Republic of Kenya

Ministry of Public Health and Sanitation

DIVISION OF LEPROSY TUBERCULOSIS AND LUNG DISEASE

ANNUAL REPORT

2008

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EDITORIAL BOARD

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DIVISION OF LEPROSY TUBERCULOSIS AND LUNG DISEASE

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ACKNOWLEDGEMENTS

Kenya is reeling from the realization of having won the coveted *Karel Stiblo Award in 2008* that a lot of work needs to be done to further improve on the targets that were achieved. The Division of Leprosy Tuberculosis and Lung Disease (DLTLD) acknowledges the guidance and support that it continued to receive from the Minister for Public Health and Sanitation, the Permanent Secretary in the Ministry of Public Health and Sanitation and the Director of Public Health and Sanitation including all health care workers in both the Ministry of Public Health and Sanitation and the Ministry of Medical Services throughout 2008. The DLTLD extends sincere gratitude to all provincial directors of Public Health (PDPHS), provincial directors of medical officers (PMO's) and District medical officers of Health (DMOH's) who continued to offer strong support to core staff of the DLTLD at these levels of the health care system. The DLTLD would not have achieved much if it were not for the inputs of the innumerable health workers across Kenya, many of whom are working under difficult circumstances.

DLTLD acknowledges the tremendous support it received from Dr Rene L'Herminez, Eveline Klinkenberq and Verena Mauch the DLTLD technical advisors from the KNCV. The same gratitude is extended to Dr. David Okello, the WR, Kenya and Dr. Joel Kangangi, the TB NPO for unwavering support to the program. The TB team at CDC –Kenya: Dr. Joseph Odhiambo, Dr. Nicholas Wambua, Tom Oluoch, Erastus Mburu and Ms. Margaret Mburu, We appreciate the support of the following partners in TB control TBCAP country office (and specifically to Drs Felix salaniponi, Amos Kutwa and Victor Ombeka), PATH, AMREF, APHIA II's Malteser, KANCO, KAPTLD, KEMRI and all other civil society organizations working with the Division. Special thanks go to staff working at USAID offices including Drs. Maurice Maina and Bedan Gichanga whose support has been very instrumental and unwavering in moving things that occasionally got stuck.

The division values strong partnership since it is only through such partnerships that the TB patient is enabled to access quality care and support. These partnerships span from the implementers in the field to the community, from where the patients come from.

Staff working within the division: central unit, CRL, provinces, districts and health facilities are highly 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 becomes, one day, a society free from tuberculosis.

LIST OF ABBREVIATIONS

ALERT	ALL AFRICAN LEPROSY AND REHABILITATION TRAINING CENTER
CDR	CASE DETECTION RATE
CIDA	CANADIAN INTERNATIONAL DEVELOPMENT AGENCY
CNR	CASE NOTIFICATION RATE (NUMBER OF CASES NOTIFIED/100,000 POP.)
DMS	DIRECTOR OF MEDICAL SERVICES
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
KNCV	ROYAL NETHERLANDS TUBERCULOSIS CONTROL ASSOCIATION
KANCO	KENYA AIDS NGOS CONSORTIUM
MB	MULTI-BACILLARY (LEPROSY)
MDT	MULTI DRUG THERAPY (LEPROSY)
MOH	MINISTRY OF HEALTH
NGO	NON-GOVERNMENTAL ORGANIZATION
DLTLD	NATIONAL LEPROSY AND TUBERCULOSIS PROGRAM
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 DLTLD continued to carry out relevant activities aimed at controlling tuberculosis (TB) epidemic and the elimination of leprosy in 2008. In relation to TB control, the focus of attention in 2008 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 challenges of MDR TB, Empowering communities with knowledge on TB and leprosy including enabling and promoting research. Specifically during the year, leprosy control activities continued to focus on early case finding, multi-drug therapy and prevention of deformities.

To enable the DLTLD to implement these initiatives effectively and efficiently, the DLTLD 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 State 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). This support was channeled through organizations like TBCAP, Family Health International (FHI), PATH; the Canadian International Development Agency (CIDA)/Royal Netherlands Tuberculosis Association (KNCV), APHIA II partners and Malteser; a German NGO amongst other organizations. In addition, Global Fund to fight AIDS, TB and Malaria (GFATM) continued to support implementation of several activities. African Medical and Research Foundation (AMREF), MERLIN, and the World Health Organization (WHO) played a critical role in ensuring quality services are offered to those in need.

The total number of TB cases (all forms of tuberculosis) reported in 2008 was 110,251. This was a decrease of 5.5% compared to the 116,723 cases of TB reported in 2007. The decrease in the number of TB cases notified could be attributed to the political disturbances experienced at the beginning of the year 2008. However, the stagnation in case notification, first noticed in 2004 could have picked up. The stagnation in the rate of increase in the number of TB cases notified in the regions is a phenomenon that may be the result of stabilization of the epidemic as a result of TB control efforts. With the increased communication and social mobilization efforts sustained and technical support to implementing units being provided case notification in 2009 may increase if the decline noticed in 2008 was due to the disturbance that the country experienced in the first quarter of 2008.

Tuberculosis treatment results for TB patients started on treatment in 2007 show treatment success rates of 85.20% for new smear-positive pulmonary TB cases (n=38,360), 79% for smear-positive re-treatment cases (n=3,945), 82% for new smear-negative PTB cases (n= 42,852), and 80% for Extra-Pulmonary TB cases (n=18,032). Coupled with an increased case detection rate (TB all forms) to 80% (WHO report), Kenya is now among the few countries in Africa to have achieved the WHO targets.

There were a total of 200 new leprosy cases reported in 2008, of which 16 (8%) cases were pauci-bacillary (PB) and 184 (92%) multi-bacillary (MB) cases. This is a decrease of 7% compared to the 214 new cases registered the previous year. The number of leprosy patients on the register at the end of the year decreased from 191 cases in 2007 to 188 cases in 2008. The proportion of disabilities among the newly registered cases still remain high calling for increased support to sensitization of health care workers to diagnose leprosy. About 13% had disability grade 2, and an additional 23% had disability grade 1, indicating that 36% of cases presented themselves in an already advanced stage of the disease, either caused by patients or health provider delay. However, in 10% of new cases the disability grade was not recorded. Compared to the previous year, the overall case holding improved slightly (PB), or decreased (MB). The proportion of cases released from treatment (RFT) decreased from 67% in 2006 to 60% in 2007 for PB cases, and for MB cases it was at 70% of those patients started on treatment in the year 2007.

This report summarizes the activities carried out by the DLTLD in 2008. It is by no means complete since a lot of activities taking place in the field have not been documented but offers a snap shot appearance of events in 2008. It is hoped that this report will be widely disseminated and used by all partners in need of the information. Hopefully, those who read this report will find the document useful in planning and that they will provide constructive comments that will assist in the development of new or improved approaches to TB and Leprosy control activities in Kenya.

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/Tuberculosis Program (NLTP).

In July 1st 2007, the National Leprosy and Tuberculosis program (NLTP) was elevated to Division of Leprosy, Tuberculosis and Lung disease (DLTLD), a Division in 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 will include amongst others, articulating critical issues on lung health.

In 2007 TB and Leprosy services were delivered through 2,280 health units managed by the Ministry of Health (and other Ministries), NGO/FBO health units and some private institutions. Smear microscopy services were available at 930 of these health units (see table 1).

Table 1: Provision of TB treatment and AFB diagnostic services in 2008

	GOK	NGO	PR	Total
Hosp.	199	105	82	386
Health C.	544	118	60	722
Disp.	915	139	37	1091
Other	8	20	53	81
Total	1666	382	232	2280
Lab.	641	199	119	959
AFB	653	172	105	930

The provision of leprosy and tuberculosis services is integrated into the general health care services at level one, two and three (Primary Health Care). However special staff of the DLTLD is responsible for coordination, supervision and technical advice in relation to management of TB and Leprosy at all levels. In 2008 a total of 148 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). Seventeen technical officers were available at the central unit of the DLTLD to provide technical guidance for the national response to TB and Leprosy control. The technical staff at the central unit was supported by 5 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 traditionally relied on passive case finding and chemotherapy through the DOTS strategy, to reduce the transmission of both leprosy and tuberculosis. In 2008 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 and through intensification of TB screening for contacts of patients with SMP PTB. Emphasis was geared towards intensified case finding among the smear positive tuberculosis.

The GOK continued to provide free TB treatment at all government owned facilities, most Faith Based and NGO health facilities and some private institutions. All the institutions receiving free anti-TB drugs 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 system to report cases on a quarterly basis to the central level through the DTLCs and PTLCs. This is in line with use of a single M and E system in the country.

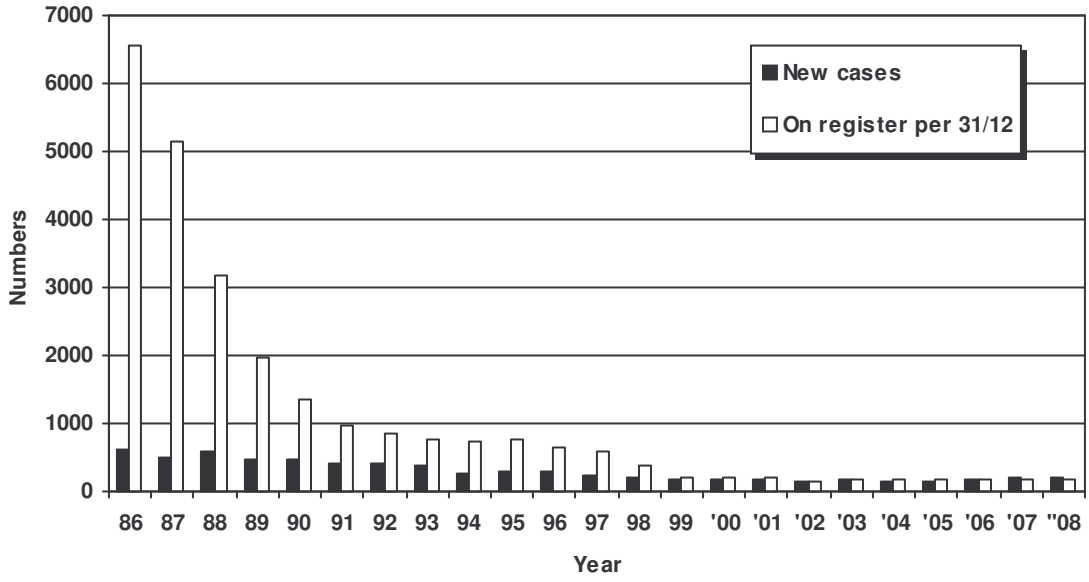
The monitoring and evaluation system was evaluated and enhanced during the year with the training of 105 DTLC's on monitoring and evaluation. During the training the monitoring and evaluation tools were revised to ensure conformity with current TB and Leprosy control activities and ensure that prevention with positives activities are factored. The revised tools have since been printed and disseminated.

2. LEPROSY

2.1 The extent and trend of leprosy in Kenya

Like in 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 rapidly decreased from 6,558 cases in 1986 to 185 cases by the end of 2006. The number of new leprosy cases detected decreased from 630 in 1986 to 167 in 2008 as shown in *Fig.1 below*

Figure 1: Leprosy New Cases & cases on register by the end of the year: 1986-2008



2.2 Case-finding

2.2.1. Case notification

The number of new leprosy cases reported increased by 7% from 213 in 2007 to 200 in 2008. Although Leprosy is no longer a public health problem in Kenya according to the WHO definition, transmission is still taking place. The 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 major public health problem. The number of cases on register decreased from 191 at the end of 2007 to 188 by the end of 2008. However, intensified and focused supervision visits on leprosy, coupled with training and sensitization of all health care workers may improve on cases detected and ultimately notified. Leprosy under reporting may still be a significant weakness of the DLTLD. Of great concern is that most patients present themselves with disabilities i.e. grade 1 and 2 (36%). There are certainly delays in diagnosis of leprosy cases due to patient and health facility

factors. Concerted efforts must be made to train health care workers on how effectively to suspect and diagnose leprosy cases including sensitizing the communities to seek care before damage is done.

2.2.2 Leprosy: Epidemiological indicators.

Table 2 gives a summary of epidemiological indicators for new leprosy cases put on treatment from 1994 up to 2008.

Table 2: Epidemiological indicators new leprosy cases Kenya: 1996-2008

Indicators/year	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08
New PB cases	68	43	41	25	37	18	13	9	6	12	18	17	14
New MB cases	226	194	174	166	133	157	141	153	137	146	172	196	153
Total new cases	294	237	215	191	170	175	154	162	143	158	190	213	167
Pop. (n x 1,000,000)	26.2	27.0	27.7	28.7	29.5	30.4	31.4	32.3	33.3	34.4	35.5	36.6	37.1
CDR new cases (n/100,000)	1.1	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.5	0.5	0.6	0.5
Registered Prevalence 31/12	640	589	375	214	209	195	148	176	182	180	185	191	200
Reg. prev. rate (n/10,000)	0.2	0.2	0.08	0.07	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05
M/F ratio	0.9	1.2	1	0.7	1.2	1	1	1.1	1.3	0.9	1.2	1.4	1..13
Child < 15 yrs. (%)	7	8	7	4	5	3	2	5	3	4	4	4	6
MB proportion (%)	77	83	81	87	78	90	91	94	96	92	91	92	92
Reported disability (%)	98	97	100	100	95	88	93	87	88	69	78	81	100
Disability grade 0(%)	59	59	67	55	60	45	36	34	50	61	64	56	54
Disability grade 1(%)	20	23	15	20	24	27	42	39	34	25	26	26	23
Disability grade 2(%)	20	16	19	25	16	28	22	27	17	15	10	17	13
MDT coverage(%)	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 2008 this proportion was 6%, which indicates a low level of transmission as would be expected but this represents a 2 percentage increase 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 for many years been around 1.

Proportion of new MB cases. This indicator provides information about the success of 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 92% in 2008, indicating that leprosy control, so far, is effective.

Disability grade 2 proportion. 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 or 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 skills to properly diagnose and or treat leprosy (health provider delay).

In 2008 the proportion of grade 2 disabilities among newly registered leprosy cases was 13%, which is increasing from the acceptable level of below 10%. The proportion of patients presenting with either grade 1 (23%) or 2 (13%) disability was 36% 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 10% of new cases. This is 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. Efforts must be instituted thus to ensure that proper recording and management of cases is instituted immediately.

2.3 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 2007.

Table 3: Treatment Results of PB cohorts 1987-2007

PB	**RFT**		**TNC**		**Died**		**TO**		**OOC**		**Total**
Cohort	n	*%*	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

The proportion of PB cases RFT for the 2007 cohort was 60% while 6% of patients went out of control. These results indicate that the DLTLD 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 70% and a defaulter rate of 10% 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 could have contributed to better treatment outcomes.

Table 4: Treatment Results MB cohorts 1987-2006

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	*<,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

2.4 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 are 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 produce footwear and prostheses for leprosy patients. However, the DLTLD did not follow up reports on their outputs to provide a proper report.

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 cases detected annually are making leprosy a low priority disease. This has translated into hardly any resources being allocated to leprosy control activities. Consequently, there is 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. Little funds specifically earmarked for leprosy control became available in 2005 from AIFO an Italian NGO with an interest in global leprosy. Since then, no resources have been available. 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 both peripheral health care workers and program staff at the district level.
- Lack of resources set aside for leprosy control

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

3. TUBERCULOSIS

3.1 Magnitude of the tuberculosis problem

DLTLD for the first time in the last 19 year reported a decline in the number of Tuberculosis cases notified. This could be attributed to the disturbances experienced in the first quarter of the year 2008 or due to stagnation and beginning of the decline in the number of TB cases notified due to concerted efforts in TB control. The number of reported TB cases had increased tenfold from 11,625 in 1990 to 110,251 cases in 2008 *(Figure 2).* The average annual increase over the past 10 years is 10% for all forms of TB. However, in the last 5 years the annual increase of notified TB cases slowed down to an average of 4%. Case Notification Rates (CNR) increased from 53/100,000 population for all forms of TB to 329/100,000 population in 2008. In addition, there was an increase from 32/100,000 population for sputum smear-positive PTB cases in 1990 to 329/100,000 population in 2008 *(see Figure7)*.

In 2008, the DLTLD surveillance system captured the contribution of the private sector in TB control. This sector notified a total of 2,051 TB patients who were put on treatment (see figure 13 and 14).

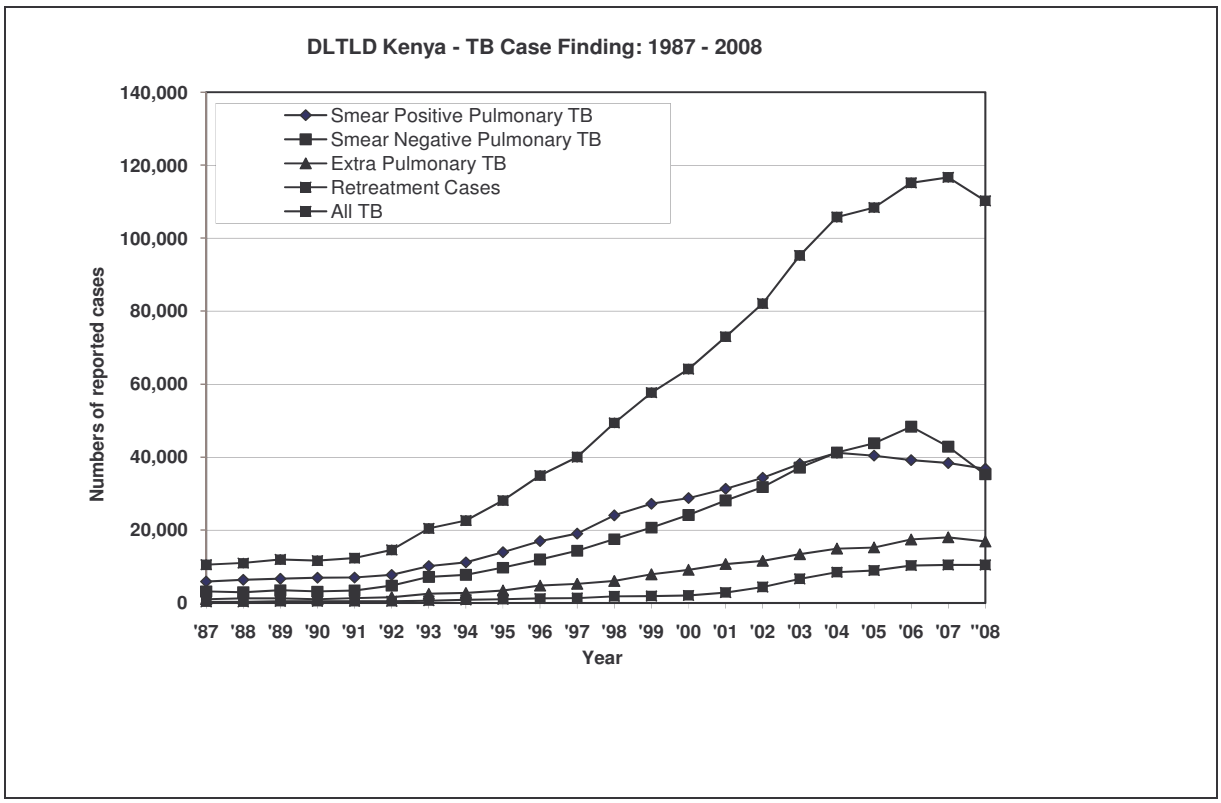
The major reason for the increasing burden of TB in Kenya is the concurrent HIV epidemic. In the last half of 2005 the DLTLD introduced TB/HIV integrated data collection system that enabled the collection of HIV related information. Data for the year 2008 indicate that the national average HIV prevalence in TB patients was 45%.

3.2 Case-finding

3.2.1 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.

Figure 2: TB case notification DLTLD Kenya: 1990 – 2007



TB CASE LOAD PER PROVINCE

The distribution of TB cases in the country follows a particular pattern that is in line with poverty and HIV indices *(see figure 3)*. In 2008 as has been shown previously, Nyanza province contributed to 20% of the TB load in the country closely followed by the greater Rift Valley province which contributed to 19%. The other provinces' contributions in order are as follows: Nairobi (17%), Eastern (14%), Coast (10%), Central (10%), Western 8% and North Eastern (3%).

Figure 4 shows that the average rate of increase in the last 5 years has only been significant in western province where there has been an increase of 7%. *Figure 5* displays the national trend of increase (decrease) over the last 13 years. *Figure 6* displays the trend of TB notifications from the provinces. This trend is a replica of what has been happening in the trend of cases notified in the country over the same period of time.

Figure 3: TB case load per province: 2008

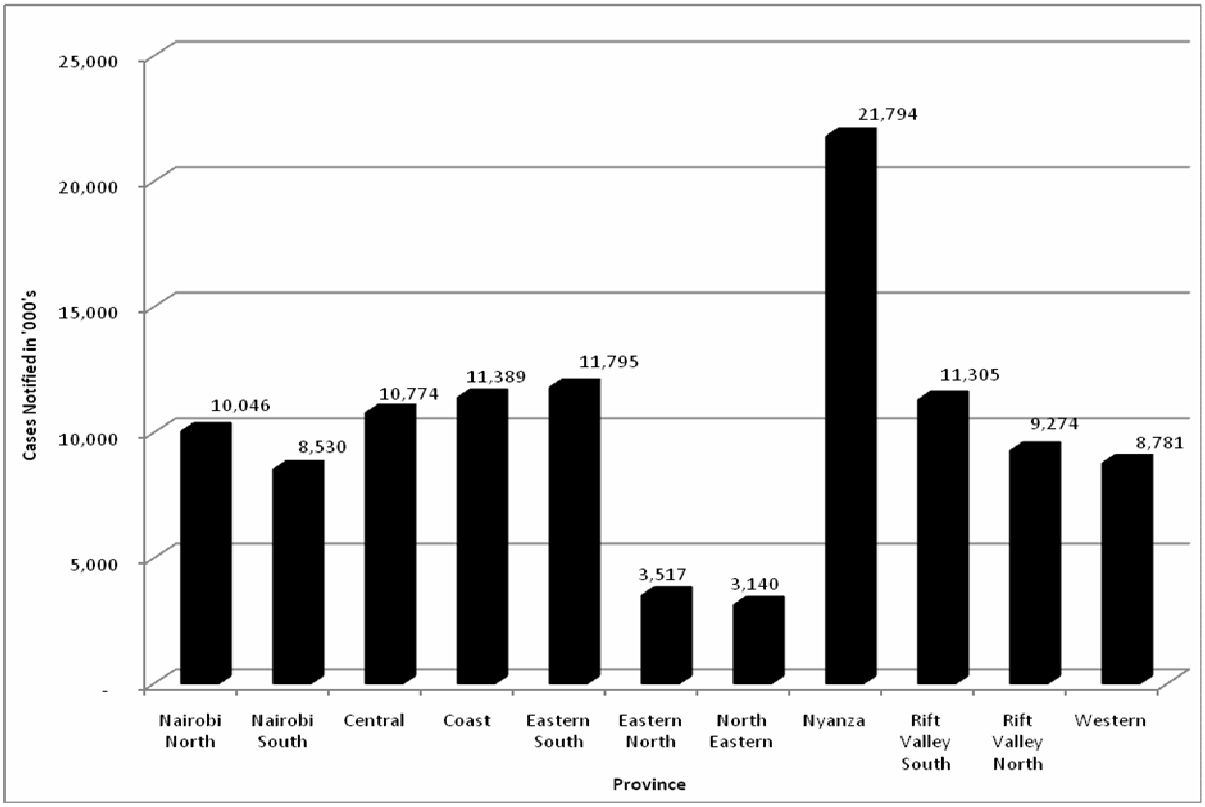


Figure 4: Average 5 year percentage increase in TB cases

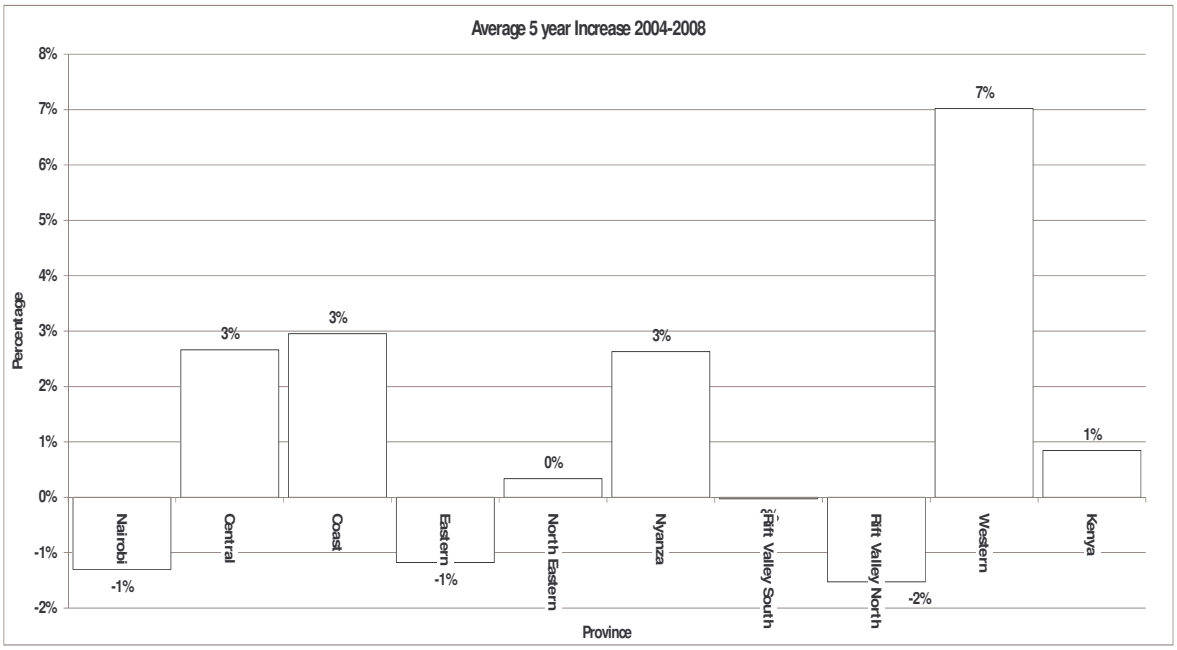


Figure 5: TB annual Increase 1987-2008

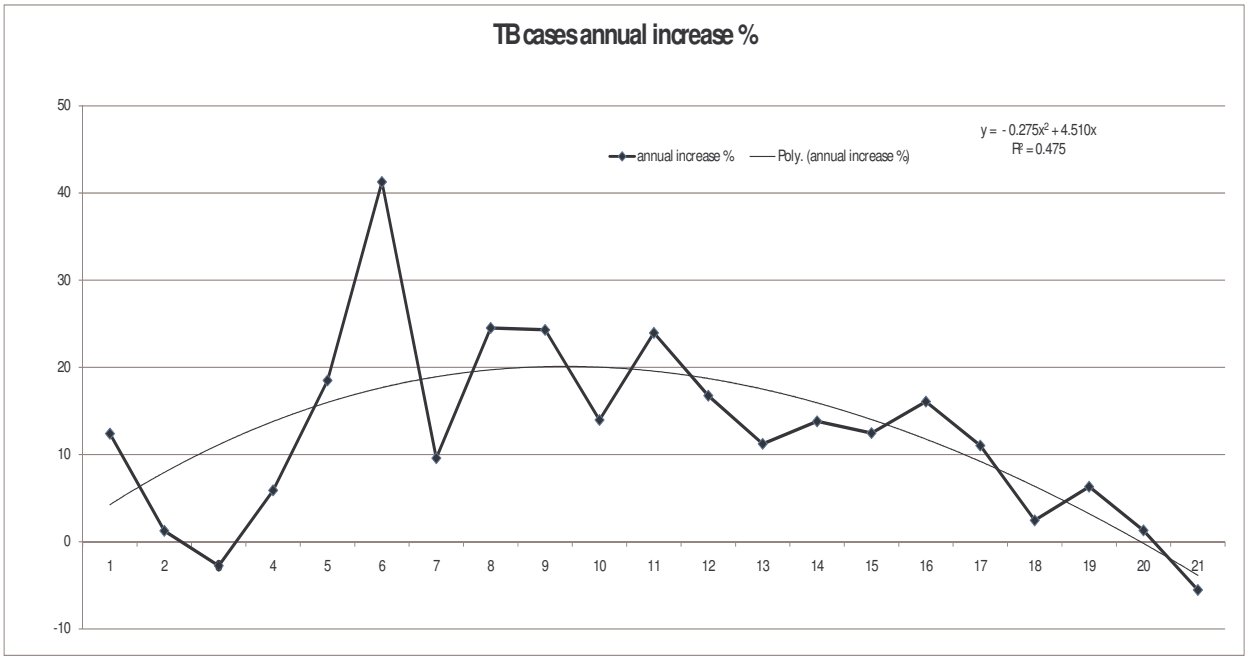
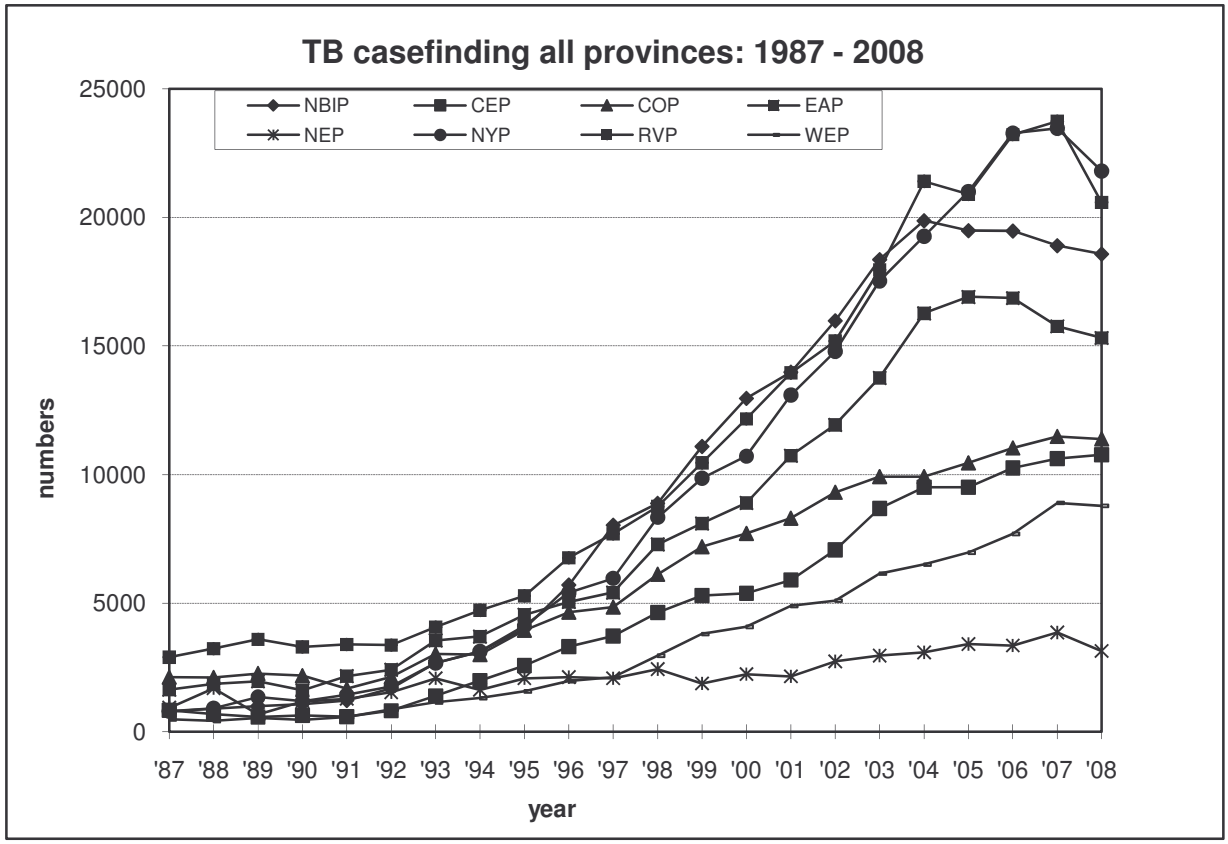


Figure 6: Provincial TB case findings 1987-2008



3.2.2. Case notification rates

Figure 7: Case Notification Rates Smear positive PTB and all Types TB Kenya 1990-2008

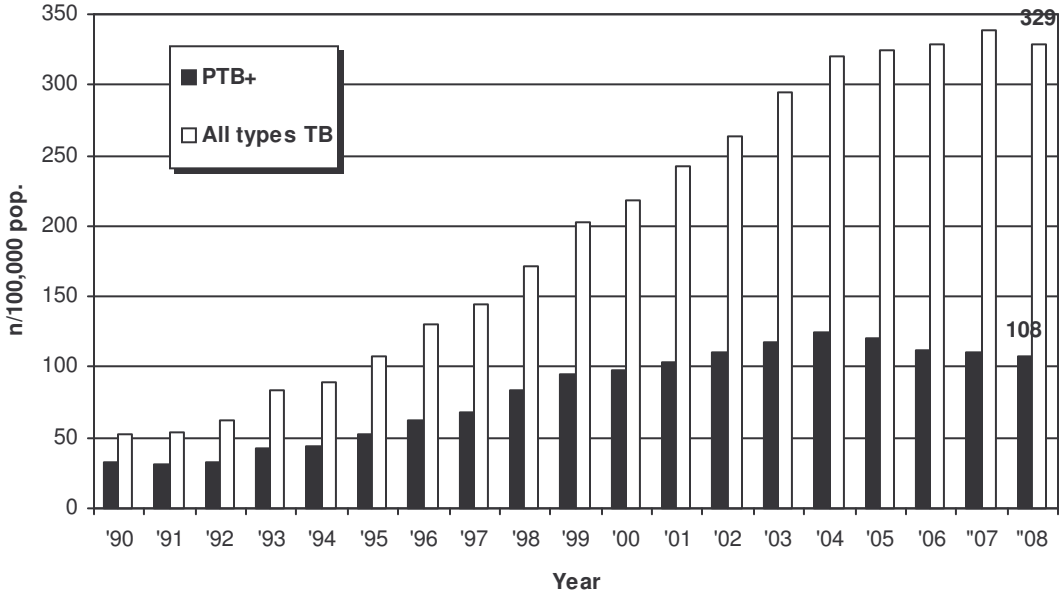
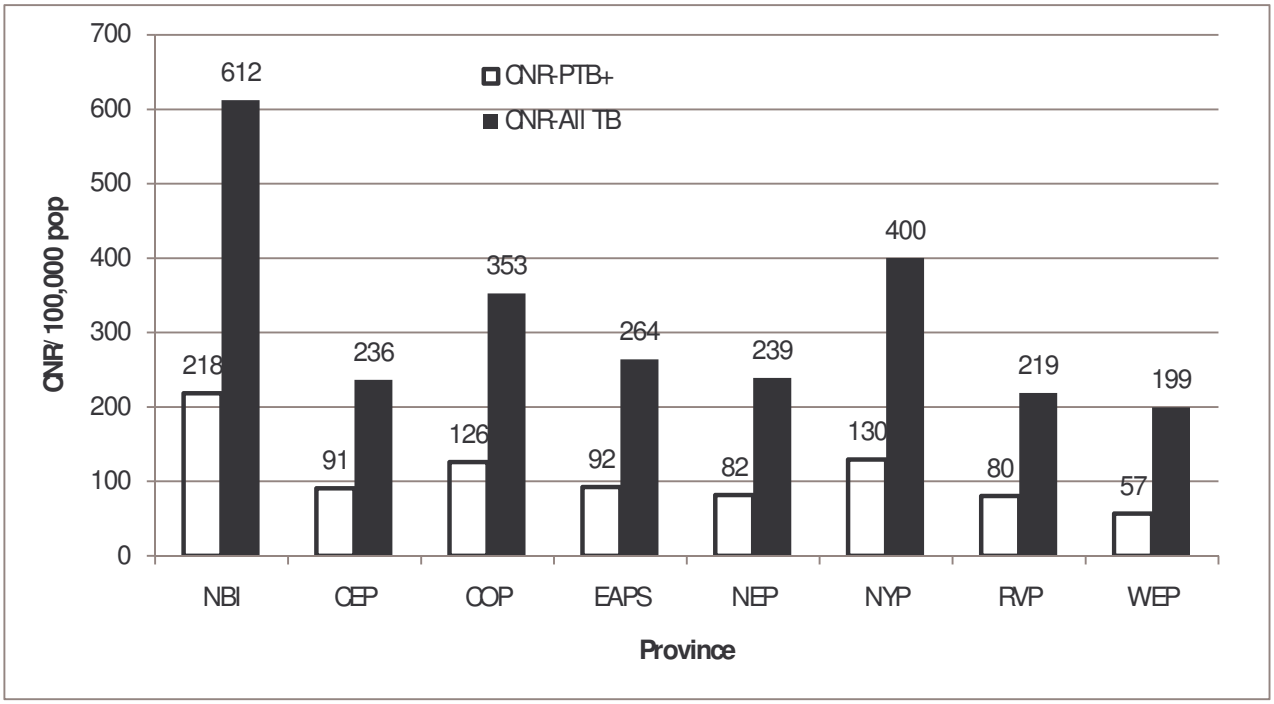


Figure 7 shows the CNR for all forms of TB and smear-positive PTB over the years from 1990 to 2008. This bar graph shows that the CNR for SMP cases has been on the decline since 2004 and calls for intensified TB case finding in all areas where TB can be transmitted. This will include the increased use of more sensitive and rapid diagnostic methods which are more sensitive and specific.

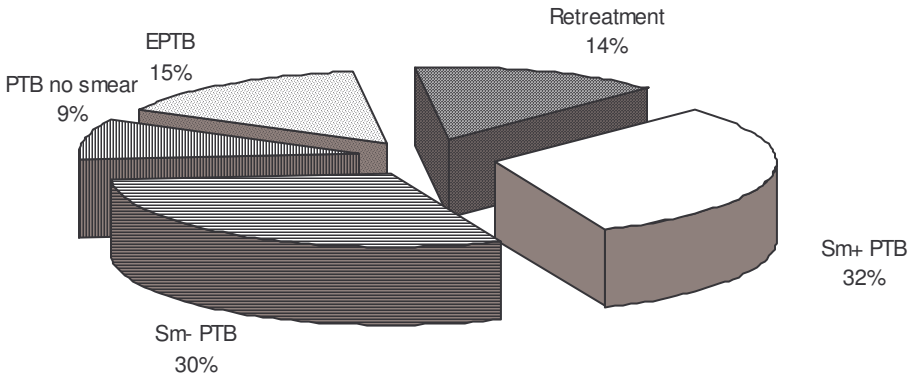
Figure 8: TB Case Notification Rates: All forms of TB and PTB+ per province in 2008



Types of tuberculosis

In 2008 the proportion of sputum smear-positive PTB cases decreased by 4% compared to 2007. There was a 17% increase 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 2008. Retreatment cases are subdivided into the following categories: Smear positive PTB relapses (3%), Recurrent smear negative PTB and EPTB cases (5%), Treatment Failures (0.1%) and Return after Default (1.8%). In 2008 nearly half (5%) of the retreatment cases were recurrent smear negative PTB/EPTB cases. 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, 2008



3.2.4 Gender-age distribution

The age group with the highest TB notification in 2008 remained 25-34 years in both males and females as has been the trend over the last decade. This is the same age group with a high HIV sero-prevalence. Males continue to dominate after the age of 24 over the females who are more notified in age groups below 24 (See *Figures 10, 11 and 12*.)

Figure 10: Age Specific CNR New Male/Female PTB+ Cases 2008

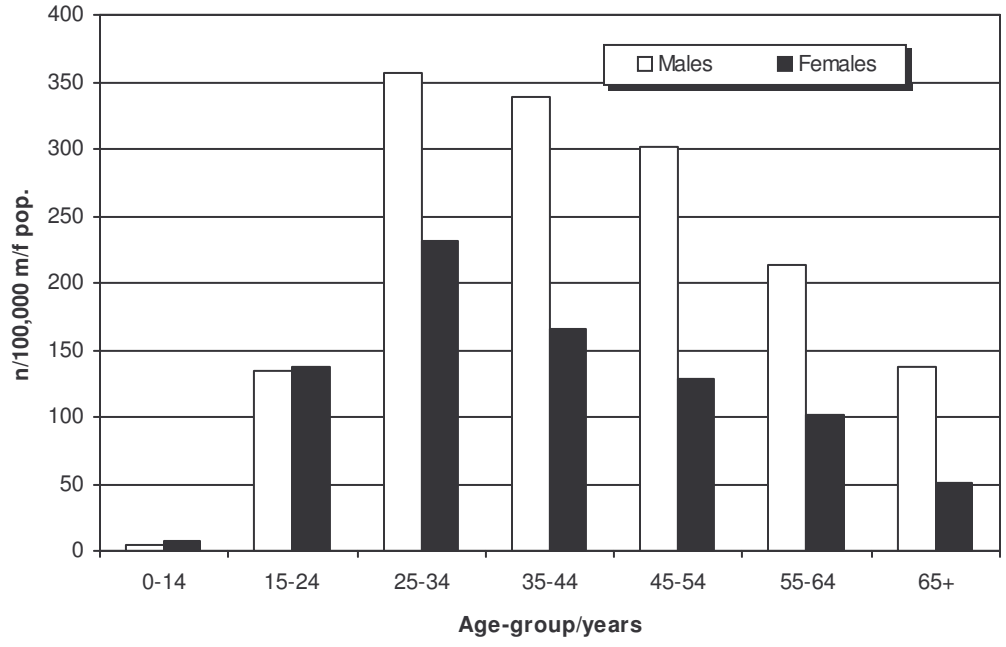


Figure 11: Age-specific CNR new male PTB+ cases: 1993-1998-2007

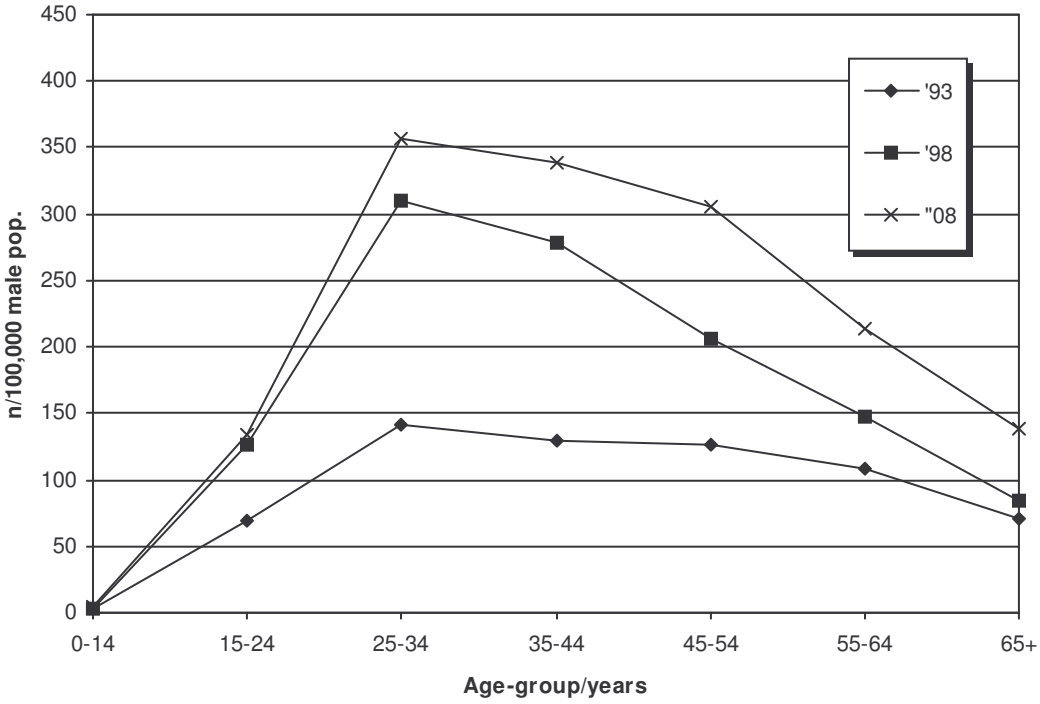
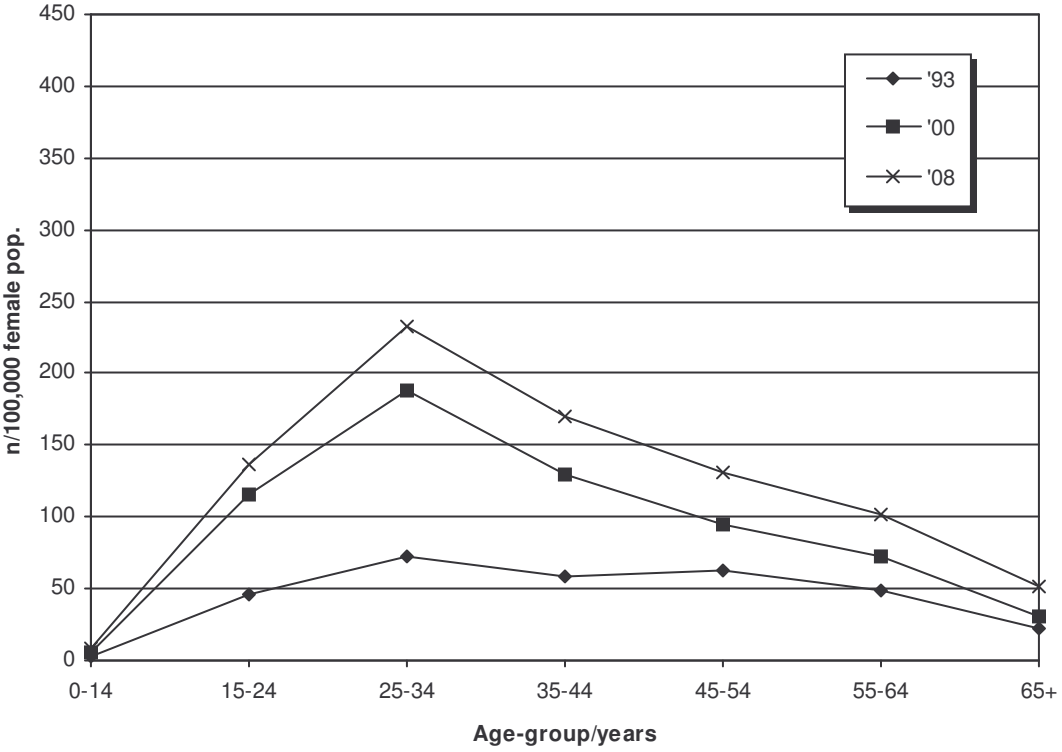


Figure 12: Age-specific CNR new female PTB cases: 1993-2000-2008



PRIVATE SECTOR CONTRIBUTION

The private sector both for profit and not for profit provides a 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, the drug company provides high quality anti TB drugs to be availed to the private sector in Kenya at a highly subsidized price to patients seeking care in this sector. Since the program has overall mandate in TB control including 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 are distributed by the program.

It is now accepted 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. Nationally the private sector notified 2,015 accounting 2% of the National TB cases notified. Initiation of new initiatives in the private sector has over the years tended to lag behind the public sector as demonstrated in the testing for HIV amongst TB patients (*figures 13 and 14)*.

Figure 13: Case finding in the private sector

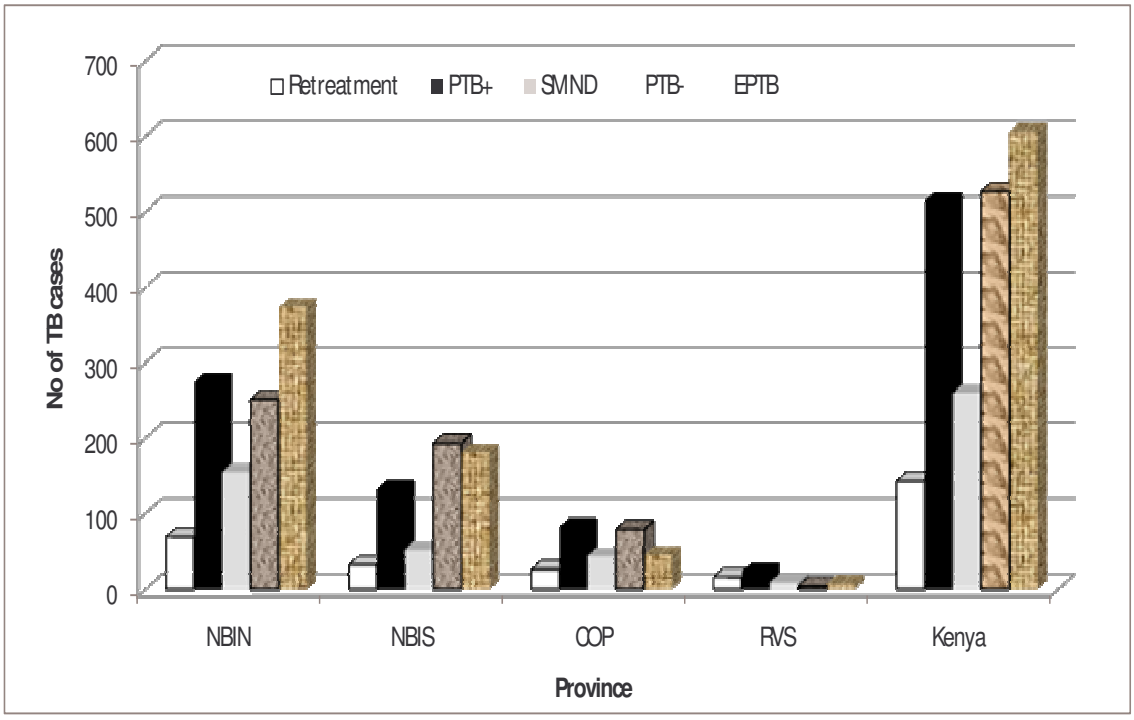
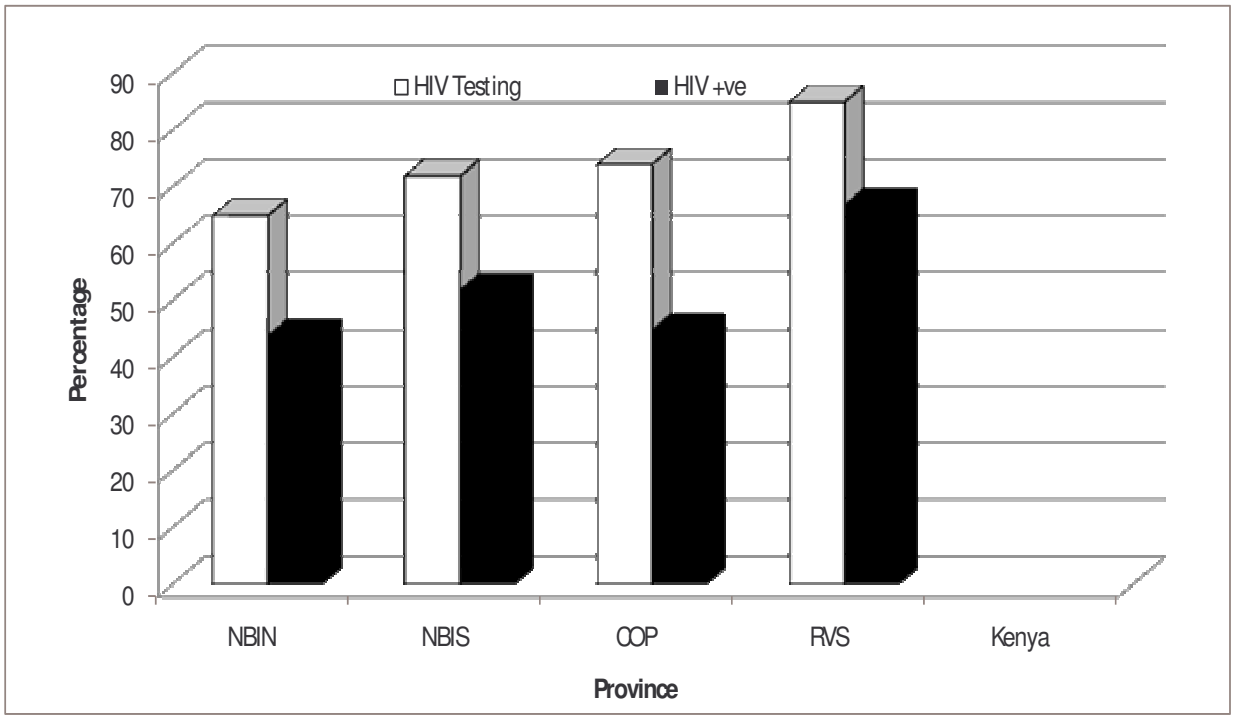


Figure 14: HIV Testing and Positivity in the private sector



3.2.5 The impact of HIV infection on case-finding

The HIV epidemic is the major reason for the TB epidemic. It has significantly led to increased proportion of smear negative pulmonary disease which has surpassed notified cases of smear positive TB disease since 2005. 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.

The DLTLD started implementing a countrywide continuous HIV sero prevalence surveillance system amongst registered TB in the last half of 2005 (3rd quarter of 2005). From the 1st quarter 2006 onwards, the new system had been fully implemented in all 80 districts. In this way the DLTLD is 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.

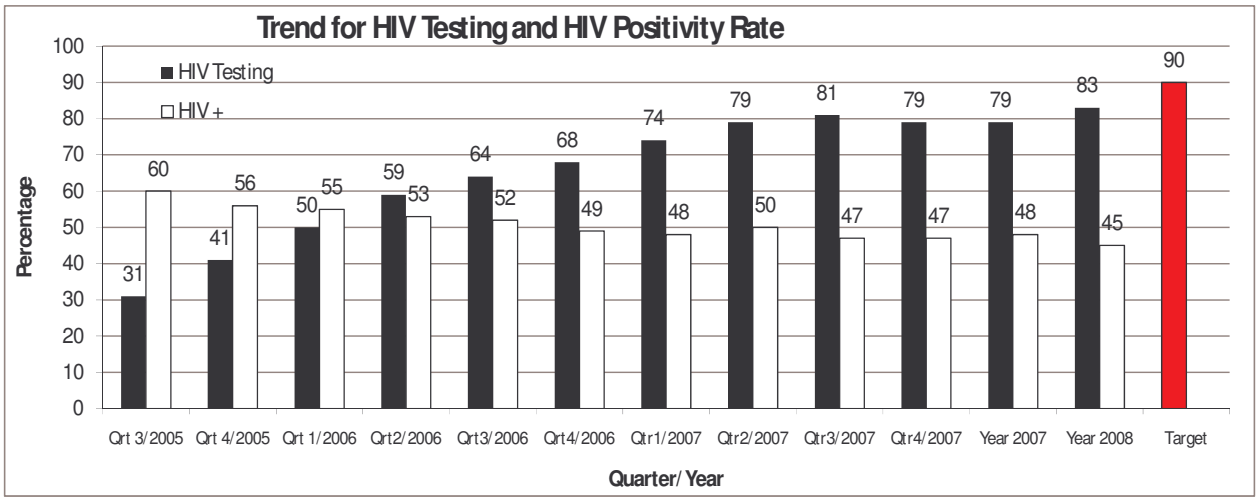
There has been vigorous pursuit of HIV Diagnostic Testing and Counseling (DTC) for all TB patients in Kenya since then (2005) and the trend of testing has been on the increase since. Testing for HIV amongst TB patients offers the entry point for comprehensive care especially those found to be dually infected. The results of all these efforts have led to the development and piloting of a TB/HIV training curricula, the printing and distribution of the new recording/reporting (R&B) tools that incorporate 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 starting year 2008 the cohort analysis were stratified by HIV status. Figure 15 below shows the proportion of TB cases tested for HIV and the HIV positivity rate amongst those patients tested.

It appears that with increased 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 15: Trend of HIV testing amongst TB patients in Kenya



As expected, HIV testing has shown that re treatment failures and EPTB have the highest HIV infection than the other types of TB *(figure 16).* This is a worrying trend if ones take into consideration that MDR TB cases could easily be found amongst the treatment failures. In addition *Figure 17* shows the progress of HIV testing amongst the provinces and that Nyanza province seems to be performing below the rest of the country. Although the target was 80% testing in 2007, the country achieved 83%. This country target has been revised upwards to reflect the goal of universal testing for HIV patients and also because the country is keen on offering comprehensive care which can only be possible with the knowledge of HIV status.

Figure 16: HIV prevalence for different types of TB: 2008

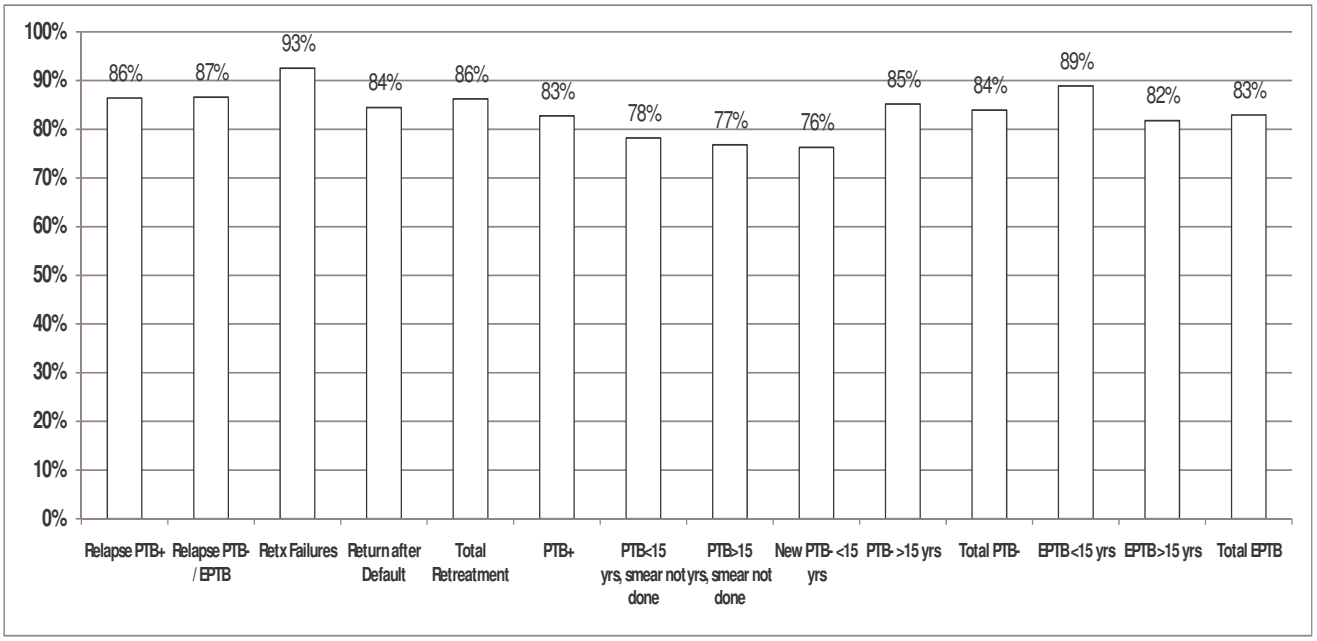
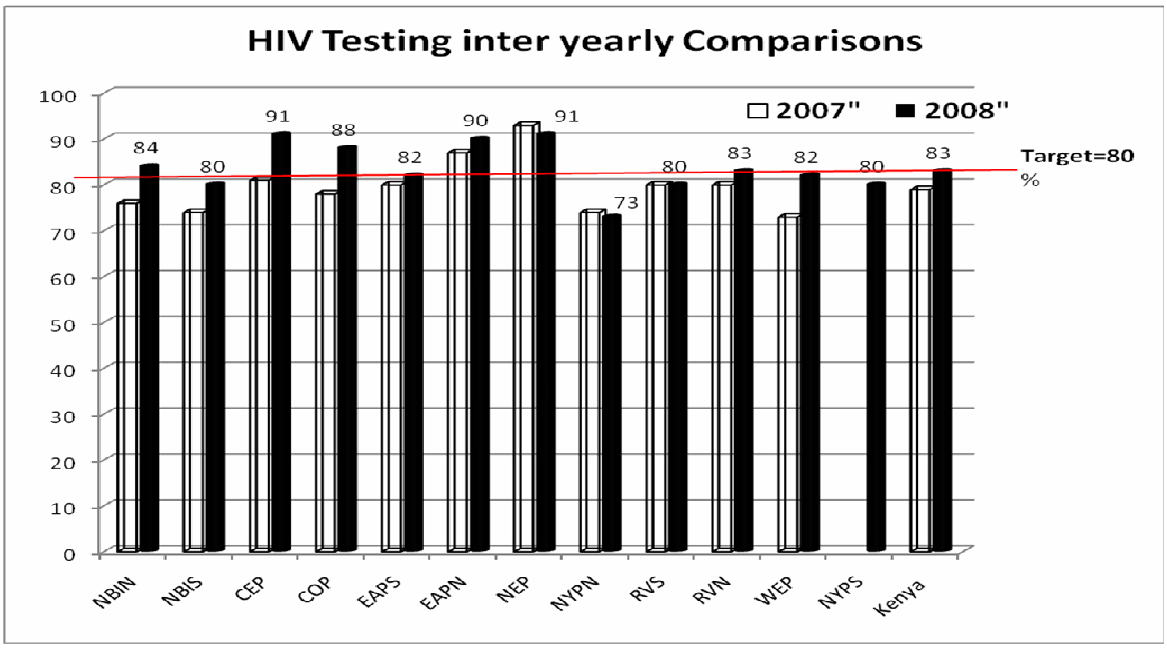


Figure 17: comparison of HIV testing amongst different provinces: 2008



3.2.6 Case-finding in refugee camps

The refugee camps in Kenya, under the UNHCR, participate in TB control activities under the guidance of the DLTLD. There are four camps: Hagadera, Ifo and Dagahaley (Dadaab) in Garissa District and Kakuma, located in the North of Turkana District. In 2008 a total of 426

cases were reported by the Dadaab camps. All cases were tested for HIV and only 15 (4%) 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.

3.3 Case-holding

3.3.1 Case-holding reporting and terminology

The case-holding results show the outcome of treatment for the different types of TB cases in non-nomadic and nomadic areas. Results of the refugee camps are reported separately. Since 1999 the DLTLD started analyzing the outcome of treatment of smear-negative PTB and EPTB cases.

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 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

3.3.2 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.

3.3.3 Regimen used

Kenya subscribes to the internationally accepted WHO strategy in TB control and treatment has been tailored from WHO recommended regimes. Although treatment for TB in Kenya has been 8 months in total, in 2007, 6 months regime (using support from GDF) was phased-in starting from Nairobi province and is expected to expand to cover the whole country by the end 2009. Additionally, the GDF support also included pediatric formulations that are now being used for the first time in Kenya.

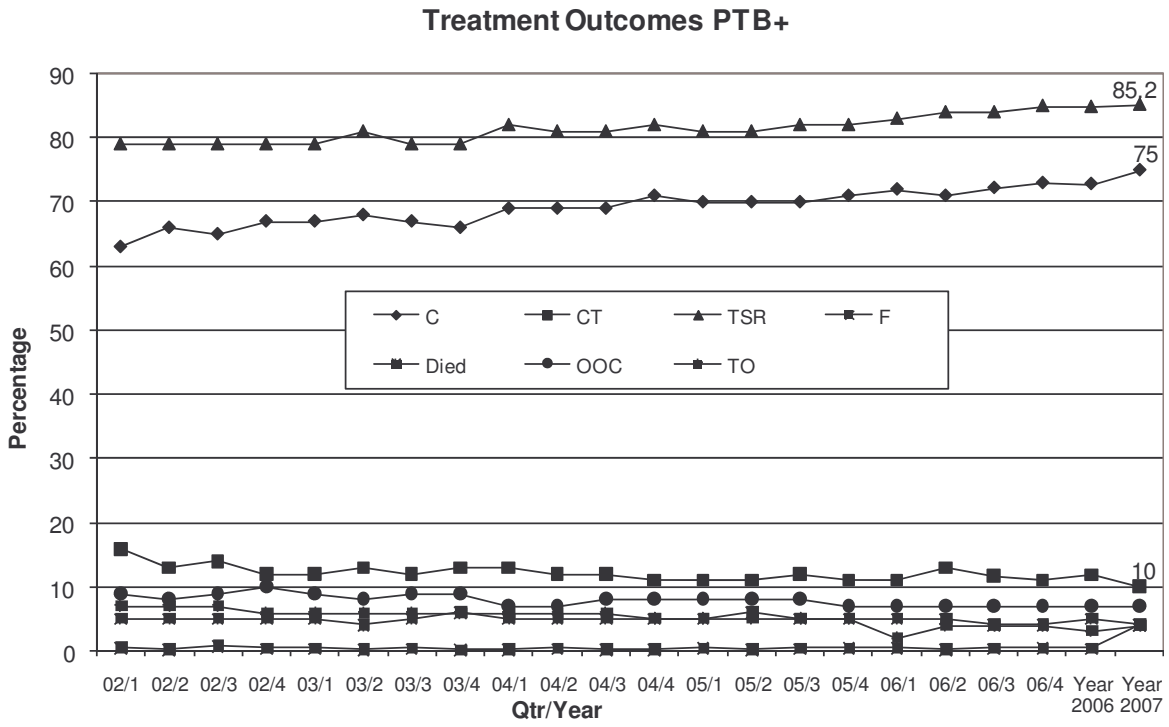
The following regimes continue to be used in Kenya:

1. 2RHZE/6EH 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
4. 2RHZE/4RH six month regimes, now in use since April 2007.

3.3.4 SCC treatment results of new sputum smear-positive PTB cases

Since a cohort of patients' complete treatment after 6-8 months after initiation of treatment, results of treatment are reported only after this period. The report given here of 38,360 patients belongs to patients started on treatment in 2007. A treatment success rate of 85.2% and case detection rate of 80% was achieved in 2007. Coupled with the revised case detection rate by WHO, Kenya is now among the few countries that have achieved the WHO recommended treatment success rate of 85% and care detection rate of 70%. These results are very encouraging considering the high rate of HIV in TB patients. Tuberculosis cases co-infected with HIV are at increased risk of dying from opportunistic infections (including TB) during treatment. The reported death rate of TB patients remained low at about 5% although an estimated 30% of the out of control cases are most probably cases who died at home and were not reported as such.

Figure19: Results of SCC treatment cohorts of new smear-positive PTB cases: 2002 -2006.

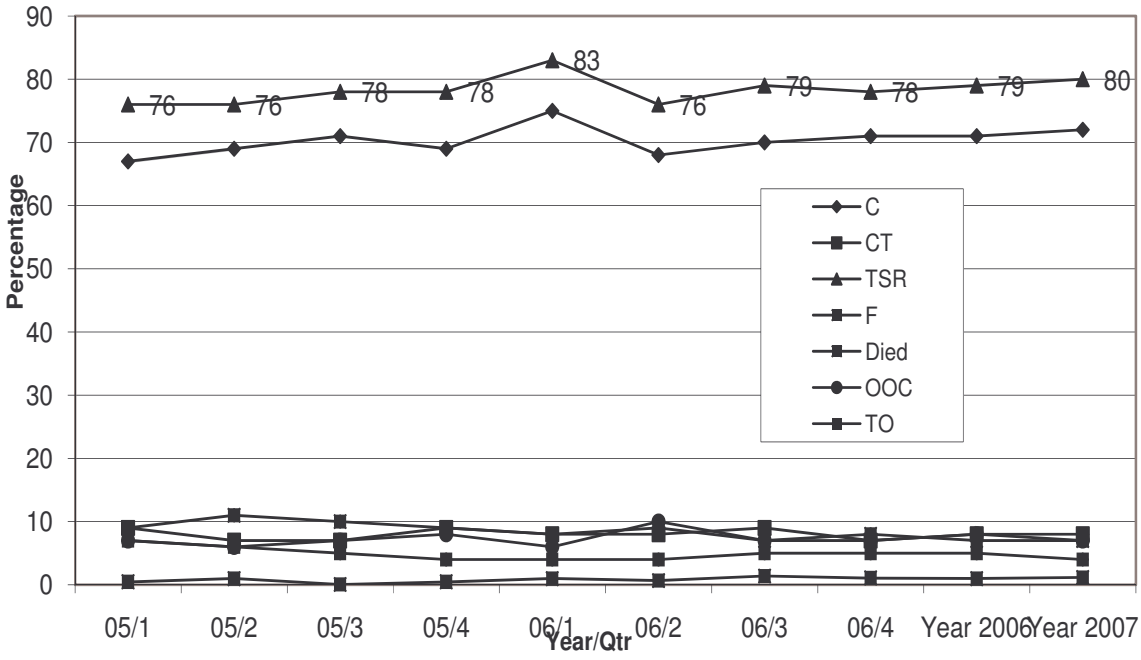


3.3.5 Re-treatment results

Since 2003 the DLTLD 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. 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 20: Treatment results for smear-positive re-treatment cases at 6/8 months: 2005-2007.

Results at 8 months (end of treatment)



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

An 8 months SCC regimen replaced the 12-month standard regimen for sputum smear-negative PTB cases and Extra Pulmonary TB cases in 1998 *(see section 3.3.3*).
The treatment success rates for new sputum smear negative and extra pulmonary PTB cases are 82% and 80% respectively, death rates were at 6% and the out of control rates 8% and 9% respectively. This can be explained by the higher HIV prevalence in both categories of patients.

Figure 21: Treatment results for new smear negative PTB cases: cohorts 2002-2007

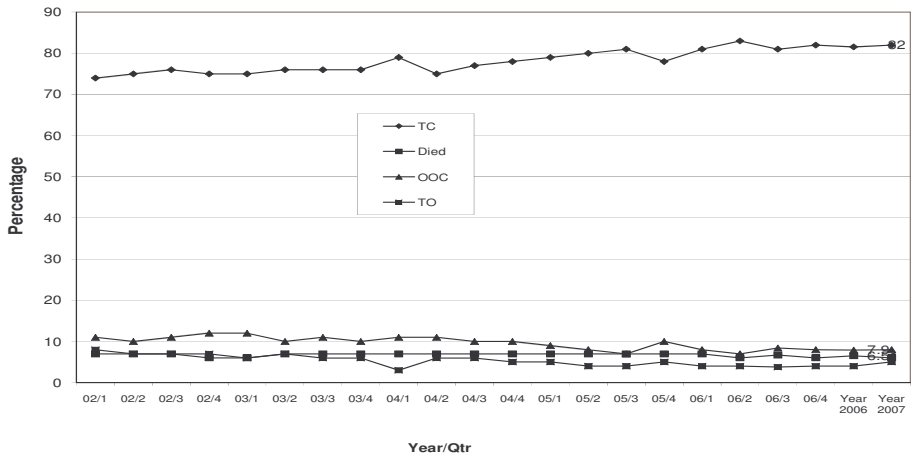
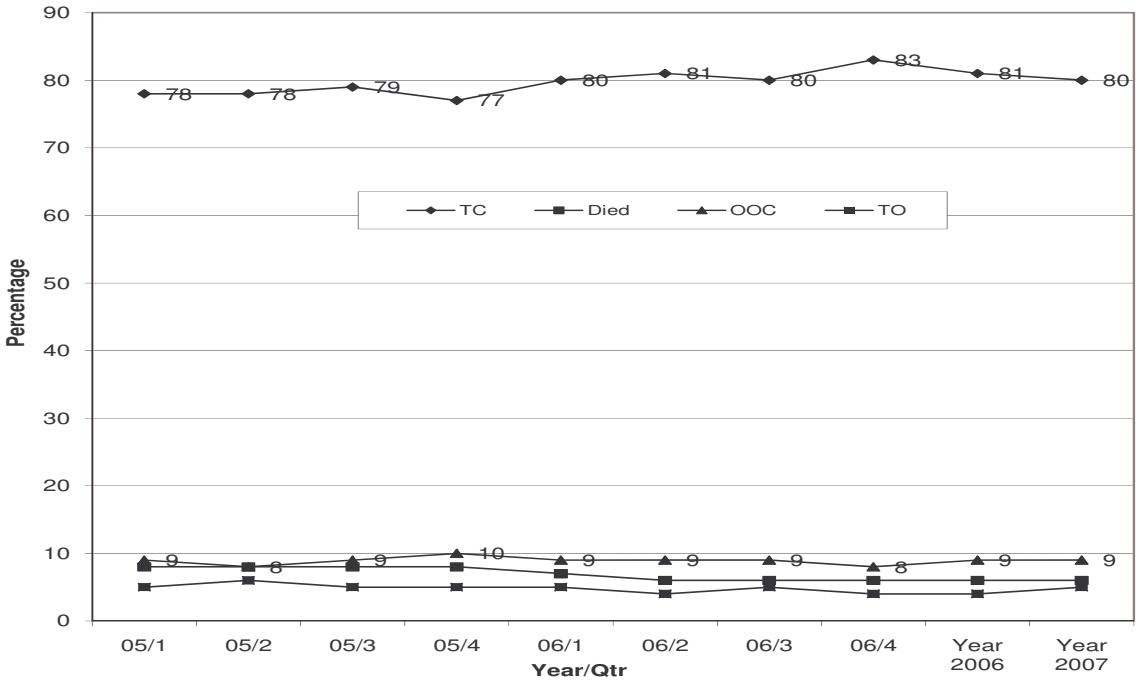


Figure 22: Treatment results new extra-pulmonary TB cases: cohorts 2005-2007

Results at 6/8 months (end of treatment)



4.0 Sectional Activities

4.1 Leprosy control

In the year 2007 there were no leprosy specific activities carried out except support supervision which was done alongside routine technical support to the provinces by the program.
In the month of October 2008, monitoring and evaluation training for DTLC's offered an opportunity for Leprosy training to be incorporated into the one week training.

4.1.1 Capacity building

Florence Yonga, the leprosy program officer, attended a workshop for program managers in leprosy control in Ethiopia, Addis Ababa, through support by WHO.

4.1.2 Funding

Leprosy control activities in 2007 were funded by WHO and AIFO

4.1.3 Challenges and constrains

1. Late submission of Leprosy reports to the central level
2. Minimal support towards Leprosy activities from all levels
3. Lack of specific resource allocation for leprosy control by the ministry
4. Incomplete data collection and submission for leprosy patients leading to poor planning for resources

4.2 Community Based TB Care (CB-DOTS)

The WHO Stop TB Strategy that is implemented in Kenya, like most other countries, has placed community involvement as the 5th component of the strategy. Community involvement in TB care in Kenya is taken to mean establishing a working partnership between the health sector and the community with the aim of:

- Ensuring that patients and communities alike are informed about TB (enhancing general awareness about the disease)
- Sharing responsibility for TB care so as to:
  - effectively empower patients and communities through active participation leading to increase in demand for health services
- Bringing TB care close to the community

CBTBC activities are directed towards achieving and maintaining or even improving the set international targets of 70% CDR and 85% Care rates.
Such targets are addressed by promoting activities such as health education to communities, referral of TB suspects; encourage DOTS through provision of DOT, among others.

4.2.1 Activities planned for 2008 were:

- DHMT/HMT sensitization meetings
- Sensitization of opinion leaders and health facility committees
- DHMTs support supervision
- Health worker's training
- Sensitization of CHEWs
- Training of CHWs
- Materials development

4.2.2 Activities carried out during 2008:

4.2.2.1 Capacity building and sensitization:

- CHWs training done in Busia and **30** participants trained by APHIA 2 Western
- In Kitui **25** CHWs were trained
- Using GF, Nairobi North region trained **42** health workers on community TB Care in October 2008.
- **70** TB/HIV TOT trained in Nyanza and Central provinces

4.2.2.2 An evaluation exercise was carried out in 14 out of 31 implementing districts with the following aims:

1) find out and document CB DOTS activities being undertaken in the districts,
2) To find out other partners with health related activities that CB DOTS can ride on,
3) To evaluate the impact of CB DOTS in the implementing districts; to find out challenges and also to lessons learnt from implementing districts.

4.2.2.3 Findings:

- 90% of DOT is offered by family members and 25% by CHWs
- Documentation – The indicators for CB DOTS were generally poorly captured in both the district and facility registers.
- Activities-A good number were involved in TB suspect referrals DOT, defaulter retrieval, and creation of awareness.

4.2.2.4 Conclusion reached was that Family supervision should be encouraged and Community volunteers should be assigned new roles of supervising families with TB patients.

4.2.3 Materials Development:

a) With financial support from PATH, the following materials were developed /updated:

- Training curriculum for CHWs on CTBC was developed
- Training manual- revised
- Reporting forms for DTLTC/PTLC on CTBC- developed
- Reporting form for CHW- revised

b) Printing of materials was done using WHO funds

i) Training manuals
ii) Training curriculum for CHWs
iii) Guidelines for CBTBC
IV) Monthly activity forms for CHWs
v) Quarterly meeting for DTLC/PTLC on CBTBC

4.2.4 Support given to CHWs during the year 2008:

- Bicycles: 320 pieces were purchased with GF and distributed to 56 districts (each 6) through KEMSA

4.2.5 Scale up of CTBC

With support from various sources,10 more districts were supported for CBTBC activities (Kajiando,Maragua,Bugoma,Kitui,Marsabit,Mombasa,Mandera,Baringo,Kilifi and Langata) and by the end of 2008, 38 districts were supported to implement CBTBC Activities.

4.2.6 Gaps:

Supervision to districts was not carried out as planned

4.3 Monitoring and Evaluation

Throughout the year 2008 M & E section continued spearheading the routine surveillance of program activities including ensuring that support supervision to the provinces was carried out as planned. However during the year 2008, supervision was not done as planned. There is need for the section to ensure that in 2009 support supervision is intensified to all regions.
M & E section in the year 2008 provided support to other sections of the division to develop protocols for DST survey due in 2009 and prevalence survey which is budgeted under global fund round 8.

During the year the division with support from KNCV Tuberculosis foundation organized a biennial planning meeting which took place in Mombasa between 1st to 5th September. This meeting brought together all key stake holders in TB control in the country and was officially launched by the Minister for Public Health and Sanitation.

Honorable Beth Mugo, Minister for Public Health and Sanitation officially opens the DLTLD Biennial Planning Meeting while the head of the division, Dr Joseph Sitienei, looks on

4.3.1 Capacity building

M&E officers trained 129 DTLC's on monitoring and evaluation through the support of the global fund round 2 and through CDC funding training of DTLC's on the use of computers and PDA's was done in the four TB control provinces (Nyanza North and South, Nairobi North and South).

4.3.2 Technical Support

Support supervision was provided to all the 12 TB control provinces in the year 2008.

4.4 TB HIV collaborative activities

Tuberculosis cases notified in Kenya continue to pose a big public health especially because of the emergence of resistant strains in particular MDR TB and XDR TB. In 2008 110,251 cases were reported a reduction from 116,723 cases reported in 2007 (a decrease of 7%). Human Immunodeficiency Virus has been well documented to fuel the TB scourge in Kenya. It is also known that the largest killer of HIV infected patients is TB. Other major reasons why there has been an increase in TB cases include poverty with its manifestations in unplanned upcoming structures like slums, malnutrition and poor sanitation.

The TB HIV collaborative activities focus on three main objectives as stipulated in the WHO interim policy and from where the Division of TB, Leprosy and Lung Disease division borrows heavily. These objectives are:

- Setting up mechanisms of 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

Although there are 12 TB HIV collaborative activities, Kenya initiated in the third quarter of 2005 in pilot districts implementation of 11 collaborative activities. The one activity that is not widely implemented in Kenya is the use of IPT. The rationale for this is related to challenges faced in the field in properly and effectively ruling out active TB before initiation of IPT. There are fears that widespread use without ensuring proper adherence could lead to development of resistance.

In May 2007, a national Stakeholders meeting was convened to deliberate, review existing knowledge and recommend policy guidelines on TB preventive strategies towards achievement of the Millennium Development Goals (MDGs) and specifically on policy change in regards to:

- Widespread use of IPT
- Mechanisms of intensifying TB case finding for TB Control
- Infection prevention/control in health care/congregate settings

The meeting made the following recommendations:

1. IPT should not be implemented nationwide at the moment
2. Implementation should be limited to selected settings that include:
    - Congregate settings; prisons, military, children homes
    - Target groups; HCW, children exposed to open TB
    - Selected Health programs which have adequate systems and structures; e.g. EDARP, AMPATH, MSF
    - Controlled research programs

Introduction of TB HIV collaborative activities was done through a stepwise approach starting with revision of TB data collection tools to capture both TB and HIV variables, development and adoption of policy guidelines including training materials and ensuring that there were teams to roll out training in quality assured standard manner throughout the whole country. By Quarter 1 of 2006, all the districts were using the revised tools which enabled monitoring and

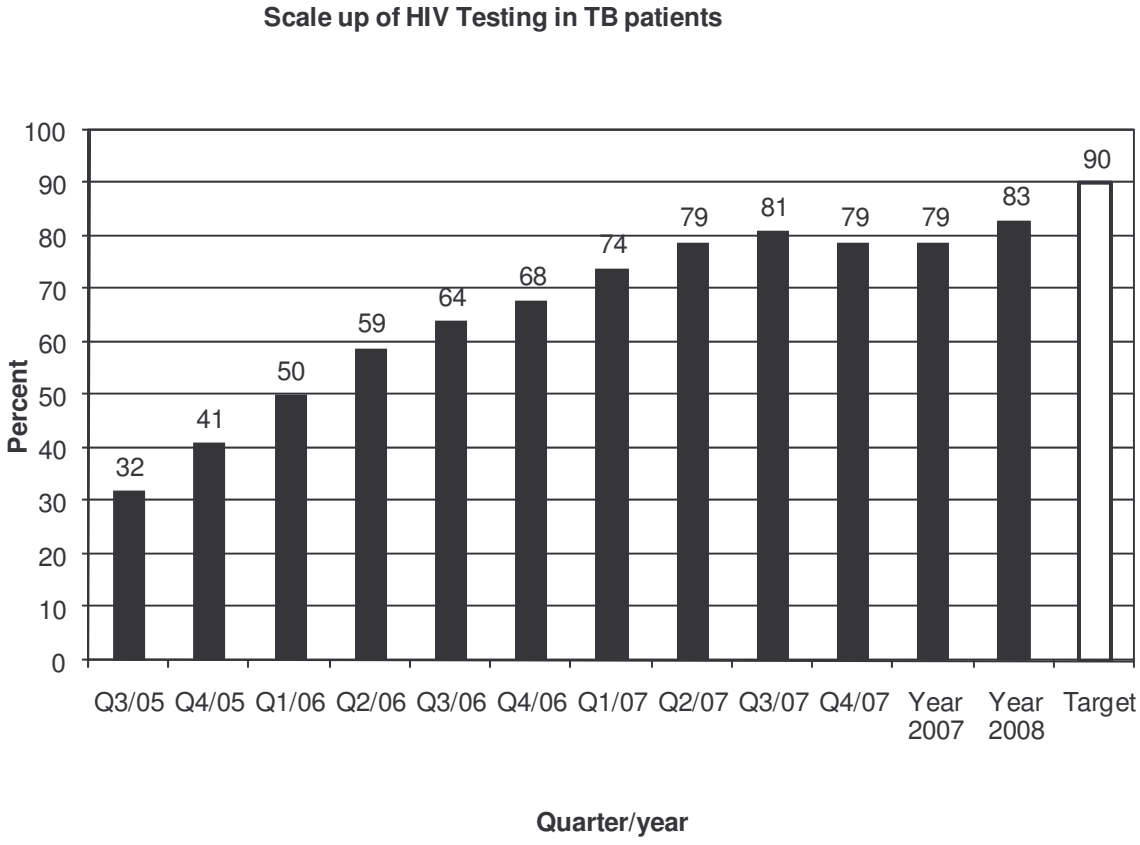
evaluation including analysis of the implementation of the activities. At the end of 2008, 1,120 Health care workers had been trained on TB HIV collaborative activities (by the division excluding trainings done by partners).

Testing for HIV in TB clinical settings through Diagnostic Testing and Counseling (DTC) protocol offered the entry point to comprehensive care for dually infected patients in Kenya. The country adopted the WHO and UNAIDS policy on testing through policy guidelines *'HIV testing in clinical settings'* in October 2005. Testing for HIV is offered in the context of the three C's (counseling, Consent and Confidentiality). To guide implementation and to monitor progress, the division set up targets (for 2007) to be met at all levels that included:

- HIV testing of TB patients to 80%
- Ensuring 80% HIV+/TB patients on cotrim
- Ensuring 50% of HIV+ TB patients on ARV's
- Ensuring at least 20% of PLHWA are screened for TB with the **Ultimate goal of universal routine testing for HIV amongst all TB patients and suspects**

HIV testing amongst TB patients has rapidly picked up and surpassed the target of 80% and by the end of 2008, 83% of the TB patients were offered DTC and tested for HIV

Figure 23: DTC Uptake in Kenya



One of the greatest challenges facing the dually infected patient relates to linkages to comprehensive care and treatment, and specifically linkages to ART. This weakness is

basically because a TB HIV patient that has been identified in the clinic is referred to the ART clinics. Although TB services have been decentralized to the community, HIV services are still limited to specifics sites. In 2008, only 31% (12,426) of TB HIV patients were put on ARV's as compared to 94% (37,757) on cotrim which is offered at the TB clinic.
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 demands for testing for HIV and for offering counseling.

So far funds for training have been through partner support and in particular CDC, WHO (OGAC) and WHO (Italian grant). Partners in the field have also played a key role in supporting training of health care workers. Funds from CDC were used to expand and improve space in 20 high volume facilities during the year to cope with the demands.

4.5 Multidrug Resistant Tuberculosis-MDRTB

The year 2007 was instrumental in initiation of MDRTB management in Kenya. The key activities included mobilization of program personnel to submit sputum specimens to the CRL for DST. This improved from 4,004 specimens in 2007 to 5,604 specimens in 2008 representing a 60 percentage improvement. The CRL identified a total of 102 isolates that were resistant to both R and H during the year.

The country's MDRTB regime was decided by the MDRTB committee with five drugs used in the intensive phase (Capreomycin, Ofloxacin, prothionamide, cycloserine and pyrazinamide) for a minimum of 6 months while the continuation phase last for a minimum of 18 months using three drugs (Ofloxacin, prothionamide, and cycloserine). During the year MDRTB drugs sufficient to treat 40 MDRTB were procured using GFATM round 5. The first consignment of these drugs was received in country from International Dispensary Association (IDA) the local agent of Green Light Committee (GLC) in December and the first patients were enrolled on treatment early in 2008.

To enable skilful management of MDRTB, a team of 5 medical staffs from KNH were trained at Latvia and 35 program officers were trained in Eldoret. Sensitization of staffs was also done at Kenyatta national hospital

There was a delay in construction of an isolation facility for MDR TB patients at KNH due to technical challenges. The renovation of identified structure is expected to take place any time soon. Tenders for procurement of protective gear and ancillary drugs have taken place and deliveries were expected during the year. Design of treatment guidelines, treatment record cards, patient appointment cards and the category IV register were finalized through wide consultation with all key stakeholders. Support for training for MDRTB was received from REDSO (through RCQHC), the global fund round 5 grants and WHO.

4.6 Global fund

The global fund remains a substantial source of funding to TB control in Kenya. So far the country has signed 3 grants- round 2, 5 and 6 grants providing a potential financing of USD: 37,838,439.

Round	Start	End	Amount	Disbursed
2	1st Nov 2003	31st Oct 2008	8,761,405	3,299,522 (37.7%)
5	1st Sep 2006	31st Aug 2011	19,916,156	3,511,242(17.6%)
6	1st April 2008	31st Mar 2013	9,160,878	1,710,684(18.6%)
Total			37,838,439	8,521,448 (22.5%)

In Round 2, USD 3,299,522 was disbursed (37.7%) towards introduction of TB/HIV activities and community TB. This enabled DLTLD to train 2,541 health care workers and 1,182 community health care workers. Subsequently the program achieved 83% HIV testing, 94% CPT uptake and 31% ART uptake.

Round 5 addresses the challenge of MDRTB through MDR surveillance, advocacy and social mobilization, treatment of MDRTB patients. Through support of R5, 34 patients have been started on treatment by end 2008 and 838 laboratory technologist trained on EQA. Number of sputum submitted for culture and DST in this period stood at 60% of all retreatment cases. In ACSM activities resulted in reaching 1,385,795 children and subsequent survey found 72% of them knowledgeable on TB. This grant also has an advocacy, communication and social mobilization component raised the awareness level on TB among the population, mass media.

Round 6, was signed on 30th October 2007. To date 18.6% of the funds has been disbursed. This round supports employment of laboratory staff and setting up of 50 new sputum diagnostic centers annually leading to 250 centers by the end of 5 years. This round also addresses human resource motivation and workload assessment in TB/HIV setting.

Part of the global fund support has been channeled through 29 Non governmental organizations; 1 NGO in round 2, 13 NGOs in round 5 and 15 in round 6

The biggest challenge and constrain for global fund implementation remains timely submission of reporting of activities implemented. GFATM is a performance grant and continued flow of funds is based on outputs and outcomes of the planned activities with timely submission of reports. Information on implementation of the activities has not been flowing as smoothly as anticipated but has recently improved and the division expects to perform better in 2008 and subsequent years.

4.7 Pharmaceutical Unit

The unit had one pharmacist and two record officers for the three quarters of the year however towards the end of the year Dr. Richard Muthoka (pharmacist) returned from further studies. There were many projects done by the unit during the year including the following:

4.7.1 Key activities of the 2008

Quarter One:

- Multi-Drug Resistant medicines arrived in the country and treatment commenced in two sites i.e. Kenyatta National Hospital and Moi Teaching and Referral Hospital in western Kenya.
- Quantification and forecasting of TB drugs for 2009 -2010 carried out and requirements given to KEMSA for the GOK procurement. This exercise was facilitated by Global fund consortium and DLTLD. Two computer soft ware were utilized during this exercise i.e. quantimed and pipeline
- Throughout all quarters the staff in the unit participated in the national supervision in some provinces and attended several DTLC quarterly meeting in the provinces.

Quarter two:

- The unit in collaboration with MSH and laboratory unit developed TB commodity Job Aids, which were printed and distributed to the whole country. The commodity job aids received an excellent impact from the field with healthcare workers commenting on its usefulness for day to day business in the TB clinics and laboratories.
- There was a shortage of leprosy drugs in the field due to inaccurate quantification and lack of reliable M&E leprosy case finding data. However the DLTLD with WHO-Kenya ordered for more leprosy medicines i.e. Multi-bacillary adult packs.

Quarter three:

- Green light committee consultants (Dr. Michael Rich and two WHO consultants from Afro) arrived in the country to perform a review of the country MDR-TB treatment. They paid a courtesy call to the Permanent Secretary who committed himself to lobby in the government for more funding and decentralization of MDR-TB treatment services

- Implementation of the six months treatment packs moved to additional three regions as the eight months adult patient packs were withdrawn from the TB supply chain system. The figure below depicts the current and future situation of this new TB regimen implementation.

<table>
<tr><td></td><td>2006</td><td></td><td></td><td>2007</td><td></td><td></td><td></td><td>2008</td><td></td><td></td><td></td><td>2009</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td>Q1</td><td>Q2</td><td>Q3</td><td>Q4</td><td>Q1</td><td>Q2</td><td>Q3</td><td>Q4</td><td>Q1</td><td>Q2</td><td>Q3</td><td>Q4</td></tr>
<tr><td>Nairobi NORTH</td><td colspan="9" rowspan="9">ALREADY ON SIX MONTHS PATIENT PACKS REGIMEN</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>NAIROBI SOUTH</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Rift Valley South</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>North Eastern</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Riftvalley North</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Coast</td><td colspan="10" rowspan="3">TO COMMENCE SIX MONTHS PATIENT PACKS REGIMEN ON 1st FEBRUARY 2009</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Central</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Nyanza</td><td colspan="13" rowspan="7">ON EIGHT MONTHS PATIENT PACKS REGIMEN</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>Eastern North</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>Western</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>Eastern South</td><td></td><td></td></tr>
</table>

- Dr. Masila was successively involved in the preparation of the DLTLD CDC cooperative agreement TB/HIV work plan and budgeting process which was to commence implementation from December 2008.
- The unit participated actively in the Biennial planning meeting in reef hotel; Dr. Masila successively chaired the Biennial planning meeting committee.

Quarter four:

- A logistic management information system assessment was done in Eastern south in collaboration with DLTLD and funding catered by MSH. The findings of the LMIS study will inform the decision of the DLTLD to roll out the LMIS for TB commodity management tracking in the whole country. However this needs be implemented with all stakeholders including GOK, KEMSA, partners and the division. DLTLD is committed to LMIS scale-up.

- The bi-annual TB review meeting was held in Naivasha in November 2008 and the unit was represented by Dr. Muthoka who made a presentation on behalf of the unit. The drug financing model below was presented as a financial review for the DLTLD fraternity. (see figure 4.7.1)

Figure 4.7.1: ANTI-TB DRUG FINANCING FOR 2007/2008

COMMODITY	QUANTITY OF MEDICINE DELIVERED IN 07/08 FROM GOK, GDF & GF (pack/vial/tablet)	Unit cost per pack/vial/tablet (Ksh)	Total cost (Ksh)
Patient packs (6months)	243,071	1,568	381,135,328
RHZE	5,225,441	3.08	16,094,358
Paed RHZ	2,866,800	290/per pack of 84's	9,897,286
Paed RH	9,684,192	210/pack of 84's	24,210,480
MB adult	288	148	42,624
Capreomycin	7,200	225	1,620,000
Prothionamide	28,800	10	288,000
Ofloxacin	38,400	2	76,800
Cycloserine	28,800	35	1,008,000
PAS	9,600	113	1,084,800
Ancillary medicines	40 types of medicines		1,610,000
AVERAGE TOTAL FOR DLTLD MEDICINES PROCURED IN 2007/2008			**437,067,676**

- Towards the end of the year in December 2008, a meeting was held between KEMSA and DLTLD to sort several issues related to inadequate distribution of TB commodities. It was agreed that additional 3 months buffer stock be kept at the regional and district stores. KEMSA committed to strengthening the TB/KEMSA collaboration with regular meetings and quarterly reports on distribution and stock status situation.

4.7.2 Flow of commodities

The flow of commodities from KEMSA to the peripheral units was consistent throughout the year with minimal shortages experienced for some medicines.

- Eastern south commodities were delivered to the 9 districts by KEMSA
- In the rest of the regions of the country, the TB/leprosy commodities were delivered to respective regional stores.
- Quarterly drugs reports were received from the 11 regions although the reporting rate is 50%, resupply orders were based on these reports.
- Paediatric TB drugs were in short supply due to challenges of procurement and supply chain management.

4.7.3 Capacity Building

- Dr. Masila attended three courses during the course of the year i.e.
  i. IDA drug management training in October 2008 in Netherlands, Amsterdam for two weeks.
  ii. IUATLD Arusha course in November 2008 for three week training on International TB control.
  iii. Grant Management training in Nairobi conducted by CDC-Kenya

- Faith Ngari attended the IUATLD conference in Paris in November 2008

4.7.4 Funding Issues and sources

- Funding for TB medicines was identified from the following sources:
  i. GFATM
  ii. Global drug facility
  iii. WHO
  iv. Government of Kenya
- Funding is required for a routine post marketing surveillance of anti-TB medicines within a clear framework involving the DLTLD, Pharmacy and Poisons Board and partners.

4.7.4 Challenges and Constraints

- Delay in distribution of TB/leprosy commodities and servicing orders by KEMSA
- Late and low reporting rates of less than 30%, therefore quantification and forecasting of the same commodities becomes difficult.
- Inaccurate filling of the LMIS tools due to lack of training especially for new DTLC's in Eastern South and other regions implementing
- Short expiry Anti-TB medicines available in the field therefore redistribution becomes essentially necessary.
- Expired TB medicines in the field and no appropriate mechanisms for destruction in place.

4.7.5 Lessons learnt in 2008

- Accurate forecasting and quantification of TB/Leprosy commodities is very critical in TB control.
- Need to understand the procurement cycles of different organizations in involved to avoid overstocking or under stocking and short expiries of TB medicines.

4.8 Advocacy, Communication and Social Mobilization (ACSM)

The period under review began rather with a sad note with onset of post election violence as a result of disputed Presidential election that led to displacement of more than 300,000 people some of whom were TB patients on medication and some who were undiagnosed. TB patients who were affected by clashes could no longer collect their TB drugs as scheduled. This was of great concern to the TB program, particularly taking into account that most of them could discontinue their medication and develop multi-drug resistant TB.

An officer from ACSM unit joint the National emergency and disaster team in assessing and working out modalities of reaching the internally displaced persons (IDPS) in various camps. One of the key issues was to ensure that the IDPs continued receiving their drugs at the camps or the nearest health facility where the services were being offered.

In the beginning of the year, ACSM activities were based on the Work plan for 2007/2008 which was being implemented. This report highlights the achievement during the year.

4.8.1 Key Activities Areas

- Organizing half day sensitization workshop for Members of parliament on their role in TB prevention and control
- Developing, production and dissemination of ACSM guidelines and other educational materials like brochures, pamphlets, posters and stickers
- Supportive supervision
- Capacity building-training of PHOs/PHTS on TB/HIV ACSM prevention/control activities and short courses for ACSM Unit, DLTLD officers (target 450 PHOs/PHTs)
- Developing and airing of Radio & TV spots, and live radio talks with ACSM partners PATH and PSI and placing adverts and supplements on newspapers
- Participating in Nairobi International Show and Public Civil Services celebration week (creation of awareness on TB and leprosy)
- Organizing Word TB day 2008 commemoration, marked on 27th March 2008 with the theme: **I am stopping TB, a** Message of empowerment
- National level major activities, **Media breakfast briefing**; and launch of MDR TB treatment guidelines and creation of awareness on TB activities at KNH
- Organizing the launching of TB/HIV stigma and discrimination reduction in Nyanza and Nairobi Provinces
- Conducting sensitization forums for health workers on stigma and discrimination in Nyanza and Nairobi provinces (MOH/HLSP/DANYA)
- Engaging the PHOs/PHTs in TB control activities including defaulter and contact tracing, school health programs and TB ACSM activities
- Conducting Monitoring and Evaluation activities
    - Conducting ASCM KAP survey in 44 districts in Kenya
    - Organizing stakeholders review forums

4.8.2 Achievements under ACSM

Apart from the overall achievements made by the Division of Leprosy, TB and Lung Disease (DLTLD), highlighted here below are some of the achievements under the ACSM unit

4.8.1 Key documents reviewed and developed:-

- ✓ TB ACSM training manual (1st draft)
- ✓ Understanding TB- A discussion guide for community peer groups (finalized)
- ✓ Tuberculosis Sensitization Guideline for community leaders (finalized)
- ✓ Brochures, Pamphlets, stickers and posters on TB and HIV developed and printed (Table:4.8.1)
- ✓ VCDs with TB/HIV messages (Stigma / discrimination reduction and TB at your door steps) 2 produced
- ✓ Information booklets CB DOTS and TB media kits developed, printed and disseminated (table:4.8.1; printed items)

Table: 4.8.1: summary of the IEC material printed and distributed 2008

S/N	Item	Qty by DLTLD	Qty by Partners	
1	Media briefing kits	1,025	0	DLTLD/JHPIEGO
2	Posters (Assorted)	60.000	0	CDC fund
3	Stickers (two types)	95,000	0	CDC fund
4	T Shirts	1,045	545	World TB Day
5	Caps	1,000	500	World TB Day
6	TB quiz for School	784,915	0	GF Rd 5 & CDC fund
7	TB/HIV brochures	90,000	0	CDC fund
8	Roll up Banner	4	0	World TB Day
9	Road banners	0	10	PSI World TB Day
10	Assorted pamphlets/brochures	540,000	0	CDC fund
11	CB DOTS booklets	30,000	0	CDC fund

4.8.2. School Health program

Table 4.8.2, below show the summary of school health program achievements for the third and part of the fourth quarter of 2008. Of the school target population planned to be reached 86% pupils were reached. The schools were visited and health talks were given followed by a TB quiz and brochure on the basic facts of TB given to the children to take home. The exercise was done by CSOs/NGOs implementing Global fund round 5 in collaboration with Ministry of education at the provincial, district and division level.

Table: 4.8.2: School Health Program 2008

School Health Program 2008			
Implementer	**Quarterly targets**	**Results**	**% Reached**
PATH	220,042	977,956	444
NEPHAK	209,585	232,738	111
MTRH	200,575	54,859	27
JHPIEGO	117,985	43,259	37
ICROSS	44,834	30,792	69
Egerton	37,241	41,994	113
AAC	18,212	0	0
NAHWO	14,158	16,282	115
REMADO	23,597	37,033	157
Out reach	11,799	29,059	246
CHAK	1,997	0	0
	900,025	**1,463,972**	**163**

Table 4.8.3, is a summary of achievements of the planned activities, for 2008. After the training of PHOs/PHTs, the public health staffs have commenced carrying out defaulter and contact tracing and the school health programs. Western Province public health staffs were not trained due to a hitch in disbursement of funds for the training.

Table: 4.8.3: SUMMARYOF ACHIEVENMENTS 2006-December 2008

SUMMARYOF ACHIEVENMENTS 2006-December 2008						
	Areas of concern	Activity	Target	Results	%	
1	Employers (workplace)	Training	2,180	1,747	80	2007/2008
2	School children	Sensitization	900,025	777,437	86	For one Quarter
3	Health Workers	Sensitization (stigma & discrimination)	750	790	105	2008
4	Radio/TV sport/com.	Airing radio/TV spots	990	1,097	111	2006/08
5	Print media /Sup/adverts	Advertisement	36	24	67	Quarterly
	Radio programs	live talks	108	108	100	2007/08
6	TB Ambassadors	Training	200	200	100	
7	Magnet Theatre	Training (TOTs)		181		From 51 troupes
8	ACSM surveys (OR)	KAP surveys (impacts)	4	3	75	2007/08
9	Public Health Staff	Training	510	379	74	2007/08

4.8.3 Training for ACSM

The DLTLD Central unit in conjunction with the Provincial Medical Officers trained Deputy District Public Health Officers in the country in May 15th and 16th and 29th and 30th 2007 in Kisumu and Mombasa respectively. A total of 62 participants were invited but 54 of them turned up. The trained officers are supposed to be the focal persons for the ACSM activities at the district level.

4.8.4 Development, production and distribution of IEC materials

The ACSM officers in the central unit participated the review and development of various documents within the division.

4.8.5 Preparation for the WTB Day 2008 commemoration

The 2008 World TB Day was commemorated on 27th March 2008. Medical camps for screening and road walks were conducted in the provinces to mark the day with the climax at national level Media Breakfast briefing which was well attended by various stakeholders and MDR TB treatment guidelines were launched. The theme for World TB day in 2008 was “I am Stopping TB, Join me.

4.8.6 Sensitization of the Members of parliament

As part of advocacy for TB, the Ministry of Public Health & Sanitation through the Division of Leprosy, TB and Lung Disease organized a half a day workshop for Members of parliament.

The purpose of the workshop was to sensitize Hon Members of Parliament on the current burden of TB and to give them basic facts about TB and why TB is important in their agenda. The Parliamentarians are the key influential persons who can include TB activities in their constituency schedules as part of social mobilization, bearing in mind that TB is an inseparable part of HIV/AIDS prevention. The half day workshop was held on 30th October 2008 at Hilton Hotel, although attendance by the Hon Members of Parliament was not very good.

4.8.7 CAPACITY BUILDING

Apart from the training of the PHOs/PHTs, the officers in the ACSM unit attended the International Union Against Tuberculosis and Lung Disease Conference in Paris, France. Samuel Misoi, attended three short courses:-

- HIV/AIDS Supervision Course organized by JHPIEGO and NASCOP
- TOT training course on Prevention with Positive organized by MOPHS in conjunction with CDC Kenya
- ACSM Regional Planning workshop, organized by ECSA in Kampala Uganda

4.8.8 Funding issues/ sources

- Training for ACSM - WHO
- Printing IEC material – MOH (Global funds), WHO, CDC, Sanofi Aventis and Maltser International
- Development and airing of Radio, TV spots and print media - MOH (GFATM)
- WTBD 2008 commemoration – MOH (Global funds), WHO, CDC, Sanofi Aventis and Malteser International
- Capacity building - WHO and CDC
- Nairobi International Show - CDC
- Civil Servants celebration week - GOK

4.8.9 CHALLENGES AND CONSTRAINS

- Resources: finance for training of CHWs / printing of IEC materials
- Coordination of TB ACSM activities at Provincial and district level
- Sustaining awareness creation campaigns and involvement of community in TB prevention
- Stigma/discrimination on TB/HIV
- Human Resources: Quantity and Quality
- Emerging MDR TB
- High rate of TB and HIV co-infection
- Linking ACSM activities in line with community strategy

4.8.10 Conclusion

There is need to intensify ACSM activities to improve on:-

- Intensive case finding
- TB prevention/Infection control
- Advocate for the roll out IPT for PLWHA
- Addressing issues of stigma and discrimination among the HW and public
- Soliciting political commitment and increase funding and for declaration of TB as emergency
- Addressing emerging of MDR TB

4.8.11 Way forward

- Scale up of TB ACSM activities in all provinces and at districts by appointing/ facilitating TB ACSM focal persons
- Need to develop integrated TB M & E tools for ACSM data and monitor activities
- Commencement of planning for 2009 world TB day: Theme: ***I am stopping TB***
- ***Involvement of other stakeholders***

4.9 TB in Prisons

4.9 TB in Prisons

This unit is within the clinical care section is charged with the coordination of TB and TB/HIV activities in the prisons.

4.9.1 Activities

In the year 2008 the following key activities were carried out:

- Training of the documentation clerks on how to administer TB screening tool in prisons. Screening tool was developed in partnership with prison authorities. It enables screening of all new inmates for TB with the aim of taking appropriate action on suspects ultimately leading to reduced TB transmission in these congregate settings
- Renovation of 8 labs in various prisons to strengthen TB diagnosis
- Three other more Laboratories assed and handed over to contractor for renovation.
- Support of salaries of radiographers at Kamiti and Kodiaga prisons
- Support of RCOs and Nurses deployment in various prisons

4.9.2 Capacity Buildings

- More than 200 HCW working within prisons were trained on TB/HIV collaborative activities (DTC).

4.9.3 Funds

- TB control activities in prisons were mainly funded through CDC support.

4.9.4 Challenges and constrains.

- Implementation of planned activities moving very slowly due to bureaucracy in accessing funds from CDC Kisumu.
- HIV activities given priority to TB as the activities are done concurrently
- Congestion and overcrowding in prisons remain a major hindrance in control of TB in prisons

4.9.5 Achievements

- Diagnosis and management of TB in Prisons is done well in prisons with health Facilities

4.10 Laboratory services

There are 910 Microscopy sites in the country and majority of these are GOK and Mission hospital centers. Sputum smear microscopy has continued to play a major role in diagnosis, monitoring and verifying cure of tuberculosis patients. CDC has donated one microscope to Kisumu district hospital and one fluorescence microscope to PGH Kisumu. Walter Reed project has also donated several equipments which include one Fluorescent microscope for Kericho district hospital

Support supervision

All provinces were supervised by central unit at least once during the year under review using the supervisory checklist

4.10.1 External Quality Assurance (EQA)

GFATM funds were used to cover all the provinces and districts in the country for the first and second quarter, Rift valley north and south were able to send reports and are in the process of getting the funds for the fourth quarter. Partners on the ground are supporting EQA activities in terms of providing funds to enable our officers to go and give feedback in areas with many errors. Majority of errors were quantitative errors which usually have no effect on patients management

Central Reference laboratory staff was able to use GFATM money to collect EQA slides from all the provincial general hospital labs. Internal quality control has taken root in almost all diagnostic sites during the year under review. There is need to intensify supervision as some diagnostic centers have started falling back

Table: 4.10.1: EQA Summary

No.	Province	Slides read	HFP	HFN	LFP	LFN	QE	No Errors	% Concordance
1	Nairobi N	477	4	2	1	0	30	37	92
2	Nairobi S	757	3	17	12	12	0	44	94
3	N Eastern	36	0	0	1	0	0	1	97
4	E. North	31	0	2	0	0	2	2	93
5	E South	107	0	1	0	1	0	2	83
7	Coast	60	1	0	0	0	5	6	90
8	RVS	108	2	2	0	0	0	4	96
9	RVN	118	0	1	0	0	4	5	97
10	Nyanza	60	0	0	0	0	3	3	88
11	western	96	1	3	0	0	0	4	96
12	Central	108	0	0	0	0	0	0	100
	Kenya	**1958**	**11**	**28**	**14**	**13**	**44**	**108**	**95**

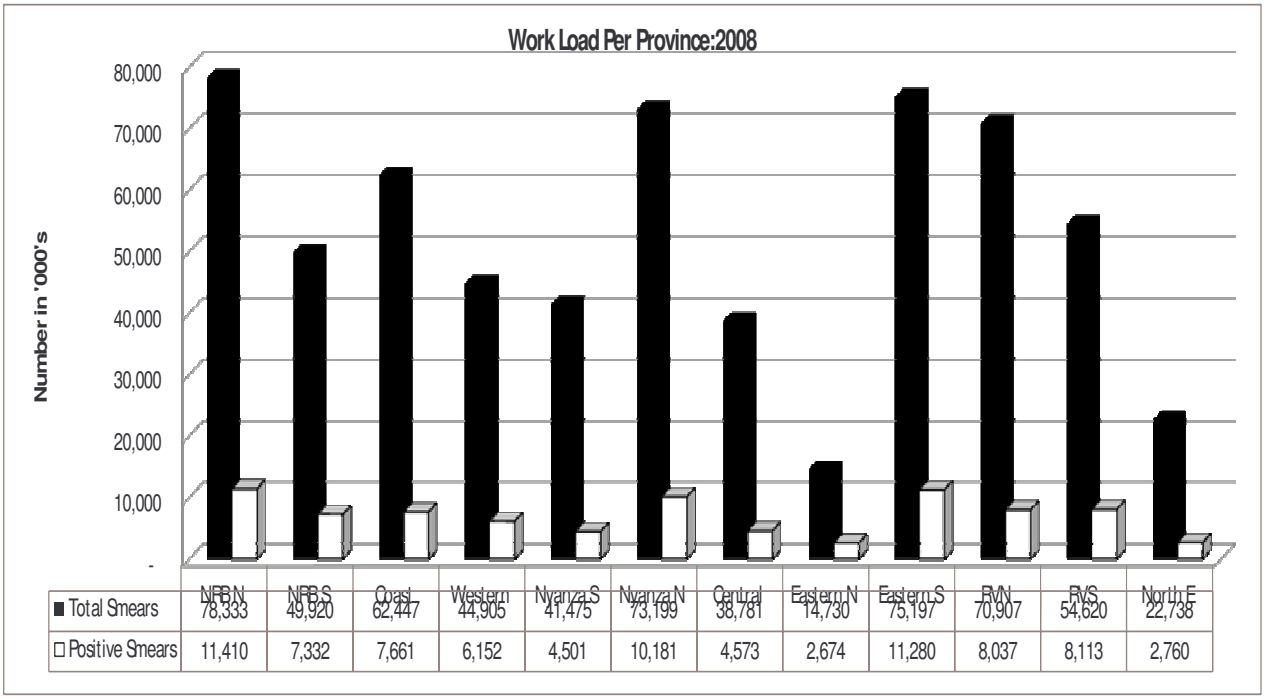
4.10.2 Training

There was PMLTs annual EQA consultative meeting/training at Kilifi where budgets for EQA were prepared taking into account the new districts.

4.10.3 Supplies of laboratory commodities

There were no shortages of lab commodities during the year under review, consumables from KNCV eased the shortage that was experienced the previous year, and 100 microscopes were distributed to all the TB zones. 8 Fluorescent microscopes were distributed to the 8 PGH hospitals in the country. WHO acquired 6 LED microscopes which were distributed to busy district hospitals Bungoma, Karatina, Kitale, Kisumu, Isiolo and Machakos district hospital. The programme is in the process of acquiring 50 safety cabinets class II in readiness for the role out plan for culture activities in the provinces.

Figure 24: **Lab Workload 2008**



	NRB N	NRB S	Coast	Western	Nyanza S	Nyanza N	Central	Eastern N	Eastern S	RVN	RVS	North E
Total Smears	78,333	49,920	62,447	44,905	41,475	73,199	38,781	14,730	75,197	70,907	54,620	22,738
Positive Smears	11,410	7,332	7,661	6,152	4,501	10,181	4,573	2,674	11,280	8,037	8,113	2,760

Figure 25: **Positivity rates in 2008**

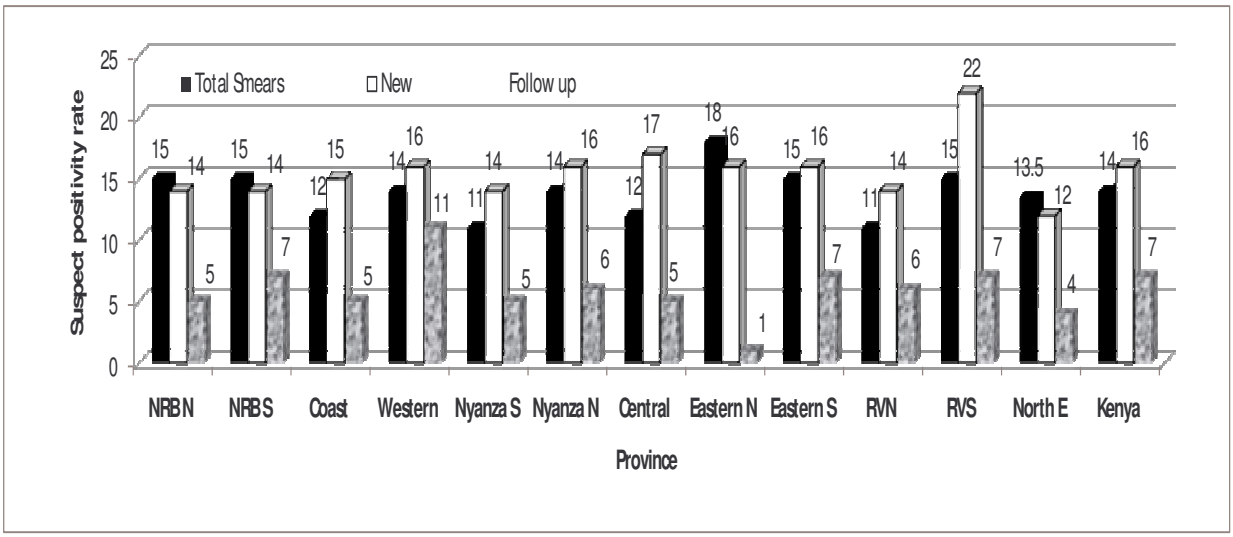


Table: 4.10.2 TB Suspects per Province

TB Suspects per Province			
Province	**New**	**pos**	**Suspect Positivity Rate**
NRB N	27338	3866	14
NRB S	24338	3419	14
Coast	23225	3411	15
Western	15971	2531	16
Nyanza S	14946	2104	14
Nyanza N	30561	4977	16
Central	12926	2198	17
Eastern N	6554	1049	16
Eastern S	28817	4674	16
RVN	24511	3490	14
RVS	19116	4101	22
North E	8793	1033	12
Kenya	237096	36853	16

Table: 4.10.3 TB Suspects per Province

Follow Up Patients per Province			
Province	**F ups**	**Pos**	**follow up Positivity Rate**
NRB N	6467	382	5
NRB S	9468	720	7
Coast	7905	428	5
Western	4133	489	11
Nyanza S	3855	309	5
Nyanza N	6237	414	6
Central	4514	221	5
Eastern N	1570	37	1
Eastern S	8481	594	7
RVN	7543	448	6
RVS	7801	522	7
North E	2226	91	4
Kenya	70200	4655	7

4.10.3: Decentralization

48 new diagnostic sites were identified for opening; with at least each zone have identifying four diagnostic centers for decentralization of services.

4.10.4: Constraints

Shortage of lab staff continues to bite throughout the country despite the programme setting funds though the GFATM for employment of 88 lab staff. Infrastructure remains poor in most of our facilities in terms of space, electricity, water and safety.

4.11 Central Reference TB Laboratory (CRL)

4.11.1 Activities

The laboratory plays a critical role in diagnosing TB and monitoring treatment. Laboratories and the laboratory network is often a direct reflection of the success of the TB programs. They

form a fundamental component of TB control, providing testing for diagnostic, surveillance and treatment monitoring at every level of the health system.
The role of the Laboratory is to

- Recommend standardized methods for SLD
- Recommend appropriate classes of drugs for DST
- Scope of IQC measures that should be undertaken by Lab. Performing SL DSTS
- To provide a frame work for evaluation of new therapeutic compounds
- Provide leadership in EQA of all provincial hospitals
- Inform clinicians and program on emerging resistance to TB drugs including monitoring of MDR TB patients on treatment

Kenya (CRL) has taken advantage of new technologies that provides rapid detection, identification and drug susceptibility testing of *Mycobacterium tuberculosis* by adopting the molecular (hain) method during the year. Since 2005 the retreatment TB cases have continued to increase steadily. The policy of the program is to have sputum from all patients started on re treatment regime submitted to the CRL for culture and DST as this inherently forms part of MDR surveillance in the country apart from providing useful information to clinicians to offer individualized TB treatment. In the year 2008, sputum from 60% of all retreatment cases in the country were submitted to the CRL for culture and DST. The target is to have over 80% of sputum of legible patients to be submitted. The table below shows the trend of increase in submitted sputum to the lab.

Figure 4.11.1: Central Reference Laboratory workload 2005-2008

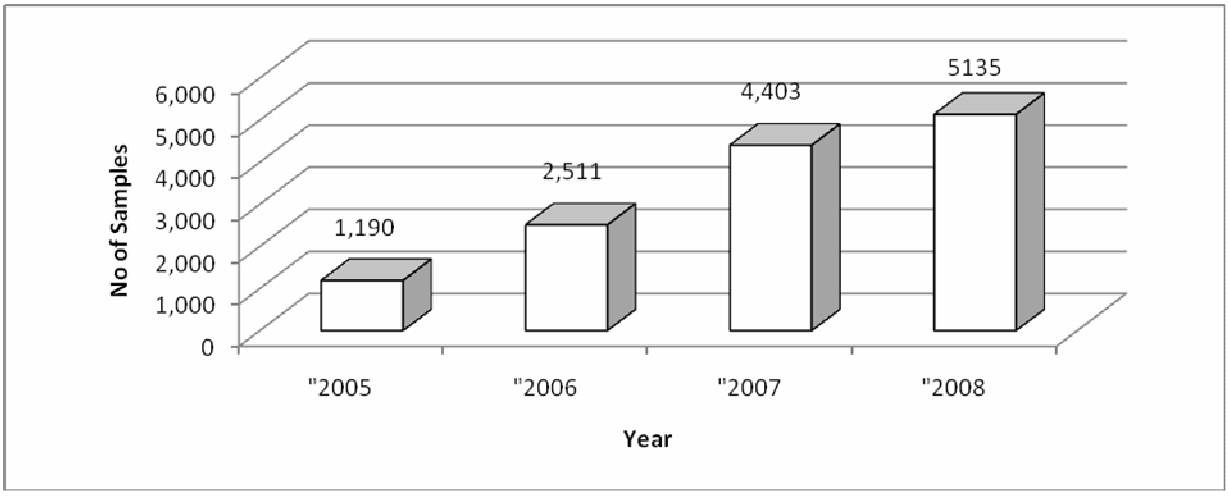
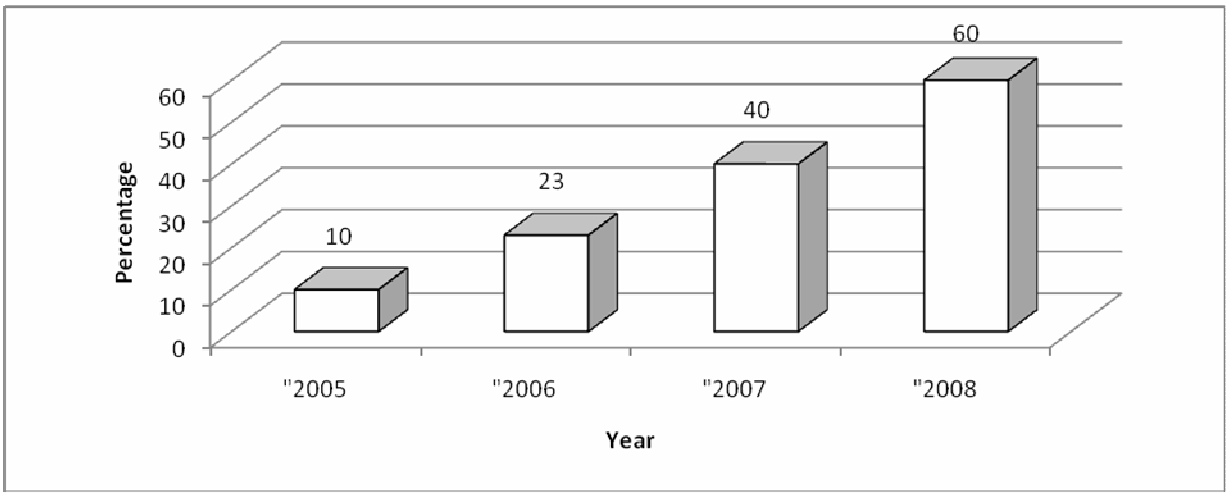


Figure 4.11.2: Sputum samples Submission rate 2005-2008



Modern techniques including fluorescence microscopy (FM), use of Liquid cultures for isolation and drug susceptibility testing and amplification for the detection of drug resistance are offered by CRL as routine procedures.

Whereas safety is a continuing concern for the Lab. staff at all levels who work with specimens and cultures containing *Mycobacterium Tuberculosis,* quality of microscopy services remain a major challenge to the TB program.

4.12 NUTRITION

Tuberculosis disease remains a major public health problem in Kenya and the world. It is estimated that due to high prevalence of poverty leading to congestion in slums and prisons leads to poor health and malnutrition. The Division requested for a nutritionist to assist in improving the health and nutrition status of patients through planning and coordinating nutrition activities.

4.12.1: ROLE OF NUTRITION

The role of nutrition in management of tuberculosis is to prevent wasting/weight loss, malnutrition, correct nutrient deficiencies, slow down disease progression and prolong life in HIV/TB.

Nutrition also strengthens the immunity thus enabling the body to fight other opportunistic infections. Malnutrition is the main contributor to illness and disease in the world comprising risk factors related to under nutrition.

Poor nutrition raises the risk of increased mortality (Illnesses are prolonged and become severe. Infections cause loss of appetite, mal absorption, metabolic and behavior changes).

There's also good epidemiological and clinical evidence that real malnutrition contributes 60% incidence of severity of TB (Mac Allan 1999).

4.12.2: PLANNED ACTIVITIES AND ACHIEVEMENTS

- During the year it was possible to plan and develop a work plan on nutrition in the Division with one major activity of developing National Nutrition Guidelines.
- The draft Guidelines came up after series of meetings towards this activity were carried out forming a technical working group and finally four day development workshop in Nakuru Bontana Hotel in November 2008 courtesy of PATH. In this workshop a brochure for the management of some nutrition problems was developed also notable was the inclusion of nutrition in the DOTS training curriculum.
- Mapping all partners undertaking nutrition activities on the ground was the other activity that was successfully carried out.
- Nutrition assessment was carried out in Nairobi and North rift. This was to identify gaps in nutrition that will help in planning activities for the year. It was evident from the areas visited that nutrition support in terms of micro-nutrient, trainings, and educational materials and anthropometric equipments were required. The outcome report was discussed.
- Supervision visits. It was possible to accompany a team that was pre testing materials to Kajiado, Nairobi and Kikuyu in June.
- I attended several meetings related to TB/HIV and also got involved in developing a food by prescription training manual for nutrition care workers at comprehensive sites- by AED USAID and NASCOP.
- During the month of August the nutrition and HIV/Aids day was cerebrated and crowned with a walk from NASCOP to Langata Women prison and a conference at KICC officiated by Hon Minister for medical services.

4.12.3 SUMMARY AND CONCLUSION

Nutrition forms an integral part of healing and patient well being and need be incorporated in the strategic plan to sustain and improve 85% treatment success rate.

4.12.4 DLTLD Accounts

The Divisions accounts department is charged with the responsibility of maintaining the division's accounts from the different sources of funds to support the division.

4.12.4.1 Funding sources

1. TB RD 2 Phase 2- In 2008 funds were distributed to all the provinces for TB/HIV, CBDOTs, PPM trainings & steering committees.
2. TB RD 5 – Funds spent for the following activities
   - Sensitization
   - ACSM survey
   - External Quality Assurance supervision in the provinces and CRL staffs
   - PPM activities
   - Parliamentarians
   - AFB training
   - Maintenance of Motor vehicles
   - Courier services

3. TB RD 6 the expenditures were minimal towards the end of the year. Funds were for:
   - Renovations and purchase of furniture.
   - TB/HIV
   - Training of Health care workers
   - Stakeholders meetings
4. GOK funds supported
   - Drugs
   - Administration support on all activities

4.13 HUMAN RESOURCE/ADMINISTRATION

Human resource and Administration section oversees the human resource requirements of the division and manages the day to day activities of the Division.

The DLTLD in collaboration with the KNCV tuberculosis foundation embarked on a mission to develop a human strategic plan for the division. As a result the human resource section has a focal person who is mentored and trained on the job by the KNCV TB Foundation.

4.13.1 ACTIVITIES

1. **Field visits**

Field visits were carried out to selected Nairobi and South Rift provinces from February to April 2008. The objective of the visits was to familiarize the human resource focal person and also get an input for the strategic planning process. Affecting HR issues were highlighted and a SWOT analysis made.

PARTICIPATION IN THE HR INDUCTION AND PLATFORM MEETING IN THE HAGUE

The HR focal person attended a 2day HR induction workshop 26th -27th may 2008 and a 2 day HR platform meeting 28th-29th may 2008 held at the Hague in the Netherlands. Training on HRH, HRD and HRM was given. A presentation made on the HR current situation, the challenges and strengths at the DLTLD.

2. **PARTICIPATION IN THE DLTLD ANNUAL PLANNING MEETING**

The annual planning meeting held in Mombasa in September from 1st-5th 2008 was an opportunity for the HRD strategic planning process to be made known to the stakeholders.

3. **FORMATION OF THE TWG**

A TWG of nine members was formed in September 2007 whose objective is to guide the process. The group consists of 1 PTLC, 2 DLTLD members, HRM ministry of Public Health and Sanitation and 3 stakeholders (1 each from PATH, MALTESER and KNCV respectively). The KNCV consultant is the resource person and gives professional advice on the process. The group has met three times and will have a five day retreat to repackage the draft.

4. **HR STRATEGIC PLANNING WORKSHOP**

Three HR strategic planning workshops took place at the Izaak Walton Inn in Embu on Tuesday 4, Wednesday 5 and Thursday 6 November 2008. The workshops were organized by the Division of Leprosy, Tuberculosis and Lung Disease (DLTLD) as an important step in the development of the Human Resources (HR) Strategic Plan for the Division. The workshops were funded by KNCV-CIDA

Thirty five participants participated in the 3 workshops. All participants are in one way or another involved in the Tuberculosis, Leprosy and Lung Disease Program. Participants from workshop 1, work within the program as program officer at Central Unit, as Provincial and District Tuberculosis and Leprosy Coordinator, as Clinical Officer, Nurse or Community Health Worker.
Workshop 2 includes participants from the Ministry of Public Health and Sanitation, The Ministry of Medical Services and the Development Partners.
Staff working at the laboratory at National, Provincial, District and Health Facility level, participated in workshop 3.
The workshops were developed and facilitated by Mary Osano (DLTLD), Nicholas Njoka (independent consultant) and Marleen Heus, HRD consultant from KNCV Tuberculosis Foundation.

The workshops aimed to create commitment and get input for DLTLD's Human Resources Strategic Plan 2009 – 2011.
At the end of the workshops the participants:

- Were informed about DLTLD's HR strategic plan and the strategic planning process
- Defined a vision and long term goal for DLTLD's HR strategic plan
- Developed further the SWOT analyses for the DLTLD's HR strategic plan
- Developed priority actions for DLTLD's HR strategic plan

5. WRITING OF THE HR STRATEGIC PLAN DRAFT

The first draft was presented to the TWG on the 10th November, 2008 and amendments were made on the vision and goal of the HRH of the division. The second draft was presented to the TWG on the 2nd December, 2008 whereby the group recommended for a retreat to repackage the document i.e. the objectives, the strategies and the activities.

DLTLD ORGANOGRAM

An organ gram was developed for the division. The TOR is currently being developed for each section depending on the scope of work, functional lines, the tasks performed and the competencies for each position.

5. INFRASTRUCTURE AND SUPPORTIVE ACTIVITIES

5.1 Manpower

5.1.1 Central level

During the year the division of TB did not receive any additional staff however with the continued expansion there is need for more skilled staff to be able to meet evolving and new challenges and to replace officers who have since left the division for other assignments. During the year Dr Dave Paul Muthama left the division for other assignments.

5.1.2 Provincial level

Dr Joel Gondi joined the division and was deployed to Nyanza North as PTLC Nyanza North, Dr Peter Mugo joined as a PTLC Central following Dr Moses Kitheka departure to pursue further studies in KIT Netherlands, Dr Anne Immaculate Kathure joined the division as PTLC Nairobi North following Dr Peter Kimuu's promotion to be the PDPH&S Eastern Province and Dr Ego Agere joined as PTLC South Rift following Dr Simon Kibias promotion to be the PDPH&S western province.

5.1.3 Transport

Supervision forms a key activity in the control activities and this is only possible with availability of an efficient and effective means of transport. The old PTLC vehicles are now gradually being replaced and in the year 2008, two new vehicles were procured for the laboratory through the support of Global fund round 5.

DISTRIBUTION LIST

Permanent Secretaries –MOPHS and MOMS

Director Preventive Promotive Health Services

Director of Medical Services

Head National AIDS/STD Control Program

World Health Organization Kenya Country office

CDC country office

JSI-Deliver project

KANCO

FHI

USAID

Medical Advisor Royal Netherlands Tuberculosis Association (KNCV)

Medical Advisor Netherlands Leprosy Relief Association (NLR)

WHO/regional Office (AFRO)

WHO/Stop TB Initiative Geneva

Provincial Medical Officers

Provincial TB Leprosy Coordinators

Medical Officers of Health

District TB Leprosy Coordinators

TBCAP

Centre for Respiratory Diseases Research- KEMRI

AMREF

MERLIN

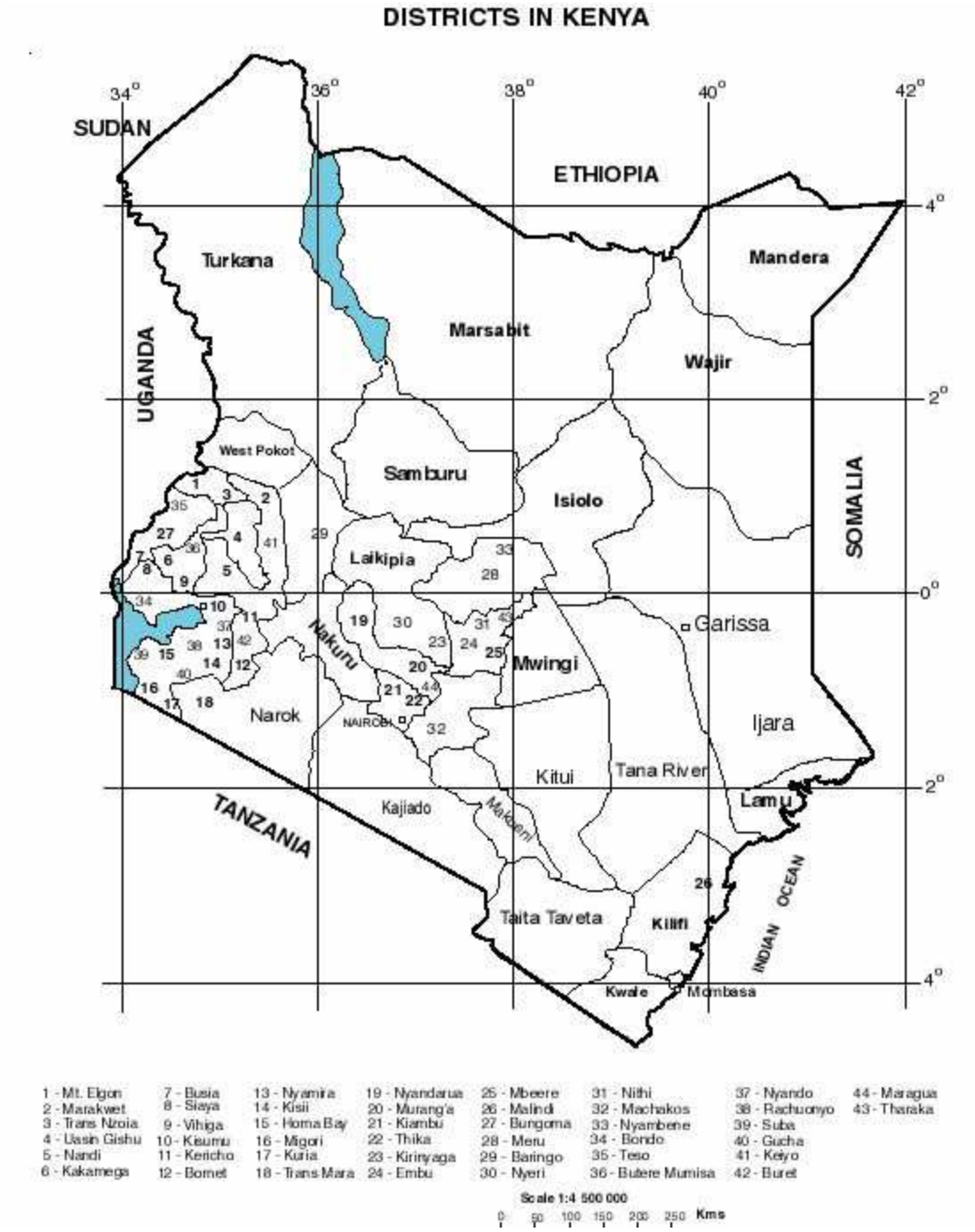
Malteser

PATH- Kenya

Kenya Association for the Prevention of Tuberculosis and Lung Diseases

International Organization for Migration (IOM)

Annex 1: Map of Kenya



Annex 2: Organizational structure of the DLTLD