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**MINISTRY OF PUBLIC HEALTH AND SANITATION**

**DIVISION OF LEPROSY, TUBERCULOSIS AND LUNG DISEASE, KENYA**



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**The Republic of Kenya**

**Ministry of Public Health and Sanitation**

**DIVISION OF LEPROSY TUBERCULOSIS AND LUNG DISEASE**

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**2010**

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The staffs working within the division (central unit, Central Reference Laboratory, provinces, districts and health facilities) are also commended for making TB control in Kenya a success. It is expected that they will continue to work with renewed energies to ensure that TB and poverty become history and that Kenya, one day becomes, a society free from tuberculosis, Leprosy and Lung Disease.



**LIST OF ABBREVIATIONS**

ALERT	All African Leprosy and Rehabilitation Training Center
CDR	Case Detection Rate
CHEW	Community Health Extension Worker
CHW	Community Health Worker
CIDA	Canadian International Development Agency
CNR	Case Notification Rate (Number of Cases Notified/100,000 Pop.)
DLTLD	Division of Leprosy, TB and Lung Disease
DMS	Director of Medical Services
DST	Drug Susceptibility Testing
DTLC	District TB / Leprosy Coordinator
E	Ethambutol
EPTB	Extra-Pulmonary Tuberculosis
GOK	Government of Kenya
GON	Government of the Netherlands
H	Isoniazid
HIV	Human Immuno-Deficiency Virus
IUATLD	International Union Against TB & Lung Diseases
KANCO	Kenya AIDS NGOS Consortium
KNCV	Royal Netherlands Tuberculosis Control Association
MB	Multi-Bacillary (Leprosy)
MDT	Multi Drug Therapy (Leprosy)
MOH	Ministry of Health
NGO	Non-Governmental Organization
NTLC	National TB/Leprosy Coordinator
OOC	Out Of Control
PB	Pauci-Bacillary (Leprosy)
PTB	Pulmonary Tuberculosis
PTLC	Provincial Tuberculosis / Leprosy Coordinator
R	Rifampicin
RFT	Released From Treatment (Leprosy)
S	Streptomycin
SCC	Short Course Chemotherapy
SM-	Smear-Negative Pulmonary Tuberculosis
SM+	Smear-Positive Pulmonary Tuberculosis
ST	Sensitivity Testing
TB	Tuberculosis
TC	Treatment Completed
TNC	Treatment Not Completed
TO	Transferred Out (of an administrative area)
VMT	Voluntary Muscle Testing
WHO	World Health Organization
Z	Pyrazinamide

## SUMMARY

The Division continued to carry out relevant activities aimed at controlling the tuberculosis (TB) epidemic, lung disease and the elimination of leprosy in 2010. In relation to TB control the focus of attention in 2010 remained hinged on the six elements of the STOP TB strategy formulated by WHO with emphasis on DOTS expansion, improvement in DOTS quality and expansion of TB/HIV collaborative activities, addressing the challenge of MDR TB, Empowering communities with the knowledge about TB and enabling and promoting research. Leprosy control continued to focus on early case finding, intensified supervision in the leprosy endemic districts, multi-drug therapy and prevention of disabilities.

The total number of TB cases (all forms of tuberculosis) reported in 2010 was 106,083. This is a decrease of 4% compared to the 110,065 cases of TB cases reported in 2009. This is a clear indication that TB burden in Kenya has stabilized and it is beginning to turn round. Although the stagnation in case notification was first noticed in 2004, this phenomenon may have been due to a stabilization of the epidemic as a result of previous TB control efforts. With the increased communication and social mobilization efforts sustained and technical support to implementing units being provided, case notification in 2011 may further reduce.

Tuberculosis treatment results for TB patients started on treatment in 2009 show treatment success rates of 85.86% for new smear-positive pulmonary TB cases (n=37,402), 78% for smear-positive re-treatment relapse cases (n=3,643), 79% for smear-positive re-treatment failures cases (n=195), 83% for new smear-negative PTB cases (n= 32,786), Smear not done 79% (11,727), Other re-treatments 79%(5,423) and 83% for Extra-Pulmonary TB cases (n=17,438). Coupled with an increased case detection rate (TB all forms) to 85% as reported in the WHO 2010 Global report.

There were a total of 154 new leprosy cases in 2010, of which 9 (6%) cases were paucibacillary (PB) and 145(94%) multi-bacillary (MB) cases. This is a decrease of 25% compared to the 204 cases registered the previous year. The number of leprosy patients on the register at the end of the year decreased from 234 cases in 2009 to 130 cases in 2010. The proportion of disabilities among the newly registered cases still remain high calling for increased support to sensitization of health care workers to increase their index of suspicion for leprosy. About 20% had disability grade 2, and an additional 23% had disability grade 1, indicating that 43% of cases presented themselves in an already advanced stage of the disease, either caused by patients or health provider delay. However, in 6% of new cases the disability grade was not recorded. Compared to 2009, the overall case holding improved for both (PB) and (MB) cases. The proportion of cases released from treatment (RFT) increased from 70% in 2007 to 86% in 2008 for PB cases and for MB cases it increased from 73% in 2009 to 74% in 2010. It is important to note that the sharp decline in the number of Leprosy cases could be attributed to the massive campaigns which had been initiated in 2009. This could have led to a high number of cases reported in that particular year whereas in the year 2010 there were no campaigns carried out.

The DLTLDD continued to pursue implementation of the quality DOTS strategy through expansion and harnessing gains made in previous years. These initiatives include engaging all providers (PPM), implementation of activities aimed at mitigating the impact of HIV on TB and TB on HIV. Community engagement and involvement (CB-DOTS), intensification of efforts to control TB in large urban centres, strengthening the laboratory network for TB control, communication and social mobilization and the control of TB in congregate settings.

To enable the DLTLTD to implement these initiatives the DLTLTD continued to receive financial and technical support from several organizations including the Government of Kenya through the Ministry of Public Health and Sanitation; the Government of the United States of America (USG) through the President's Emergency Plan for AIDS Relief (PEPFAR) whose main implementing agencies in Kenya include the Centers for Disease Control and Prevention (CDC) and the United States Agency for International Development (USAID) through TBCAP led by the Royal Netherlands Tuberculosis Association (KNCV) and subcontracting APHIA II partners, Malteser; a German NGO; the Global Fund to fight AIDS, TB and Malaria (GFATM), KAPTLTD, African Medical and Research Foundation (AMREF), MERLIN and World Health Organization (WHO).

Activities carried out by the DLTLTD in 2010 are summarized in this report. It is hoped that those who read this report will provide the DLTLTD with constructive comments that will assist in the development of new or improved approaches to TB, Leprosy and Lung disease control activities in Kenya and assist the country towards implementing these activities.

## 1 INTRODUCTION

### 1.1 History and organization of DLTLD

The Government of Kenya launched the National Leprosy and Tuberculosis Program (DLTLD) in 1980 combining the then existing tuberculosis control activities, which had been in place since 1956, with several leprosy control projects in Western Kenya, Coast and Eastern Province, which had been initiated since the early seventies, into one program: the National Leprosy and Tuberculosis Program (NLTP).

As at 1<sup>st</sup> July 2007 the National Leprosy and Tuberculosis program (NLTP) was elevated to Division of Leprosy, Tuberculosis and Lung disease (DLTLD), within the Ministry of Public Health and Sanitation in the Department of Disease Prevention and Control. This has given more impetus to the program with new demands and challenges that includes amongst others, critical issues on lung health management and coordination.

In 2010 TB and Leprosy services were delivered through 2,818 health units managed mainly by the Ministry of Public Health and Sanitation, Ministry of Medical services Health (and other Ministries), NGO/FBO health units and some private institutions. Smear microscopy services were available at 1,335 of these health units (see table 1A and B).

**Table 1A: Provision of TB treatment services in 2010**

	<b>GOK</b>	<b>NGO</b>	<b>PR</b>	<b>Total</b>
Hosp.	199	105	82	386
Health C.	794	368	60	1,222
Disp.	915	139	37	1,091
Other	8	20	53	81
<b>Total</b>	<b>1,704 (60.4%)</b>	<b>382 (13.5%)</b>	<b>232 (8.2%)</b>	<b>2,818</b>

**Table 1B: Provision of AFB diagnostic services in 2010**

	<b>GOK</b>	<b>NGO</b>	<b>PR</b>	<b>Total</b>
Lab	679	249	119	1,047
AFB	853 (63.8%)	241 (18%)	241 (18%)	1,335

Provision of leprosy and tuberculosis services are integrated into the general health service at the district level. However special staffs of the DLTLD are responsible for coordination, supervision and technical advice in relation to management of TB and Leprosy at all levels. In 2010, a total of 168 District Tuberculosis/Leprosy Coordinators (DTLCs) were responsible for coordinating the delivery of TB and Leprosy services. These officers were supported by 12 Provincial Tuberculosis/Leprosy Coordinators (PTLCs). Twenty two technical officers were available at the central unit of the DLTLD to provide technical guidance for the national response to TB, Leprosy and Lung disease control. These technical staffs at the central unit were supported by administrative, secretarial and support staff including 7 drivers.

The Organogram of the DLTLD is shown in *Annex 2*.

### 1.2 Technical policies

For a long time the DLTLD has relied on passive case finding to identify infectious and other forms of both leprosy and tuberculosis to reduce transmission. In 2010, there were efforts to intensify TB case finding through the use of household/community cough monitors, screening for TB in persons found to be HIV infected at HIV testing sites, intensification of TB screening for contacts of patients with PTB through contact invitation and screening of new inmates in prisons. Emphasis was geared towards intensified case finding among the HIV infected clients. The GOK continued to provide free TB treatment at all government owned

facilities, most Faith Based (FBO) and NGO health facilities and some private institutions. All the institutions receiving free quality assured anti-TB medicines from the DLTLD (and some private hospitals supplied with anti-TB drugs by the Kenya Association for the Prevention of Tuberculosis and Lung Diseases (KAPTLD)) used the DLTLD TB case recording and reporting tools to report cases on a quarterly basis to the central level through the DTLCs and PTLCs.

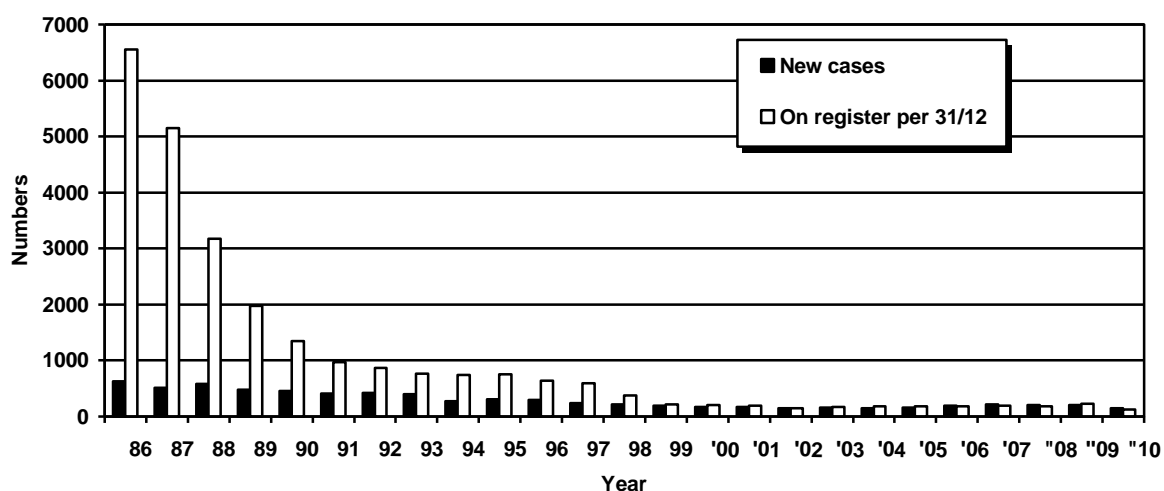
DLTLD with the support of CDC rolled out the use of Electronic TB registers with the aid of PDA's and Desktop computers to cover one more region (North Rift TB). Preliminary results indicate that this initiative is assisting in significantly improving efficiency, timeliness and quality of the reported data.

### 1.3 LEPROSY

#### 1.3.1 *The extent and trend of leprosy in Kenya*

Like most countries, the true prevalence and incidence of leprosy in Kenya is not known. So far, the most reliable indicators to monitor the extent and the trend of the leprosy disease burden is the registered prevalence of cases currently on treatment, and the notification of new cases. Since the introduction of Multi-Drug Therapy (MDT) in 1985, the registered prevalence decreased from 6,558 cases in 1986 to 154 cases by the end of 2010. The number of new leprosy cases detected decreased from 630 in 1986 to 126 in 2010 as shown in *Fig.1 below*

**Figure 1: Leprosy New Cases & cases on register by the end of the year: 1986-2010**



### 1.4 Case-finding

#### 1.4.1 Case notification

The number of leprosy cases (new and re treatment) reported decreased by 23% from 204 in 2009 to 154 in 2010. Leprosy is no longer a public health problem in Kenya, according to the WHO levels. WHO defines leprosy as a public health problem if there is a registered prevalence of more than one (1) leprosy case per 10,000 population. It is noted that the great majority of new leprosy cases are found in just a few districts in Kenya. However, even in these districts, leprosy is not a public health problem as it has been eliminated, although it is yet to be eradicated. The number of cases on register has decreased by 44% from 234 in 2009 to 130 by the end of 2010. Concerns on disability is great since most patients (43%) are diagnosed with disabilities i.e. grade 1 and 2. These could be a result of patient or health system delay. Concerted efforts must be made to train health care workers on how to effectively suspect and diagnose leprosy cases.

#### 1.4.2 Leprosy: Epidemiological indicators

*Table 2* gives a summary of epidemiological indicators for new leprosy cases put on treatment from 1997 up to 2010.

**Table 2: Epidemiological indicators new leprosy cases Kenya: 1997-2010**

Indicators/year	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10
New PB cases	43	41	25	37	18	13	9	6	12	18	17	14	9	8
New MB cases	194	174	166	133	157	141	153	137	146	172	196	153	148	118
Total new cases	237	215	191	170	175	154	162	143	158	190	213	167	157	126
Pop. (n x 1,000,000)	27.0	27.7	28.7	29.5	30.4	31.4	32.3	33.3	34.4	35.5	36.6	37.1	39.4	40.2
CDR new cases (n/100,000)	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.5	0.5	0.6	0.5	0.4	0.3
Registered Prevalence 31/12	589	375	214	209	195	148	176	182	180	185	191	200	234	154
Reg. prev (n/10,000)	0.2	0.08	0.07	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.04
M/F ratio	1.2	1	0.7	1.2	1	1	1.1	1.3	0.9	1.2	1.4	1.13	1	1.36
Child < 15 yrs. (%)	8	7	4	5	3	2	5	3	4	4	4	6	7	6
MB proportion (%)	83	81	87	78	90	91	94	96	92	91	92	92	90	94
Reported disability (%)	97	100	100	95	88	93	87	88	69	78	81	100	91	94
Disability grade 0(%)	59	67	55	60	45	36	34	50	61	64	56	54	48	54
Disability grade 1(%)	23	15	20	24	27	42	39	34	25	26	26	23	23	25
Disability grade 2(%)	16	19	25	16	28	22	27	17	15	10	17	13	20	21
MDT coverage(%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100

**Child proportion < 15 years:** This indicator provides information on the transmission of leprosy in the community (a high transmission level will cause a high proportion of children among newly reported cases of leprosy). In 2010 this proportion was 6%, which indicates a low level of transmission as would be expected but this represents a 1 percent decrease from the previous year.

**Male/female ratio:** This indicator provides gender differences on the distribution of leprosy. In most countries, the male/female ratio among leprosy patients is unequal with, in general, more males than female cases. However, in Kenya, this ratio on average has been around 1 but in 2010, there were more males than female with Leprosy with a ratio of 1.36.

**Proportion of new MB cases:** This indicator provides information about the success of a leprosy control program. If infectious cases are detected and treated effectively, the number of new cases will gradually decrease and the proportion of infectious cases (MB leprosy) amongst them will increase. In Kenya the proportion of MB cases has increased from about 25%, before 1990, to 94% in 2010, indicating that leprosy control, so far, is effective.

**Proportion of Disability grade 2:** This indicator gives information about the delay between noticing the first symptoms of leprosy (hypo-pigmented patches) by the patient and the start of treatment with anti-leprosy drugs (MDT). The longer the delay, the bigger the chance that the patient will have developed nerve impairment and subsequent anatomic and functional damage by the time treatment is initiated. This delay may be caused by patient factors including lack of awareness of the disease by the patient or lack of motivation to report to the health service (patients delay), or by health system factors including health provider knowledge and skill to properly diagnose and or treat leprosy (health provider delay). In 2010 the proportion of grade 2 disabilities among newly registered leprosy cases was 23%, a 3 percentage increase from 20% in 2009, which is increasing from the recommended level of below 10%. This increase may be explained by health care provider sensitization carried out previously. The proportion of patients presenting with either grade 1 (23%) or 2 (20%) disability was 43% indicating that still a considerable proportion of patients are diagnosed at

an already advanced stage of leprosy. This implies that there is a significant delay in the diagnosis and treatment of leprosy. There was no disability grading for 6% of new cases. This is a reason for concern since it implies that a significant proportion of leprosy patients may not be receiving appropriate evaluation and care. The declining prevalence of leprosy coupled with insufficient training and awareness for the disease and its management amongst health workers most likely is contributing to this observation. Thus efforts must be applied to ensure that proper recording and management of cases is instituted immediately.

### 1.5 Case-holding

Case holding includes all activities directed at reaching the highest possible proportion of patients successfully completing their treatment. This can be observed in the proportion of cases “released from treatment (RFT)”. The proportion “out of control (OOC)” is of importance because it is an indicator of the activities of the health services to timely detect possible defaulters, find and motivate them to complete their treatment. The following tables show the results of treatment of PB and MB cases from 1987. Although the WHO - MDT regimen was introduced in 1985, it was not until 1991 that it was fully implemented.

Tables 3 and 4 show the outcome of treatment for the new PB and MB cases from 1987 to 2009

**Table 3: Treatment Results of PB cohorts 1987-2009**

PB Cohort	RFT		TNC		Died		TO		OOC		Total
	n	%	n	%	n	%	n	%	n	%	
'87	147	55	59	22	1	0.4	10	4	52	19	269
'88	514	66	71	9	4	1	62	8	126	16	777
'89	452	79	73	13	3	1	5	1	40	7	573
'90	260	74	43	12	4	1	5	1	39	11	351
'91	158	70	23	10	2	1	4	2	39	17	226
'92	131	78	11	7	0	0	6	4	19	11	167
'93	132	83	2	1	0	0	10	6	15	9	159
'94	53	79	1	1	2	3	3	4	8	12	67
'95	62	94	0	0	1	2	3	5	0	0	66
'96	60	90	1	1	0	0	3	4	3	4	67
'97	32	100	0	0	0	0	0	0	0	0	32
'98	31	91	0	0	0	0	1	3	2	6	34
'99	32	94	0	0	0	0	1	3	1	3	34
'00	26	74	1	3	0	0	4	11	4	11	35
'01	20	77	1	4	2	8	2	8	1	4	26
'02	23	70	8	24	0	0	2	6	0	0	33
'03	31	74	0	0	0	0	7	17	4	10	42
'04	28	80	2	6	2	6	2	6	1	3	35
'05	27	69	7	18	2	5	2	5	1	3	39
'06	33	67	6	12	2	4	3	6	5	10	49
'07	39	60	17	26	2	3	3	5	4	6	65
'08	31	70	3	7	0	0	2	5	8	18	44
'09	30	86	1	3	1	3	1	3	2	6	35

The proportion of PB cases RFT for the 2009 cohort was 86% representing 16% increase from 70% in 2008 while 6% of patients went out of control. These results indicate that the DLTLTD has yet to achieve the recommended treatment results for PB cases of RFT of 90% or higher. With the small numbers of patients, these results are unacceptable and probably suggest the eclipsing of leprosy control activities by the bigger TB problem. However the treatment results of MB cases with a RFT proportion of 74% and a defaulter rate of 6% are unacceptable



and are below the recommended range of RFT of 75-80% or higher. The shortening of the treatment duration from two to one year should contribute to better treatment outcomes.

**Table 4: Treatment Results MB cohorts 1987-2007**

MB	RFT		TNC		Died		TO		OOC		Total
Cohort	n	%	n	%	n	%	n	%	n	%	n
'87	87	67	5	4	1	1	4	3	32	25	129
'88	778	72	67	6	18	2	7	1	217	20	1087
'89	131	69	10	5	5	3	11	6	33	17	190
'90	94	59	9	6	9	6	7	4	41	26	160
'91	104	62	6	4	3	2	10	6	44	26	167
'92	170	60	18	6	7	2	33	12	53	19	281
'93	186	67	6	2	4	1	25	9	56	20	277
'94	156	62	17	7	15	6	22	9	41	16	251
'95	121	66	6	3	7	4	25	14	24	13	183
'97	166	85	2	1	1	1	15	8	11	6	195
'98	162	84	0	0	3	2	12	6	15	8	192
'99	115	80	3	2	1	1	9	6	15	10	143
'00	117	80	4	3	2	1	11	8	12	8	146
'01	125	80	10	6	2	1	8	5	10	11	156
'02	130	83	7	4	4	3	7	4	9	6	157
'03	172	78	20	9	1	0,1	14	6	13	6	220
'04	150	80	12	6	3	2	12	6	10	5	150
'05	141	80	14	8	0	0	12	7	10	6	177
'06	99	70	23	16	0	0	5	4	14	10	141
'07	158	73	13	6	0	0	27	12	19	9	217
'08	162	74	23	11	2	1	17	8	14	6	218

### 1.6 Prevention of disabilities

So far, no reliable data is available concerning prevention of disabilities. The DLTLD leprosy guidelines recommend routine VMT/ST examinations on quarterly basis for each newly registered leprosy patient on treatment and for all patients who present with symptoms suggesting a reaction. Technical support missions (supervision) have suggested that either VMT/ST examinations are routinely not done or the results of these examinations are not filled in the patient cards. No records/registers are kept on the incidence of reactions or the prevalence of disabilities (no leprosy ward admission register for leprosy patients or a care/disability register). It is recommended that reactions should be treated with prednisolone. It is questionable whether reactions are recognized in time and if so whether appropriate action is taken. Patient record cards, on which this information is supposed to be entered, are often incompletely filled; the technical support to leprosy endemic areas should be intensified to ensure that guidelines are adhered to.

There are about 6 orthopedic workshops in the country, which make footwear and prostheses for leprosy patients. Unfortunately, the DLTLD did not follow up reports on their outputs. It is clear, that more emphasis should be placed on leprosy control and in particular, on prevention of disabilities.

### Constraints to improved performance

The declining number of cases detected annually has made leprosy a low priority disease. This has resulted in little resources being allocated to leprosy control activities. This translates to very little training and support of peripheral health staff on leprosy control activities. Virtually all the funds available to the DLTLD are earmarked for TB and especially TB/HIV related activities. The country continues to experience challenges in mobilizing resources for

sensitization of district health management teams, training of health care workers and intensified supervision in leprosy endemic districts. If leprosy control activities continue to receive little attention, there is a real danger that leprosy may rebound to become a public health threat.

- The massive burden of TB continues to eclipse the insignificant leprosy problem. Program staff remains overloaded with the management of high numbers of TB cases and devote less time to the pursuance of leprosy control activities.
- There continues to be a high turnover of trained staff at both peripheral and the district levels.
- Lack of resources set aside for leprosy control.

The country however appreciates the technical and financial support in the procurement of leprosy medicines by World Health Organization.

## 2 TUBERCULOSIS

### 2.1 Magnitude of tuberculosis

DLTLD for the third year in a row reported a decline in the number of notified TB cases. This is attributed to previous TB control activities that have begun to bear fruit leading to stagnation and now, a beginning of decline in the incidence of TB. Many other factors may have contributed to the declines including the changing epidemiology of HIV and health care workers skills, attitude and knowledge. The number of reported TB cases had increased tenfold from 11,625 in 1990 to 116,723 cases in 2007 and declined to 106,083 in 2010 (*Figure 2*). The average annual increase over the past 10 years is 4% for all forms of TB. However, in the last 5 years, there has been an annual decrease of about -2%. Case Notification Rates (CNR) increased from 53/100,000 population for all forms of TB and 32/100,000 population for sputum smear-positive PTB cases in 1990 to 271/100,000 population and 95/100,000 population respectively in 2010 (*See Figure 7*).

The major reason for the increasing burden of TB in Kenya is the concurrent HIV epidemic. In the 3<sup>rd</sup> Quarter of 2005 the DLTLD introduced an integrated TB/HIV data collection system that enabled the collection of HIV related information. Data for the year 2010 indicate that the national average co infection with HIV was 41%.

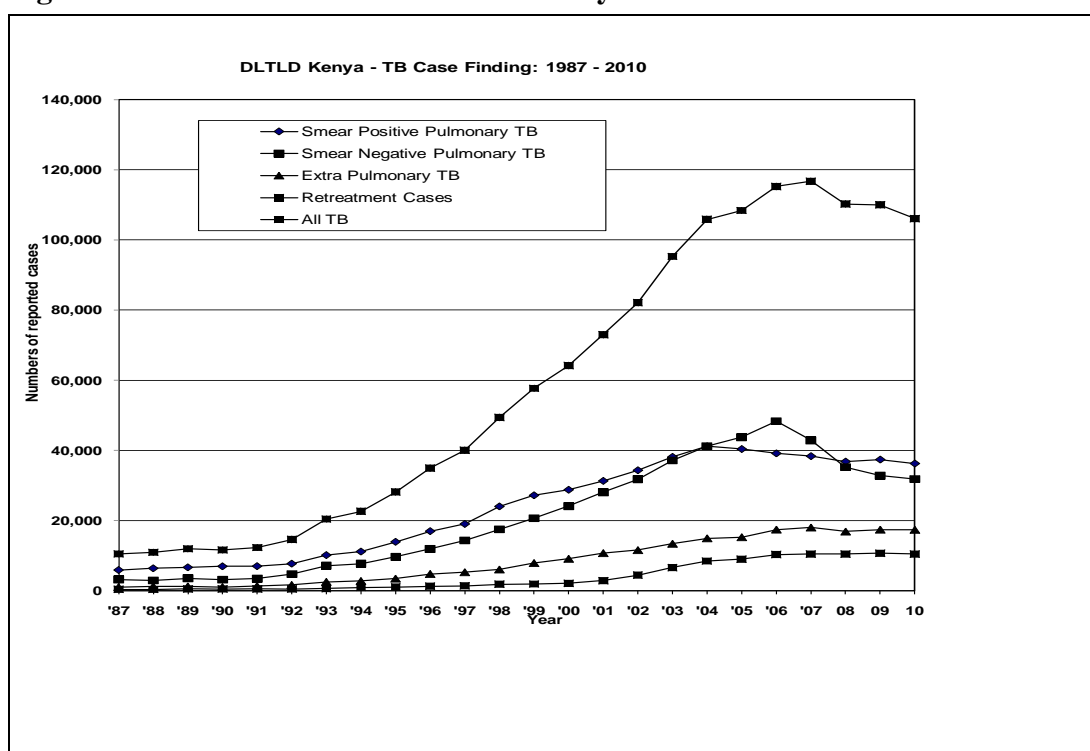
In 2010 the DLTLD surveillance system captured the contribution of the private sector in notifying a total of 7,162 TB patients who were all put on treatment (see table 5).

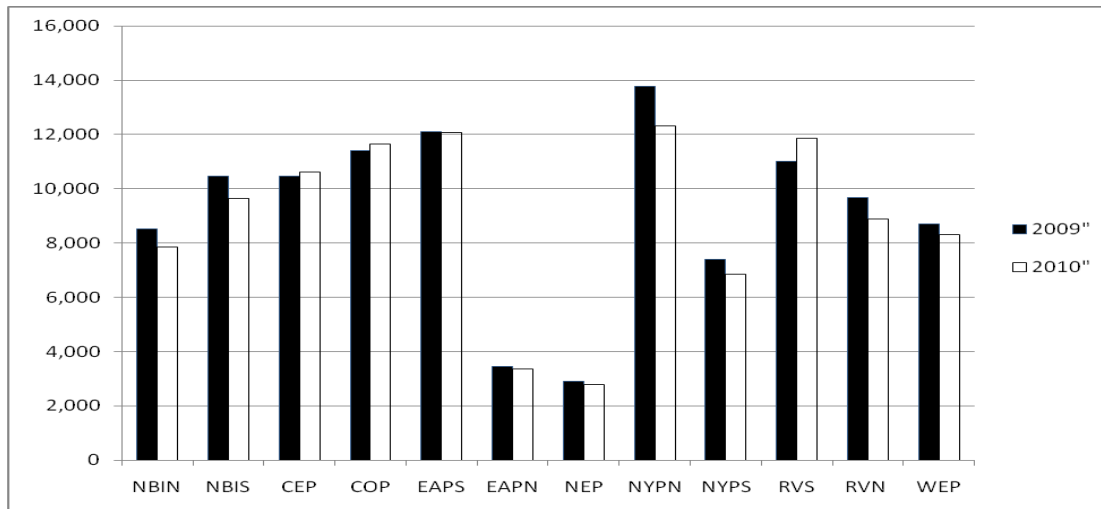
### 2.2 Case-finding

#### 2.2.1 Case-finding reporting

The central unit receives case finding reports on a quarterly basis from all districts. These reports are submitted by DTLCs; through their respective PTLCs. Figures 2 through to 8 demonstrate the epidemiology of TB in the country and the provinces.

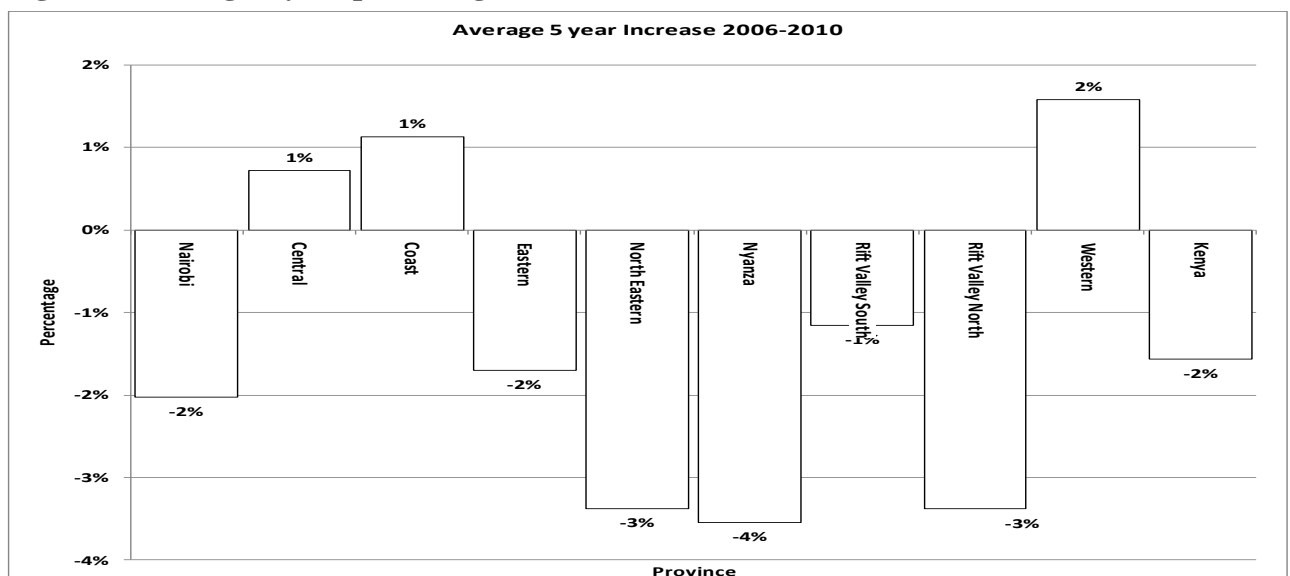
**Figure 2: TB case notification DLTLD Kenya: 1990 – 2010**

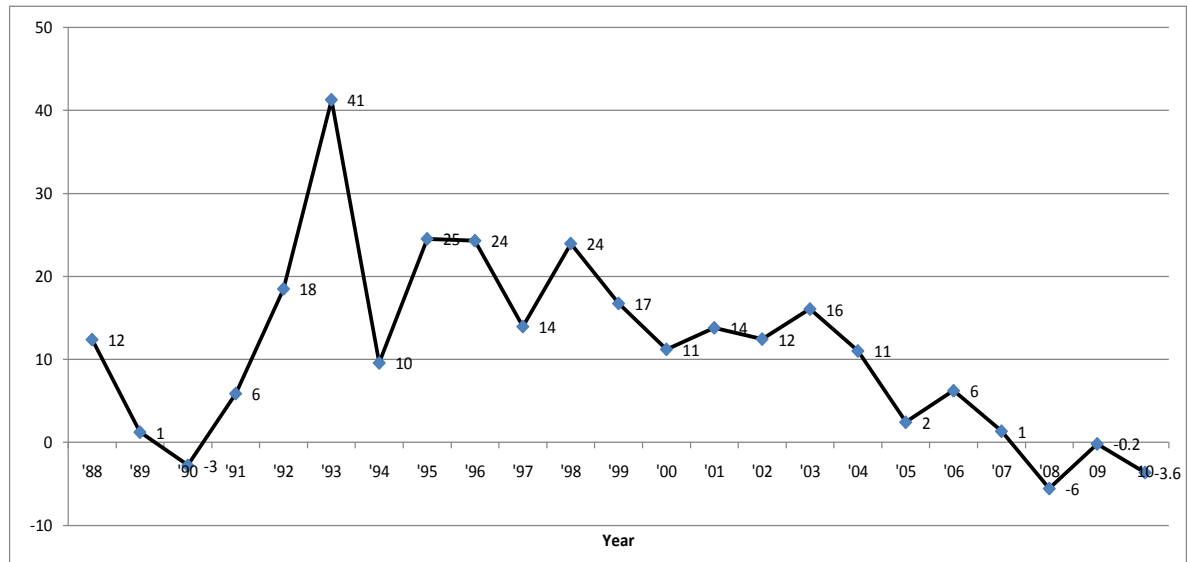
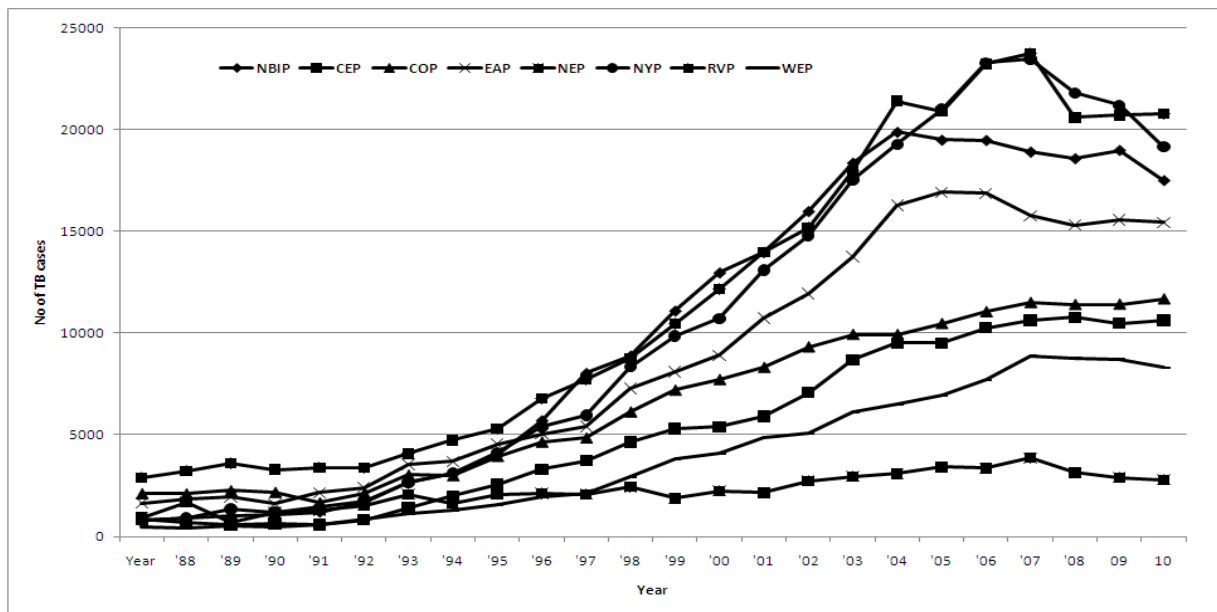


**Figure 3: TB case load by province: 2010**

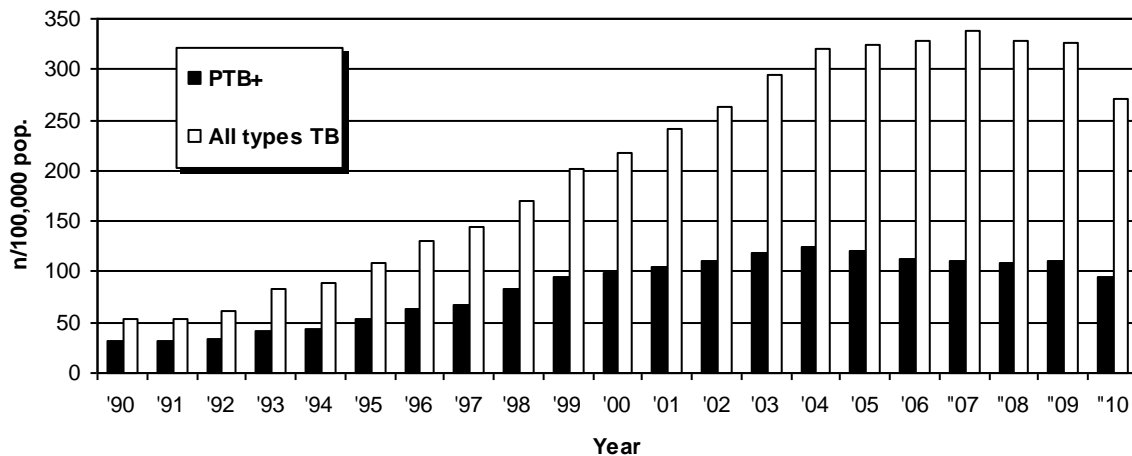
Province	2010
Nairobi	17,503
Central	10,627
Coast	11,660
Eastern	15,433
North Eastern	2,661
Nyanza	19,152
Rift Valley South	11,858
Rift Valley North	8,895
Western	8,294
Kenya	106,083

TB Cases Notified Per Province, 2010

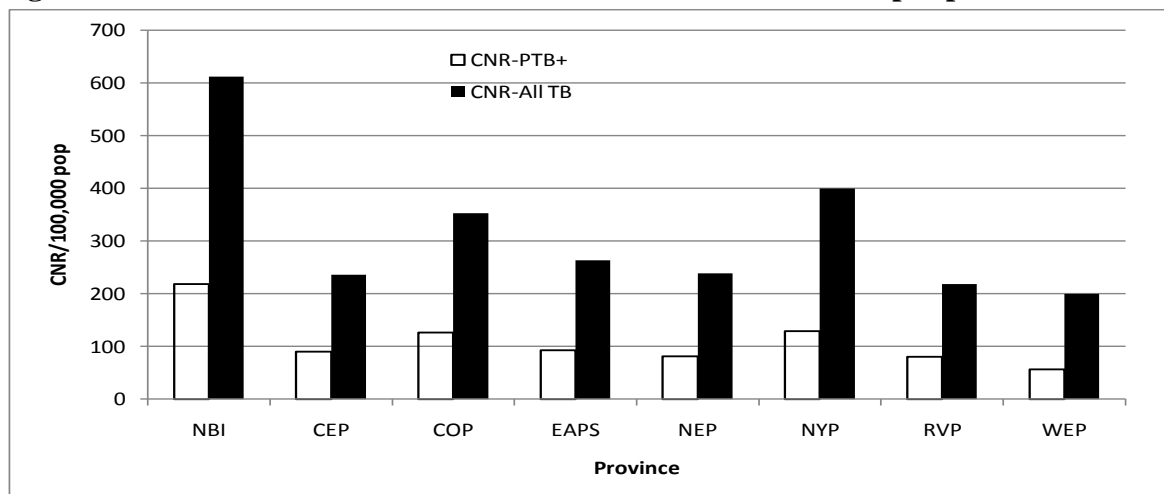
**Figure 4: Average 5 year percentage increase in TB cases**

**Figure 5: TB annual Increase 1987-2010****Figure 6: Provincial TB case findings 1987-2010**

**Figure 7: Case Notification Rates Smear positive PTB and all Types TB Kenya 1990-2010**

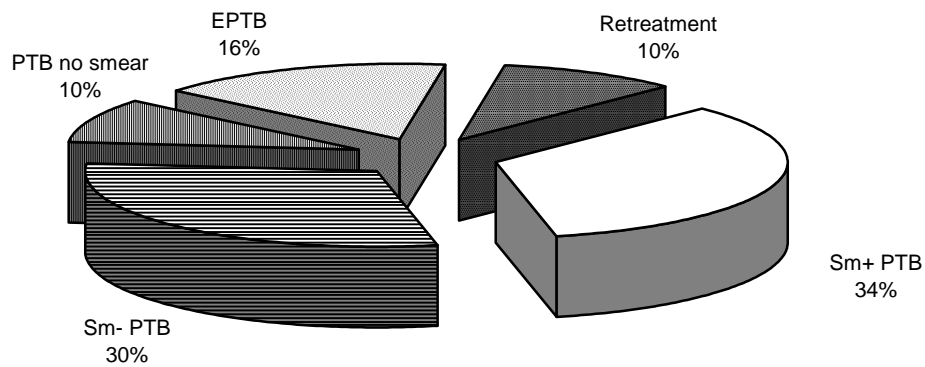


**Figure 8: TB Case Notification Rates: All forms of TB and PTB+ per province in 2010**



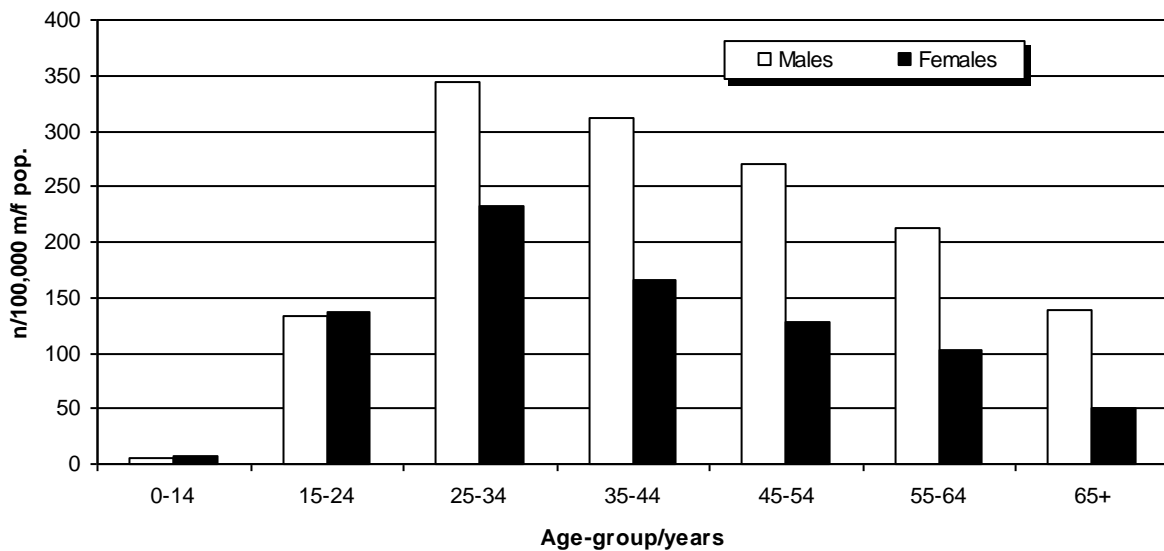
### Types of tuberculosis

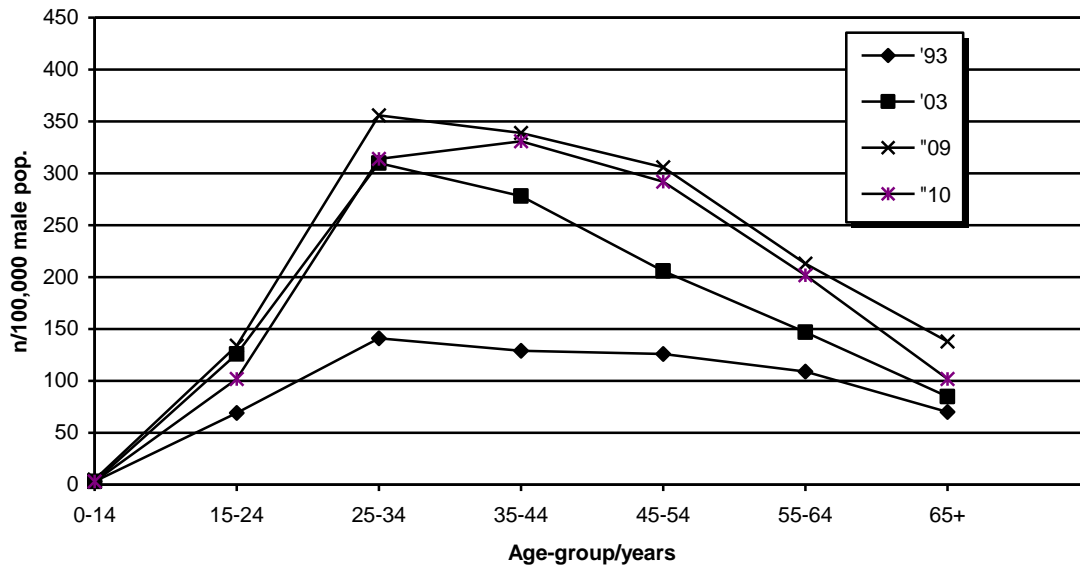
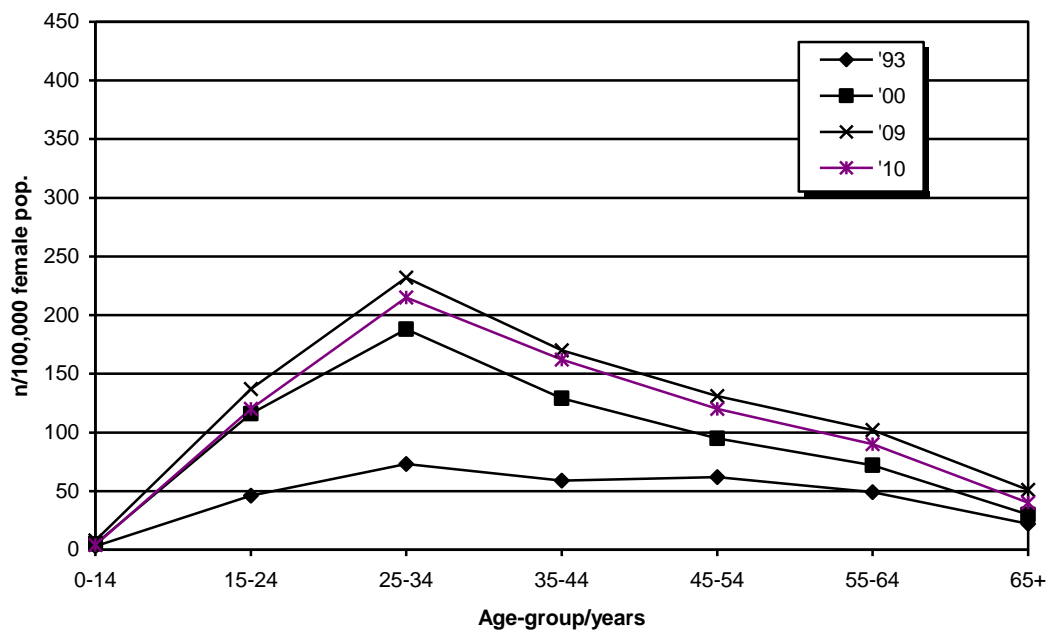
In 2010, the proportion of sputum smear-positive PTB cases decreased by 3% compared to 2009. There was a 3% decline in the proportion of sputum smear-negative PTB cases and adult PTB cases without sputum smear results. *Figure 9* shows the distribution of the different types of TB in 2010. With the high prevalence of HIV in this population it is possible that some of these cases are not true TB cases but represent undiagnosed HIV related disease.

**Figure 9: Distribution of TB cases by type, 2010**

### 2.2.2 Gender-age distribution

The age group with the highest TB notification in 2010 remained 25-34 years in both males and females as has been the trend over the last decade. This is the same age category with a high HIV sero-prevalence. Males continue to dominate after the age of 24 over the females who are more below this age group. This trend is clearly shown in *Figures 10, 11 and 12*.

**Figure 10: Age Specific CNR New Male/Female PTB+ Cases 2010**

**Figure 11: Age-specific CNR new male PTB+ cases: 1993-2001-2009-2010****Figure 12: Age-specific CNR new female PTB cases: 1993-2000-2009-2010**

### 2.2.3 Private sector contribution

The private sector both for profit and not for profit provides significant care to TB patients. This sector has flourished since an agreement facilitated by the program between KAPTLD and a drug manufacturing company was signed in 1997. Through this agreement, a drug company provides high quality anti TB drugs to the private sector in Kenya at a highly subsidized price to patients seeking care in this sector. Since the program has overall supervisory activity, the sector is routinely supervised by program staff and all the policy guidelines used belong to the ministry. To further ensure that quality and standards are acceptable, the M and E tools used in this sector have been standardized and distributed by the DLTLD.

Data collected over the years have shown that about 10% of TB patients in the urban set up are managed by the private sector if Nairobi figures can be generalized to cover the whole



country. Initiation of new initiatives in this sector has over the years tended to lag behind the public sector as demonstrated in the testing for HIV amongst TB patients (Table 5). It is worth noting that in 2010 other provinces have begun reporting on the sector as shown in Table 5.

**Table 5: Case finding in the private sector**

<b>Province</b>	<b>No. cases</b>
NBIN	963
NBIS	574
CEP	1,523
COP	522
EAPS	110
Eastern North	287
North Eastern	-
Nyanza North	103
Nyanza South	291
Rift Valley South	1,623
Rift Valley North	-
Western	1,164
<b>Total</b>	<b>7,160</b>

#### **2.2.4 The impact of HIV infection on case-finding**

The HIV epidemic is the major cause of TB epidemic in Kenya with 41% of TB being dually infected. HIV may also have contributed to the increase in cases requiring re-treatment especially those cases classified as other retreatment. Even though smear positive pulmonary disease remains the most important type of TB from a transmission standpoint, in situations where HIV prevalence is high as in Kenya, smear negative and extra pulmonary forms of TB assume a great deal of importance because of their contribution to TB morbidity and mortality.

DLTLD is currently able to monitor HIV prevalence amongst TB cases and to track the proportion of TB patients receiving HIV related interventions including HIV testing and counseling, Cotrimoxazole preventive therapy and anti-retroviral treatment.

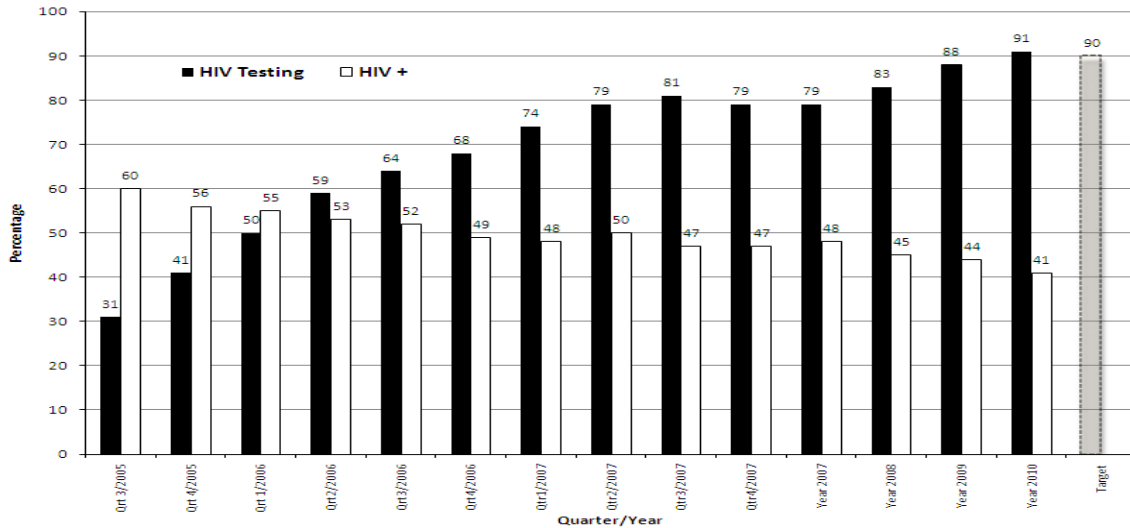
There was a vigorous pursuit of HIV Diagnostic Testing and Counseling (DTC) for all TB patients in 2007. This resulted from the publication of the policy document on HIV testing in clinical settings in 2004 and availability of support from partners including PEPFAR and the Global Fund for visible results in TB/HIV collaborative activities. The results of all these efforts were the development and piloting of a TB/HIV training curricula, printing and distribution of the new recording/reporting (R&R) tools incorporating HIV related data in addition to routine TB data and the procurement and distribution of cotrimoxazole for the prevention of opportunistic infections in HIV positive TB patients.

It is important to note that since 2008 the cohort analysis for patients started on treatment has been stratified by HIV status and what this has demonstrated is the fact that treatment outcomes are poorest in the category of patients where HIV status has not been documents followed by HIV positive TB patients. It is hoped that with the rollout of the provision of ART in TB clinics, better treatment outcomes will be realized. Figure 13 below shows the proportion of TB cases tested for HIV and the HIV positivity rate amongst those tested. Figure 14 below demonstrates the HIV prevalence amongst the different types of TB with re treatment failures leading followed by EPTB below 15 years. HIV testing is being promoted as a standard care for all TB patients. The rate of testing has been increasing over the years since the introduction of the intervention. Figure 15 indicates that only 7 regions have reached

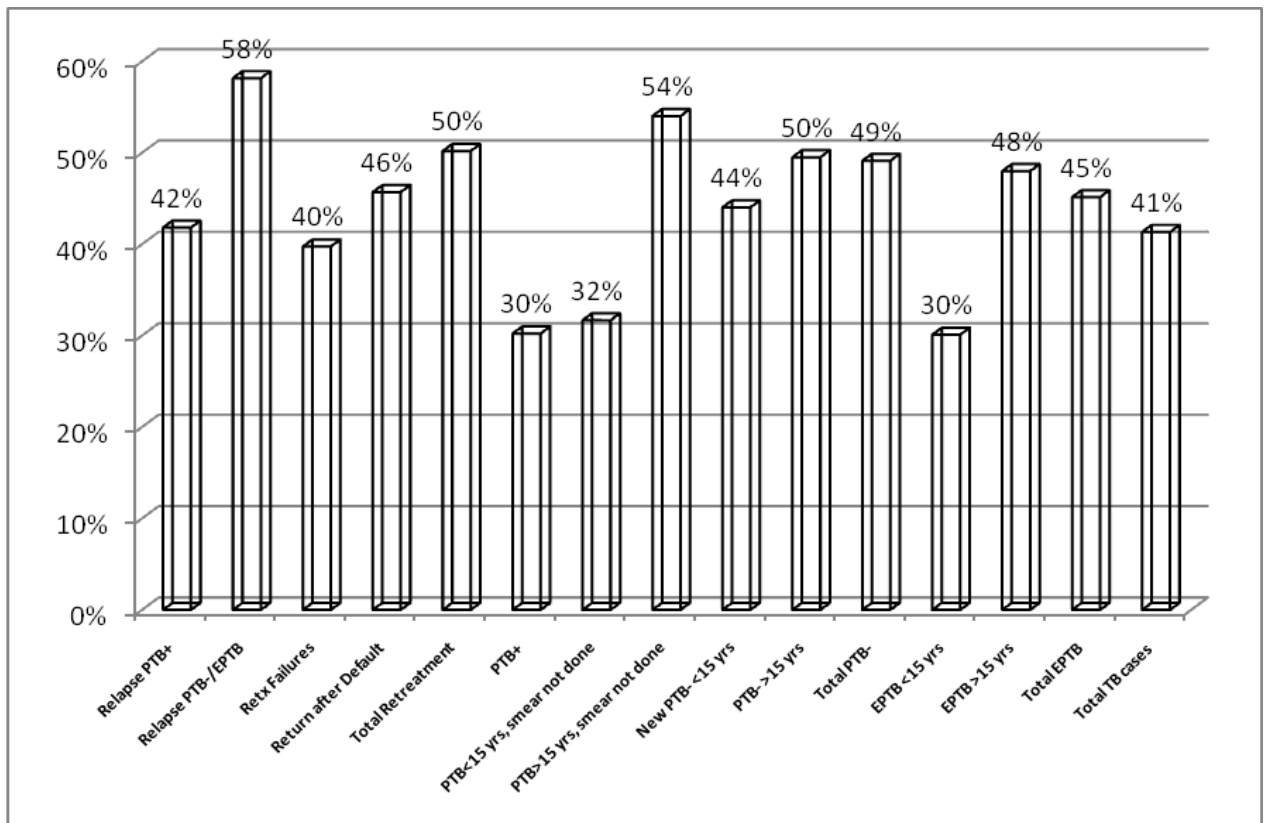
the HIV testing target amongst TB patients of 90% while the rest of the regions are lagging behind.

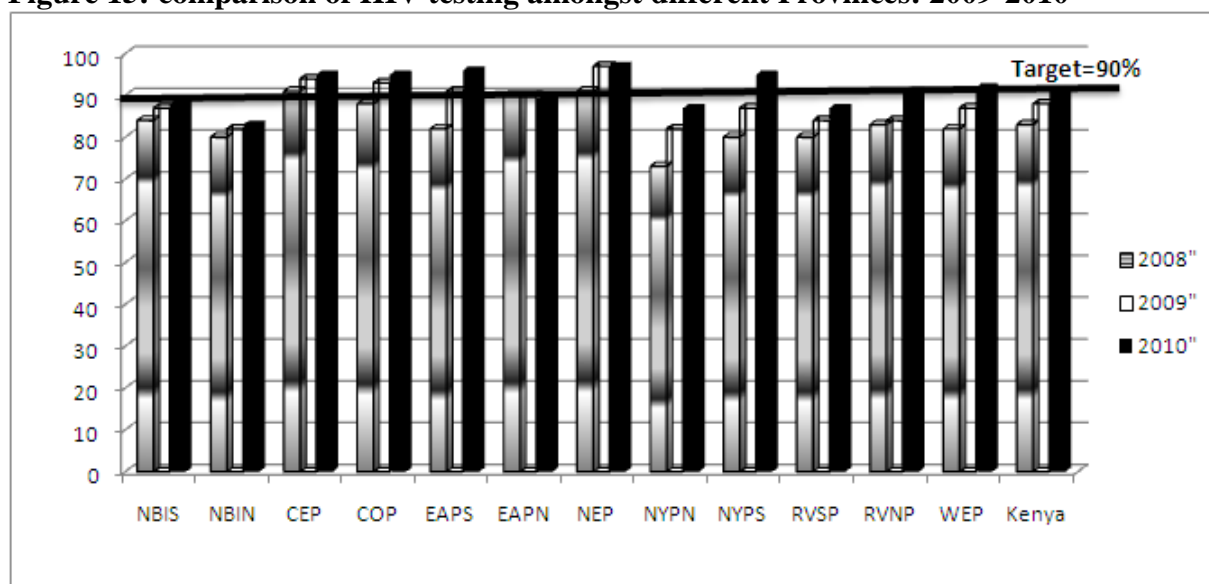
As expected, with increased coverage of HIV testing, the HIV prevalence amongst TB cases decreases. This probably is caused by a diminishing bias in selecting/offering/availability of HIV testing by the health workers at the different levels of the health care system.

**Figure 13: Trend of HIV testing and HIV positivity rate**



**Figure 14: HIV prevalence for different types of TB: 2010**



**Figure 15: comparison of HIV testing amongst different Provinces: 2009-2010**

### 2.2.5 Case-finding in refugee camps

The refugee camps in Kenya, under the UNHCR, participate in TB control activities under the guidance of the DLTLTD. There are four camps: Hagadera, Ifo and Dagahaley (Dadaab) in Garissa District and Kakuma, located in the North of Turkana District. In 2010 a total of 508 cases were reported by the Dadaab camps. Those tested for HIV accounted for 98% and only 11 (2%) tested HIV positive. These cases were included in the national figures. However it is important to note that most of the immigrants have integrated into the communities in North Eastern province and Nairobi and are served by the general health care system.

## 2.3 Case-holding

### 2.3.1 Case-holding reporting and terminology

The case-holding results show the outcome of treatment for the different types of TB cases. Results of the refugee camps are reported separately. Since 2008 the DLTLTD started analyzing the outcome of treatment of all categories of TB patients.

The terminology used in assessing the results of treatment (treatment outcome) includes the following:

Cured	: Completed treatment and smear-negative at the end of treatment
TC	: Completed treatment, but no smear taken at the end of treatment
Died	: Died of any cause during TB treatment
Failure	: Smear-positive at 3, 5 or end of treatment
OOC	: Out of control/absconded from treatment
TO	: Transferred out to another administrative area (province)
Success rate	: Proportion of PTB+ cases cured and completed treatment

### 2.3.2 Short Course Chemotherapy (SCC) implementation

Short course chemotherapy (SCC) for new smear positive PTB cases was initiated in 1993 and fully implemented in the whole country by the end of 1997. Implementation of SCC for Smear negative PTB and Extra-Pulmonary TB commenced in 1997 and covered the whole country

by the second half of 1998. Since then, the whole country is under DOTS giving a 100% geographic DOTS coverage.

### 2.3.3 Regimen used

Kenya subscribes to the internationally accepted WHO strategy in TB control and treatment which has been tailored from WHO recommended regimes.

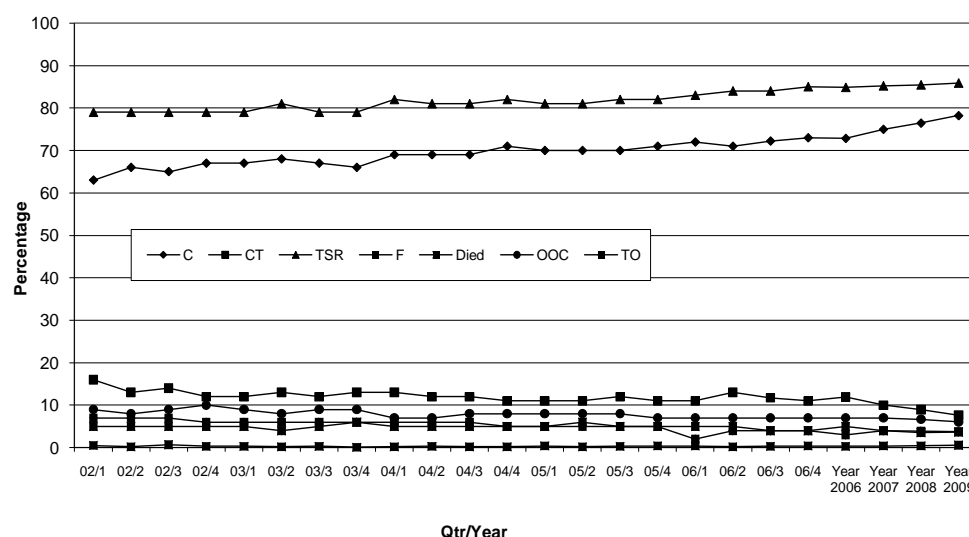
The following regimes continue to be used in Kenya:

1. 2RHZE/4RH for new cases with smear-positive PTB (Category 1), smear negative PTB and extra-pulmonary TB (Category 3)
2. 2SRHZE/1RHZE/5RHE (re-treatment regimen) for smear positive relapse cases, recurrent negative PTB/EPTB cases, failures and defaulters (Category 2).
3. 2RHZ/4RH for new cases of smear positive or negative PTB or EPTB who are younger than 15 years

### 2.3.4 SCC treatment results of new sputum smear-positive PTB cases

As usual, TB treatment outcomes are reported for the year preceding the year in question, in this case the cohort of 37,402 patients put on treatment in 2009 was analyzed. A treatment success rate of 85.86% as in figure 16 was achieved. This puts Kenya amongst countries that have achieved the WHO recommended treatment success rate. Coupled with the improved case detection rate of 80% amongst the smear positive cases, Kenya stands to improve on TB control targets beyond set targets. This result is a very reasonable performance when the high rate of HIV in TB patients is taken into account. Tuberculosis cases co-infected with HIV are at risk of dying from non-TB opportunistic infections during treatment for TB. The reported death rates of TB patients remained low at about 4%, but an estimated 30% of the out of control cases are most probably cases who died at home and were not reported as such.

**Figure 16: Results of SCC treatment cohorts of new smear-positive PTB cases: 2002 - 2009**



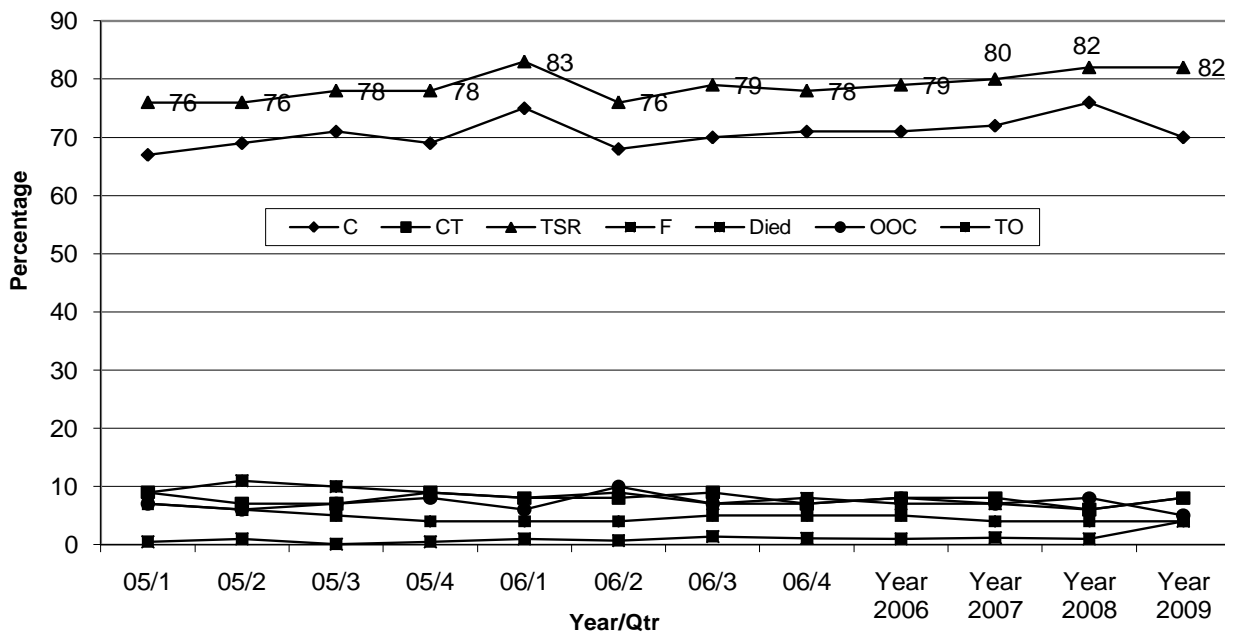
### 2.3.5 Re-treatment results

Since 2003 the DLTLTD has put a lot of emphasis on obtaining sputum smear results during the continuation phase, and especially at the end of treatment as a known form of monitoring treatment. Patients put on re treatment regimen are considered high risk for resistant strains of

TB and subsequent development of resistant forms. Figure 17 shows that there has been a gradual improvement in treatment outcomes for this category of patients. This resulted in a small increase in the proportion of cases cured and an equally small decrease in cases that completed treatment without a smear result.

**Figure 17: Treatment results for smear-positive re-treatment cases at 8 months: 2005-2009.**

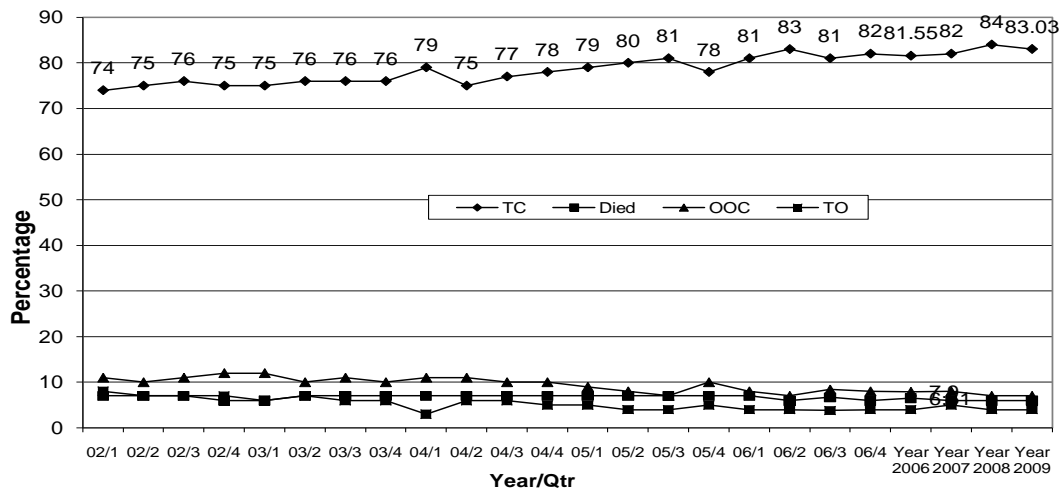
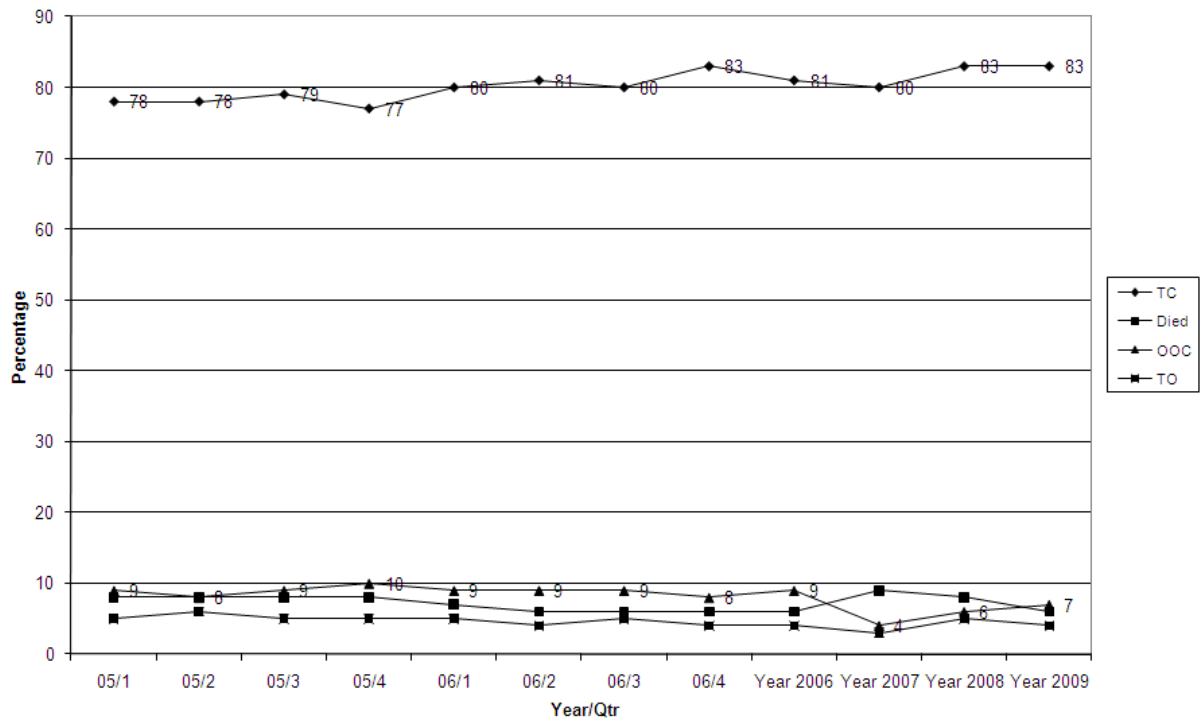
Results at 8 months (end of treatment)



### 2.3.6 Results of SCC treatment for smear-negative and extra-pulmonary TB cases

The 6 months SCC regimen replaced the 8-month standard regimen for sputum smear-negative PTB cases and Extra Pulmonary TB cases in 2007 (*see section 3.3.3 - Regimens used*).

The treatment success rates for new sputum smear negative and extra pulmonary PTB cases are 83.03% and 83% respectively, death rates were at 6% and the out of control rates 4% (figure 18 and 19). This can be explained by the higher HIV prevalence in both categories of patients.

**Figure 18: Treatment results for new smear negative PTB cases: cohorts 2002-2009****Figure 19: Treatment results new extra-pulmonary TB cases: cohorts 2005-2009**

## SECTIONAL ACTIVITIES

### 2.4 Leprosy Control

Kenya is in the Leprosy post-elimination phase.

#### 2.4.1 Key Activities

The leprosy program officer carried out a number of activities including resource mobilization, developing mechanism for coordination, support supervision and on job training of health care providers.

#### 2.4.2 Capacity building

Owing to the decrease in number of leprosy cases, there is a general loss of competence of health care workers in diagnosis and management of leprosy. In order to facilitate continuous training and leprosy supervision, sensitization of districts was carried out by the national and provincial teams in an integrated manner when other trainings were being carried out since there was no funding support available.

#### 2.4.3 Funding

WHO continues to provide leprosy medicines free of charge to Kenya. During the year, the division in its bid for more support towards leprosy control approached other partners. Among many organizations approached was Ifo an Italian NGO that pledged to provide funds for the development of a leprosy training curriculum and technical working group meetings.

#### 2.4.4 Challenges and Constraints

There has been minimal funding of leprosy control activities since its elimination in 1989. Consequently, there has been no focused training of staff on leprosy. The division therefore recommends on the job training of care providers during routine support supervision. This is not usually effective given the large number of health facilities to be supervised.

#### 2.4.5 TB HIV

HIV infection is one of the major drivers of the TB epidemic in Kenya while TB remains the greatest single cause of morbidity and mortality among PLHIV. In 2010, up to 41% of the notified TB cases in the country were HIV seropositive and although there lacks representative data on the proportion of PLHIV also infected with TB, approximately 17% of all notified TB cases were referred from HIV testing, care and treatment sites.

In response to the dual epidemic, DLTLD and its partners continued to scale up the implementation of TB/HIV collaborative activities with a focus on providing quality and comprehensive care. Implementation of these activities was based on the national TB/HIV guidelines which in line with the WHO policy to address three main objectives namely:

- Setting up mechanisms for collaboration between the HIV and TB program
- Reducing the burden of HIV amongst TB patients
- Reducing the burden of TB amongst People living with HIV/AIDS

#### 2.4.6 Key activities

##### 2.4.6.1 Development of the 2011-2015 DLTLD strategic plan

In 2010, DLTLD initiated the process of development of the 2011-2015 strategic plan bringing together members of all technical working groups in series of meetings. These

meetings served as opportunity for the TB/HIV team to come up with a strategic objective that comprehensively addresses gaps existing in the implementation of collaborative activities.

#### 2.4.6.2 Strengthening Mechanism for Collaboration

In the course of the year, TB/HIV committees at national, provincial and districts levels continued to hold their quarterly collaborative meetings at respective levels with support from partners in the field.

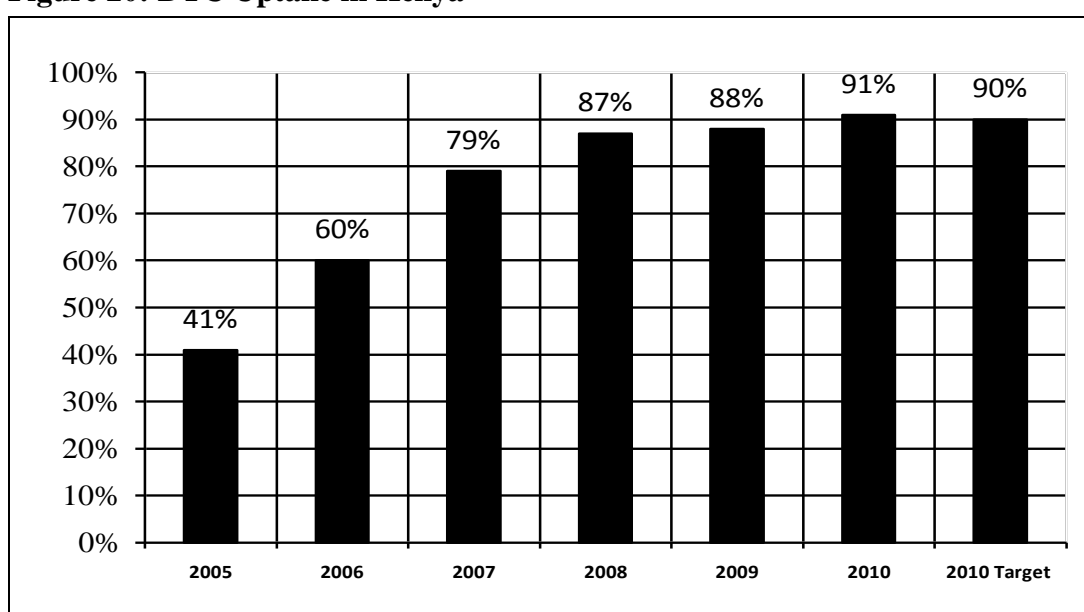
At the national level, DLTLD, NASCOP and partners held a meeting in the first quarter to develop a two year TB/HIV business plan for the country. This meeting brought together key players in TB/HIV at national and provincial levels who reviewed the progress in implementation of TB/HIV collaborative activities, identified weaknesses and set targets based on finding from the Management and Organizational Sustainability Tool (MOST) meeting held in Mombasa the previous year. Another planning meeting was held in the third quarter with financial and technical support from WHO with focus on strengthening the integration of ART in TB clinics.

To strengthen monitoring and evaluation, efforts were made to capture key TB/HIV indicators including TB screening in HMIS monitoring and evaluation tools. Variables to facilitate capture of data for generation of these indicators were also included in the ART and pre-ART registers.

#### 2.4.6.3 Reducing the burden of HIV among TB patients

Testing for HIV in TB clinical settings was introduced in 3<sup>rd</sup> quarter 2005 in the context of Provider Initiated Testing and Counseling (PITC) as an entry point to comprehensive care for the dually infected. This is offered in the context of the three C's (Counseling, Consent and Confidentiality). Over the years the division has consistently met targets set for HIV testing among TB patients. Like the other years, the division met the 90% target and surpassed it with 2 points. However some provinces still face challenges in meeting this target owing to high workload, limited space and low number of care providers. Efforts are being made to address these challenges as the Division gears towards the ultimate goal of making HIV testing universally accessible to all TB patients and suspects.

**Figure 20: DTC Uptake in Kenya**



Treatment of HIV related opportunistic infections in the TB/HIV coinfecting individuals significantly reduces mortality. Towards this end, DLTLD has continued to scale up the



provision of cotrimoxazole preventive therapy with the aim of not only reducing mortality but also to improve the patients' quality of life. It was also realized that a small proportion of patients are unable to tolerate cotrimoxazole and thus the need to put measures in place to ensure that dapsone is available.

By the end of 2010, 99% of all HIV infected TB patients had been put on CPT surpassing the year's 80% target.

Concomitant initiation of ART and ant-TB therapy has been demonstrated to be life saving. Majority of TB/HIV patients receive ART from HIV clinics. In 2010, deliberate efforts were made to improve access to the coinfecting patients through integration of ARV in TB clinics. Impressive results in ART uptake were reported in facilities that had optimized integration with up to 90% of TB/HIV patients being put on ART. By the end of 2010, nationally, 47% of HIV infected TB patients were reported to have been put on ART within the first three months of enrollment into TB care. This was a remarkable increase above the previous year's 34%. Although the performance was still below the 50% target it is recognized that the proportion only represents those enrolled during the first three months of initiation of TB treatment and more patients are put on ART during the remaining period.

The division has continued to provide HIV prevention care and support services in all the service delivery points including condom promotion and distribution. In 2008, DLTD introduced prevention with positives (PwP); an intervention that calls for meaningful involvement of PLHIV in prevention of the spread of HIV. In the same year reporting and recording tools were modified to start capturing key indicators of performance of this intervention including sexual partner testing. By the end of 2010, 25% of HIV positive TB patients' sexual partners were invited and tested for HIV. This was an improvement compared to 21% in 2009.

#### **2.4.6.4 Decreasing the burden of TB among PLHIV**

In the past few years, the ministry has been focusing on the scale up of activities geared towards reducing the burden of TB among PLHIV namely Intensified TB case finding (ICF), Infection Prevention and Control (IPC) and isoniazid Preventive Therapy (IPT) in an effort to optimize the implementation of TB/HIV collaborative activities.

##### *Intensified TB case finding*

Although data on TB screening among PLHIV was not available by the end of the year, there has been an initiative to source for funds to print, disseminate and roll out the TB screening tools. By the end of the year, five of the twelve TB regions had been sensitized. However there was a funding gap in printing and roll out of the tools to the remaining regions. It is hoped that in 2011 greater progress will be made in screening of PLHIV to pave way for implementation of IPT on a wider scale.

##### *Isoniazid preventive therapy (IPT)*

Since the initiation of the implementation of the TB/HIV collaborative activities, ruling out TB among PLHIV and follow up of those initiated on isoniazid have been the greatest hurdle in implementation of IPT programs. This relates to the fears that widespread use of Isoniazid without ensuring proper adherence could lead to development of resistance.

Currently the implementation of IPT is limited to selected settings that include:

- Congregate settings; prisons, military, children homes
- Target groups; HCW, children exposed to open TB
- Selected health programs with adequate systems and structures; e.g. EDARP, AMPATH and MSF
- Controlled research programs

No routine reporting is done to the national programs due to lack standardized recording and reporting tools. To overcome this, DLTLTD in collaboration with partners developed draft IPT recording and reporting tools that are due for review and roll out in 2011.

#### **2.4.7 Capacity building**

TB/HIV Capacity building was centered on provision of comprehensive TB/HIV care particularly strengthening the capacity of the HIV program to screen for TB, the TB program to handle ARV and the two programs capacity to conduct operation research. At the national level, the DLTLTD TB/HIV focal person successfully completed a Master of Science degree course in Applied epidemiology supported by GOK and CDC. He also attended the Pan African Thoracic Society's Methods in Epidemiological Clinical and Operations Research (MECOR) training.

During the year peripheral health care workers underwent training to improve their capacity in managing the dually infected patients. Some of the capacity building activities include training in TB/HIV, IMAI, PWP, Nutrition in TB as well as a series of mentorships programs.

#### **2.4.8 Research**

The TB/HIV focal person who is also the head of care and support section finalized the case control study on factors associated with MDR-TB and disseminated the findings in the Emerging Infectious Disease conference held in Atlanta, USA.

#### **2.4.9 Funding**

Funding for TB/HIV collaborative activities was received from various sources including GOK, Global Fund, CDC, USAID and other partners. Activities funded during the year included trainings, procurement of M&E tools and logistic support.

#### **2.4.10 Challenges**

One of the greatest challenge facing the dually infected patient relates to linkage to comprehensive care and treatment and specifically linkage to ART. This weakness is basically because a TB/HIV patient that has been identified in the clinic is referred to ART clinic. Although TB treatment services have been decentralized to low level facilities, HIV treatment services are still offered in a limited number of higher level facilities. This presents a challenge in access of HIV care and treatment to majority of the TB patients on treatment at low level facilities. To overcome this challenge, DLTLTD and NASCOP are developing a common plan for decentralization of ART to TB sites.

Other challenges that continue to impede implementation include how to strengthen health care delivery systems to sufficiently respond to increasing resource demands, financial, human resource, logistics and infrastructure. In particular, there is shortage of funds to train all health care workers in all health facilities (both public and private), creation of space in the TB clinics to respond to the additional demands for testing for HIV and for offering counseling and provision of ARV. Training of HCW has mainly been through partner support and in particular CDC, TB CAP and WHO, PEPFAR. None PEPFAR funded Partners in the field have also played a key role in supporting training of health care workers.

### **2.5 Nutrition**

Malnutrition is well known among adults with tuberculosis. Protein deficiency may have a particular detrimental effect on the ability of the body to fight tuberculosis. Multiple micronutrient deficiencies are also common during tuberculosis. Nutrition interventions mitigate the impact of all forms of tuberculosis and HIV/AIDS by enhancing growth and development of a strong immunity.

## 2.5.1 Key Activities

### 2.5.1.1 Nutrition assessments

Since the year 2008, the division has laid emphasis on having registered TB patients' nutrition status assessed and monitored on a monthly basis. This was by way of introduction of nutrition indicators in the TB register. Currently, TB treatment sites are able to identify malnourished patients and refer them to areas of support early enough. Through nutritional assessment, areas in dire need for nutrition support have been identified i.e. the TB Manyattas (hard to reach areas) and efforts made to mobilize the necessary support is being sought.

### 2.5.1.2 Development of training materials

The review of TB/HIV training curriculum provided an opportunity for the integration of a 3 hour nutrition session. The development of a nutrition curriculum was started and is awaiting completion once funds are available in the coming year.

### 2.5.1.3 Nutrition M & E

The nutrition indicators in the routine and the DR TB register were modified to capture specific data for instance nutritional support was further broken down into :-

- a) Nutrition education.
- b) Micronutrient supplement or
- c) Food support

### 2.5.1.4 Capacity building

*Nutrition in TB training and sensitization*

Training of trainers in Nutrition in TB was conducted in 4 provinces where 105 TOT's were trained.

Nutrition sensitization meeting for DTLCs and nutritionists in Nairobi South was held in December 2010 with support from Malteser. Nutrition component was included in the mentorship program for drug resistance TB conducted at KNH for several regions.

### 2.5.1.5 Advocacy and resource mobilization

The advocacy for nutrition and mobilization of resources continued in the year. During the year, the global fund round 9 grant with a large nutrition component was approved. Nutrition activities were also captured and budgeted for in the new strategic plan.

GOK through the division of nutrition and partners supported tuberculosis patients with micronutrients, anthropometric equipments and special feeds including:

- Provision of 50 boxes of plumpy nut to patients in Eastern North region
- Provision of food supplementation to under nourished TB patients by APHIA II- Central and Nairobi
- Provision of ready to use therapeutic food and Ready to Use Supplementary Food
- Provision of feeds to the Co-infected patients through various programs namely:-
  - The World food program (WFP) in Kilifi and Kaloleni
  - USAID through the Nutrition Health Program (NHP) / Academy for Education (AED)/NASCO in all the other sites.

Previously TB patients without HIV/AIDS were not eligible for support but efforts have been made to make sure that these patients access this support.

### 2.5.1.6 Supportive supervision

The nutrition program officer participated in supportive supervision in several regions and participated in DTLC meetings where an hour of sensitization was spared. In these activities the nutritionist was able to link the TB services to the existing/ongoing nutrition programs.

### **2.5.2 Funding**

Through the CDC TB/HIV grant, funding for training of DTLCS on Food by prescription were made available

It is hoped that in the New Year, more funds will be available to support nutrition activities.

### **2.5.3 Other activities**

*Workshops and conferences*

The nutrition program officer also attended several workshops and conferences:-

- a) Growth standards- By WHO/MOPHS
- b) TOT in training – KEBS/DLTLD
- c) Supportive supervision- JEPIEGO/MOPHS
- d) Internal Audit – KEBS/DLTLD
- e) Conference on nutrition and food security
- f) International Union Conference – Berlin Germany.

### **2.5.4 Challenges and Constraints**

- Widening gap on Nutrition education amongst health care workers.
- Inadequate anthropometric equipments to undertake nutrition assessments.
- Lack of Funds for running nutrition activities.
- Recording and reporting on nutrition indicators in the routine registers not optimized
- Nutrition support for tuberculosis patients is still quite low and especially in the hard to reach areas and the slums where food insecurity exists. The challenge also exists in the areas where there are no ART sites and TB Manyattas.

## **2.6 DRUG RESISTANT TB**

Great strides were taken in the year 2010 in offering DRTB services by implementing activities planned for the year. The unit received additional MDR TB coordinator to support the program through decentralization of DRTB treatment to peripheral sites.

### **2.6.1 Key activities**

#### **2.6.1.1 Strategic plan for DRTB**

The DRTB taskforce team met in Mombasa 24<sup>th</sup> – 27<sup>th</sup> March 2010 to strategize on how DRTB services were to be offered in the future. The team discussed and agreed on the treatment scale up, patient support policy in terms of laboratory investigations, nutritional and transport support. The plan was done and a budget for the activities attached to it.

#### **2.6.1.2 DR TB case finding**

In 2010 a total of 112 MDRTB cases were identified and notified to WHO.

The only XDRTB patient on treatment died in June 2010.

#### **2.6.1.3 Decentralization of DRTB treatment sites**

In the course of the year, the DRTB treatment services were decentralized to cover facilities that had MDR-TB patients across the entire country. The sites increased from 8 in 2009 to 26 MDR-TB treatment centers in 2010. By the end of the year the country had cumulatively initiated 180 patients MDR-TB on treatment, with 70 of them being initiated within the year.

#### **2.6.1.4 DRTB training curriculum**

The zero draft of national DRTB training curriculum was developed by the various stakeholders in DRTB management.

### 2.6.1.5 ETB manager

The division with support from MSH received 2 consultants from Brazil who offered technical support in training of health care workers from 3 main DRTB treatment sites namely KNH, MTRH and Port Reitz on the use of e TB manager.

The web based reporting system will avail information on DRTB services to different levels of management.

### 2.6.1.6 Technical meetings

The DRTB taskforce committee met twice in the year to plan on the DRTB services while the Green Light Committee made a mission visit to the country in August 2010.

### 2.6.1.7 Supportive and targeted supervision

Throughout the year, the DRTB sites were supervised and on job training offered. Staffs from facilities which offer DRTB treatment in the course of the year were mentored at KNH.

### 2.6.1.8 Drugs

The country received second line drugs for 90 patients from UNITAID

## 2.6.2 Capacity building

### *Trainings*

Capacity building on DRTB management was done to facilitate decentralization of services. Training of health care provider was done with support from CDC, Global Fund and USAID in various provinces. A total of 180 health care workers were trained in 4 provinces focusing on facilities that had diagnosed DRTB cases.

## 2.7 Central reference TB laboratory (CRL-TB)

The Central reference TB laboratory plays a critical role in MDRTB diagnosis, surveillance, and patient management.

During the year, the Central reference laboratory ensured that:

- Drug resistance testing was done among previously treated TB cases (FLD/SLD)
- Laboratory processes are quality-assured in cooperation with a partner supranational reference laboratory.
- Strengthening laboratory information and surveillance systems is done to ensure detection and monitoring of the epidemiological profile of mono resistant, poly, multidrug-resistant and extensively drug resistant tuberculosis and monitor achievement in its prevention and control.

MDRTB surveillance was conducted among retreatment TB case and their contacts. By the end of 2010, sputum for 69% of all the retreatment cases and MDR contacts in the country had been submitted to the CRL for routine culture and DST. This was below the national target of all (100%) sputum submission for the retreatment cases.

**Table 6: Trend of sputum submission to CRL 2005 to 2010**

Year	2005	2006	2007	2008	2009	2010
Sputum Samples	1,460	2,511	4,403	5,135	6,569	7,256
Number of retreatment cases	8,975	10,299	10,462	10,444	10,676	10,479
Percentage submission	16%	24%	42%	49%	65%	69%

The CRL has taken advantage of the funding support to make available, sufficiently trained and motivated staff to enable diagnosis, treatment and care of tuberculosis including multidrug-resistant and extensively drug-resistant tuberculosis, as an integral part of efforts to address the overall health workforce crisis; strengthening laboratory systems, through increasing capacity and adequate human resources, and accelerating access to faster and quality-assured diagnostic tests through technology transfer at the Reference TB laboratory.

## **2.8 Pharmaceutical Unit**

This unit is responsible for handling the supply chain management of the divisions' medicines in order to avoid interrupted supply to all facilities in the country. The unit had two pharmacists, one pharmaceutical technologist who joined the division in November 2010 and two record officers in 2009. Many activities were undertaken throughout the year.

### **2.8.1 Key activities**

#### **2.8.1.1 Finalization of the post market surveillance report**

The results of the PMS report were finalized and shared among the key stake holders. This report was further shared in the international union on November 2010.

#### **2.8.1.2 Missions and Meetings**

##### *Global Drug Facility (March 2010)*

A Monitoring of GDF support for 2nd year paediatric grant and adult direct procurement was conducted in March 2010. Two consultants from the GDF participated in this annual supervisory visit.

The mission had the following objectives;

- a) Quantification of next drug supply needs (including the last two years of the WB-TOWA grant for adult anti-TB drugs)
- b) Recommendation on renewal of GDF support
- c) Verification of adult anti-TB drugs procurement with government funding
- d) Discussion of the new WHO paediatric dosage recommendations

To assess the country's preparedness to garner the second year support of pediatric TB medicines from GDF. This mission was very successful since the country was fully prepared. Several recommendations were made by the GDF consultants to further strengthen TB medicines management in the country. These recommendations have been adopted.

##### *Green Light committee*

The pharmaceutical unit participated actively in the preparations for the green light committee visit in the country in August 2010. The visit included a visit to the KEMSA stores and sampled field visits

##### *Commodity security sub-committee*

The unit formed a national coordinating commodity management committee with specific terms of reference early in the year. Several committee meetings have been held and this has led to streamlining of commodity management activities in the division including involving other partners and technical experts in this field. The commodity management meetings were supported by Management Science for Health (MSH).

#### **2.8.1.3 Electronic Data reporting training, piloting and roll-out**

The division managed to train DTLCS as ToT's in all districts on the use of the electronic aggregated data reporting tools. Currently, over 70% of the districts in the country are able to send their reports electronically to the Logistics management Unit at KEMSA

#### **2.8.1.4 Quantification and Funding for DLTLTD commodities**

Forecasting and Quantification exercise was conducted to ensure commodity security. This exercise involved the use of Quantimed software in calculating the division's two year commodity requirements (2010/2011) for medicines and laboratory reagents and equipment. A concise report was reproduced for this exercise listing the commodity requirement and finances required in having these commodities. Technical and financial support provided by partners; - MSH, KNCV/TBCAP and the GF –PSCMC

#### **2.8.1.5 DLTLTD commodity financial gap analysis for 2010 and 2011**

The funding for DLTLTD commodities was made possible through support from the Government, Global fund, WHO, GDF and UNITAID (is supporting treatment of up to 390 MDR-TB patients with half the number being put on treatment).

The first phase of World Bank TOWA funding (USD 2 million) for first line TB commodities was approved and drugs delivered from September 2010. The second disbursement of USD 2 million is waiting signing of the agreement for the payments to be effected by the NACC to the GDF.

Currently, the division has a financial gap of **Ksh 182,300,750** to meet medicines need. Since 2006, Global Drug Facility (GDF) stopped supporting procurement of the adult anti-TB first line drugs

### **2.8.2 Achievements**

- Rolled out of distribution of commodities from KEMSA direct to all the districts
- Training, piloting and roll-out of the electronic data reporting by the DTLCs
- Revised the TOTs LMIS training curriculum for use by the health care workers
- Participation in the development of the medium level managers training curriculum
- Involvement of partners in the monthly commodity sub-committee meetings
- Participation in the development and training of HCWs on ACEM-IT
- Forecasting and quantification of the DLTLTD commodities
- Participation in the development of division's strategic plan (2011-15)

### **2.8.3 Challenges**

- Delay in distribution of TB/leprosy commodities and servicing orders by KEMSA.
- Late and low reporting rates (less than 50%), therefore leading to challenges in Quantification and Forecasting of commodities
- Inaccurate filling of LMIS tools due to lack of training especially for DTLC's and other health care workers

Slow pace of involvement of pharmacists in integrated commodity management at the district level

### **Policy, planning and Research Section**

Throughout the year, the section continued to spearhead monitoring and evaluation activities for various programs within the national office and the field as well as manage routine TB, leprosy and DRTB surveillance data.

## **2.8.4 Key activities**

### **2.8.4.1 Development of the new strategic plan**

The year 2010 marked the end of DLTLDs strategic plan 2006-2010. Meetings were held to develop the new strategic plan for DLTLD during this period which was successfully crowned by the launch of the new strategic plan 2011-2015 on the 20<sup>th</sup> September 2010 to mark a new dawn for DLTLD.

### **2.8.4.2 Biennial planning meeting**

During the year the division with support from USAID held successful biennial planning meeting. The meeting brought together districts from each of the 12 TB control regions where they discussed and planned activities to be carried in their districts for the next 2 years

### **2.8.4.3 Support supervision**

Support supervision was carried out in the 12 TB control provinces with support from CDC, Global Fund, WHO and USAID. This was not done as planned due to competing tasks but the ones carried out were redirected to focus on the 30 poorly performing districts.

### **2.8.4.4 PDA reporting and recording system**

Implementation of PDA has been ongoing and the section has been offering technical support to the implementing regions. Plans to roll out the PDA system of reporting to the remaining regions by the end of 2011 are underway.

### **2.8.4.5 Development of the web based surveillance system**

DLTLD through the section is in the process of establishing a web based surveillance system to ease data management. Planning meetings were held between the division and the technical advisor in the year 2010.

### **2.8.4.6 Research**

During the year the section provided support to other sections of the division including developing work plans, program indicators as well as the study protocols for drug resistance survey, TB prevalence survey, Delay in diagnosis, KAP survey and mortality survey to be funded under the global fund Single Stream Funding (SSF).

The division was also invited to participate in an on operational research training conducted by the regional centre for quality health care (RCQHC) in collaboration with Makerere University (Uganda) and the ministry of Public Health and Sanitation. The training attracted 22 participants from Kenya, Uganda, Tanzania, Rwanda and Burundi. Six (6) Kenyan participants attended the training. The main objective of the training was to enhance the capacity of health program managers, administrators and policy makers to commission and utilize Operations Research for service delivery improvement.

During the year the following assessments were conducted and their findings disseminated to DHMT members:

- Integrating HIV testing into routine drug resistance surveillance methods in Kenya
- Motivating and De motivating factors among health care workers at facility level in Kenya
- Routine data quality assessment (DQA)
- Workload assessment



### 2.8.4.7 Capacity building

The M/E section also carried out capacity building to field officers with support from Global Fund. The trainings were directed to mainly the DTLCs, DPHNs and DHRIOs with the aim of improving among other things recording and reporting.

No of Trainings	Thematic area	Target Group	Where conducted
5	MDR-TB	Health Care Workers	Eastern South, Central, Coast, Rift Valley North and Eastern North
1	ACSM	Health Care Workers - DHMT	Rift Valley North
1	IPC	Journalist	Nairobi
2	TB/HIV	CHEWs	Rift Valley South, Eastern North
4	M&E	DHMT members	Coast, Eastern North, North Eastern and Nyanza North
1	Core TB	DTLCs	
3	Nutrition in TB		Coast, Central, Western, and Rift Valley North
1	TB/HIV through Advanced Continuing Medical Education - IT	Health Care Workers	Western
15	Commodity Management	Health Care Workers	Nationally
2	ISO – (TOT and Auditors training)	DLTLD staff	Nakuru
2	TB/HIV - IMAI	Health Care Workers	Coast, Nyanza

### 2.8.5 Funding

During this period the division applied for global fund round 9 and qualified for funding under the new mechanism of funding by global fund. This mechanism called for consolidation of all grants (round 5 and 6 phase II and round 9) into one single stream of funding with a total budget of \$23,616,018. The process of consolidation went on during this period with development of a consolidated work plan, Performance Framework, PSM Plan and the M/E plan. Negotiations for funding are ongoing and the grant signing expected to be completed in January 2011.

### 2.8.6 ISO 9001:2008 certification process

The Division was selected by the ministry of public health and sanitation as a pilot for implementation of quality management system. The division began to commute the 17 steps process towards attaining a mark of quality and reputation in the healthcare sector. The first step for the division was to participate in the sensitization of senior management at the ministry.

The DLTLD staff was involved in three day training in ISO certification process offered by Kenya Bureau of Standards and a project team was identified to lead the process in having the division ISO-certified.

## 2.9 Advocacy, Communication and Social Mobilization (ACSM)

### 2.9.1 Key ACSM activities

#### 2.9.1.1 Finalization of sensitization guides for community and health workers

The finalization of development of the community and the health workers sensitization guides were done with support from APHIA II Western. The guidelines are complete waiting to be printed when funds are made available.

### **2.9.1.2 World TB Day 2010 commemoration**

The World TB Day (WTBD) was on 24<sup>th</sup> March, worldwide, the national event was held at Nakuru town

The year 2010 theme was “**Innovation**”, and the slogan was “*On the move against tuberculosis, innovate to accelerate*”. The campaign focused on individuals around the world who had found new ways to stop TB and served as an inspiration to others. The theme runs for two years from 2010 and 2011.

The major activities carried out during World TB Day commemoration included public education and pamphleteering on the basic facts of TB prevention, control and treatment activities country wide, Screening of TB suspects, inspection of MDR TB facility at Kenyatta National Hospital and the launch of intensified case finding in Prisons by the assistant Minister for Public Health and Sanitation.

Other activities included the production of IEC and promotional materials, speeches, newspaper supplements and involvement of media in dissemination of messages on basic facts on TB. A procession was held in Nakuru led by Police band.

The IEC and promotional materials were distributed to all the TB zones and the partners

### **2.9.1.3 Mass Media Campaigns: Radio, TV live talks, spots newspaper adverts and newspaper supplement**

The following Radio and TV stations gave free slots on live talks: KBC- TV, Radio Umoja, Family Media, KTN, Coro FM, KBC Radio and Kenya Times during WTBD day. News paper adverts were placed in 2 newspapers while newspaper supplement were placed in Standard, Nation and Nairobi Star newspapers. The planned national Mass media preparation started in October through support from Global fund Round 5. The campaign involved interactive live talks, spots/commercials and placement of adverts on the newspapers.

### **2.9.1.4 Capacity building**

#### **TB/HIVACSM training**

This event took place in North Rift, Baraton University in February 2010, with a total of 33 District Health management Members trained with support from Walter Reed.

#### **ACME –IT**

The ACME –IT is Advancing Continuing Medical Education through Information Technology. This project was organized with support from PATH Kenya through its APHIA Western II project and EC Associates. The interactive distant learning brought together four institutions in western province, namely:

- Busia District Hospital
- Lugari District Hospital
- Mbale Provincial Rural Training Center/Vihiga District Hospital (joint learning center)
- Provincial General Hospital (Kakamega)

Division of Leprosy, Tuberculosis and Lung Disease provided leadership and the curriculum for the presentations.

## **2.9.2 STOP TB Partnership, Kenya**

The Stop TB partnership was inaugurated in Kenya with formation of the National Steering Committee consisting of 12 members drawn from various organizations. Interim Secretariat with 3 officers was drawn from DLTL and KAPTL. The Steering committee organized and held successful Pre launch event presided over by the Minister for Public Health and

Sanitation Hon. Beth Mugo. The Partnership is a nonprofit organization that is open to individual or corporate membership with a vision to support TB control activities in the country and especially in resource identification and mobilization through advocacy at all levels.

## **2.10 Infection Prevention and Control**

### **2.10.1 Key activities**

TB infection control remains a major programmatic intervention in TB control especially in this era of HIV epidemic and the increasing prevalence of drug resistant TB. TB infection control is a combination of measures aimed at minimizing the risk of TB transmission in various settings.

#### **2.10.1.1 Follow up TB IPC visits**

TB IPC follow up visits were done to some of the facilities with trained IPC teams and had earlier been funded to sensitize HMT through the TBCAP support. These facilities included Kakamega, Machakos, Embu, Meru, Nakuru, Kitale, MTRH and Thika. The visits revealed major improvements being undertaken to ensure minimal or no transmission of TB within health care settings. Majority (those with adequate space) of the facilities observe the outdoor waiting bay policy to enhance dilution of contaminated air and reduce infection in waiting areas.

#### **2.10.2 Capacity Building**

To ensure adequate capacity building, TB IPC modules have been included in the MDR, TBHIV and CBDOTS training curriculum. Approximately 80 HCWs were trained under the ACME – IT that was piloted in the Western part of the country under the support of PATH.

During the year, WHO did support sensitization of HMTs and development of IPC plans for the facilities that did not benefit during the previous funding from TB CAP. The Division, through the IPC focal person participated in the development of the Kenya Prisons Strategic Plan 2011-2015 to ensure the IPC component is well addressed in the prisons which form a major congregate setting.

There were minimal trainings of health care workers in the year due to minimal funding for trainings. However, two officers attended a TB IPC training organized by RCQHC, in Uganda.

#### **2.10.3 IPC personal protective gear**

There was an adequate supply of N95 respirators through the support of CDC and global fund; hence no stock outs were realized during the year. The division, through KEMSA also purchased disposable gloves and aprons as part of protective gear for use in MDR treatment centres in the year 2011.

#### **2.10.4 Isolation facilities**

There were three hospitals with isolation facilities: MTRH, Homabay and KNH. The isolation facility at KNH was not ready to admit patients by the end of the year due to financial problems. Isolation shall only be considered in special cases i.e. poor adherents; refugees; XDR TB disease; mobile populations and patients with complications necessitating admission.

## **2.11 Community TB Care, Poverty and Gender**

The Division of Leprosy, TB and Lung Disease in line with the international Stop TB strategy implemented CTBC, Poverty and Gender activities throughout the year with support from the Government, partners and NGOS.

### **2.11.1 Key activities**

#### **2.11.1.1 Policy document development/ review**

During the year, WHO supported a 5 day workshop to review M&E tools. The workshop was held in July and participants were drawn from DLTLT (all levels officers), NASCOP, MOPHS, Nutrition department and KAPTLT.

The following tools were updated:

- Community Referral form
- Monthly CHWs reporting form
- Quarterly reporting forms

Other documents reviewed but are yet to be finalized were CHWs training curriculum and manuals, CTBC Guidelines and training Job aid for CHWs.

TB- Poverty & Gender policy document (final draft) was also developed.

#### **2.11.1.2 Capacity building**

Sensitization of District Health management teams and training of CHWs was done in four districts with support from WHO.

Training of CHEWs on CTBC from Hard to reach districts (Marsabit, Samburu East, Moyale, Samburu Central, Turkana Central, Turkana South, Turkana North, Kajiado North, Loitokitok Manyatta jillo Marsabit) was done in March by AMREF/DLTLT using GFs.

#### **2.11.1.3 Out-reaches activities by TB patients**

TB Advocates in Coast province were supported for 5 months (August -November) to carry out outreach activities. In total 25 TB advocates were supported by WHO to undertake the following activities:

- Door to door campaigns,
- Active case finding
- Referral of suspects
- Defaulter tracing
- Health education through community sensitization

## Summary of outreach activities undertaken by TB Advocates

<b>TB Indicators</b>	<b>Total Number</b>
Number of TB Outreaches undertaken	74
No of suspects referred to the health facility	183
No of patients enrolled under care	17
Number of Defaulters traced	0
Number of patients who completed treatment	11
No of times supervised by a health care worker	2

***Lessons learned***

- Engaging TB patients goes a long way in breaking TB-related stigma within the community.
- TB patients, when engaged as treatment supporters, result in better treatment outcomes.
- Communities when engaged on TB become very instrumental in providing information on TB prevention, care and support.

**2.11.1.4 Technical Support supervision**

Supervision of community TB care control activities was done throughout the year alongside other routine scheduled program. Additional technical support was given to partners implementing TB Reach Project (KAPTLTD, IMC) and NGOs (NEPHAK) funded with Global funds.

**2.11.1.5 Mission visits**

A team from Ethiopia conducted an experience sharing visit on TB Control Program in Coastal Province. The objective of the mission was to share the experience on how to run a successful TB program from national level down to the community

**2.11.1.6 Conferences, Workshops and seminars**

Susan Gacheri participated in the 41<sup>st</sup> International Lung union conference in November 2010, and made 2 oral presentations on:

- Partnership between NTP(Government) and Civil Societies in implementing the 3Is
- Developing and Implementing a competency-based curriculum for District managers in TB Control

She also participated in a number of workshops including:

- December: participated in the review of CHWs curriculum for the MOPHS (Community Health services).
- September: Participated in the National biennial meeting in Mombasa
- September: Participated in the 3<sup>rd</sup> PIA Regional learning meeting held in Kigali, Rwanda. During this workshop, DLTLD emerged with best performer on quality of TB health services.
- August: Coordinated and facilitated the District TB managers training: 24 DTLCs and DMLTS were trained.
- July: Participated in the Regional PIA experts meeting in Kampala
- March: Coordinated the 3<sup>rd</sup> PIA learning session held in March in Thika with support from RCQHC. DTLCs from 15 districts participated.

## 2.12 General Lab Services

In 2010 microscopy diagnostic services sites increased from 1,183 to 1,335 majority of which are mainly GOK and Mission hospital facilities. Sputum smear microscopy is still the main lab diagnostic method for tuberculosis. The division is in the process of introducing LED microscopy in high volume laboratories and several laboratories have graduated to using LED Fluorescent microscopes. These include all 8 PGH laboratories and a few busy district hospitals such as Homabay, Port Reitz, Kericho and Blue house. The microscopy sites coverage per population has gone down to 1 lab to 30,000 population compared to 50,000 as recommended by WHO. The division is now keen on improving the quality of services in the current labs rather than decentralizing further.

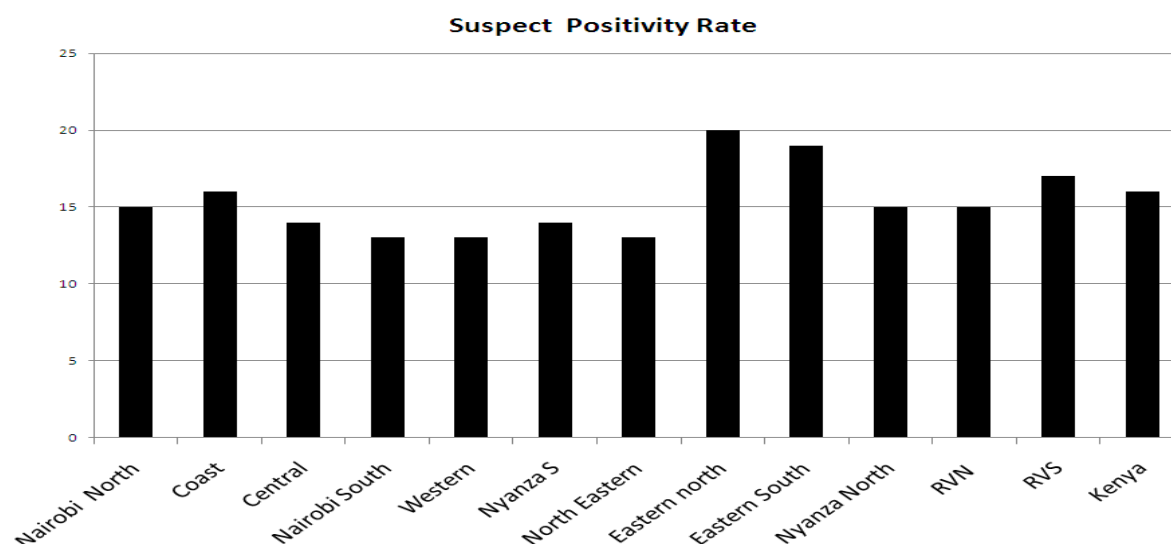
### 2.12.1 Key Activities

#### 2.12.1.1 Smear Microscopy

Diagnostic sites continued to screen TB suspects and monitor patients' treatment progress as shown in the tables below

#### Sputum microscopy in 2010

	Province	Patients						Smears		
		New	Pos	%	F/Ups	Pos	%	Total smears	Pos	%
1	Nairobi North	30,479	4,456	14.62	6,863	320	4.7	87,480	11,512	13
2	Coast	23,063	3,583	15.54	8,327	458	5.5	70,805	8,077	11
3	Central	24,216	3,300	13.63	7,691	613	8	59,078	9,409	16
4	Nairobi South	27,353	3,581	13.09	10,290	952	9.3	78,278	9,478	12
5	Western	14,415	1,905	13.22	3,855	282	7.3	34,072	4,270	13
6	Nyanza S	14,267	2,046	14.34	5,378	233	4.3	41,202	5,369	13
7	North Eastern	7,026	912	12.98	1,919	109	5.7	18,389	1,944	11
8	Eastern north	5,946	1,170	19.68	1,325	73	5.5	14,350	2,338	16
9	Eastern South	32,161	5,514	17.14	11,836	635	5.4	75,223	9,590	13
10	Nyanza North	35,470	5,450	15.37	7,383	480	6.5	67,408	9,411	14
11	RVN	22,420	3,373	15.04	7,122	407	5.7	57,473	6,645	12
12	RVS	27,656	4,793	17.33	11,048	610	5.5	74,937	10,893	15
	Total	264,472	40,083	15.16	83,037	5,172	6.2	678,695	88,936	13



### 2.12.1.2 EQA

TBCAP continued supporting EQA activities in all regions for DMLTS and PMLTs to give EQA feedback to diagnostic centres. By the end of June 2010 EQA coverage was 68 % with an average concordance of 97 %. See table below

#### Cumulative EQA analysis as per the end of June 2010

1	No of operational labs	1,335
2	Lab rechecked	868
3	EQA coverage	68 %
4	No of positives checked	1,951
5	No of negative checked	12,861
6	Overall positivity rate	13 %
7	High false positives	6 %
8	False negatives	1 %
9	Over all true +ves /all +ves	99 %
10	Over all detection proportion to controllers	1,0
11	% concordance	97.3 %

FACILITIES WITH EQA RETURNS								
PROVINCE	QUARTER	TOTAL FACILITIES	WITH RETURNS	WITHOUT RETURNS	% RETURNS	≥ 95 % CON	% CON	
1 Rift Valley North	1	108	66	42	61.1	45	68.2	
	2	116	74	42	63.8	52	70.3	
2 Rift Valley South	1	138	74	64	53.6	53	71.6	
	2	148	79	69	53.4	52	65.8	
3 Western	1	77	26	51	33.8	18	69.2	
	2	94	40	54	42.6	17	42.5	
4 Nyanza South	1	77	42	35	54.5	34	81.0	
	2	68	42	26	61.8	33	78.6	
5 Nyanza North	1	88	62	26	70.5	36	58.1	
	2	108	65	43	60.2	43	66.2	
6 Central	1	98	66	32	67.3	36	54.5	
	2	102	58	44	56.9	38	65.5	
7 Eastern North	1	17	7	10	41.2	2	28.6	
	2	17	5	12	29.4	2	40.0	
8 Eastern South	1	132	94	38	71.2	75	79.8	
	2	136	37	99	27.2	24	64.9	
9 North Eastern	1	32		32	0.0		0	
	2	32		32	0.0		0	
10 Coast	1	94	46	48	48.9	40	87.0	
	2	104	64	40	61.5	53	82.8	
11 Nairobi North	1	56	36	20	64.3	21	58.3	
	2	63	35	28	55.6	24	68.6	
12 Nairobi South	1	43	21	22	48.8	18	85.7	
	2	51	43	8	84.3	24	55.8	
SUB-TOTAL	1	960	540	420	56.3	378	70.0	
	2	1039	542	497	52.2	362	66.8	

### 2.12.2 Capacity Building

#### 2.12.2.1 Trainings

TBCAP supported regional EQA training workshop in Nairobi which involved several African countries. Five lab staff from Kenya attended. This was closely followed by TOT for the newly introduced TBCAP tools for all PMLTs and in charges of referral hospital labs.

50 DMLTS in four provinces were trained on the usage of the newly introduced TBCAP laboratory tools. Partners such as Walter Reed, APHIA II, ICAP, PATH etc also supported trainings in their target districts.

One staff from CRL attended 2 weeks Culture and DST training in South Africa while 2 lab other staff also attended a 5 day training on Bio safety in the same place. These trainings were supported by CDC-COAG.

#### **2.12.2.2 Lab Supplies**

Lab commodities especially Stains and other consumables were adequate and no shortages were reported in all the provinces. GFATM supported renovation of 50 diagnostic centres in all 12 TB zones in the country.

#### **2.12.3 Constraints**

Human resource remains a major challenge as majority of the diagnostic centres at the peripheral level are manned by one lab staff. There is also a high staff turnover, which affects the quality work. Infrastructure is a big problem in terms of space and ventilation. This is a big concern in the area of infection control.

#### **2.12.4 Achievements**

- All PGH Labs now using FM
- Microscope repair contract in place
- New lab staff employed
- Renovation of labs going on in 51 labs in the country under R6 GFATM
- Recruitment and retention of lab staff through GF rd 6 support

### **2.13 Human Resource/Administration**

The section is charged with the staff management and development, fleet management, organizational sharing and learning, procurement and financial management.

#### **2.13.1 Key Activities**

##### **2.13.1.1 Staff Movements**

The division received 10 new members of staff and 4 left to other ministries. The new members of staff were deployed as follows:

- |                             |                                     |
|-----------------------------|-------------------------------------|
| • 1 Epidemiologist          | -Head of Care and treatment section |
| • 2 accountants             | - Accounts unit                     |
| • 1 PHO                     | - M&E unit                          |
| • 1 Pharmacy technologist   | -KEMSA                              |
| • 1 Driver                  | -Administration                     |
| • 1 Secretary               | -Administration                     |
| • 1 Procurement             | -Administration                     |
| • 1 Laboratory technologist | -Lab In Charge CRL                  |
| • 1 Clinical officer        | -MDR TB                             |

##### **2.13.1.2 Recruitment of medical laboratory technologists**

The DLTLTD through the support of Global Fund under round 6 was able to employ an additional 15 MLTs in April 2010; this brings to a total of 115 MLTs working in various facilities in Kenya.



### **2.13.1.3 Capacity building**

The DLTLTD staff both from the central unit and field participated in the various in-service training programs offered by the division and by partners. There was also attendance of both local and international participation of meetings and conferences. The following capacity building activities took place in 2010

### **2.13.1.4 Development of documents**

The Administration and Human resource section participated in the DLTLTD strategic planning process. The HR agenda was put in the DLTLTD strategic plan.

The section was able to review the District TB managers' curriculum with the technical assistance of the HR consultant from KNCV and hope to complete the process in 2011.

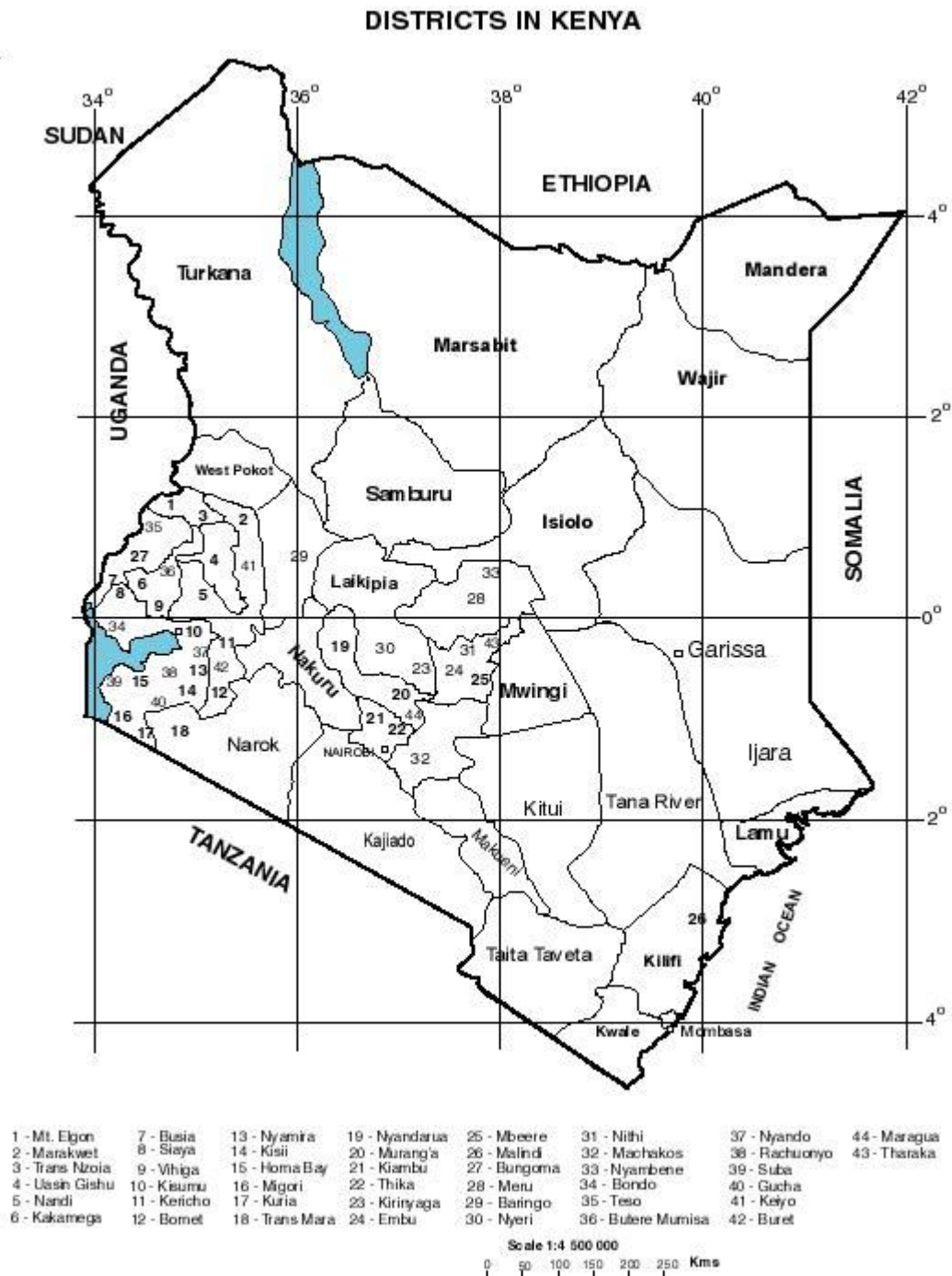
### **2.13.2 Challenges and constraints**

- Resignations of hired staff after recruitment by public service commission
- Lab technicians not willing to work in hard to reach areas
- Delay in filling the vacancies left due to the bureaucracies in of replacement of staff
- Lack of funds to support long term courses
- Lack of conference room for meetings

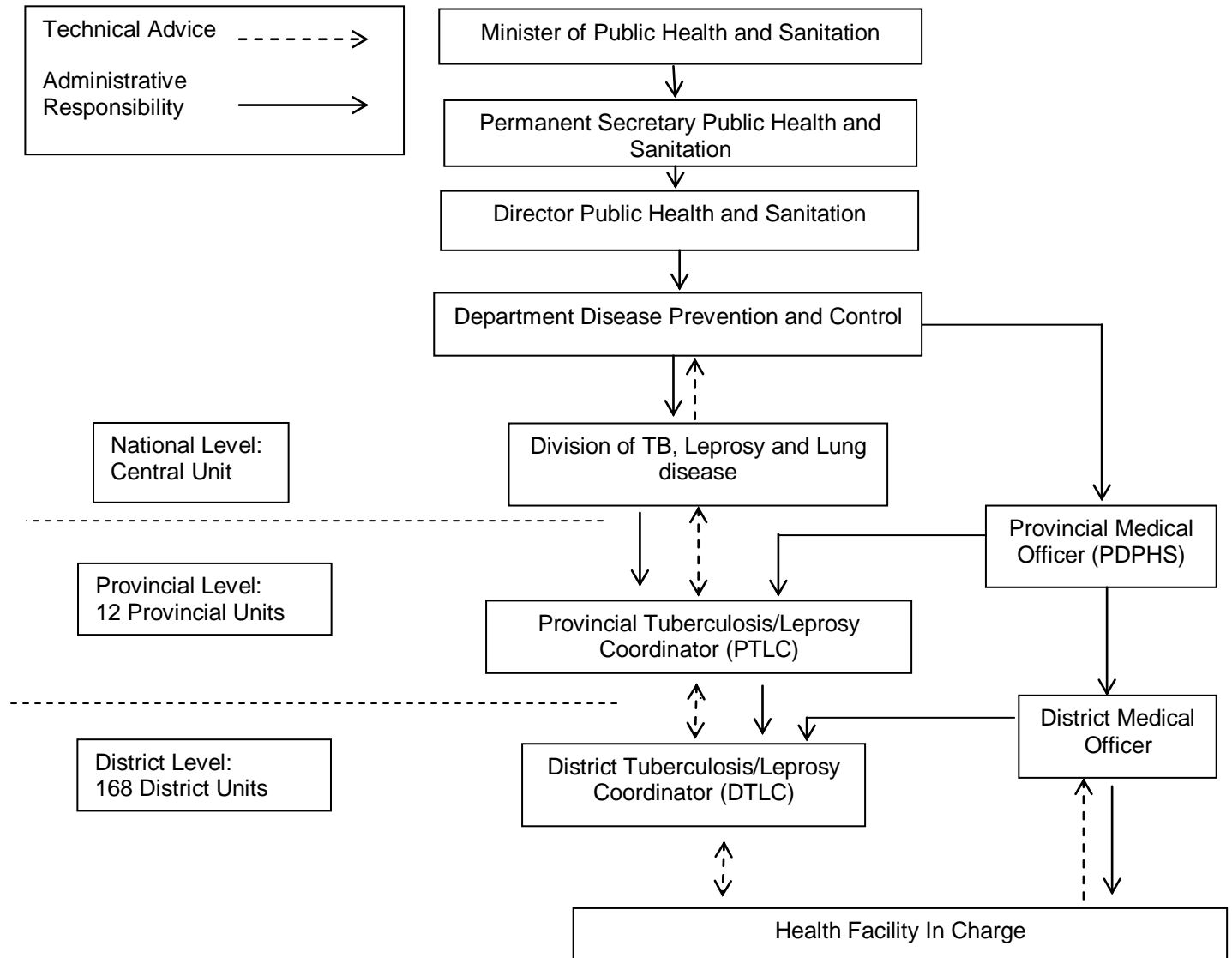
**MAIN DISTRIBUTION LIST**

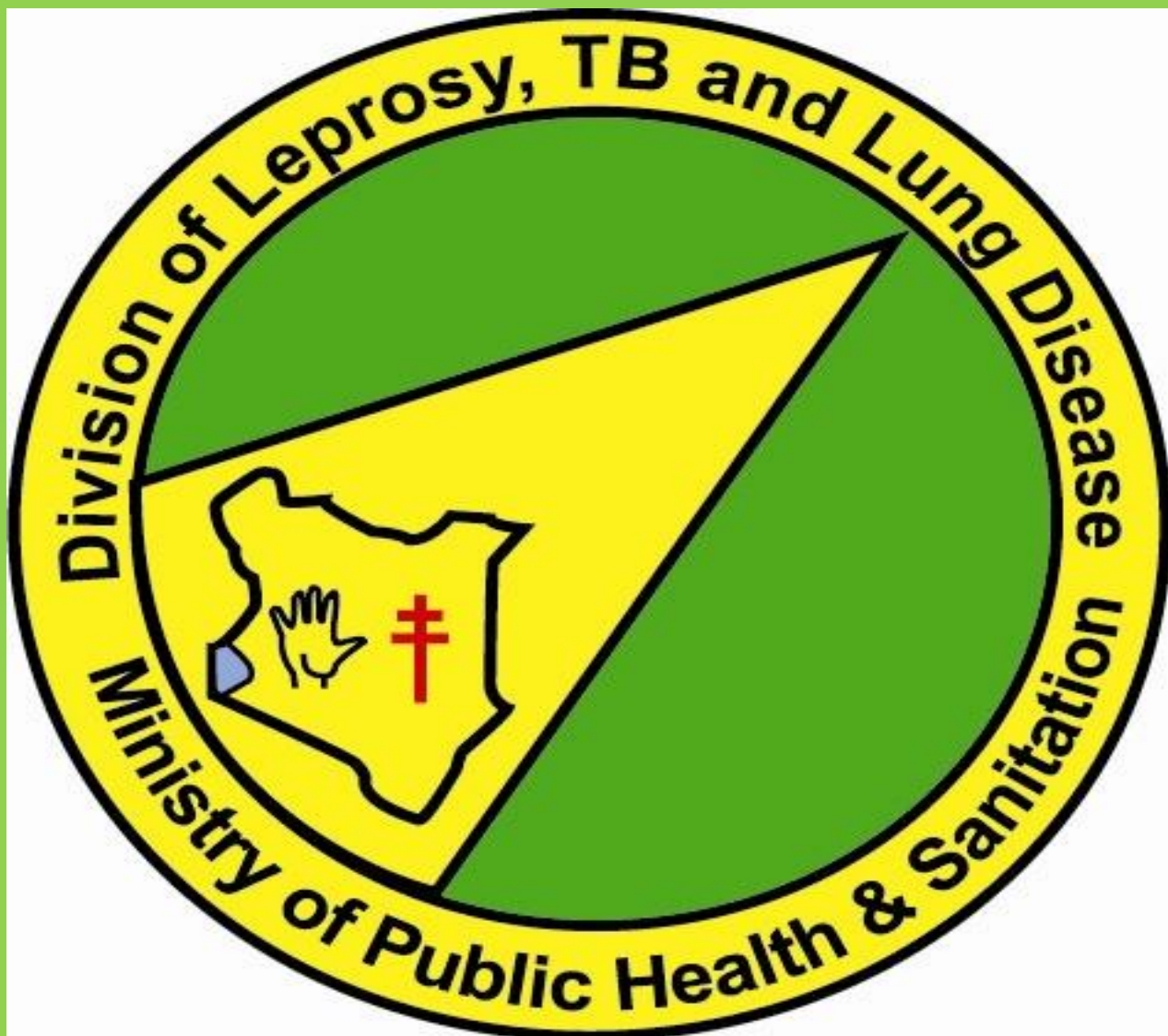
1. Permanent Secretaries –MOPHS and MOMS
2. Director of Medical Services
3. Director Public Health and Sanitation
4. Head Department of Disease Prevention and Control
5. World Health Organization Kenya Country office
6. CDC country office
7. USAID
8. KANCO
9. TBCARE1
10. Provincial Medical Officers
11. Provincial TB Leprosy Coordinators
12. Medical Officers of Health
13. District TB Leprosy Coordinators
14. TBCAP
15. Centre for Respiratory Diseases Research- KEMRI
16. AMREF
17. Malteser International
18. PATH- Kenya
19. Kenya Association for the Prevention of Tuberculosis and Lung Diseases
20. International Organization for Migration (IOM)
21. ICAP
22. IMC

## Annex 1: Map of Kenya



## Annex 2: Organizational structure of the DLTLD within the Ministry of Public Health and Sanitation





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