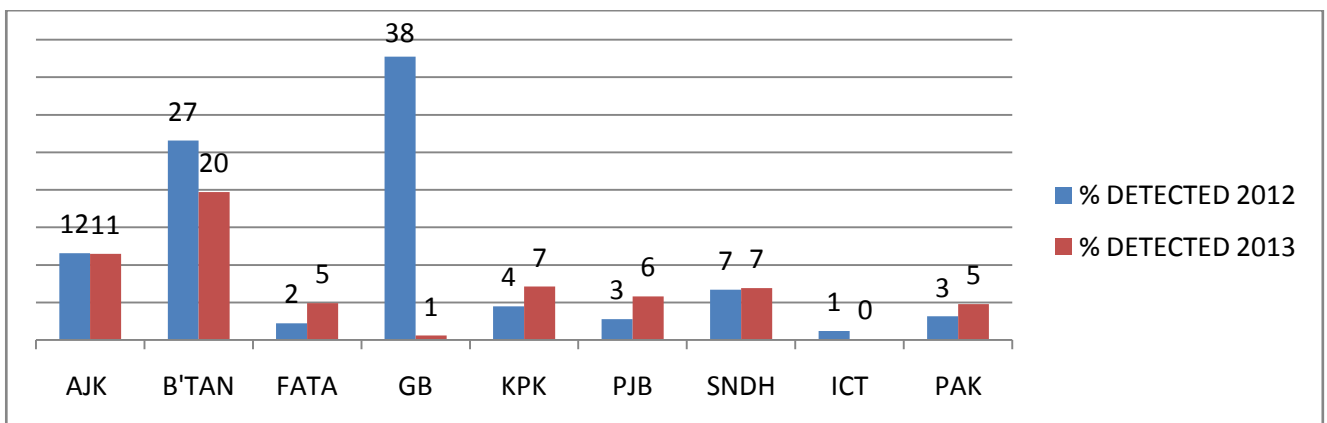
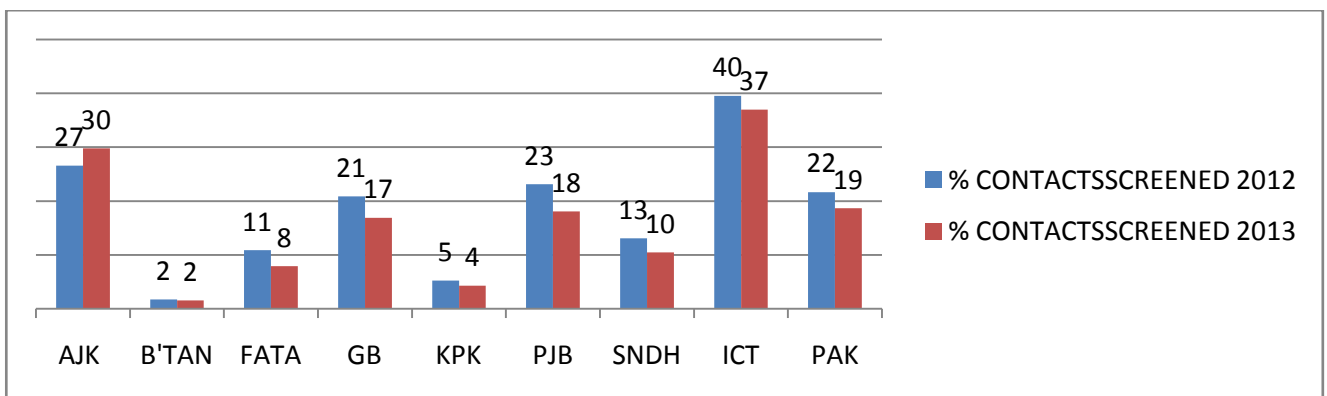
PROP NSS+ v/s SS-



MALE TO FEMALE RATIO - PAKISTAN



CONTACT MANAGEMENT - 2013



3. Principal Recipient Unit 2013

Role of the Global Fund

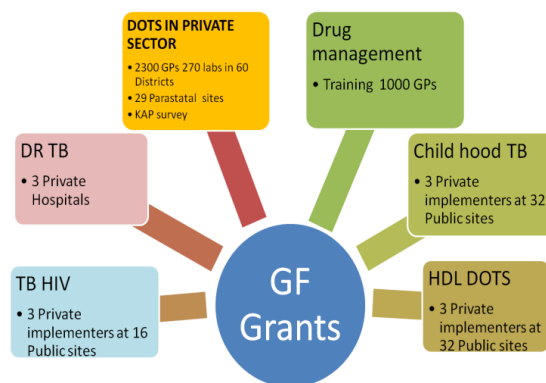
The Global Fund to Fight AIDS, Tuberculosis and Malaria was established in January 2002 to increase global financing for interventions against TB, malaria and HIV/AIDS. It is the largest international public/private partnership to combat malaria and tuberculosis, providing two-thirds of all financing, and provides Global Fund has pledged almost 80 Billion US \$ in last 12 years for control of three diseases.

The Fund operates in 136 countries. The partnership between governments, civil society and private sector represents a new approach to international health financing. The Global Fund works in close collaboration with other bilateral and multilateral organizations to supplement existing efforts dealing with these diseases.

Global Fund committed almost 214 million US \$ from Global Fund in last ten years and allocated another 250 million for next three years.

The Global Fund support is critical to continue diagnosis and treatment of thousands of Patients suffering from TB, Malaria and AIDS IN Pakistan.

GLOBAL FUNDS SUPPORTED INTERVENTIONS



Government of Pakistan adopted DOTS strategy in 1995, and declared as National Emergency in 2001. In July 2000 National TB Control Program was established and in a short span of time the National guidelines were developed for different cadres of health care providers to standardize case management in line with WHO guidelines. The program has shown remarkable achievements that have been acknowledged internationally.

The program has been expanded and decentralized to provincial and district level and integrated in to Primary Health Care services. The overall objective of TB Control Program is to reduce mortality, morbidity and disease transmission, so that tuberculosis remains no longer a public health problem and also to prevent Multi-drugs Resistance TB (MDR-TB). In line with Global Stop TB targets, the program targets are to detect at least 70% of the estimated New Sputum Smear Positive cases in the country and successfully treat at least 85% of the cases started on the treatment to achieve TB related Millennium Development Goals (MDGs). New Stop TB Strategy Plan has been adopted for this purpose.

Current Grant:

The Grant titled “Reducing the burden of Tuberculosis in Pakistan by improving access to quality Directly Observed Treatment Short Course (DOTS) and Multi-Drug Resistance (MDR-TB) care services” is being implemented by NTP as public sector Principal Recipient (PR) for all of the 140 districts and territories across the country through its implementing partners as Sub-Recipients (SRs) i.e. (1) Association for Community Development

(ACD); (2) Association for Social Development (ASD) and (3) Indus Hospital Karachi.

In addition, implementation of TB activities is conducted through Provincial and Regional TB Control Programs all over the country. However, current SSF Grant also took into account the devolution of MoH at federal level and adapted the work-plan to fully address the proposed new role of provinces as SRs (sub-recipients). It is planned that these PTPs will be taken on board as SRs during the month of January 2014. NTP has been continuing to perform on their behalf and consume their allocated part of the budget, as per existing mechanisms to ensure smooth functioning of grant all over the country without any interruption. As SRs, the provincial programs are being provided with adequate HR support at two levels; one at management level for PTPs like program management, M&E, finance etc and other clinical support for which HR is being provided to implementing hospitals and labs in each province/region. Trainings, Communication Material, monitoring & evaluation and other operational costs for Planning & Administration are also being provided. Above all, first and second line anti-TB drugs to address the demand gap of the provinces/ regions along with diagnostic equipment like X-ray machines, Gene Xpert, microscopes, power generators & UPS etc. are also being provided to the provincial TB control programs. Its maintenance and running costs including cartridges, lab reagents etc. are also being provided through GF grant support.

In post-devolution scenario NTP has a role of developing national policies and guidelines, monitoring, and reporting of the programmatic and financial achievements to The Global Fund and LFA. Additionally, NTP taps international funding to plug the resource gaps in the country both at technical and financial levels. It is pertinent to mention that NTP plays a role of coordinating body rather than implementing agency. The outward coordination is made internationally with donors and partners and, inward coordination is made with Provincial /

Regional TB Programs and other in-country players involved in TB control activities. NTP will continue to act in a supervisory and technical support role with no implementation except for federal administrative territories, and support / facilitate the provinces for international procurements and liaison with international partners for resource mobilization etc.

Pakistan has been awarded the funding for a period of two years and nine months i.e. from October 1, 2012 to June 30, 2015; hence, entering into Single Stream Funding, as per GF requirements. Mercy Corps and Greenstar are also implementing certain components of this grant, in the capacity of Co-Principal Recipients from private sector.

In this phase, the Objectives and implementation arrangements have been revised as under:

Objective 1: Pursue High Quality DOTS through countrywide Quality Assured Bacteriology - NTP PR

Objective 2: Strengthen and Sustain DOTS services and address TB-HIV Co-infections – NTP PR

Objective 3: Enhance the Capacity of Health Sector to detect and manage 80% of the estimated DR-TB incident cases by year 2015 – NTP PR

Objective 4: Ensure High Quality treatment of all diagnosed cases of TB – NTP PR

Objective 5: Drugs Management Systems Strengthening – Greenstar PR

Objective 6: Offer Quality of care to TB patients through a network of enabled Private Sector and Other health sector Hospitals, Clinics and Laboratories – Mercy Corps PR

NTP as public sector Principal Recipient (PR) for Objectives, 1, 2, 3 & 4 is to be implemented through non-governmental private sector sub-recipients and Provincial and Regional TB Control Programs in all districts of the country. However, some of the activities are also being conducted by

NTP itself like receiving drugs and equipments through international partners/suppliers.

Resource allocation:

NTP has been successful in getting GF approval for USD 121 million for the current grant period. Later, NTP has also been able to get an approval of USD 8 million to ensure appropriate buffer stock for First Line Drugs. The resources in terms of finances as well as commodities / products would be distributed through the implementing partners based on their contribution in case management and patient load. Significant amount of the budget (around 80%) has been allocated for drugs, up-gradation/ equipment and social/ food support, which are being managed by the PR as per GF Guidelines.

Major Achievements:

- Scaling up of MDR-TB intervention is underway through Global Fund grant enabling 30 hospitals to manage more than 11,000 patients approximately over the total grant period of 5 years.
- Out of total 22 Labs, five have been upgraded and plan for up-gradation of remaining 19 labs at Bio-safety Level 2 & 3 to perform TB Culture and Drug Susceptibility Testing is under different levels of progress
- AKU Lab has been engaged to provide support for Culture and DST services as interim arrangement
- 10 PMDT hospitals for MDR-TB management have been completed and handed over. Out of remaining 20, eight more hospitals have been assessed for infection control and are in the process of upgrading.
- MDR-TB intervention has been instituted in eighteen hospitals
- Doctors, paramedics and program management staff have been trained on programmatic management of MDR-TB
- To date a total of more than 3000 Drug Resistant TB patients have been enrolled
- Mechanism for Food Support for MDR-TB patients has been developed and

implemented through Utility Stores Corporation to ensure treatment adherence and increase treatment success

- Agreement has been signed with GDF/IDA for the procurement of GLC approved Second Line Drugs (SLDs)
- Warehouses at national, provincial and district levels have been upgraded for appropriate storage of anti-TB Drugs. The Drug Management system has been strengthened by provision of training to staff involved in drug management throughout the county.
- Recording and reporting tools and systems have been improved besides strengthening of monitoring and supervision in this critical area.
- Implementation of National Guidelines for management of First-line and Second-line anti-TB drugs
- Usage of Dispensing Manuals for First-line and Second-line anti-TB drugs
- Development Quality Assurance Plan for drug management has been completed and submitted to Global Fund for approval
- Currently, for implementation of grant activities, NTP has following non-governmental organizations working as sub-recipients in Consolidated Grant:
 1. Association for Community Development - ACD
 2. Association for Social Development – ASD, and
 3. Indus Hospital Karachi - IHK

In addition to these NGOs, activities are also conducted through Provincial and Regional TB Control Programs all over the country. For conducting these activities funds are transferred to the sub-recipients and PTP/RTPs.

Indicators	Jan 2013 – Dec 2013	
	Targets	Achievements
Number of new smear-positive TB cases notified to the national health authority (NTP)	123,193	86,319 (up to Sep,13)
Number of TB cases (all forms) notified to the national health authorities (NTP)	299,048	232,541 (up to Sep,13)
Laboratories showing adequate performance in external quality assurance for smear microscopy among the total number of laboratories that undertake smear microscopy during the reporting period	70%	(71%) 101%
Number of laboratories upgraded for BSL 2 and BSL 3	12	4 (up to Sep,13)
Number of health care providers and laboratory staff trained in TB management	9,856	1,534
Number of Childhood TB cases detected	12,180	5,926 (up to Sep,13)
TB patients who had an HIV test result recorded in the TB register	10,396	5,432 (up to Sep,13)
Number of laboratory-confirmed DR-TB cases enrolled on second-line anti-TB treatment	1,722	2,022
Number of Hospitals currently managing DR-TB cases	10	8
Percentage of DR-TB patients on treatment receiving Social Support	90%	103%
Number of new smear-positive TB cases successfully treated (cured plus completed treatment) among the new smear-positive TB cases registered	100,621	78,208 (up to Sep,13)
Number and Percentage of Diagnostic Reporting Centers submitting timely reports on quarterly basis according to National Guidelines	1,207 (98%)	1,107 (92%) (up to Sep,13)
Number and Percentage of Districts reporting No-Stock Out of First Line Anti-TB drugs in last week of quarter	90%	99% (up to Sep,13)

Future Plan for Next Year:

NTP will continue all its current activities and in addition will be undertaking following two major tasks:

- NTP is developing its National Strategic Plan from year 2014-2020. This comprehensive document will be finalized by the first quarter of year 2014. The same document will be used to develop Concept Note for Global Fund requesting for funds beyond June 2015 in the New Funding Model
- NTP is also one of the countries which is planning to pilot and implement new R&R tools developed by WHO. A pilot will be conducted in all four provinces in first quarter of year 2014. NTP plans to implement these tools all across the country.

4. Operational Research Unit NTP

Background:

National TB control program over the years expanded and consolidated DOTS in line with new stop TB strategy. The new areas of intervention and expanding network of partners brings new challenges for the program. It is emphasized with greater zeal that public health programs generate evidence for decision making and test new initiatives and interventions with a scientific rigor. The evidence generation required not only to test the feasibilities of the new initiatives but to monitor the overall program performance.

Research is a key strategic area identified in the National strategic and operational (PC1) plans as well as the new stop TB strategy. The strategy describes operational research as a core component of NTP work. Designing and conducting locally relevant operational research can help in identifying problems and workable solutions, testing them in the field and planning for the scaling up of activities.

Epidemiology:

Pakistan ranks 4th in the world amongst 27 high burden DR-TB countries. According to WHO estimates, there were around 7700 (220-27000) MDR-TB cases amongst new pulmonary TB cases and 3700 (880-6600) amongst retreatment cases, notified in 2012, (3.5% and 32% in New and retreatment cases, respectively). Pakistan shares 60% of the DR-TB burden in the EMRO region countries. The

focus of NTP GF Funded Research in 2013 was on MDR TB management and three randomized controlled Trials were implemented in this regards.

Moreover, WHO estimates were used for TB Burden assessment in the country, so two main research projects for TB Disease Burden estimation were done in 2012 TB Disease Prevalence Survey and Inventory study using Capture-Recapture Analysis. Evidence suggests despite 65% case detection we are losing majority of cases in high risk areas such as urban slums and private practitioners, NTP successfully implemented TB REACH Wave 1 project providing evidence that active case detection can contribute significantly to enhance TB Case notifications.

Objectives:

The objectives of Research Unit are as follows:

- Providing research leadership to establish National research/development agendas, attracts resources, new researchers and research groups, and develops Institutional networks;
- Providing management capacity for carrying out specific research projects to ensure relevance, quality, timeliness, efficiency and accountability;
- Developing Critical mass of personnel with Up-to-date R&D skills;
- Enabling the Means and opportunities for participating in international R&D;
- Developing road maps for new researches based on need and priority of NTP.
- Develop Collaborations with international academic institutes to perform international standard Quality Research.

Main Achievements (2013)

1. Report Finalization of "Prevalence Survey 2010-2011"

The 4th Pakistan TB prevalence survey was the second largest TB prevalence survey conducted ever. This survey enumerated 131,331 eligible persons in 95 clusters, of whom 105,915 (81%) participated. A total of around 10,000 sputum smears were examined, over 7,500 cultures were performed, and a total of 345 TB cases were identified. In November 2013, the findings of the survey were finalized in the "Data Analysis workshop for TB prevalence survey" 26-28 November, 2013 Geneva, Switzerland.

2. Effectiveness and feasibility of 2 months hospitalization (hospital based) and 1 week hospitalization (community-based delivery of care) for multi-drug resistant tuberculosis (MDR-TB) in Pakistan: A randomized controlled trial

NTP is conducting a randomized controlled trial study entitled: Effectiveness and feasibility of 2 months hospitalization (hospital based) and 1 week hospitalization (community-based delivery of care) for multi-drug resistant tuberculosis (MDR-TB) in Pakistan:

The aim is to enable the program to effectively implement multi-component MDR TB management. Two types of service delivery models namely community based (1week hospitalized and early discharge to peripheral care) and hospital-based (2 months hospitalized and late discharge to peripheral care) will be studied for its effectiveness and cost-effectiveness in the low resource settings of Pakistan. In 2013, 50% of the sample (patients) has been enrolled in the study in three tertiary care hospitals i.e. Gulab Devi Lahore, OJHA Karachi and Samli Sanitarium Murree.

3. Good quality, locally procured drugs can be as effective as internationally quality assured drugs in treating multi-drug resistant tuberculosis. A retrospective cohort study in Pakistan.

A retrospective cohort study was conducted in three hospitals across Pakistan. Data on baseline characteristics and treatment outcomes during first six months of treatment were extracted from hospital records of adult culture-positive pulmonary MDR-TB patients starting treatment between January 2011 and June 2012. Two cohorts were defined: patients receiving IQA drugs and patients receiving locally procured non-IQA drugs. Data were analyzed using Kaplan-Meier curves and Cox proportional hazards regression. The primary outcome compared between cohorts was time to culture conversion. Of 231 patients, 90 were in the IQA and 141 in the non-IQA cohorts. Baseline characteristics were similar except for higher frequency of quinolone resistance in the IQA cohort. Overall, 193 patients (84%) culture converted. Culture conversion was not faster in the IQA cohort; the median time was 81 and 68 days in the IQA and non-IQA cohorts, respectively. Unadjusted and adjusted hazard ratios for culture conversion in IQA verses non-IQA cohorts were 0.82 (95%-CI, 0.62-1.10) and 0.91 (95%-CI, 0.62-1.35) respectively.

4. Improving the Prevention of Drug-Resistant TB: A Randomized Controlled Smoking Cessation Trial and Prospective Cohort Study of TB Treatment Outcomes.

Indus Hospital Research Centre / Interactive Research and Development (IRD) has initiated this project with the coordination of NTP. Prior

protocol has been finalized in 2013. The project will be implemented in mid of February, 2014

The Implementation of TB REACH Wave 3 Project

National TB Control Program and TB REACH signed a Grant agreement in February 2013 for the study “Effectiveness of widening circle of contact screening from within the household to 100 m around the house of index case on case finding through outreach using GIS”. The project introduces active contact investigation into 3 cities in Punjab Province and the Capital Territory utilizing all SS+ notified cases as index cases. The evaluation population districts are Islamabad, Lahore, Faisalabad and Rawalpindi, while the control populations are Multan, Hafizabad, Kasur and Jhelum. Household contacts, i.e. those normally resident or sharing the same airspace, are verbally screen initially, followed by a widening circle of close community contacts. The project test additional yield by Gene-Xpert among smear negatives and chest X-ray suggestive for which the evidence available in published articles suggest there is 60% increase expected. The project will start the contact tracing from 1st July 2013. Children contacts are sent for diagnosis to pediatrician. All the data is being entered in GIS enabled mobile phone. The data of evaluation population will be compared with that of the control population. Quarterly online report is being sent at the end of each quarter. This activity will continue till the end of June 2014.



Conferences:

In 2013, Research Unit, NTP remained actively involve to disseminate research findings of the different projects in form of Oral and poster presentation at national and international forums.

International Level Conference:

The 44th Union World Conference on Lung Health was held in Paris, France on 30 October - 3 November 2013. Research Unit had shared the preliminary findings of prevalence survey 2010 - 11 in their Oral presentation. Three posters were also presented on the following topics:

1. Innovative Strategies to enhance additional case finding of smear positive cases through TB reach wave1 project in Pakistan.
2. Inventory study involving three data sources, revised TB incidence, Pakistan.
3. TB Burden higher than TB prevalence survey, Pakistan.

National Level Conference:

4th Annual Public Health Conference 2013 was held at Health Services Academy, Islamabad on 2nd & 3rd December 2013. Research Unit, NTP had actively participated in this conference. One stall was established in the conference by the NTP. The preliminary findings of prevalence survey 2010 - 11 were also shared and importance of MDR was also discussed in form of oral presentations. Moreover, two posters were also presented on TB-REACH project and Capture –Recapture study.



Published Article

Estimating tuberculosis burden and case detection in Pakistan

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BACKGROUND: The National Tuberculosis Control Programme (NTP) in Pakistan has identified a substantial tuberculosis (TB) case detection rate of 44% in 2011, with an estimated incidence rate of 20 per 100,000 population, but a likely to be missing an unknown number of patients, particularly in the private sector.

OBJECTIVE: All public and private sector providers in 12 randomly selected districts of Pakistan were included. To estimate TB incidence and TB notification rates in Pakistan in 2012.

DESIGN: A surveillance system was established among all eligible non-NTP providers in selected districts from January to March 2012. Record linkage and capture-recapture analysis were conducted.

RESULTS: Of 196 TB cases identified after record linkage, 69% were registered with the NTP. The estimated number of undetected TB cases was 10,000 (95% CI: case detection rate of 44% in 2011, with an estimated incidence rate of 20 per 100,000 population), but a likely to be missing an unknown number of patients, particularly in the private sector.

CONCLUSION: All public and private sector providers in 12 randomly selected districts of Pakistan were included. To estimate TB incidence and TB notification rates in Pakistan in 2012.

KEY WORDS: tuberculosis, surveillance, record linkage, capture-recapture analysis

INTRODUCTION: World Health Organization targets for tuberculosis (TB) control, including that of detecting 70% of new sputum smear-positive cases occurring each year and of successfully treating 85% of detected cases [1, 2011]. The estimated incidence of all types of TB in Pakistan was 20 per 100,000 population. Based on these estimates, the country reported a case detection rate of 44% for all types of TB – it is possible that the case detection rate varies across the country; however, the estimates of disease burden upon which this is based was underestimates as in all countries have probably substantial numbers of TB patients. These health care providers are estimated to refer patients to the NTP but, as in other developing countries, this happens with varying consequences of notification. While public-private sector approaches can improve case notification, the NTP faces multiple challenges in expanding this approach. This is particularly important, as non-NTP providers do not always follow NTP guidelines for TB management, which could contribute to the emergence of clinically significant drug resistance.

Study design and sampling method: Prospective surveillance was set up to identify and prospectively follow all TB cases in the sampled districts. Suspects were consecutively enrolled and followed up until confirmation of diagnosis. Identified cluster random sampling was used to obtain a representative sample from 12 of 101 districts of Pakistan in 2012, with sites chosen to have equal-sized populations according to levels of smear-positive notification rates, i.e., quartile 1 (low) <10 smear-positive notification rates; quartile 2 (intermediate) 10-15; quartile 3 (high) 15-20; and quartile 4 (very high) >20. The number of selected districts (Table 1) from each stratum was allocated proportionately weighted on to population size. One district was obtained from stratum 1, 4 from stratum 2, 3 from stratum 3 and 3 from stratum 4. All non-NTP facilities in the selected districts were mapped, and consenting providers were enrolled.

Definition: Incident TB cases were defined as: 1) all TB patients registered with the NTP between 1 January and 31 March 2012, or 2) all TB cases confirmed according to NTP criteria during the same period for cases known to non-NTP providers.

Register and record linkage: Four sources of information were used: the NTP TB Register, non-NTP public health facilities, private health facilities and private laboratory facilities. The NTP TB Register was reviewed and data on all patients recorded. Identified TB and laboratory registers were extracted and reviewed. These data collection tools were used to record the management of patients by non-NTP health care providers without changing their source practices [2]. These facilities were visited weekly by field officers and direct observations were conducted (OTOC) to check records, with instructions to collect missing notes for proper record linkage and update the accuracy and completeness status of TB cases. Non-registered non-NTP cases were contacted by visits (diagnoses per NTP criteria). Every eligible patient was recorded in the study.

1. Estimated tuberculosis burden and case detection in Pakistan (Fatima R, Harris R J, Enarson D A, et al. Estimating tuberculosis burden and case detection in Pakistan. *IJTL* 2013; 18(1):55-60)

Submitted Article

1. Good quality, locally procured drugs can be as effective as internationally quality assured drugs in treating multi-drug resistant tuberculosis. A retrospective cohort study in Pakistan, *Plos One Journal*

2. Success of active case detection of tuberculosis among high risk groups in urban slums in Pakistan, *IJTL*

3. Investigation Practices of Private Providers for Tuberculosis: Lessons learned from a survey in Pakistan", *Journal of Public Health Action*

Way Forward

The future activities of the Research Unit in 2014 will be as follows:

- Successful completion of TB REACH wave 3
- Report writing of TB REACH wave 3 project
- Successful Implementation of "A Randomized Controlled Smoking Cessation Trial and Prospective Cohort Study of TB Treatment Outcomes"
- Monitor and data processing of "Effectiveness and feasibility of 2 months hospitalization (hospital based) and 1 week hospitalization (community-

based delivery of care) for multi-drug resistant tuberculosis (MDR-TB) in Pakistan: A randomized controlled trial"

- Data processing, analysis and report writing of a research study on "Loss to follow up of TB patients"
- International Publications, articles of the Prevalence Survey 2010-11, TB REACH Wave 3 and Loss to follow up project
- To collaborate with international institutions such as University of Bergen, London school of hygiene, John Hopkins University to enhance capacity at National level.

4. Drug Management Unit

LMIS
Pakistan Logistics Management Information System

Home | Contact Us | FAQs

Tuberculosis Drug Management Information System

With TB-DMIS implementation, the likelihood of stock outs and overstocks that can lead to product expiration will reduce and programs can avoid wasting valuable tuberculosis medicine resources through prolonged and frequent stock outs, overstocks and losses.

○ ○ ○ ○

Vaccines | **Contraceptives** | **TB-DMIS**

TB-DMIS User Login

User Name *

Password *

[Forgot Password?](#)

For limited access username: guest and password: guest

- ✓ Are you interested in improving supply management of health commodities?
- ✓ Are you making informed, evidence-based decisions?
- ✓ Are you committed to improving collaboration among resource providers?
- ✓ Are you playing a role in forecasting, quantification and supply planning?

TB-Drug Management Information System (TB-DMIS)

58.65.186.135/wms/

Log-in: Warehouse Management System (WMS)

Username

Password

Warehouse Management System

Online WMS

Tuberculosis Control Program

Warehouse Management System (WMS)

5. Drug Management Unit

Introduction:

National TB Control Program, as a policy ensures provision of regular quality assured, free of cost anti TB medicines to every registered patient in the county. It is essential that the country maintain a sufficient and well managed supply of WHO assured quality TB drugs to ensure the treatment of increasingly detected TB cases. Quality and uninterrupted supply of ATT Drugs is a core element of DOTs strategy which is being catered through Objective-4 in SSF grant of GF.

Background:

NTP as a policy is implementing drug management activities all over the country with the support of its provincial counter parts.

At the National TB Control Program, Drug Management Unit has been established looking after all Anti TB drugs i.e. FLDs, SLDs, Ancillary drugs and related issues.

KEY ACHIEVEMENTS:

Some of the key achievements made by Drug Management Unit in year 2013:

Successful approval of SSF:

Based on the successful implementation of R-8 activities (Drug Management) NTP is able incorporate Objective-4 as an integral part in SSF grant and securing more than 59 Million USD grant for procurement of First Line Drugs (FLDs) for Core DOTs and Second Line Drugs

(SLDs) for Multiple Drug Resistant TB Patients.

FLDs additional support of 8 Million:

As per WHO guidelines to avail 100 buffer stocks of FLDs across the supply chain; Drug Management Unit has done a comprehensive gap analysis of FLDs in country and on the basis of this gap analysis successfully able to get additional grant of 8 million USD from Global Fund and became the first country to get GF interim funding.

WHO Emergency Grant of 8 Million:

In collaboration with World Health Organization and Stop TB Partnership Geneva, NTP / DMU has conducted a GDF review mission in year 2013 to assess the activities of Drug Management. On the valuable recommendations of GDF review mission a grant of about 8 Million USD is approved for the provision of FLDs and Paediatric drugs to be used in year 2014.

Drug Management Guidelines & SOPs:

The Drug management unit with the support of MSH has developed 1st line and 2nd Line Anti TB Drug management guidelines and dispensing Manual for managing TB drugs. Moreover, a comprehensive document about standard operating procedures for pharmaceutical products across the supply chain has been developed by the Drug Management Unit which will be a handy tool for the health care provider and storage personal in the country.

Up gradation/refurbishment of Warehouses

One of the main achievements is the up gradation/refurbishment of warehouses at national/ provincial/ regional/ district level for

the appropriate drug storage throughout the country. This challenging task was completed and now all the districts TB stores and provincial warehouse has been uniformly upgraded/ refurbished across the country.



Procurement/Availability of ATT Drugs:

The Drug Management Unit is ensuring the procurement of ATT drugs to meet the needs of the country as per the standard procedures set forth by NTP, WHO and GF through WHO prequalified manufacturers.

NTP Support to Provinces:

As per the agreement b/w Provinces and NTP, 50% of the drug need will be filled by NTP and remaining 50% requirement will be met through PSDP Funds of Provinces. However Provinces were unable to secure full release of PSDP funds during the year 2013 and NTP has provided First Line Anti TB drugs to provinces which contribute 82% of their requirement. Out of 250,000 courses as an annual need, NTP has provided almost 210,000 courses to the provinces across the county to avoid stock outs and ensure timely availability of TB drugs to the patients; which is a great achievement of Drug Management Unit.

PMDT Sites Management:

NTP is managing 18 PMDT sites with more than 2000 MDR patients in the country. The DMU is providing regular uninterrupted costly second line drugs to these sites and patients which is worth 5000 USD/patient.

Drug Management Information System:

The Drug management information system (DMIS) serves as the engine for supply chain management programs. A functioning DMIS is the key to programmatic success. Accessing web-based technology to enhance DMIS timely reporting and accuracy creates the ability to make prompt supply decisions using accurate data.

Fully functional and developed TB DMIS is being developed and handed over to NTP by Green Star through GF funding; TB DMIS training across the country and accordingly implementation national/provincial/district level are in progress to develop a pool of skilled personnel for smooth functioning and execution of this task.

NTP management is confident that with the implementation of TB DMIS, robust analysis of inventory management, consumptions patterns of drugs, monitoring stock outs, over stocking and timely availability of precious drugs to patients will be done on regularly basis.

ISO Certification of Lab/WHO pre – qualification of TB Pharmaceutical Companies:

NTP DMU was in regular correspondence, TB DM & Regulation committee has been notified by the then ministry of health to manage and regulate TB Drugs related affairs where participation of all important stakeholders has been ensured. Committee meets to discuss

WHO Prequalification criteria, their BA/BE status and its enrollment. On the vigorous follow-up and technical support of DMU/NTP, CBSBR Lab/HEJ Karachi has got accreditation of ISO 17025 by PNAC (www.pnac.org.pk as Lab no 66) and is the first ISO 17025 and ISO 9001 accredited facility of the country.



Way Forward:

- Securing TB drugs supply beyond 2014-16
- Pediatric TB interventions across the country
- Implementation of TB DMIS
- Up gradation of BA/ BE study centers as per WHO standards
- WHO prequalification of TB Pharmaceutical companies
- Legislation for ban on over the counter sale of TB drugs

6. Advocacy Communication & Social Mobilization



6x3

FACT SHEET

The baseline IAP survey of private healthcare providers
Progressive increase in Case contribution through private sector
during years 2004-2012

CASE NOTIFICATION INDIA - PUBLIC VS PRIVATE

Private Doctor receiving ART drug
Group of Private doctors trained at TB 2013
TB awareness session during Community gathering

Way Forward:

- Expansion of PPM initiatives
- Legislation for TB as a notifiable disease & DTC sale of TB drugs
- Collaboration with local pharmaceutical companies and chemical manufacturer
- Defining the role of informal health care providers

National TB Control Program
Ministry of Health Services, Pakistan and Contributors

TB CONTROL IN PAKISTAN - AN OVERVIEW

TB CONTROL IN PAKISTAN AN OVERVIEW

Mrs. Saira Afzal Tarar
National TB Control Program

44th Conference of World Bank, 2013

NTP AND MDCT/TB

PROGRESS UPDATE OF NTP PAKISTAN

7. Advocacy Communication & Social Mobilization

Background:

Advocacy Communication & Mobilization (ACSM) is integral cross cutting through all program components of the National TB Control Program. The ACSM activities predominantly focus on setting agendas, improve awareness, knowledge and in shaping of public attitudes toward risk behaviors. The ongoing efforts will provide evidence based strategic and targeted communication for enhanced visibility acceptability and utilization of the intended TB services throughout Pakistan – hence creating high demand for TB services. The current plan envisages social mobilization to contribute towards high utilization of desired TB services through private sector partner organization operating in communities. In the context of TB control, the objective of the ACSM 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. NTP is now recognized as a leader in producing high-quality ACSM material and products. ACSM Unit has

also modeled public-public and public-private partnerships with numerous health institutions across the country.

The ACSM activities under the Global Fund Round 6 closed off in December 2012. However, with new funding model SSF-SDA 2.4 the NTP resumed the ACSM interventions in October 2013, with following objectives and planned activities.

Objectives:

The objectives of ACSM Unit are as follows:

- To advocate/engage with policy makers and media for TB as a national public health emergency
- To promote disease awareness and knowledge among community
- To engage TB patients and affected communities in TB care

ACSM activities:

The proposed ACSM activities are in line with new roles and responsibilities of NTP, PTP and district health authorities in post devolution environment. Three activity packages are proposed here with the aim of empowering people with TB and communities.

National level ACSM functions

Objectives:

- Position TB as a national public health challenge
- Provide strategic guidance, coordination and partnership opportunities to provinces and partners

In current ACSM activities, NTP is not directly involved in provincial or district level implementation. NTP role has been positioned to provide national leadership for advocacy,

coordination and partnership. It will continue to provide strategic advice and coordinate to create synergies among provinces. NTP is also conducting periodic evaluations.

NTP activities

- Involvement of policy makers through seminars
- Engagement with national media through workshops
- Production of event specific TV, radio and newspaper advertisement campaigns
- Celebrity endorsement through national TB ambassadors
- Development of social mobilization guidelines
- Development of evaluation tools and conducting periodic evaluations

Provincial ACSM responsibilities

Objectives:

Promote TB as a priority in provincial health agenda Provide leadership in communication and social mobilization implementation, monitoring

PTPs are proposed as main implementers in ACSM. PTPs are taking the lead in the design and implementation of advocacy, communication and social mobilization activities. PTPs are responsible for development and dissemination of communication and health education products among districts and are collecting data for periodic monitoring.

PTP activities

- Involvement of provincial policy makers, influential through seminars

- Production of cable television advertisement campaigns
- Production of radio advertisement campaigns
- provincial celebrity endorsement through TB ambassadors
- Development of context specific education material
- Training of master trainers
- Periodic monitoring

District implementation functions

Objectives:

- Make TB visible in district health agenda
- Create awareness among community about TB
- To engage TB patients

District health authorities are proposed as on ground implementers. District TB coordinator and district health education officer (wherever available) are responsible for actual implementation of activities. They are seeking guidance from PTPs and are responsible for reporting and documentation.

District activities

- involvement of district level policy makers, key influencers through seminars
- Broadcasting of cable television spots
- TB patient coalition activities (training on patient charter, group meetings)
- NGO/CBO coalition activities (community gatherings, local festivals)
- periodic monitoring

GLOBAL STOP TB PARTNERSHIP

Founded in 2001, the Partnership's mission is to serve every person who is vulnerable to TB and ensure that high-quality treatment is available to all who need it.

The Partnership is recognized as a unique international body with the power to align actors all over the world in the fight against TB. The participation of a wide range of constituencies gives us credibility and the broad range of medical, social and financial expertise needed to defeat TB.

We operate through a secretariat hosted by the World Health Organization (WHO) in Geneva, Switzerland and seven working groups whose role is to accelerate progress on access to TB diagnosis and treatment; research and development for new TB diagnostics, drugs and vaccines; and tackling drug resistant- and HIV-associated TB. The secretariat is governed by a coordinating board that sets strategic direction for the global fight against TB.

Way forward:

The future activities of the ACSM Unit in 2014 will be as follows:

- Advocacy for Legislative bill for TB as notifiable disease , regulation of counter sale ATT
- Legislative bill for on the counter sale of Anti TB drugs
- Legislative framework for PPM and HDL
- Tax Credit for private GPs
- Mandatory testing of HIV patients for TB
- Implementation of a BCC strategy targeting healthcare providers
- Advocacy with treatment supporters
- Community mobilization for active case finding

- **Advocacy with professional bodies**
Involving pharmacists (via the Pakistan Pharmacists Association) into the NTP/DOTS system to the extent that the pharmacists who wish to continue selling anti-Tuberculosis

medications will require to attend in NTP/PTP trainings. These trainings will cover the causes of drug-resistant tuberculosis, the importance of adhering to a strict treatment regimen and the importance of receiving a proper diagnosis and remaining in the care of a qualified medical practitioner. In addition, advocate for the inclusion of NTP's TB guidelines into the curricula of medical colleges via Pakistan Medical & Dental Council (PMDC)

- **Engagement of Young Volunteers**

Engaging Young volunteers is another key strategy for social mobilization. Opportunities should be created to motivate and engage youngsters. The National TB Control Program (NTP) seeks to revitalize the existing structured national youth volunteers program with defined policies and procedures addressing TB control efforts.

- **Community mobilization**

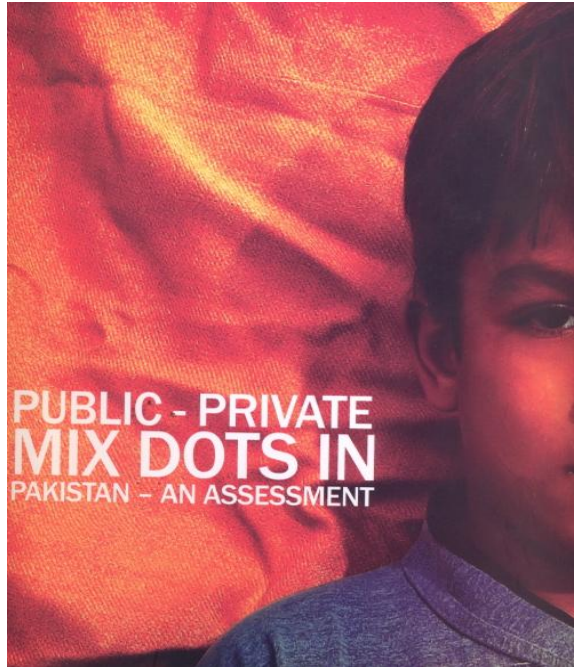
- Mass media campaigns
- Community involvement

TB is known to be a poor man's disease, and its worst victims are the poor and the vulnerable groups of the society. For this reason people falling under these categories will be addressed with ACSM activities. Banners, posters and other informational materials will be developed and placed in common areas, such as bus stops, rickshaw stands, local clubs, schools and colleges, local market-places, public toilets, to name a few. Mass Media Campaigns will be organized annually for creating greater impact. Cable television is a popular, widely available and cost effective electronic medium in Pakistan. Context specific i.e. local language and culture based TB messages based campaigns will be developed for broadcasting on cable networks through cable operators associations. Radio particularly FM is a

popular entertainment media. It is also cost effective. Context specific TB message campaigns will be developed and broadcast through radio channels in selected districts.



7. Public Private Mix

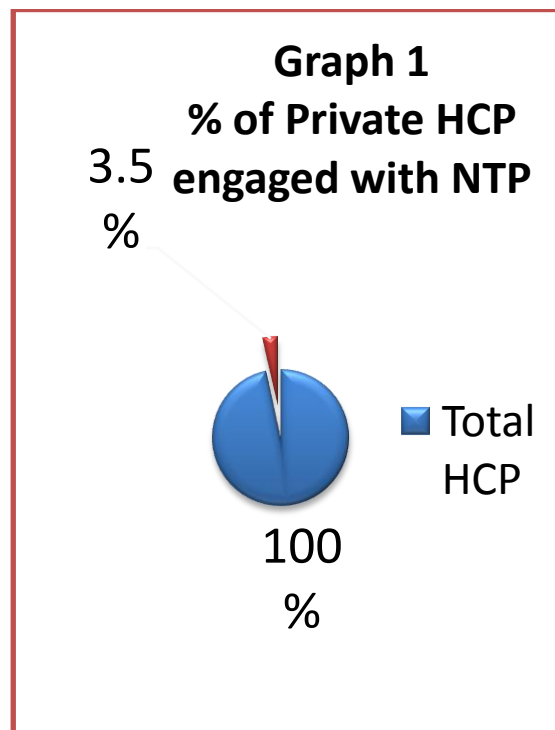
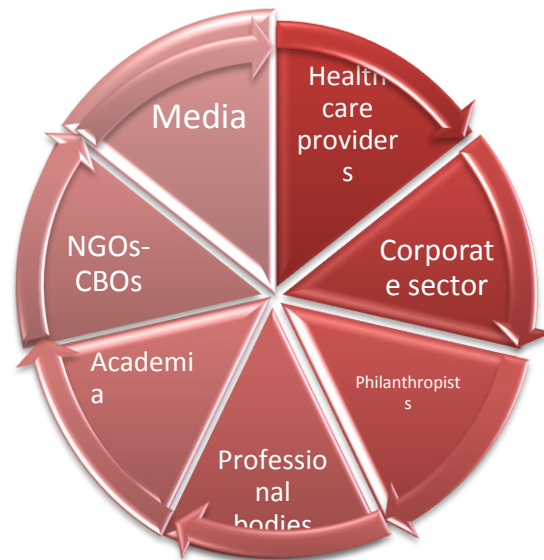


7. Public Private Mix

Background

Tremendous progress has been made in Pakistan for tuberculosis control in recent years through implementation of DOTS. It has been acknowledged that TB control efforts are impressive but, not sufficient. The CDR remains 58% means missing at least 42% of the patients. As in most countries with a significant burden of TB, DOTS implementation is limited largely to public sector services under national tuberculosis programs (NTPs). In reality, however, many patients with symptoms of TB, including the very poor, do seek and receive care from a wide variety of health care providers outside the network of NTP services mostly not following National Guidelines Graph 1 (only 3.5 % are engaged with NTP). Thus the TB patients they serve are deprived of the benefits of DOTS and poses an obvious risk of drug resistant TB.

The private sector which has its stakes in TB control is much larger than perceived and not only limited to the health care providers only, a simple stake holder list includes NTP, PTPs, Technical Partners, implementing partners, Donors, philanthropists, pharmacists, chemists, insurance agencies, professional bodies, Researchers, large private hospitals, CBOs, community leaders, religious leaders, trade unions, chamber of commerce.



The private health care system in Pakistan is huge but highly unorganized, with a lack of regulation in both prescribing practices as well as the qualifications of those prescribing these medications. Practitioners of various alternative forms of medicine often prescribe anti-TB drugs without being qualified to do so. Apart from causing

prolonged morbidity and increased mortality from the disease, poor prescribing practices also fuel the emergence and spread of drug-resistant organisms, and are most certainly one of the reasons why Pakistan is fourth of the global MDR-TB burden, with indicators showing a rising trend.

The migration from rural to urban areas due to rapid and uneven economic development has led to an increase in TB cases in urban areas. The development of linkages between the different tiers of the health system is another challenge. The situation is considerable in the urban setting which lack primary and secondary care public sector.

In health care delivery system of private sector it is noted that the annual per capita health expenditures for Pakistan as per NHA 2007-08 are 35 US\$. The ratios of health expenditures according to NHA over GDP 2007-08 are 3.36% while public sector health expenditures according to NHA over government expenditures are 6.57%. The private sector health expenditures according to NHA over total private expenditures are 3.07%.

There are around 100,000 qualified allopathic health care providers, and an equal number of traditional healers, homeopathic, herbal and traditional birth attendants. The urban rural ratio of 40:60 is quite expected¹

There is no confirmed data of number of non-qualified health care providers “Quakes” but anecdotal estimates are around three times the qualified practitioners, in addition 67000 chemists are also part of the health care delivery system.²

PPM partners

Pakistan Anti TB Association is working for the control of TB since 1948, and has a extensive

network of over 100 health facilities dedicated for the purpose. The association was engaged with NTP since long but the meaningful partnership was established in 2003 when it was taken as sub recipient of GF grant round 3. The association was further engaged in GF 6. The association contributes over 15000 cases annually to the national data. PATA is now working at its own without GF support, and implementing DOTS. It has great potential and need support.

Marie Adelaide Leprosy Control is working for Leprosy elimination, TB and Blindness control and community development for the last 56 years. A well-knitted network of 157 control centers nationwide mostly in remote areas is functioning in close collaboration with provincial governments and providing services to the patients and communities free of charge.

This is an international NGO supported by corporate sector and had great contribution towards leprosy control & TB is a partner of NTP in TB.

TB Association Geneva is an international NGO supporting a few districts in KPK

German Cooperation has been providing technical support to KPK government, through **EPOS** a sub contractor of GIZ has expanded the coverage of TB DOTS services in eight additional districts of KPK. They have adopted the same model as of GF i.e district led TB DOTS. The support end in 2014

Agha Khan Health Services has its network of 128 health care facilities mostly in Karachi, AJK and Northern areas of Pakistan providing mainly MNCH services; they are partners with TB Control Program since 2006 and contributing to the national data.

Green Star Social Marketing is mainly a social franchising network for family planning and

¹ National Health accounts 2009-2010

² Pharmacist association ppt dated 8th July 2013

maternal health, in 2003 the idea of social franchising in TB was conceived and Green Star was engaged for TB Control activities in five metropolitan cities of Pakistan as the name of Good life. The model was successful for case detection and treatment success but could not be sustained without financial support. Currently GSM is a sub recipient to Mercy Corps in the current GF grant and is implementing TB DOTS in 22 districts which includes five metropolitan cities.

Mercy Corps is an international humanitarian organization and the principle recipient of the GF TB grant since 2006, for ACSM and PPM. Private Public Mix is one of the objectives in SSF grant which intends to engage 2300 GPs, 30 other health sector hospitals and 300 Laboratories. The project has entered into phase 2 of implemented by Mercy Corps as principal recipient through its six sub recipients namely ACD, ASD, Bridge, Green star, PLYC and Mercy Corps PIU.

TB REACH is a WHO initiative for short term path finder operational research interventions, there are several interventions which are made in Pakistan through different waves of funding a few are, TB DOTS services in slums of Karachi (NTP), TB DOTS services through introduction of mobile technology in Urban areas of Karachi (INDUS HOSPITAL KHI), TB in Prisons (PTP Punjab), TB case detection through infotainments and referral to Public health facilities(ASD), Enhanced case detection through contact tracing in Punjab and Sindh (NTP& BCF) which have shown promising results.

Models of PPM TB DOTS in Pakistan:

1. District led model

The model has the main stewardship with the district health authorities; District TB coordinator has a pivotal role. All the TB related activities and implementation is done through the public

sectors. The NGO supporting the project has mainly a role of coordination between the GPs and the Public sector, providing logistics for the project and organizing community awareness activities.

2. NGO led model:

The model is experienced mainly in Punjab where Pakistan Anti TB association has a large network which mainly provide TB care, self operated, supported by local philanthropists. The AKHSP is working in GB and MALC is operational with few centers in Sindh.

3. Social franchising: Franchise network of Green Star Social Marketing and 1000 GPs are engaged mainly in five metropolitan cities.

4. Large private hospitals: Include large private hospitals and tertiary care hospitals e.g (Gulab Devi and Indus). The large private hospitals are engaged with PTPs which directly supervises the TB DOTS implementation, provides drugs & trainings, and generates quarterly reports e.g Ghurki trust hospital, Bethania hospital etc

5. Other health sector Model: Includes Social Security, Fauji foundation , Wapda, Railways Cantonment hospitals and other health sector in all the four provinces of Pakistan

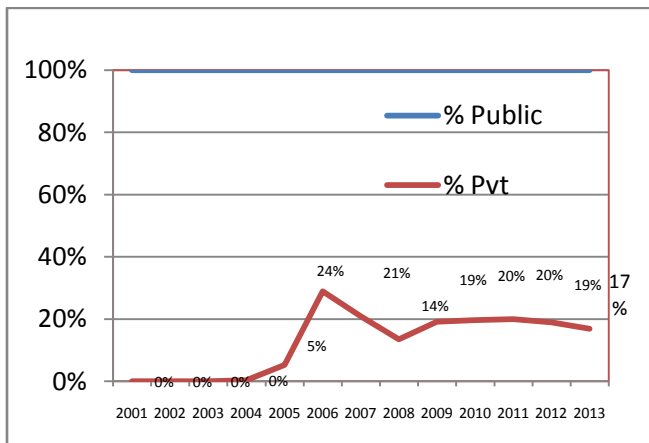
6. Engagement of Pharmacies in TB control: A pilot study for mapping and KAP has been done with encouraging results in four large urban cities of Pakistan. The idea is to develop referral linkages between pharmacies and service delivery points for early and enhanced case detection.

PPM Activities during 2013:

In addition to the routine activities in PPM DOTS the coordination among the partners and discussions at the challenges and lessons learnt remained the main focus of the program.

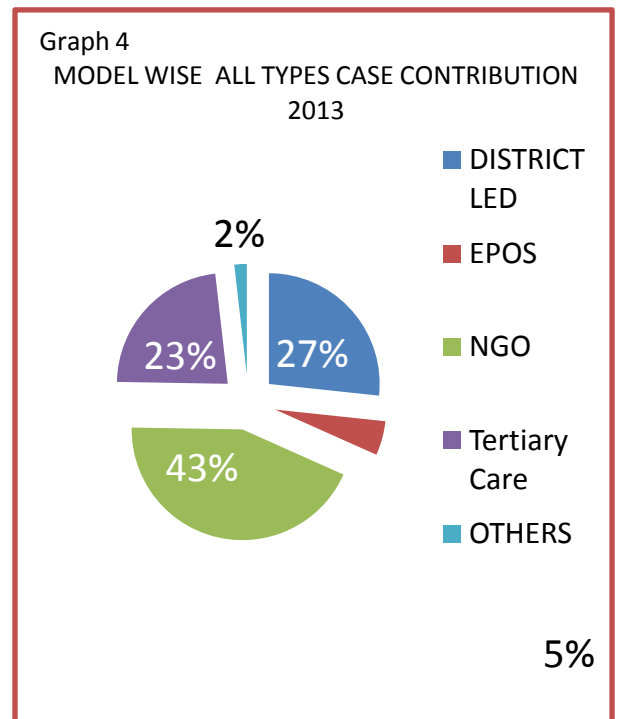
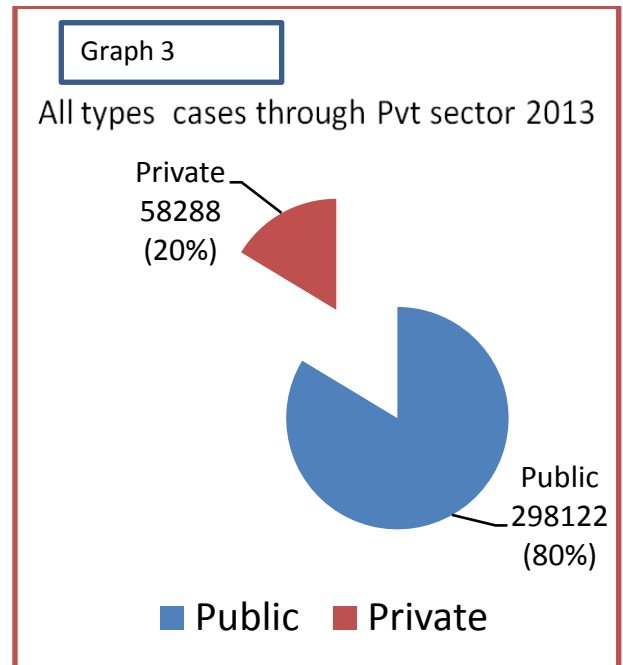
The few of the activities were

- Modified chest camps strategy for outreach
- Community gatherings and engagement of CBOs for community coalitions
- Uninterrupted drug supply
- Engagement of private labs in EQA with promising results of over 80% labs working with adequate performance
- Regular quarterly meetings for data validation mostly monitored by the project staff.
- Quarterly news letter
- Regular coordination between NTP and partners



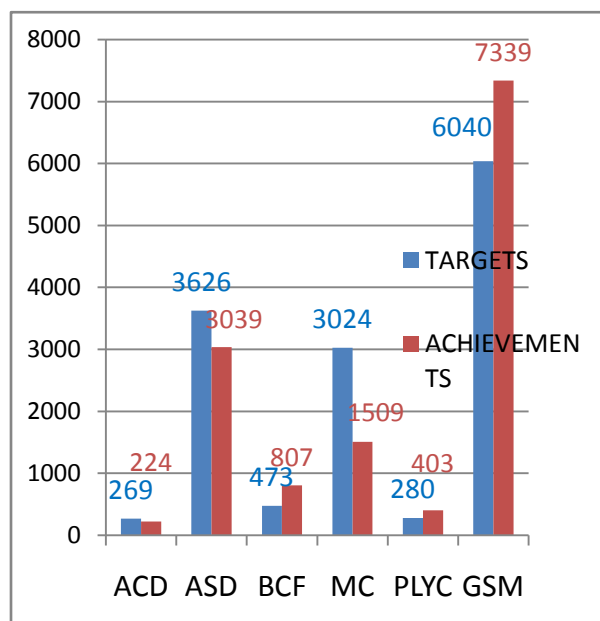
Case contribution through PPM in 2013

PPM contribution of SS+ to National data over years



Graph 5:

ALL TYPES TB CASE CONTRIBUTION 2013
DISTRICT LED MODEL



PROJECTED PPM CONTRIBUTION 2013-2020

The National Strategic plan 2020 envisages a major contribution from private sector through expansion in partnership and innovative approaches the table below explains the year wise projection from 20% to 40% case contribution in 2017

	2013	2014	2015	2016	2017	2018	2019	2020
TB Case notification (all ages, all forms)	298122	337,999	363,652	389,095	411,226	402,509	380,083	358,475
Number of TB case notification from PPM intervention	58288	84,500	109,096	136,183	164,490	161,004	152,033	143,390
Proportion of TB case notification from PPM intervention	20%	25%	30%	35%	40%	40%	40%	40%

CHALLENGES

In view of their dominant role in tuberculosis care, engagement with private providers is crucial for achievement of tuberculosis control targets. Although small-scale, public-private mix models have worked in many studies, there are almost no examples of large-scale, successful, sustained engagement of the private health sector in tuberculosis control. Private sector engagement has been addressed in WHO's Stop TB Strategy and the International Standards of Tuberculosis Care, but the reality is that private sector providers are largely uninterested in partnering with national tuberculosis control program. Less than desired ownership of public sector at implementation level, mutual mistrust between public and private sectors, lack of appropriate incentives, poor regulation and accountability, and perverse market driven forces are barriers for meaningful partnerships.

Pakistan's national program has worked to overcome such barriers, and an estimated 20 % of all tuberculosis patients are recruited from public-private projects that include social franchising models. Projects are often unsustainable, which emphasizes the importance of using financially viable business models that are market based.

National program in Pakistan chronically underfunded, and advocacy is needed to convince governments, industries, and high net-worth individuals to invest more resources in tuberculosis control. The logical step is to combine innovative technologies with smart business models to better exploit their additive effects.

Way forward:

1. Strengthen Stop TB Partnership at all levels for advocacy & external and domestic resource mobilization
2. Advocacy with policy makers for legislation (e.g. mandatory case notification, regulated sales of ATT)
3. Targeted electronic and print media campaign (including cable networks)
4. Stop-TB coalitions'-led social mobilization activities: community meetings, sports events etc.
5. Develop coordination with professional associations, such as, Chest Society, Pakistan Medical Association, Hospitals Owners Association, Hospitals Regulatory Authority
6. Hospitals involved with the private medical colleges could be motivated to conduct research for evidence base medical care
7. Engage pharmacies & informal health care providers with a specific role of referral of presumptive TB case to DOTS center
8. Engage NGO working in health sector and community levels like PPHI, PRSP, NRSP, PRCS etc

9. Engage large other health sector i.e Army, Fouji Foundation , Pakistan Mineral development corporation etc
10. Develop a pool of experienced master trainers for general practitioners & pharmacists
11. Specialized, small national and provincial teams (including M&E and QA experts, and trainers)
12. Enhanced support of DTCs and DLS in supervision
13. Annual seminars for wider dissemination of lessons learnt through PPM experiences
14. Allocation of package of TB services according to strengths and geographical presence of the partner organizations

Specific Plans for:

A. District led GP model

- Meaningful engagement of EDOs, DHOs, DOHs, DTCs, DLSs etc.
- Simplified, standardized training (short duration, new learning methods, e-training)
- Accreditation/certification and branding of GPs and labs (reflected in contracts)
- Business plans (fee structure) for GPs and labs
- Active case finding in Key populations and vulnerable groups like Slums, prisons, madrassas, Drug users, sex workers and elderly
- Setting-up labs where they don't exist with social business model
- Mobile phones technology for simplified recording and reporting
- Social support for TB patients through food stamps, Food baskets, voucher scheme etc

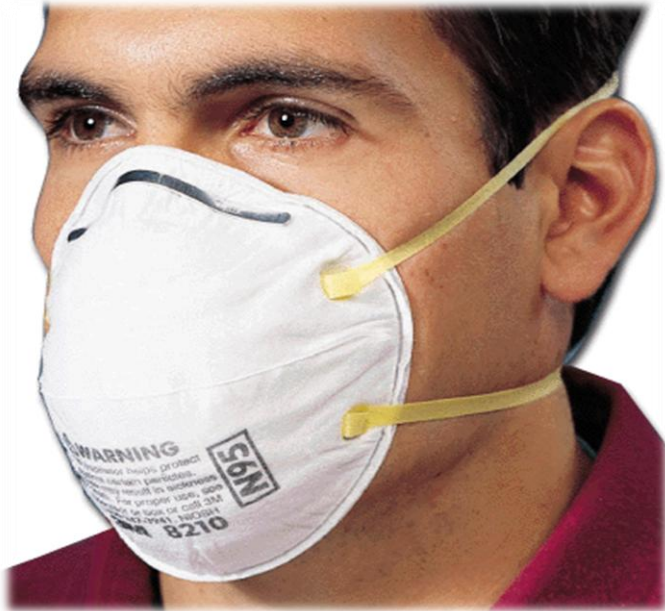
B. NGO model

- Measures to enhance technical & management capacity through NTP/PTP
- Engage NGO network in research projects of TB
- Ensure sustainability through business models and local philanthropy
- Should be utilized as venue for CME and trainings
- Utilize strength of NGOs for resource mobilization
- Strong linkage with PMDT sites should be developed and where appropriate Gene Xpert installation may be considered
- Presence in the community should be utilized for suspect referral and treatment support

C. Hospital/Specialist Model

- Engage with PCS , private hospital association and private medical colleges
- Linkages with PMDT sites and Pharmacies for referral of sensitive and resistant TB

7. Drug Resistant-TB



8. Drug Resistant-TB

Programmatic Management of Drug-resistant Tuberculosis (PMDT)

Background:

The emergence of resistance to first line anti-tuberculosis drugs, and particularly of multidrug-resistant TB (MDR-TB), has become a major public health problem in a number of countries, and an obstacle to effective global TB control.

National TB Control Program (NTP) with the support of The Global Fund through Round-6 started piloting of management of DR-TB cases on hospital-based and ambulatory models in following three hospitals and enrolled 200 patients;

- Gulab Devi Chest Hospital Lahore (hospital-based)
- Ojha Institute Hospital Karachi (hospital-based)
- Indus Hospital Karachi (Community based)

The intervention scaled up when The Global Fund Round-9 grant was approved and awarded which specifically addresses DR-TB management in 30 hospitals of the country.

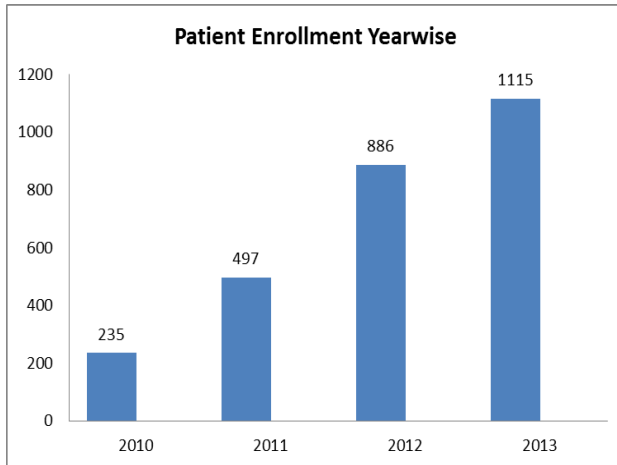
Epidemiology:

Pakistan ranks 4th in the world amongst 27 high burden DR-TB countries. According to WHO estimates, there were around 7100 (1700-13000) MDR-TB cases amongst new pulmonary TB cases and 2300 (800-3700) amongst retreatment cases, notified in 2010, (3.4% and 21% in New and retreatment cases, respectively). Pakistan shares

60% of the DR-TB burden in the EMRO region countries.

Achievements/Progress:

- Total 30 Treatment Sites will be established across the country to address Programmatic Management of Drug-resistant Tuberculosis across the country. In addition to 14 already functioning, **4 New Treatment Sites** have been taken on board during June-December 2013 to implement the PMDT. Total 18 Treatment Sites functional and reporting to NTP.
- **800Lab confirmed DR-TB patients** were diagnosed and enrolled, in addition to 2049 already enrolled patients through 18 PMDT sites nationwide
- **8 Treatment Sites were renovated and up-graded** for proper management of DR-TB to address Infection Control completed during the reporting period.
- A 6 days Training of Trainers' (**TOT Workshop had been conducted** from 21-26 October in Karachi for Physicians and PMDT Staff on DR-TB Guidelines
- DR-TB Patients who were on treatment on locally available second line drugs and waiting List were shifted to GLC approved (quality assured) second line drugs. Now **all the DR-TB patients are on quality assured SLDs** across the country.



- Trainings of Health Care Providers (HCP) on Ambulatory Based Model of Care in DR-TB management.

Challenges

Some of the major challenges in the implementation of the programmatic management of DR-TB are

- Uncontrolled over-the-counter prescription of unknown quality SLD,
- Lack of internationally standard bio availability/bio equivalence laboratory testing facilities in the country
- Peripheral linkage of DR-TB Ambulatory based model of care needs to be significantly strengthened.
- Provincial TB Control Programs PMDT roles and responsibilities need to be strengthened.

Way Forward:

- Plan to manage 80% of estimated DR-TB patients by 2017 and 100% by 2020 in line with MDR expansion plan and National Strategic plan.
- Plan to expand PMDT treatment sites to 30 units by the end of 2014.
- Plan to upgrade/establish 11 culture and 5 DST Laboratories in the country
- Provision of Social support (food basket & Travel Incentive) to all DR-TB patients and their Treatment Supporters.

9. Hospital Dots Linkages/ Childhood TB



9. Hospital Dots Linkages/Childhood TB

ADULT DIFFICULT-TO-DIAGNOSE AND COMPLICATED TB CASES:

The adult difficult to diagnose and complicated TB cases are mostly referred from other departments within the tertiary care and also from other secondary and primary health care facilities of the periphery. These cases are mostly from gastroenterology, orthopedics and general surgery.

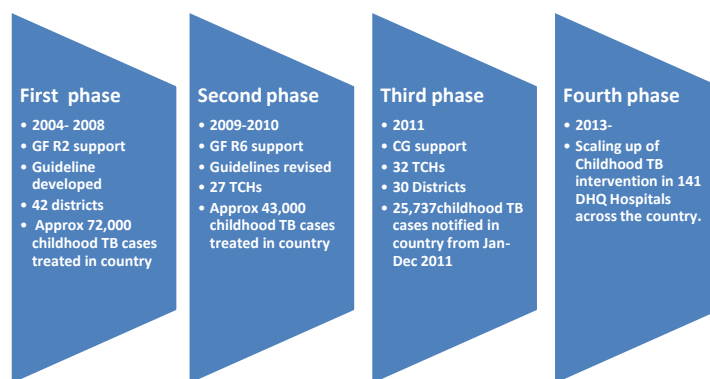
CHILDHOOD TB MANAGEMENT:

The childhood TB management in tertiary care was taken as a new initiative in round-6. Previously it was implemented at secondary care i.e. DHQs through round-2 of GFATM grant. These cases are diagnosed and treated free of cost. Provision of PPD for free diagnosis and screening is provided to these selected Tertiary Care & Secondary Care Hospitals. Pediatric drug formulations are also supplied to provide free of cost treatment for children with TB.

KEY ACHIEVEMENTS:

Some of the key achievements made during 2013 are:

The HDL intervention included management of adult and childhood TB cases according to the national guidelines. Through this initiative, over 4,000 doctors, paramedics and lab technicians in 32 tertiary care hospitals (TCHs) were trained on TB DOTS as well as adult difficult-to-diagnose and childhood TB management. This initiative is now being scaled up across the country in all district headquarters hospitals (140 District Headquarter Hospitals) and 16 additional tertiary care hospitals (48 TCHs).

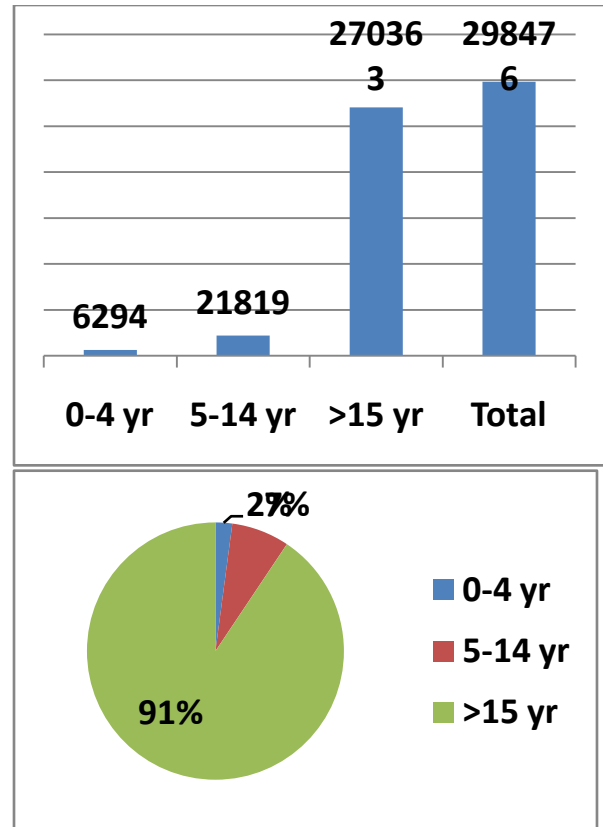
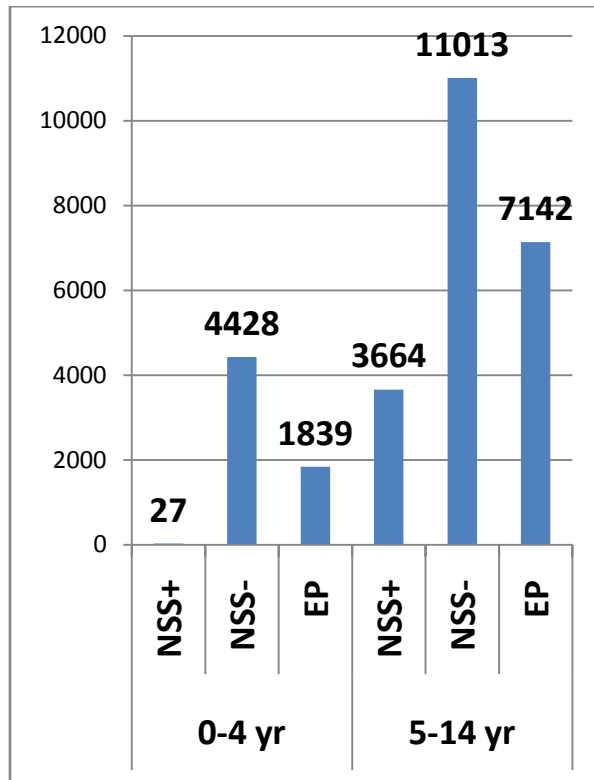


<ul style="list-style-type: none"> • Childhood TB Implemented in 30 districts & 34 TCHs
<ul style="list-style-type: none"> • Approximately 9% children suffer in Pakistan
<ul style="list-style-type: none"> • TB cases notified in 2013 were 28113

- Provision of pediatric drugs and PPD for management of childhood TB cases in tertiary and secondary care hospitals.
- Two Master Trainings were conducted at the Federal Level. Master Trainers were trained on Management of Childhood TB and Adult Difficult to diagnose and Complicated TB;
- Training of doctors, paramedics and lab technicians in core DOTS, adult Difficult to diagnose and complicated case management, as well as Childhood TB management.



CHILDHOOD TB CASES - 2013



Way Forward:

The NTP plans to expand HDL initiative in all the Tertiary Care hospitals, Children Hospitals and DHQ hospitals across Pakistan. The objective is to provide TB treatment services in line with the international & national guidelines to children with TB.

Challenges:

Currently, the HDL intervention faces challenges such as weak linkages between different departments within the hospital as well as with peripheral facilities. Additionally, due to high turnover of staff and resistance from consultants and hospital administration, uniform implementation of national TB guidelines is still a challenge. Alongside the expansion of the hospitals covered under HDL, the issues highlighted above form the key action areas to be addressed by NTP going forward

10. Infection Control



10. Infection Control in Hospitals

1- Background of objective (intervention)

In 2009, NTP stepped forward and started managing MDR/ XDR TB in line with the New Stop TB Strategy. The NTP has taken pivotal steps to handle this situation that includes constitution of a Technical Working Group, development of MDR scale up plan and National Guidelines and Strengthening of MDR-TB management Hospital sites for Programmatic Management of Drug Resistant TB (PMDT).

2-Epidemiology

TB infection control is a combination of measures aimed at minimizing the risk of TB transmission within populations. The foundation of such infection control is early and rapid diagnosis, and proper management of TB patients. TB infection control is growing in importance because of the association of TB with the emergence of multi drug resistant TB MDR-TB (Pakistan ranks 5th of 22 high burden countries in susceptible TB and 4th among the 27 high burden Drug Resistant TB countries). TB Infection Control measures needs to be prioritized at National & Sub National level.

3. Current Status

Progress Update for PMDT Up gradation:

PMDT up gradation is in place for 30 Hospitals for Infection Control. 10 Hospital

up - gradations has been completed and handed over to local administration with provision of Infection Control Items (N95 & Surgical Masks). Currently, out of newly assessed 8 PMDT sites, only 6 are in the up-gradation phase which would be positively completed by Sep 2014. The remaining sites where up-gradation couldn't get started either due to site shifting by local stakeholders or in tendering process will be re-tendered by the end of May 2014. Assessments for last 12 sites are already in progress which would be finished by the time current phase of up-gradation is completed.

Progress Update for BSL Labs up gradation:

Under consolidated grant 21 Labs were proposed to be up graded to BSL2 (16) & BSL3 (5).

To date, 6 out of 8 Labs in the first phase (5 BSL2 and 1 BSL3) have been completed and handed over to Hospitals. Works are still in progress in the remaining 2 labs.

In the current phase of up gradation, out of assessed 12 labs {9 BSL2 and 3 BSL3}, works have been commenced {Dec 2013 to April 2014} in 7 BSL labs {5 BSL2 & 2 BSL3}.

Completion time period for current ongoing labs will be Sep 2014 that will make the total no of labs ready to perform by the end of Sep 2014 to fifteen (15).

The site space for the last remaining lab at Loralai BSL2 (Baluchistan) is yet to be identified by PTP Baluchistan.

5. Constraints:

Unavailability of space at the district headquarters hospitals which are now being converted into medical colleges thus, a space is identified with lot of difficulties by the stakeholders.

Lack of ownership by the stakeholders

Interferences by the stakeholder's individuals during the up gradation process

Delayed inputs from the Engineering Consultant in invoices clearing of vendors

5-Lesson learnt

MOU signing should clarify the objectives, purposes, time-lines of project initiation & completion with limitations of the up gradation projects

Any requisite input conforming to the policy of Infection Control shall be entertained at the time of assessments only & will not be accepted later on at the time of project initiation/execution.

6-Success stories:

10 MDR management sites have been handed over including Wards, waiting areas & OPD's & XDR rooms with provision of Infection Control Supplies for prevention of Health Care Workers and patients.

Six (6) BSL Labs (Five BSL2's & One BSL3) have been up graded and handed over to stakeholders.

Identify and Strengthen a Coordinating Body for Infection Control

It's high time that in Pakistan that NTP should identify and strengthen a coordinating body for infection control

Purpose: Infection prevention and control practices cut across many institutions. The involvement of dedicated leaders in TB-IC, calls for a strong coordination effort in planning, implementing and evaluating control measures at all levels.

Objective: To define the leaders who will oversee successful implementation of TB-IC activities.

Recommended Actions: Adopt appropriate actions for different levels of the healthcare system and identify the persons responsible for those actions.

1. List existing coordinating bodies within the health service delivery system who are willing to take responsibility for TB-IC;
2. Establish a working group, committee, task force, team or focal person to oversee major activities regarding TB-IC;
3. Define the terms of reference (membership, responsibilities, tasks, meeting and reporting guidelines) of the selected group to incorporate TB-IC content;
4. Ensure adequate technical assistance to do the following:
 - Do a situational analysis/facility assessment on TB-IC.
 - Develop or review technical guidelines, standards & policies.

Draft a budgeted country or facility implementation plan.

Pictorial View:

Completed Facility (XDR room showing HVAC unit maintaining negative air pressure):



11. TB/HIV



11. TB-HIV

Background:

HIV epidemic presents a major challenge to the control of tuberculosis (TB) in countries with concentrated epidemics of HIV. Tuberculosis is also one of the most common causes of morbidity and one of the leading causes of mortality in people living with HIV/AIDS (PLWHA). In addition, there is a mutual interaction between 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. Therefore addressing TB/HIV co-infection is a high priority in most settings.

The project was being implemented in four provinces of Pakistan in order to control TB/HIV co-infection to establish a platform for collaborative planning and monitoring of interventions of TB-HIV co-infected patients, a technical working group has been adapted the WHO technical guidelines for screening, counseling, diagnosis, treatment and support of patients co-infected with TB-HIV. Sixteen sites in four provinces were selected and strengthened, through collaborative efforts of disease control programs and three non-government partners (Association of Social Development, Mercy Corp and Bridge) for screening, care and support of TB-HIV co-infected patients

Activities:

TB/HIV collaboration

Each of the three non-government implementing partners were tasked to either engage or designate a qualified public-health doctor, and provide him/her mobility support, to coordinate their respective TB-HIV related activities.

Furthermore, in each of the sixteen TB diagnostic centers, implementing TB-HIV co-infection intervention, a designated paramedic staff will also be enabled through project inputs. The role of project staff is elaborated in the activities below.

Establish a Coordinating Mechanism:

The National TB Control Program and National AIDS Control Program in partnership with non-government partners, patients living with disease/had lived with disease, pressure groups will constitute a National Level Coordinating Forum headed by MoH. This Forum will facilitate collective decision making for TB-HIV collaborative interventions, including activities included in the proposal. The provincial programs (TB and AIDS) and their partners are representatives in the Forum. The Forum will meet on quarterly basis to facilitate the interaction and collective decision making for TB-HIV collaborative interventions.

Development of Guidelines:

The National TB Control Program and National AIDS Control Program in partnership with non-government partners were organized for a TB-HIV technical working group. The technical working group review the WHO technical guidelines for screening and managing TBHIV co-infected cases and adapt these to Pakistan context by selecting appropriate screening, counseling, diagnostic, treatment and patient support protocols, according to country situation. The guidelines included:

Screening of newly diagnosed TB patients to identify HIV infection

Screening of known HIV cases to identify TB infection

Referral and management of patients found co-infected with TB-HIV.

The technical group comprises mainly clinicians, pathologists, program managers and pharmacists. The draft of adapted guidelines, prepared by a technical working group, will be shared and finalized in the national level consultation with a wider group of experts, including clinicians, program managers, pharmacists, planners, drug control authority and others.

The drafted guidelines and materials will be field tested at a selected site. The purpose will be to assess the clarity, correctness and adequacy of guidelines, as well as to identify and carry out the required revisions/enhancements in the guidelines.

HIV/AIDS prevention, care and treatment among TB patients:

The selected TB diagnostic centers will be strengthened by:

- a) Training staff on HIV Screening and counseling of TB patients, as well as treating the co-infected patients for TB and referring for HIV care
- b) Providing HIV rapid testing kits, print materials including guidelines, IEC materials and recording tools etc
- c) Communication linkage with a VCT center
- d) Regular onsite supervision/ technical support. TB-HIV Coordinators will coordinate the agreed set of strengthening activities.

HIV Testing and Counseling of TB Patients:

A designated paramedic staff at each of the participating diagnostic center will be trained on

HIV testing and counseling. This designated TB-HIV staff will be responsible for:

- a) Enlisting all the newly diagnosed TB patients
- b) Providing these TB patients an agreed set of information about voluntary HIV testing
- c) Encouraging patients to ask questions/elaborations/clarifications and respond accordingly
- d) Seeking patient consent for his/her participation in voluntary HIV testing, as per agreed process, e) pre-testing counseling of TB patients who gave consent for HIV testing
- e) Collecting blood sample and getting HIV rapid testing done
- f) Conduct post-test counseling of all TB patients tested for HIV
- g) Maintain records and ensure confidentiality of patient information
- h) Informing the TB physicians about HIV test results, as per agreed protocol and
- i) Referring the HIV positive TB patients to VCT center for HIV related care and management. In five years, 34,560 TB patients will be offered HIV testing and counseling services.

Introduce HIV Prevention Methods:

As a part of post testing counseling, the designated TB-HIV staff will screen TB patients for risk-behaviors and symptoms/signs of sexually transmitted infections (STIs). Each of the TB patients, according to his/her behavior and circumstances, will be informed and encouraged to take appropriate measures for reducing the risk of HIV infection through contaminated needles/instruments/ blood products and unsafe sex practices. Those found to be suffering from STI symptoms or signs are referred for diagnosis, treatment and prevention of STIs.

TB patients found HIV positive will be referred to the VCT center. At each VCT Center, staff will be

enabled to offer HIV care to known TB patients. This enabling will include:

- a) Training VCT staff on HIV care of patients co-infected with TB, including managing other opportunistic infections
- b) Providing print materials including guidelines and IEC materials
- c) Encourage patient referral to Anti-Retroviral Treatment (ART) Center, and
- d) Regular onsite supervision/ technical support.

The uptake of screening and co-infection management services at TB diagnostic centers and VCT centers will be monitored, through a monthly visit of a qualified public health doctor (TB/HIV Coordinator). At completion of first two years, a technical group will qualitatively review and refine the guidelines and materials for wider replication in other sites. A group of experts from technical partners (such as WHO, IUATLD, UNAIDS) will conduct an evaluation of TB-HIV intervention at completion of fourth project year.

TB Care among PLWHA:

To date sixteen public sector ARV treatment programs have been established to provide free antiretroviral therapy (ART from 2nd round GF funding) and comprehensive HIV care services to HIV positive people. The NACP and the provincial AIDS Control Programs (PACPs), in collaboration with local NGO's, are trying to strengthen community-based services for PLWHA. INH Prophylaxis is being practiced at all ART sites to save the PLWHA from active TB. After excluding active TB every patient puts on INH therapy for six months. This intervention being new in WHO protocols is started now at all the sites of NACP.

TB care among PLWHA:

As a part of regular follow-up of PLWHA, the VCT center staff will periodically (annual basis) refer them to TB diagnostic center for screening of TB

infection. The staff at TB diagnostic center screens the PLWHA for TB infection, as per agreed program protocols. Those PLWHA found positive for TB infection/ disease will be managed at TB diagnostic center, according to agreed treatment protocols.

Progress and Achievements:

Since achieving the country-wide DOTS coverage in 2005, the National TB Control Programme, Pakistan has started expanding the scope of its activities to include TB/HIV interventions as recommended in the New Stop TB Strategy, through the Global Fund support.

A joint Coordinating Board for TB/HIV has been constituted under Federal Ministry of Health for policy guidelines to address these challenges. The board is chaired by the Federal Health Secretary which is now replaced by MNHSR&C.

A National Technical Working Groups to address TB/HIV has also been formulated for development of national guidelines and manuals for screening and managing TB/HIV co-infected cases.

TB/HIV guidelines and manuals have been developed for the screening and management of TB/HIV co-infected patients in consultation with Technical Working Group.

Sixteen sentinel sites are selected and strengthened, through collaborative efforts of TB & AIDS control programs and non-government partners for screening, care and support of TB/HIV co-infected patients. The TB/HIV interventions are being provided through the implementing partners in sixteen hospitals providing coverage to all the four provinces. The non-government partners are MC, Bridge and ASD

Provincial TB/HIV Collaborative Committees have been constituted in consultation with NTP. The committee includes the Managers of both the

provincial Tuberculosis and HIV programs and is chaired by the respective Director General Health of the provinces.

Indicators in the consolidated Round to address TB/HIV Co-Infection:

Indicator	Target till 31 st December 2013	Achievement Results till 31 st December 2013	Number of TB positive patients tested positive for AIDS till Dec 2013.
No of registered TB Patients receiving testing and counseling for HIV after giving consent	47431	49039	160
No. of PLWHA receiving testing, counseling and treatment for HIV are screened for TB symptoms (NTP DATA)	581	1054 (61 positive)	
Number of HIV positive patients screened for TB (NACP DATA)		1871 NACP Data	Number of HIV positive patients tested positive for TB Number of patients suffering from TB and Currently on ART = 1241

NTP DATA:

The site wise data containing number of Registered TB patients screened (49,039) for HIV and HIV Positive found (160) during the period P-1 Round 6 (Nov, 2007) to P-5 SSF (Dec, 2013).

Way Forward/ Future Plans:

- Increase political commitment and involvement of major partners to ensure the sustainability of the National DOTS-Plus Project.

- Training of Physicians, counselors and Laboratory staff on TB/HIV Co-infection after endorsement of the guidelines developed by the technical working group.
- Strengthening the linkages and up scaling the intervention in the round 11 of global fund.

12.National TB Reference Laboratory and Network



NRL – Automated Liquid Culture (MGIT) introduced in 2013



NRL – AFB smear microscopy

13.National TB Reference Laboratory and Network

1. Microscopy Network

The NTP continued to observe policy to diagnose pulmonary tuberculosis through direct smear microscopy. Two smear examined for diagnosis and monitoring of treatment is single smear examination is done at the end of 2nd, 5th and 6th month.

Microscopy coverage: Microscopic network was expanded in 2013 with engagement of Private sector under new PPM initiative supported by GF . Number of functioning

laboratories increased to 1395 with (including 213 private labs). On average at end of 2013 one microscopy laboratory was serving a population of 132,704 population from 55,339 in GB to 222,222 in ICT country wide, this varies from province to province /region depending on density population and geographical terrain from 55,339 in GB to 222,222 in ICT. Country wide, this varies from province to province /region depending on density population and geographical terrain

Quality Assurance of microscopy services: EQA by Blinded r echecking remained corner stone for quality assured microscop y services. 1345 DCs (including 213 DCs of PPM-GF) in 1 27 districts were covered by EQA by December2013.

Continued support was provided for quality assured microscop y services for human resource development, quarterly s urveillance meeting and provision of laboratory supplies.

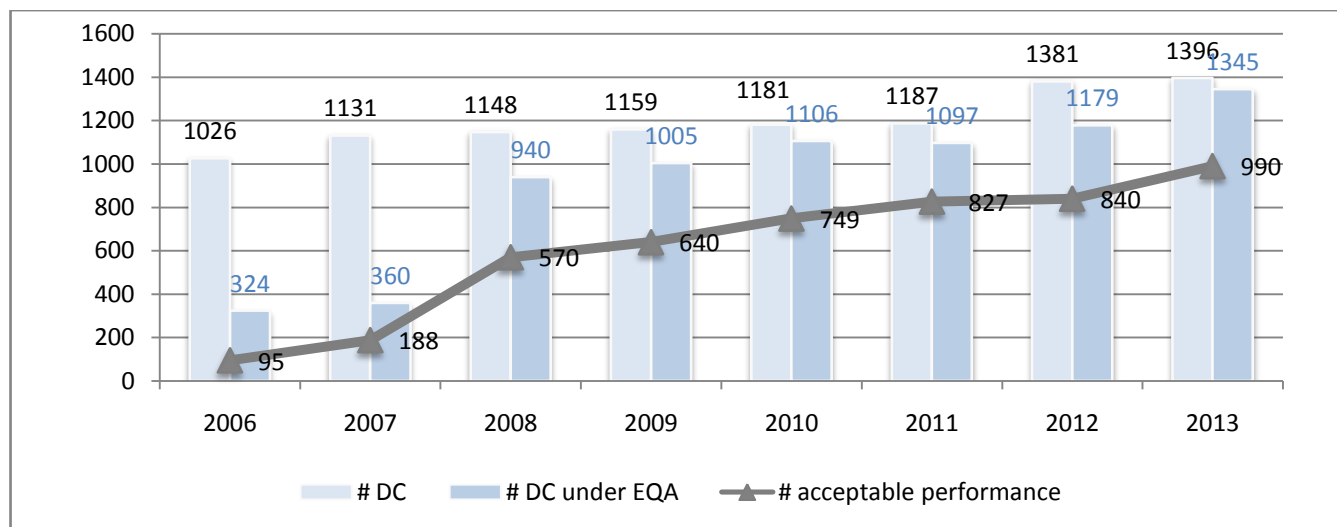


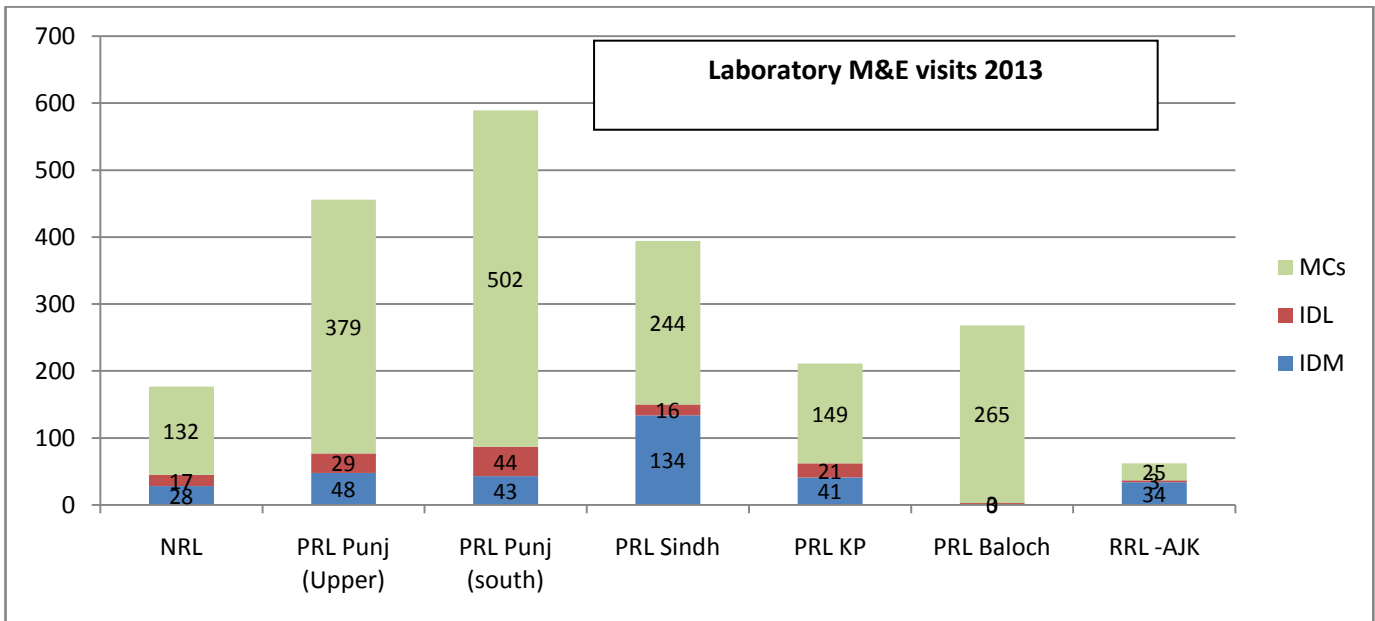
Figure-1 : Microscopy services , EQA coverage and performance

M&E Visits (Laboratory): M&E remains the keystone of TB laboratory network. For the microscopy network the M&E function is performed by the dedicated team at NRL central level as well provincial teams based at PRLs (Annex –V). The M&E staff is supported by GF. Microscopy network M&E primarily covers the quarterly intra-district meetings (IDMs), Intermediate laboratories at district level (IDLs), peripheral

microscopy centers and quarterly laboratory surveillance meetings held at provincial level. During 2013 > 2000 M&E visits were carried out country wide.

M&E of culture/DST and Xpert is being carried out currently by the technical staff of NRL i.e. Senior Microbiologist & Senior Molecular Biologist. This

function is planned to be devolved to the PRLs after the necessary capacity building.



Laboratory Performance indicators: -

- i. **Positivity rate among TB suspects** is showing gradual decline from 16.7% in 2009 to 14.6% in 2013 .as total number of notified cases is improving this decline is assumed as an indicative of improved suspect referral to laboratories.

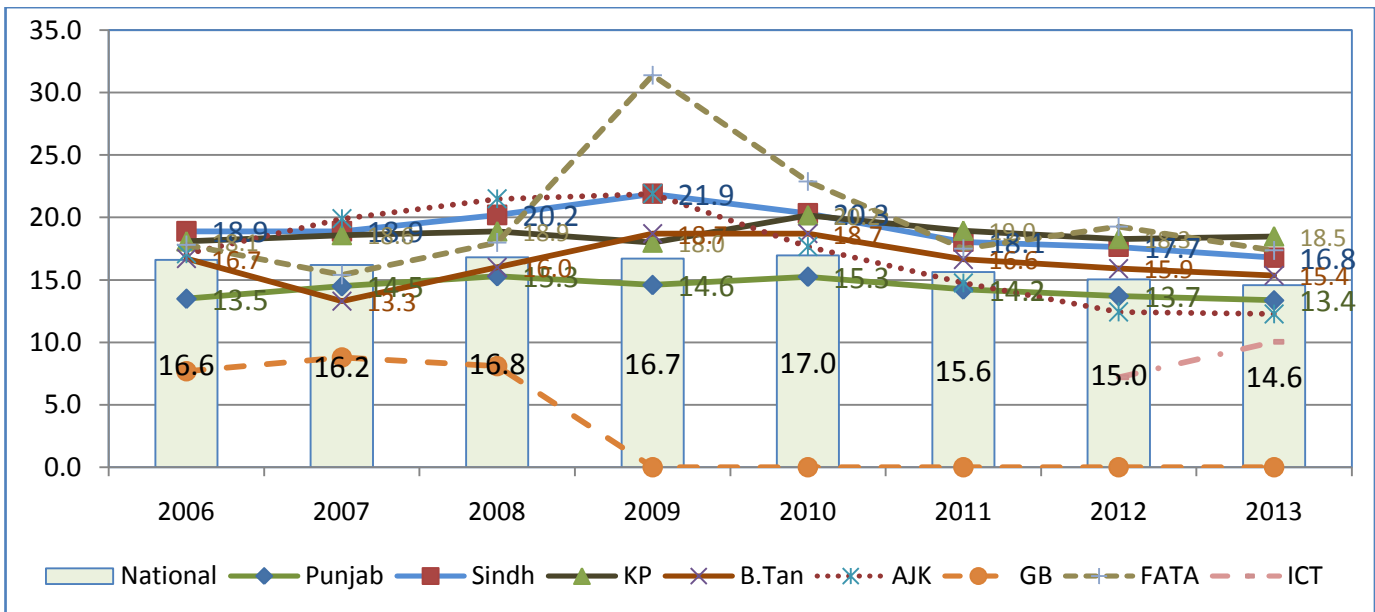


Figure 2 : Trend Suspect positivity rate

ii. **Positivity rate among follow –up examination** which is considered more sensitive indicator of quality of smear microscopy is still lower than expected. Positive among follow up examination has improved to some extent in Sindh, KPK and FATA but still is low in Punjab, AJK and Baluchistan despite the fact that number of reported errors in EQA are low in these provinces.

iii. **Efficiency of microscopy services** is gradually improving with decline of proportion of false positive and false negative reporting. Decline in false positive error was seen between 2006-2011 but slight increase is seen again in 2012-13 .Similarly decline in false negative error was seen 2006 to 2012 but an increase is observed in 2013 from 0.7% in 2012 tp 0.7% in 2013. However 27% of centers have yet to achieve level of acceptable performance.

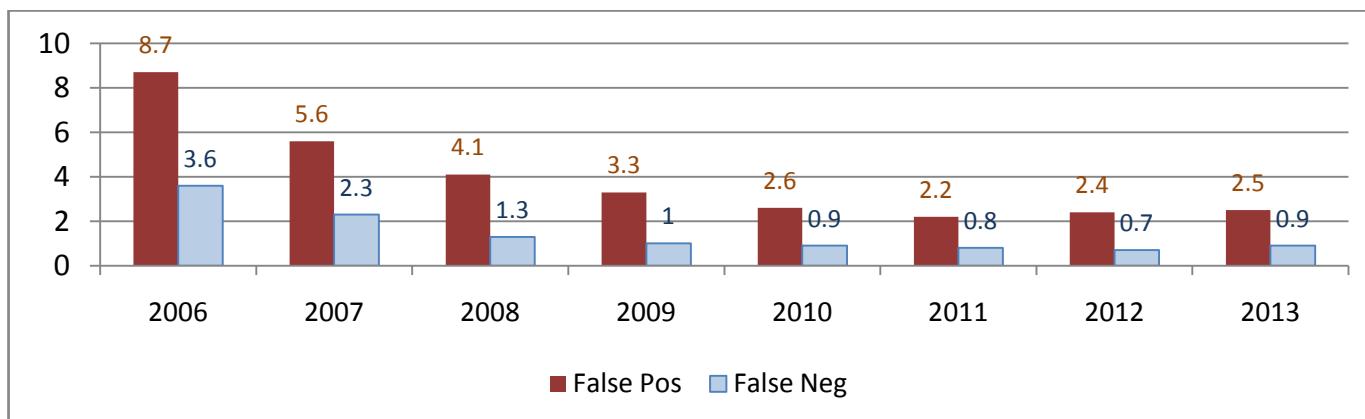


Figure 3: TREND Proportion of False Positive and Negative Error

2. GENEXPERT NETWORK:

After endorsement of *Xpert MTB/RIF assay* in December 2010 by World Health Organization (WHO) in both HIV-negative and HIV-positive individuals, Pakistan with financial support of US (DOS) successfully piloted implementation of GeneXpert in 2011 at eleven sites across country . Xpert was installed at

more sites in subsequent years in KP and FATA (KFW) , Sindh (UNITAID) and other districts however distribution of Xpert is not even due to specific donor support for specific province (KFW for KP and UNTAID in SINDH) .

Year	XPRT IMPLEMENTATION			Cartridges cost support	# TB LABS WITH XPRT								
	Donor	Province	# GX		ICT	Punj	Sind	KPK	B.	FAT	AJ	GB	Tot
2011	US	All	12	US(DOS)	1	3	3	1	1	0	0	0	11
2012	KFW	KP	10	KFW	1	6	3	4	1	0	0	0	15
	GF	All except	15	GF									
2013	KFW	FATA	6	KFW/TB REACH	2	9	15	10	1	4	0	0	43
	UNITAID	Sindh	25	UNITAID									

Table 3: GeneXpert partner support and distribution

Patient group recommended for Xpert Testing includes

RETREATMENT PTB CASES

- ALL smear positive and smear Negative TB patient with history of previous treatment .

NEW PTB CASES

- Symptomatic contacts of known DRTB cases
- NEW PTB cases who are reported smear positive at end of intensive phase

PRESUMPTIVE TB CASES IN VULNERABLE POPULATION

- Children (<15yrs)
- Health Care workers (including Laboratory workers)
- PLWHIV (people living with HIV)
- Immuno-compromised /Hospitalized or seriously ill
- Biological specimen obtained through procedures (gastric aspirates, Tissue biopsy, CSF)

	# Tested			# MTB +ve						# RR + ve					
	2011	2012	2013	2011		2012		2013		2011		2012		2013	
	#	#	#	#	%	#	%	#	%	#	%	#	%	#	%
NRL	163	4645	4896	92	56.4%	3161	68.1%	2718	55.5%	34	37.0%	321	10.2%	375	13.8%
Punjab	239	2722	3120	128	53.6%	1468	53.9%	1772	56.8%	55	43.0%	438	29.8%	454	25.6%
Sindh	409	4745	6270	285	69.7%	3418	72.0%	2652	42.3%	73	25.6%	563	16.5%	628	23.7%
KP	96	2335	2497	63	65.6%	1451	62.1%	1124	45.0%	24	38.1%	293	20.2%	257	22.9%
Balochist	7	415	174	3	42.9%	239	57.6%	164	94.3%	1	33.3%	76	31.8%	47	28.7%
FATA			69					35	50.7%					3	8.6%
TOTAL	914	14862	17026	571	62.5%	9737	65.5%	8465	49.7%	187	32.7%	1691	17.4%	1764	20.8%

Table 4: Trend Genexpert utilization and performance

3. TB Culture & DST laboratory network:

With support of Global fund grant TB culture /DST laboratory network expansion has made much progress in 2013 .

- TB Culture Laboratories:** Up-gradation work completed in three TB culture laboratories (Abbotababd, Faisalabad, Kotri), whereas at two sites (GB at Challas, and Zohb in

Balochistan) work was started and is near completion.

TB culture workload is gradually increasing and number of culture performed annually has increased from 15000 (2012) to more than 25000(2013).

Lab	2008	2009	2010	2011	2012	2013
NRL-ICT		285	4563	9754	5215	10668
PRL-Punjab		164	1452	1577	1739	2567
GDH				215	2339	3086
PRL-Sindh	2725	3406	4307	4209	5356	5757
PRL-KPK		319	768	823	760	3402
PRL-Bal		261	173	146	375	
Total	2725	4435	11263	16724	15784	25480

Table 5 : TB culture workload 2008-2013

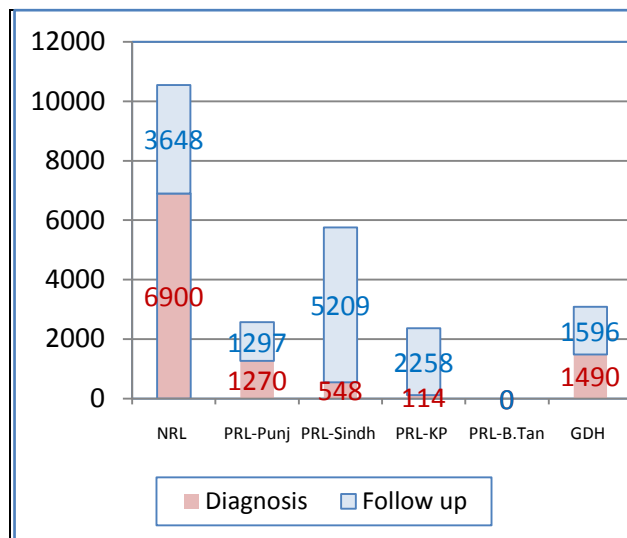


Figure 4 : TB culture -Annual workload 2013

- ii. **TB DST laboratories:**-In year 2013 plans to establish New DST laboratories has made significant progress and up-gradation work completed PRL – Sindh in Karachi and PRL -Balochistan in Quetta . These laboratories are expected to establish capacity for DST

services in 2014 enabling them to provide DST services for PMDT

AKUH, Indus Hospital TB laboratory, National Reference laboratory continues to provide DST services for PMDT.

4. National TB Reference Laboratory

ROUTINE DIAGNOSTIC SERVICES: National Reference Laboratory has expanded the coverage of diagnostic services for provision of diagnostic services to PMDT

sites as well patients /specimen referred from Rawalpindi Leprosy Hospital, Holy Family Hospital Rawalpindi, MH and CMH Rawalpindi etc. for early detection of MDR and diagnosis of TB.

	Name referring Health facilities	Referring District	Province	# of sample received
	PMDT			
1.	PIMS-Islamabad	ICT	ICT	19
2.	Mayo Hospital Lahore	Lahore	Punjab	95
3.	Jinnah Hospital Lahore	Lahore	Punjab	16
4.	DHQ Sargodha	Sargodha	Punjab	2
5.	Leprosy Hospital Rawalpindi	Rawalpindi	Punjab	1714
6.	Samlee Sanatorium-Muree	Rawalpindi	Punjab	1091

7.	Lady Reading Hospital-Peshawar	Peshawar	KPK	1627
8.	Ayub Teaching Hospital-Abbottabad	Abottabad	KPK	30
NON PMDT				
1.	Federal General Hospital (FGH)-Islamabad	ICT	ICT	618
2.	PIMS-Pulmonology ward-Islamabad	ICT	ICT	574
3.	PIMS-Children ward-Islamabad	ICT	ICT	854
4.	FGSH (Poly Clinic)	ICT	ICT	367
5.	Holy family hospital	Rawalpindi	Punjab	46
6.	Benazir Bhutto Hospital-Rawalpindi	Rawalpindi	Punjab	65
7.	DHQ Rawalpindi	Rawalpindi	Punjab	44
8.	Khayaban-e-Sir Syed (KSS)	Rawalpindi	Punjab	105
9.	Military Hospital Rawalpindi	Rawalpindi		1245
10.	Others			982

Table 6: Health facilities linked with NRL for provision of diagnostic services

Drug susceptibility Testing; Since 2009 NRL is involved in drug susceptibility testing of drug in Previously treated as well in patient with history of previous treatment ,However with increase of work load and introduction of GeneXpert, phenotypic DST is now done mostly of patient reported Rifampicin resistant . As results reporting of MDR is increased from 4.5% in

2009 to 24.6% in 2013 and similarly in Retreatment cases MDR reporting has increased 30.4% to 70.5% in retreatment cases.

As patient reported RR are tested further on phenotypic methods therefore reporting of mono-resistant to RR has decreased

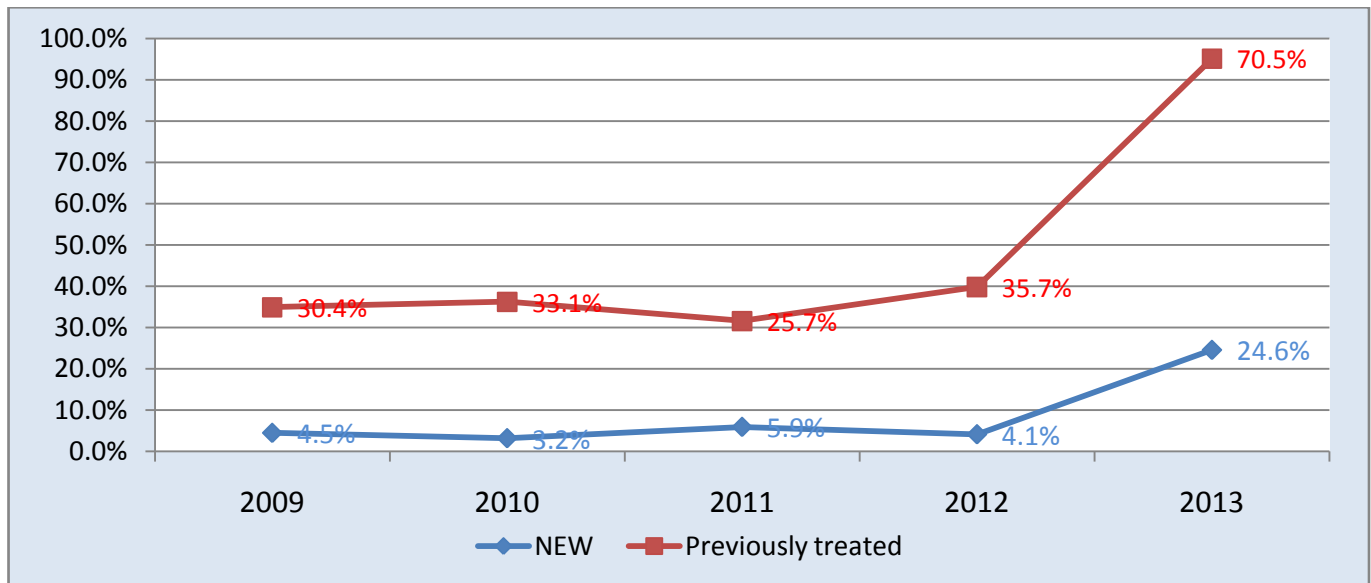


Figure 5 : NRL DST trend . MDR reporting in New and previously treated cases

		New	Previously Treated	Unknown treatment History	Total
1.	-Number of patients with positive identification for M..tuberculosis complex (confirmed by culture and/or line probe assay)	592	852	20	1464
2.	Among patients reported in (i) number of patients with available DST results for isoniazid(H) and Rifampicin (R)	61	261	17	339
3.	Among patients reported in (ii) number of patients with resistant to H but not R	4	11	0	15
4.	Among patients reported in (ii) number of patients with resistant to R but not H	0	2	0	2
5.	Among patients reported in (ii) number of patients with resistant to R and H (MDR-TB)	15 (24.5%)	184 (70.4%)	17 (100%)	216 (63.7)
Results of second-line drug susceptibility testing					
1.	Total number of pulmonary MDR-TB patients with DST results for any fluoroquinolone (FQ) and any second-line injectable agent (2LI)	15	182	17	214
2.	Among MDR-TB patients reported in (i) number of patients susceptible to both FQ and 2LI	9	92	10	111
3.	Among MDR-TB patients reported in (i) number of patients with any resistance to FQ	6	90	7	92
4.	Among MDR-TB patients reported in (i) number of patients with any resistance to 2LI	2	8	1	11
5.	Among MDR-TB patients reported in (i) number of patients with any resistance to both FQ and 2LI (XDR-TB)	2	8	1	11

Table7: NRL drug susceptibility pattern routine surveillance

DRUG RESISTANCE SURVEY: In 2013 Major task accomplished was completion of **FIRST NATIONAL DRUG**

RESISTANCE SURVEY. Interim results were finalized during workshop in Copenhagen conducted by WHO (HQ).

	TB disease type	TB Cases notified, 2012	% MDR	% MDR low	% MDR high	N MDR	N MDR low	N MDR high
PTB	New	219,970	4.3	2.8	5.7	9459	6159	12538
	Retreatment	11,717	19.4	13.6	25.2	2273	1594	2953

Table 8: DRS Preliminary results and estimated burden of MDR

DRS sample intake completed in November and laboratory work at NRL was completed in January four batches of strain for rechecking have been shipped to

EQA Scheme for DST :

NRL is linked with SNRL -Antwerp AND PARTICIPATES IN ANNUAL SCHEM OF EQA of DST is a regular activity

Antwerp .Final DATA analysis will be done in Q-03 2014 after all QA results are completed at SRL

organized by Supranational Reference Laboratory Network. NRL has sustained its proficiency in 19th round of annual panel testing coordinated by SNRL Antwerp Belgium

		2009 (Round-16)	2010 (Round-17)	2011 (round-18)	2012 (Round-19)
First Line	Rifampicin(R)	100%	100%	97%	100%
	Isoniazid (H)	100%	100%	97%	100%
	Ethambutol	100%	100%	96%	100%
	Stretomycin	100%	80%	93%	100%
Second	Ofloxacin		93%	100%	100%
	Amikacin		100%	100%	100%
	Capreomyin		100%	93%	100%
	Kenamycin		97%	97%	100%

Table9: - NRL Panel testing for DST results

Besides NRL .two other laboratory including in SRL EQA scheme. These include Tb laboratory AKU (Candidate SRL) and IHK regularly participate in EQA scheme report both first and second line DST. Both laboratories have sustained proficiency for FLDST and SLDST.

NATIONAL EQA SCHEME FOR DST: - NRL has been organizing National EQA scheme for DST since 2009 , Subsets of Panel strains received from SNRL are sent to both public and private sector TB laboratories who express their interest for participation .

	2010		2011		2012		2013	
	# Participati on	# Qualified	# Particip ation	# Qualifie d	# Participat ion	# Qualified	# Participati on	# Qualified
Public								
FLD	1	1	2	2	3	1	2	2
FL+ SL	1	0	1	0	1	0	1	0
Private								
FLD	2	1	3	2	3	2	4	3
FL+SLD	0	0	1	0	1	0	0	0

Table 10: Participating Laboratories in National EQA Scheme for DST 2012

In 2013 altogether 6 laboratories participated (2public and 4 private) participated in EQA and 7 qualified proficiency testing for first line DST but only one reported second line DST result and failed to achieve proficiency target .

Although in country capacity for QA first line DST is gradually improving but with introduction of GeneXpert , only Rifampicin resistant are referred for DST thus making it important for DST laboratory to have capacity for both first and SLDST .

Annex-1: Lab Training Support in 2013

		Fed	Punjab	Sindh	KPK	B-Tan	AJK	NA	FATA	Total
Initial training	Peripheral lab staff	0	120	54	42	19	11	0	10	256
	Gene Xpert	-	-	-	-	-	-	-	-	-
	District lab supervisors	-	-	-	-	-	-	-	-	-
	Non Lab supervisors	0	6	0	0	12	0	0	0	18
	MLT Student	-	-	-	-	-	-	-	-	-
	6 Training for IT Staff for	0	4	2	2	2	0	0	0	10
	Culture	-	-	-	-	-	-	-	-	-
	DST	4	5	1	1	0	0	0	0	11
Panel Testing	-	-	-	-	-	-	-	-	-	
Refresher	Peripheral lab staff	0	80	49	30	10	12	0	0	181
	DLS	-	-	-	-	-	-	-	-	-
	Culture	-	-	-	-	-	-	-	-	-

Annex –II: Microscopy: EQA coverage and performance of centers

Microscopy		Punjab	Sindh	KP	B.TAN	AJK	GB	FATA	ICT	Total
Network	2005	445	237	163	63	35	11	28		982
	2006	445	237	181	80	35	18	28		1026
	2007	472	259	199	102	57	18	24		1131
	2008	473	262	203	102	62	22	24		1148
	2009	473	264	199	108	67	22	26		1159
	2010	486	270	202	108	67	22	26		1181
	2011	487	274	203	108	67	22	26		1187
	2012	494	274	204	107	52	22	17	7	1177
	2012 (PPM-	103	56	29	11	2	0	0	3	204
	2013	497	267	204	111	52	22	23	7	1183
2013 (PPM-	113	57	30	6	5	0	0	2	213	
EQA coverage	2006	111	84	71	29	18	11	0		324
	2007	118	91	81	40	18	12	0		360
	2008	420	234	200	57	13	2	14		940
	2009	441	262	191	91	0	0	20		1005
	2010	482	268	200	93	48	0	15		1106
	2011	480	268	199	98	53	0	14		1112
	2012	491	270	201	60	53	0	17	3	1095
	2012 (PPM-	33	45	5	0	1	0	0	0	84
	2013	493	267	204	91	52	0	18	7	1132
	2013 (PPM-	113	57	30	6	5	0	0	2	213
# of Centers with acceptable	2006	20	15	31	22	2	5	0		95
	2007	42	61	49	21	4	11	0		188
	2008	257	125	124	43	7	2	12		570
	2009	282	138	127	75	0	0	18		640

result	2010	319	149	149	85	34	0	13		749
	2011	361	167	133	89	25	NA	13		788
	2012	368	165	132	48	38	NA	17	3	771
	2012 (PPM-	28	36	4	NA	1	NA	NA	NA	69
	2013	395	142	151	73	43	NA	12	4	819
	2013(PPM-GF)	106	25	27	6	5	NA	NA	2	171

Annex-lab-III: TB laboratory performance indicators

		Punjab	Sindh	KP	B.Tan	AJK	GB	FATA	ICT	National
Suspect positivity rate	2006	13.5	18.9	18.1	16.7	17.1	7.7	17.8		16.6
	2007	14.5	18.9	18.6	13.3	19.9	8.8	15.4		16.2
	2008	15.3	20.2	18.9	16.0	21.5	8.1	18.0		16.8
	2009	14.6	21.9	18.0	18.7	21.9	NA	31.4		16.7
	2010	15.26	20.33	20.18	18.7	17.67	NA	22.88		16.95
	2011	14.24	18.06	18.95	16.64	14.76	NA	17.49		15.64
	2012	13.71	17.65	18.29	15.90	12.43	NA	19.28	7.2	15.03
	2012 (PPM-	12.9	19.2	35.9	NA	2.77	NA	NA	NA	18.9
	2013	13.37	16.79	18.5	15.35	12.27	NA	17.36	10.06	14.59
	2013(PPM-	17.7	19.9	23.0	26.0	8.1	NA	NA	NA	18.7
Follow up Smear positivity rate	2006	0.9	3.7	2.6	1.7	0.8	3.3	0.7		2.4
	2007	2.8	4.6	2.3	1.8	0.7	2.1	2.1		3.2
	2008	1.4	5.6	3.3	1.7	1.1	1.7	4.4		2.7
	2009	1.7	6.0	3.6	1.5	1.4	NA	5.9		3.0
	2010	2.16	5.79	3.58	1.70	1.58	NA	4.28		3.15
	2011	2.55	5.29	3.94	1.96	2.50	NA	6.30		3.37
	2012	2.39	5.04	4.42	1.60	1.89	NA	6.08	1.4	3.28
	2012 (PPM-	2.0	2.2	3.1	NA	50	NA	NA	NA	2.3
	2013	2.94	5.34	4.09	2.15	2.05	NA	4.38	1.23	3.58
	2013 (PPM-	1.64	3.1	1.89	0	0	NA	NA	NA	2.29
Proportion false positive	2006	9.0	10.4	7.8	2.1	7.8	8.6	0		8.7
	2007	6.5	6.5	2.4	7.3	6.9	9.5	0		5.6
	2008	4.4	4.6	3.1	2.0	8.8	0	2.2		4.1
	2009	2.5	5.5	3.2	1.76	NA	NA	0.0		3.3
	2010	2	3.7	2.9	1.1	4.7	NA	0.60		2.6
	2011	1.50	1.8	3.8	2.4	6.2	NA	0		2.2
	2012	1.7	2.9	2.8	3.5	3.8	NA	0.5	0	2.4
	2012 PPM-	5.9	16.5	2.8	NA	0.0	NA	NA	NA	11.8
	2013	1.5	3.3	2.9	4.1	2.1	NA	3.7	3.5	2.5
	2013(PPM-	0.60	6.52	2.0	0	0	NA	NA	0	3.08
Proportion false	2006	3.0	5.9	2.6	2.5	5.0	1.7	0		3.6
	2007	2.2	3.2	1.5	3.1	6.1	1.3	0		2.3
	2008	1.2	1.9	1.0	0.9	4.1	0	1.1		1.3

19	PRL KP Peshawar		956	975		416	327		56	53
20	LRH Peshawar	96	1379	726	63	705	461	24	208	139
21	MMC Mardan			63		48	18		8	4
22	KTH Peshawar			425		282	139		21	12
23	ATH Abbotabad			226			117			33
24	DTO Lab D. I. Khan			40			33			9
25	DTO Lab Swat			29			19			5
26	DTO Lab Batagram			4			2			0
27	DTO lab L. Dir			7			7			2
28	DTO Lab Banu			2			1			0
SUB TOTAL KP		96	2335	2497	63	1451	1124	24	293	257
BALUCHISTAN										
29	PRL Baluchistan Quetta	7	415	174	3	239	164	1	76	47
FATA										
30	TBC AHQ Hospital, Parachinar, Kurram			19			7			0
31	AHQ Bajaur Agency			41			20			3
32	ATH Hospital LandiKotal, Khyber			9			8			0
SUB TOTAL FATA				69			35			3
Total		1828	29724	33983	1142	19474	16895	374	3382	3525

Annex- V : Human Resource for M&E (Microscopy Network)

Reference Laboratory	*Senior M&E Officer/M&E Officer LAB	Senior Laboratory Supervisors (SLS)
NRL	*1	4
PRL Lahore	0	3
PRL Multan		3
PRL Sindh	1	4
PRL KP	1	4
PRL Baluchistan	0	4

AJK	-	1
GB	-	1
FATA	-	0



NRL Reception



NRL ; Media preparation in process



International Review mission 2013



Union conference 2013 with Dr Rumina Hassan, Dr Richard Urbanzik and Dr John Ridderhof



DRS DATA analysed workshop 2013



Disease Prevalence survey DATA analysis workshop



National Manager with NRL Team



13. Health System Strengthening

13. Health System Strengthening

1-Introduction:

The health policy of Pakistan formulated in the year of 2001 makes a direct reference for controlling the disease in Pakistan using the WHO-Recommended strategy of Directly Observed Treatment Short Course (DOTS). National TB Control Program is conducting capacity building of all cadres of DOTS staff to enable them to provide quality DOTS services under health system strengthening.

2-Epidemiology of HSS as a core Component

At the start of the millennium, it was realized that the need of economic boom and innovative new technologies, improved health outcomes and deep equities in health status in developing countries. Several global health initiatives to address these health issues emerged, bringing with them new resources, partners, technical capacity and political commitment. However, as interventions in Health system strengthening in many specific areas initiatives were made to be scaled up, some of these have had the unintentional effect of eroding the capacity of already health systems. Now, the world has a sophisticated array of preventive, diagnostic, and curative interventions that are evidence-based and affordable. Yet in many resource poor settings the uptake of these technologies is very low and they lack the systems to deliver these interventions reliably, consistently, at reasonable cost and on the scale that is required to those most in need.

Health System Strengthened (HSS) with access to financial, material, technical and human resources to deliver high quality healthcare to reach even the most underserved and marginalized populations. It is also essential to improving the world's health, and that investments and efforts in global health, whether they

involve disease control, quality of health care delivery, health promotion, or policy-making, will fail if the HSS itself is absent or ineffectual. More over most global health interventions depend upon an existing infrastructure and set of services, that in many countries around the world are weak. Thus, health systems are fundamental to global health and their strengthening is now seen as vital by the global health community.

The main aim of HSS is to overall improve the health status of TB patient in Pakistan at community level. Other aim is keep on tract the resources and money according to: goal, objective, targets and indicators. Implementation is another important aspect of HSS and the core responsibility

Objective of HSS identified are:

To improve access of health facilities, to improve overall coverage and utilization; to provide quality assurance in healthcare; to increase technical and financial efficiency; to Integrate services with other sectors; to ensure sustainability; to remove barriers that hinder introduction of new, to contextually appropriate technologies; to Complement national government efforts and to Improve health outcomes.

3-Background:

The National Tuberculosis Control Program (NTP) is responsible for overall TB Control Activities in the country i.e. Policy Guidelines, Technical Support, Coordination, Monitoring and Evaluation and Research whereas the provincial Tuberculosis Control Programs (PTPs) and Districts are responsible for the actual care delivery processes including program planning, training of care providers, case detection, case management, monitoring and supervision.

The support from Global Fund has been used to further strengthen the implementing capacity of the

NTP by enhancing the financial and administrative managerial capacity of the NTP, assist and carry out capacity building/refresher training activities and monitoring the Program.

GFATM support addresses the key components of Stop TB Strategy. Health System Strengthening is the major areas for NTP intervention. Through sustained commitment, Strengthening Partnership with Public and Private Sectors and introducing new initiatives, the program steadily improved case detection and treatment outcome for TB patients.



4- Major Achievements

National TB Control Program is conducting capacity building of all cadres of DOTS staff to enable them to provide quality DOTS services under health system strengthening through Objective 7 of the consolidate Grant. The project ended in December 2012. More than 7800 Managers & Doctors, and 11,000 Paramedics have been trained on Refresher Modules on Core TB DOTS. In order to sustain the gains, TB control program planned to include the following activities under the HSS objective, under SSF Grant:

1. Capacity Building Of Provincial Programs – In the area of Program management, financial management, procurement and M&E. Through provision of trained HR and training of all PTP staffs on The Global fund grant management policies and procedures.

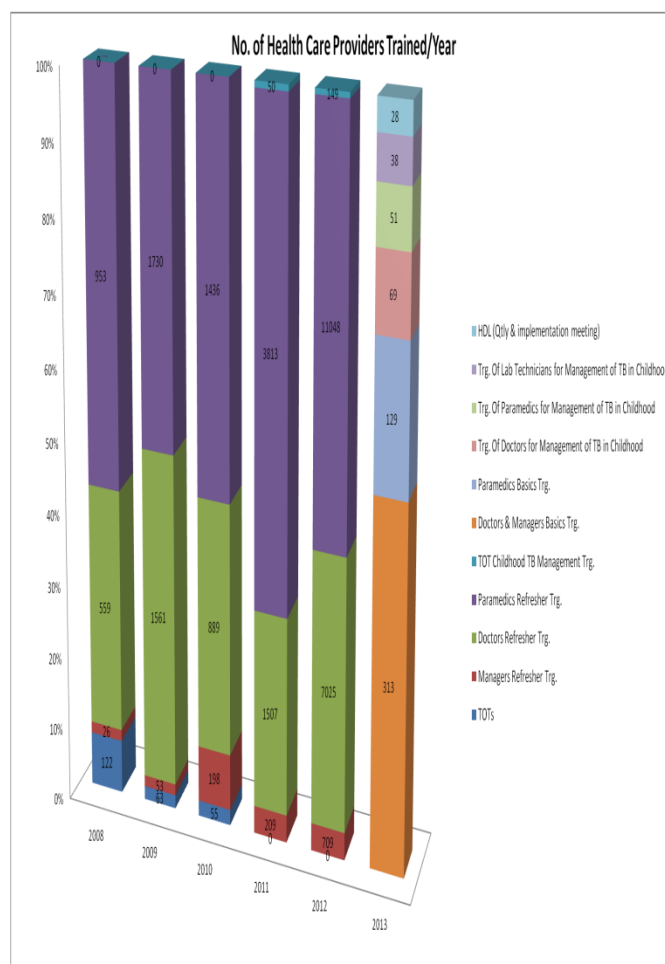
2. Continue Capacity Building of Field Staff

Refresher Trainings for three cadres of Health care Providers started from June'2008 and 7883 (96%) doctors & managers and 11048 (96%) paramedics from the actual target, have been trained in 2012.

The expected attrition of staff is around 40%, hence the basic training was required for the turn over staff. To cater this need, NTP envisages inclusion of basic training for 50% of the staff turnover and rest will be catered through public sector funds. Refresher trainings for those trained two years earlier will continue from NTP end. The execution of the training activities is the responsibility of the Provincial TB Control Program. Basic trainings on CORE DOTS and Management of TB in Children have been started for health care providers, under SSF Grant.

	2008	2009	2010	2011	2012	2013
TOTs	122	63	55	0	0	
Managers Refresher Trg.	26	53	198	209	709	
Doctors Refresher Trg.	559	1561	889	1507	7025	
Paramedics Refresher Trg.	953	1730	1436	3813	11048	
TOT Childhood TB Management Trg.	0	0	0	50	149	
Doctors & Managers Basics Trg.						313
Paramedics Basics Trg.						129
Trg. Of Doctors for Management of TB in Childhood						69
Trg. Of Paramedics for Management of TB in Childhood						51
Trg. Of Lab Technicians for Management of TB in Childhood						38
CHILDHOOD TB (Qly & implementation meeting)						28

3. **Development Of Online Data Base**– For all trainings conducted under each objective. Online data base is required for efficient and error free recording of all trainings. The data base will help in planning and avoiding repetition of training. It will be used by Provincial TB Control Program and analysis will be performed at Provincial as well as National Level. However, it is not yet mature but working is going on it.



4. **Quarterly Surveillance Meetings**– To sustain the quality of data is an ongoing, regular and continuous activity, included under HSS.

5. Through CG Grants NTP has developed modules for nursing and medical schools. Advocacy seminar for inclusion of modules in the curriculum of nursing and medical schools will be conducted for endorsement by PMDC and Directorate General of Nursing.

14. **Training On Web TBS For Electronic Surveillance** – Web TBS has been introduced in 2012 with the support of W.H.O for electronic surveillance of DOTS data as pilot across 10

districts of the country. Currently, it is implemented in 79 districts and all Provincial managers, DTCs, Database Managers and NPOs of respective districts have been trained.

5- Way Forward:

The intervention is in place in phase-2 according to original proposal. The indicator of objective-5 is, the number of health care providers and laboratory staff trained in TB management

National TB Control program as PR of GF consolidated grant has been successful in achieving the programmatic targets i-e; more than 96% of targets has been achieved in objective-7 under consolidated grant. Recently there has been extensive revision of case management protocols on the recommendation of World Health organization. Ministry of health has been devolved and provinces are supposed to manage the health function independently. In Phase-11 under SSF, objective -5 also focused on health system strengthening. NTP through this objective has conducted capacity building training of various cadres involved in project implementation and management including various components of TB case management. The major focus is on basic trainings. The revised basic training manuals have already been printed.

The National Tuberculosis Control Program (NTP) is responsible for overall TB Control Activities in the country i.e. Policy Guidelines, Technical Support, Coordination, Monitoring and Evaluation and Research whereas the Provincial Tuberculosis Control Programs (PTPs) and Districts are responsible for the actual care delivery processes including program planning, training of care providers, case detection, case management, monitoring and supervision.

Involvement of multiple general cadre staff (i.e. Doctor, Paramedic, Managers) in the delivery of TB care at a public health facility implies the need for clear responsibilities, operations and capacity building of each staff. The role of managers (including NTP & PTP managers, DTC's, NPO, EDO's, DHO,MS) is enabling and functioning from National to district level for proper coordination and monitoring of TB care delivery processes, challenges related with technical competence, time-sharing and program support.

6-Constraints / challenges observed during implementation.

- Delayed approval of Training Plan from GF.

- Due to devolution and transition phase, SR Capacity building is an important challenge for the proper implementation of project.
- Law and security issues, throughout the country is a main constraint.

7- Lesson learnt

Capacity building of Provincial Programs in the area of Program management, financial management, procurement and M&E. Through provision of trained HR and training of all PTP staffs on The Global fund grant management policies and procedures.