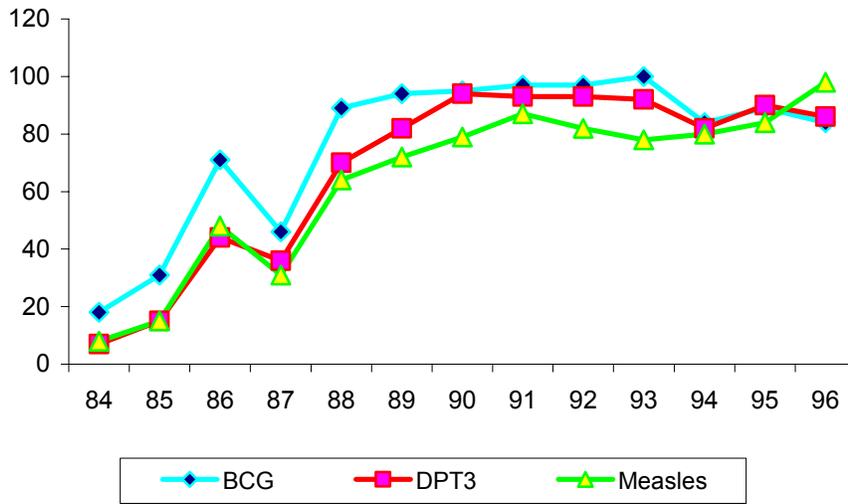


**Government of the National Regional State of Tigray
Bureau of Health**

**Strategic Plan
1996-1998 EC**



“Better Health Reduces Poverty”

**Mekelle
April 2003**

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Strategic Plan of the Bureau of Health of Tigray

1996-1998 EC

Introduction

Country context

Ethiopia has one of the poorest health status of low-income countries. Health indicators reflect high levels of morbidity and mortality. Infant mortality rate is estimated at 112 per thousand live births, while the under five-mortality rate is 187 per thousand live births. Maternal mortality is estimated at 500-700 deaths per 100,000 live births. High morbidity is mainly attributable to preventable infectious disease and nutritional deficiencies, compounded by natural calamities and unchecked population growth. Wide spread poverty, the general low income level of the vast majority, low education levels, and inadequate access to clean water, sanitation facilities, and health facilities are major contributors to the prevailing ill-health.

The health care delivery system was formerly highly centralized, with most service delivery taking place in urban centers while the remote and most in need rural majority had limited access to care. The new Ethiopian health policy endorsed in 1991 focused on equitable health care delivery to rural poor communities through decentralization. The policy emphasizes preventive and promotive aspects of health care. Community participation with active involvement is a key component of this new health policy.

Regional context

Tigray is the northernmost national regional state of Ethiopia and is located between latitude 12° and 15° north. The region is divided into northwestern and southern lowlands (700-1500 meters above sea level) and central highlands (1500-3000 meters above sea level). The region covers 80,000 square kilometers. Tigray is bounded on the north by Eritrea, on the south by the Amhara Regional State, on the east by the Afar Regional State, and on the West by Sudan.

Population in the 1994 GC census was 3.16 million and growth rate is estimated at 3% per year. The 2003-projected population is estimated to be 4,028,237 of which 1,981,761 are males and 2,046,476 females. Under five year children and under 15 year adolescents constitute 17.7% and 44.3% of the population respectively.

Eighty-five percent of the population is rural and engaged in subsistence agriculture. Population density ranges from 5 per square kilometer in lowland areas to 120 per square kilometer in the highlands. Large population movements have occurred since 1991 GC

with permanent resettlement of refugees, settlement of demobilized soldiers in lowland areas of economic development, and seasonal migrations from highlands to lowlands for labour on large-scale agricultural development projects.

Tigray's agriculture is based on plough cultivation of mainly cereal crops and until recently depended almost entirely on rainfall. The main rainy season is from May to September, with most rains falling in June and July. In southeastern Tigray additional rains fall during January and February, providing sufficient moisture for a second harvest. Mean annual temperature is 18°C.

The region's socio-economic and health problems are immense and highly interrelated. As development without healthy people is unthinkable, the health sector is considered as integral target of development by the regional government.

Since 1991 GC there has been upgrading of general health services through rehabilitation and construction of health facilities, training and deployment of health personnel, and expansion of primary health care. As a significant proportion of the population still lives beyond catchment areas of even peripheral health institutions, community-based volunteer health workers continue to play an important part in delivery of primary health care services.

Communicable diseases and nutritional problems are major health problems of the region and account for the majority of all health problems. Malaria, tuberculosis, ARI (acute respiratory tract infection), diarrhoeal diseases and HIV/AIDS are among the top disease burdens. These diseases are preventable through approaches such as supply of adequate and safe water, control of vectors, expanding vaccination and educating the people to bring behavioral changes. The pandemic of HIV/AIDS is spreading at an alarming rate. The number of HIV carriers in the towns of Tigray is estimated to be 33,949-37,132. Rapid spread of the disease will stall development endeavors, and the problem must be addressed by all sectors of the government, as well as non-governmental agencies.

The Tigray Regional Health Bureau (TRHB) has actively dealt with the above-mentioned major health problems by designing the first and second five-year action plans, and setting strategies, objectives, and targets for delivery of better health services to the people. The administration, health professionals, and the community have worked together to try to improve the health status of the people. Considerable achievements have been made each year, with progress toward the goal of better health. A lot of good experiences and lessons have been learnt. We have also faced weaknesses and problems. Despite many achievements, the first term action plan had drawbacks, including lack of clear vision and not prioritizing activities in line with the needs of the rural majority and the resources of the region (money, manpower, and infrastructure). Through serial evaluations, solutions were suggested, and thorough discussion helped when drafting the strategic second five-year action plan in June 1994 EC.

Purpose

The draft strategic second five-year action plan was designed according to the new government development vision, to address the shortcomings of the first plan. However, in-depth analysis of the internal and external situation of our sector had not been conducted and a further revision was necessary to polish the draft strategic plan prepared in June 1994. Compared to our 1994 draft strategic plan, this revised strategic plan will set the highest possible goals and targets in line with our government's commitment for high-speed development programmes.

Methodology

The Strategic Planning Management (SPM) Document Development

The management committee of the bureau acted as the steering committee for the preparation of the SPM document. The steering committee established a strategic planning team with representatives from the Department of Planning and Programming, the Department of Health Services and Research, the Department of Disease Prevention and Control, and the Malaria Control Department. The planning team developed the terms of reference (TOR) for the SPM development. According to the TOR the steering committee prepared the vision, mission, mandate, values, goals and strategic objectives of the bureau, and the planning team was given the following responsibilities:

1. Undertake a situational analysis, including SWOT and stakeholder analysis.
2. Identify strategic issues based on the situational analysis.
3. Design and develop strategic options for the strategic issues.
4. Revise the vision statement, mission statement, mandate, values, goals and strategic objectives drafted by the steering committee, according to findings in the situational analysis.
5. Finalize the SPM document.

Study design for stakeholder analysis

A stakeholder list was made and the most important stakeholders identified. Structured questionnaires were developed, and guidelines were developed for use in focus group discussions. Cross-sectional institution and community-based surveys were then conducted using both qualitative and quantitative methods.

Study subjects

The major stakeholders who were the subjects of the stakeholder analysis were

1. Service users (patients)
2. The public/community
3. Staff
4. Health managers
5. Community Health Workers
6. Administrative bodies
7. Donors
8. Private enterprise representatives
9. Experts (Finance, Human Resource and Gender)

Methods

Study site selection

Mekelle was included as the best urban center. Since disease distribution and health service demand vary geographically, weredas were first stratified by altitude then categorized as highland if 75% of their kushets were more than 2000 meters above sea level, and lowland if 75% of their kushets were less than 2000 meters above sea level. Weredas out of the two categories were excluded from the study. Within the selected weredas three highland and three lowland weredas were randomly selected. With proportion to service utilization by community, 4 hospitals, 4 health centers, 20 clinics and 11 health posts were then randomly selected. (The health services utilization pattern in Tigray is that, 40% of outpatients are seen at hospitals and health centers and 60% at clinics and health posts, out of which health posts account for 11.3% of the out patient service rendered.) By this selection process, study sites included 39 health institutions, or nearly 12% of the total number of health institutions in Tigray: 20 health institutions from the highlands and 19 health institutions from the lowlands.

Sample size calculation for patient exit interviews at health institutions

The following formula was used to determine sample size for patient exit interviews.

$$n = \frac{z^2 pq}{d^2} \text{ where,}$$

n = sample size

d = degree of precision, 0.05

p = level of service satisfaction 50% (p=0.5) conservative value, q(1-q) =

0.5

z = coefficient of confidence, 1.96

Using this formula, required sample size in each area was 384. To correct for poor data quality, sample size was increased to 422 for each geographic category, and 100 from Mekelle. Thus, total sample size required for exit interviews was 944. In each geographic area interviews were planned with 50 patients from each hospital and health center, 20 patients from each clinic and 4 patients from each health post.

Table 1 Planned and actual number of patients interviewed by facility type

Institution		Interviews		Response (%)
Type	Number	Planned	Actual	
Hospital	5	250	247	98.8
Health Center	5	250	259	103
Clinic	29	400	389	97.3
Health Post	11	44	39	88.6
Total	41	944	934	98.9

Self-administered questionnaires

CHWs, staff, health managers

All community health workers reporting to the selected health institutions, and the selected wereda and tabia heads and capacity building focal persons were targeted for the self administered questionnaire. At health institutions, all managers and half of the staff (technical and supportive) were interviewed. At the regional health bureau, all health managers were interviewed. All health workers rendering specific program service and all wereda specific programme experts were also targeted for the specific program self-administered questionnaire.

Private enterprise representatives

Four hundred enterprises (food and drink establishment, various workshops) and all private higher health institutions (two hospitals, one higher clinic, one FGA clinic, two missionary clinics, Rest Mekelle, Shire Clinic, Adua Eye Clinic, Adigrat, Edaghamus, Alitena clinics.) were targeted for self-administered questionnaire.

Data collection

Structured questionnaire administration

1. Self-administered questionnaires about general quality and health services utilization were distributed to donors, health managers, staff, private health institutions, Community Health Workers, food and drink establishments and other private enterprises.
2. Self administered questionnaires about utilization and quality of health services rendered by health institutions and community health workers were distributed to administrators (tabia, wereda), staff working in specific health programs or wereda specific program experts, and community health workers
3. Patient exit interviews were conducted at hospitals, health centers, clinics and health posts.

Focus group discussions

1. Community focus group discussions were conducted about utilization and quality of health services rendered at health institutions and by community health workers. Ten paired (men and women) discussions were conducted in each geographic category. Discussions were held with community representatives in the catchment areas of one hospital, two health centers, three clinics and one health post. Highland discussants were from catchment areas of Wukro Hospital, Ahferom Health Center, Endalgeda Clinic, Adi Belae Health Post and Galelo Health Post. Lowland community discussants were from catchment areas of Alamata Hospital, Shire Health Center, Mai Hanse Clinic, Semema Clinic, and Mai Aye Health Post. Mekelle town residents were discussants from the catchment area of Mekelle Hospital.
2. Focus group discussions on SWOT (strengths, weakness, opportunities and threats) were conducted in the five hospitals and at the Tigray Regional Health Bureau. The management bodies of the respective institution comprised the focus group members. In hospital discussions, wereda health office heads, wereda administrative heads, and wereda capacity building focal persons were also focus group members.

Table 2 Data collection tools and methods by stakeholder type

S.No	Stakeholder	Data collection	
		Tools	Methods
1	Service users (patients)	Structured questionnaire on general health service satisfaction	Exit interview
2	Community	FGD guideline on specific health programs/service utilization and satisfaction	Focus group discussion
		FGD guideline on community health worker performance	Focus group discussion
3	Staff	Structured questionnire on general health service	Self-administered
		Semi-structured questionnaire on specific health programs	Self-administered
4	Health managers	Structured questionnire on general health service	Self-administered
		FGD guidelines on weakness, strengths, opportunities and threats	Focus group discussion
5	Community health workers	Structured questionnaire on general health service	Self-administered
6	Donors	Structured questionniare on regional health bureau performance	Self-administered
7	Administrators	Structured questionniare on health institution performance	Self-administered
		Structured questionniare on CHW performance	Self-administered
8	Private enterprise representatives	Structured questionniare on service satisfaction and support	Self-administered

Data analysis

Qualitative data

Focus group discussions were documented manually and recorded by tape recorder. From the written and recorded documents, data were compiled and analyzed.

Quantitative data

Data were entered, cleaned and analyzed using the Epi Info version 5 statistical software program.

Vision, mission, mandate and values of the Tigray Regional Health Bureau

Our Vision

We aspire to have a healthy and prosperous society with the best community based household level health system in Africa

Our Mission

To provide basic health services to the people with excellence in community based household health promotion and disease prevention thereby decreasing morbidity, disability, mortality and poverty to have a healthy and happy society that will take part in the development of the nation.

Mandate

1. Implementation of health policy as to the national and regional guidelines
2. Control and follow up of implementation of health service related laws and regulations
3. Management, coordination, and organization of health institutions and research centers
4. Licensing and control of private health institutions based on national standards and guidelines

5. Regulation of health services rendered by health professionals according to their proficiency standard
6. Evidence-based licensing and promotion of traditional medicine /practice based on research and efficacy/toxicity studies
7. Implementation of effective epidemic prevention and control programs based on research
8. Monitoring and control of environmental health service based on the laws and regulations on environmental health

The above mandates given to the TRHB bureau have been exercised to improve health service delivery. However, we still appreciate gaps of mandate, which are of paramount importance in ensuring better health service delivery in the region. Hence the TRHB proposes that the following additional mandates to be given.

1. Professional licensing
2. Revenue retention
3. Control and monitoring of private health professional training institutions
4. Institution of sectorally endorsed independent salary scale
5. Curriculum revision for regional training schools

The rationale for proposing the additional mandates is:

1. The TRHB strongly requires legal grounds to license professionals. Our ultimate goal is to maintain proficiency standards and ensure career development of individuals and excellence of the health services.
2. The TRHB strongly believes that revenue retention has a vital role in alleviating the current financial, facility and professional deficit of health institutions in the region. Hence, the TRHB asks for a fully granted mandate on revenue retention.
3. The TRHB appreciates the establishment of health professional training schools in the region. This is because we have the living experience of how lack of trained manpower devastates health services. Furthermore, we strongly consider our own position as the major stakeholder, since most of the schools' outputs will end up being our staff. Thus, we must ensure quality of training by structured evaluation of the process of teaching and training. The bureau thus urges the government to grant the mandate or legal grounds for controlling the schools.
4. It is a well-established fact that skilled manpower in terms of quantity and quality is the major requirement in providing quality health service. However, good quality of staff and their fair distribution cannot be achieved as long as we keep assigning people in very different areas (remote and best urban centers) with the same salary. Hence we would like to institute a sectorally endorsed salary scale. The TRHB hereby requests the legal grounds for this.
5. The national curriculum for lower and mid-level nurse training is specialized, whereas in practice after training nurses are expected to undertake integrated clinical and public health services. Thus the TRHB asks for the mandate for curriculum revision according to our region's needs.

Our 10 Values

Values are part of an organizational culture/belief shared by all the staff. The TRHB wishes to see the following values shared by all staff.

1. **Transparency:** Management decisions at all levels need to be transparent to all staff. Policy guidelines, regulations, procedures need to be clear and understandable by all stakeholders.
2. **Respect for customers:** The customer/client is the king of an organization. The TRHB has many clients to serve. Respect to the client is the core for client satisfaction.
3. **Accountability:** Accountability means being responsible, or being the person to be asked for what has done, be it wrong or correct. Everyone needs to be accountable for the duties and responsibilities given to him/her to perform. This is essential for timely, efficient and effective performance of activities.
4. **Efficient use of resources:** Resources are scarce. Wise and efficient use of resources is essential to provide quality and sustainable service to our clients.
5. **Result oriented work:** The TRHB has many objectives to achieve. Activities need to be oriented to attain the stated objectives.
6. **Readiness for change:** Introduction of new management styles, medical technologies, and information technologies are important for rapid development. Adaptation to changes in our sector is vital to improve health care delivery. All staff in the health sector need to be ready to implement the adopted changes.
7. **Focus on prevention:** Our vision is to have a healthy and prosperous society. This can only be achieved through preventing disease. Health sector activities at all levels should be geared to prevention.
8. **Participatory management:** Participation creates a sense of ownership. Participatory management at all levels is essential for timely, efficiently and effective implementation of activities and plans at all levels.
9. **Work integration:** Integrating related activities is important to avoid work duplication and redundancy; and to ensure efficient use of scarce resources. This is essential to provide sustainable and quality health service delivery.
10. **Professional ethics and human dignity:** Health workers of different categories deal with human life. Health professionals undertake a professional oath. All health workers at all levels need to respect their professional ethics and human dignity while providing health services.

Goals

1. Improve quality of health care services.
2. Increase health services coverage and utilization.
3. Implement best health management practices and information system
4. Reduce morbidity and mortality.

Objectives

Goal 1: Improve quality of health care services.

- Increase external quality assessment programme from 50% to 100% by 1997.
- Staff all health institutions per national/regional standard by 1998
- Increase health extension agent to population ratio from 0 to 1:2500 by 1998.
- Equip all health institutions per national standard by 1998
- Improve and maintain the availability of essential drug and supplied in all health institution to 75% of required amount by 1998.
- Improve cure rate of smear positive pulmonary TB from 71% to 85% by the end of 1998.
- Introduce an effective, efficient, and equitable health care financing system in 1996.
- Implement stratified user fee by the end of 1997.
- Secure at least 50% of the user fees by public health facilities by 1997.
- Increase index of satisfaction of health services customers from 58% to 80% by 1998.

Goal 2: Increase health service coverage and utilization.

- Increase health services coverage from 55% to 75% by 1998
- Increase per capita health care utilization rate from 0.5 to 1/person/year by 1998.
- Increase antenatal coverage from 52% to 62% by 1998.
- Increase contraceptive prevalence rate from 35% to 50% by the end of 1998.
- Increase safe delivery from 28.6% to 50% by the end of 1998.
- Sustain immunization coverage above 90% (DPT3) and reduce all antigen defaulter rates below 10% by the end of 1998.
- Strengthen integrated disease surveillance and response system in all weredas by 1997.
- Expand health extension package to all tabia of Tigray by 1998.
- Increase case notification of pulmonary TB +ve from 44% to 70% by 1998.

- Increase proportion of households targeted for using at least 1 ITN from 34-75% in villages <2000 m altitude above sea level by 1998.

Goal 3: Implement best health management practices and information system

- Introduce and maintain best practice management system (strategic planning management) in all levels by 1996.
- Introduce autonomous management system in hospitals as a pilot in 1996 and in all hospitals by 1998.
- Expand drug revolving fund scheme to all hospitals, health centers and nucleus health centers by 1998.
- Reduce the number of drugs prescribed in a single prescription from 3 to 1.5 by 1997.
- Strengthen simple and modern information system starting from 1996.
- Network (wide area network) all levels of the health system by the end of 1998.

Goal 4: Reduce morbidity and mortality

- Reduce maternal mortality rate from 756 to 450 per 100,000 live births by 1998.
- Reduce under 5 mortality from 101/1000 to 90/1000 live births by 1998
- Reduce infant mortality from 97 to 85 per 1000 live births by 1998
- Reduce fertility rate from 5.8 to 5 children per woman.
- Halt the spread of HIV infection at 7% by 1998.
- Reduce malaria prevalence by 25% by 1998.
- Eliminate Leprosy from 0.6/10,000 to 0.3/10,000
- Eliminate measles by 1998.
- Eradicate Polio and achieve certification criteria by 1997

Situational Analysis

Regional progress towards health from 1991 through 1994

After the fall of the Derg in 1991 GC, the health policy drafted during the transition period focused on decentralization, to better serve the rural majority. The strategy relied on disease prevention. Main components included maternal and child health, health education, environmental sanitation, epidemic control, improving health service quality and coverage, rehabilitation and expansion of health facilities, and human resource development. When the first five-year action plan of the health sector was designed and implemented (1988-1992 EC), there were limited baseline data, with no information about mortality, and limited data on morbidity and other health care indicators. This created difficulty when trying to gauge the impact of health interventions at the end of the first action plan period. However process and outcome variables allowed some assessment of the interventions.

The role of the community in Tigray in expanding and strengthening health services was very encouraging. The community participated in almost all health activities including identification of health problems, implementation of health interventions, and participation in the construction of health facilities either by contributing money or their labour. The community health agents (CHAs) remained key partners in health development: community health workers (CHWs), trained and traditional birth attendants (TTBAs and TBAs) and community based reproductive health agents (CBRHAs). Currently 2,461 TBAs and 1,172 CHWs are active in the region.

Health service delivery and quality of care

Table 1 shows trend in delivery of institution-based services. Despite an increase in number of services delivered, the quality and comprehensiveness of curative health care was often at minimum standard, and many lower level institutions provided only basic health services. In addition, many health facilities were not fully staffed or equipped with the necessary materials.

Table 3 Services delivered at health facilities

Service	1988			1989			1990		
	Planned	Achieved	%	Planned	Achieved	%	Planned	Achieved	%
New out patients	2,015,968	2,551,878	126	2,040,319	2,173,917	106	2,300,168	2,656,325	115
Inpatients	28,880	27,364	95	25,095	23,230	923	32,095	30,119	94
Lab Exam	275,076	292,439	106	254,828	271,149	106	303,460	301,827	99
X-ray Exam	18,548	23,418	126	27,811	20,654	74	20,700	20,757	100
Minor surgery	6,222	4,941	79	7,530	4,400	58	4,128	5,928	144
Major surgery	2,808	2,703	96	2,535	2,413	45	4,128	4,083	99

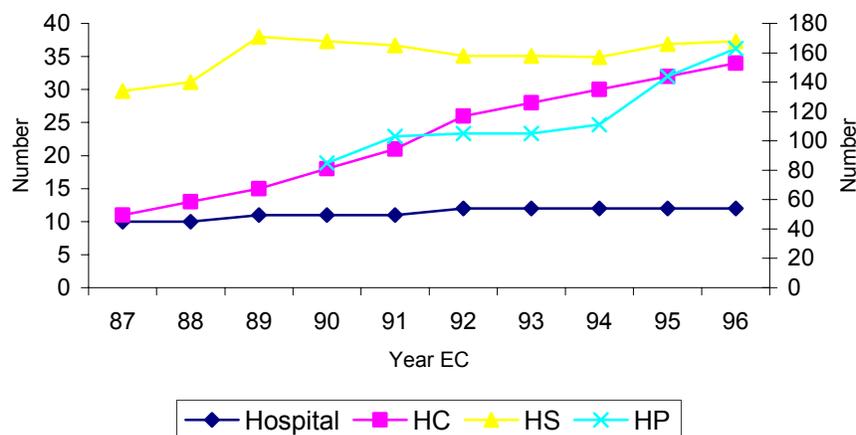
Service	1991			1992			1993		
	Planned	Achieved	%	Planned	Achieved	%	Planned	Achieved	%
New out patients	2,760,201	2,152,471	78	2,927,326	2,664,465	91	2,812,568	2,531,983	90
Inpatients	35,045	27,603	79	38,546	25,298	66	30,847	29,062	94
Lab Exam	339,875	315,763	93	373,858	216,805	58	355,046	241,847	68
X-ray Exam	23,294	23,645	101	24,044	20,258	84	22,438	20,476	91
Minor surgery	10,271	5,443	53	11,294	6,193	55	3,736	4,819	128
Major surgery	4,401	3,134	71	3,736	4,599	123	4,717	9,545	202

Service	1994			1995			1996		
	Planned	Achieved	%	Planned	Achieved	%	Planned	Achieved	%
New out patients	3,374,858	2,944,030	87	1,987,129	1,739,380	88	2,024,021	1,884,107	93
Inpatients	36,189	33,118	92	40,372	33,892	84	46,372	37,146	80
Lab Exam	386,256	281,940	73	630,430	374,379	60		388,475	
X-ray Exam	30,971	19,826	64	33,188	22,928	69		19,149	
Minor surgery	6,534	4,261	65	8,956	11,183	125		11,242	
Major surgery	8,190	7,744	95	6,475	5,554	85		5,380	

Primary health care services (community health services) given at tabia and kushet level through community health workers were not always guided and organised properly, and community health workers were not always given the necessary materials to enable them to give service.

Expansion and strengthening of health facilities

Based on the principle of expansion of health services to the community both in quality and quantity, new health facilities were constructed and old ones maintained. As shown in Figure 1, the number of health facilities doubled from 1987 to 1992 EC. The number of beds increased from 815 to 1,323. Health services coverage, defined as the population living within a 10 km radius of health facilities, increased from 42% to 55%. (The assumption is that people living within 10 km radius of health institutions have access to services).



**From 1990 to 1992 the number of health stations decreased because they were upgraded to health centres.

Figure 1 Number of health institutions by type

Maternal and child health services

Mothers and children account for 70% of the regional population, and are an especially vulnerable group because of frequent illness coupled with limited access to health services. The major health problems that cause morbidity and mortality in children under five years of age are vaccine preventable diseases, ARI (acute respiratory tract infection), diarrhoeal diseases and nutritional deficiency. To decrease the magnitude of these health problems, different control programmes were given both at static and out reach sites. Maternal mortality and morbidity associated with pregnancy and delivery were also given attention.

Maternal Health Services

Maternal health service coverage as measured by delivery service, antenatal care, postnatal care, and family planning increased from 1987 to 1991 EC by 12%, 19%, 10% and 20% respectively. Vitamin A distribution started in 1987, and by 1991, 38% of lactating mothers and 19% of pregnant mothers had received the service. Tetanus Toxoid vaccination rose from a low level to 27% in pregnant and 54% in non-pregnant women. Despite these achievements, antenatal care, delivery service, postnatal service, and family planning were lower by 10%, 5%, 10%, and 7% respectively, from what had been planned.

One reason could be that the plan may have been exaggerated. When compared with 1987 EC, all achievements were above 100%. However, a major reason for achievement lower than planned is mother's behaviour. The health-seeking behaviour of the mothers depends on many factors. Mothers may not come because of distance, lack of knowledge about the service, responsibilities at home so they don't have time to visit, and problems related to the service provider side. These reasons and ways to address them need thorough investigation.

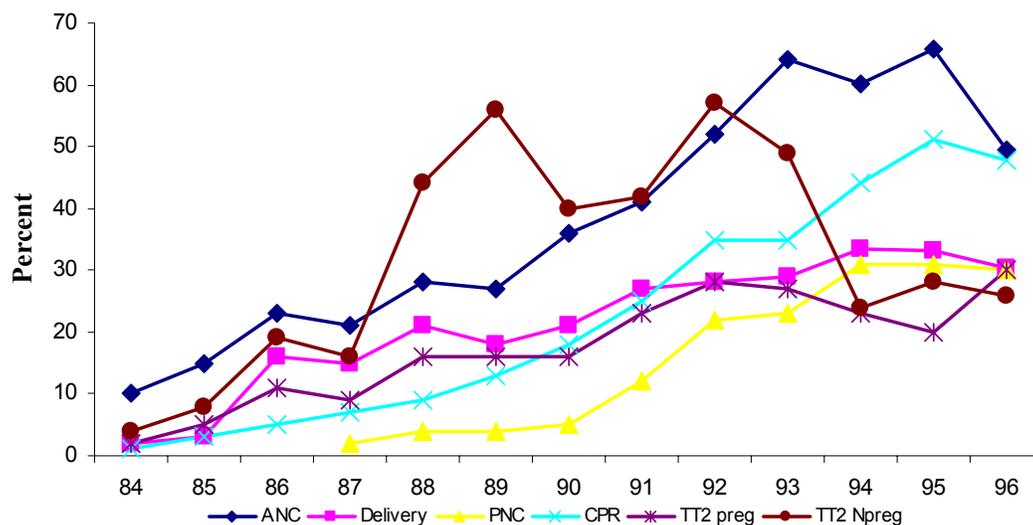


Figure 2 Maternal health services coverage

Child Health Services

Between 1987 and 1991 EC, DPT₃ coverage increased by 41%, Vitamin A distribution to under 5 children by 86%, growth monitoring by 23%, and examination of under 5 year children by 25%. However CDD and ARI services showed no change. Of note, services coverage increased when community-based, whereas services that did not change were those given only at health facilities.

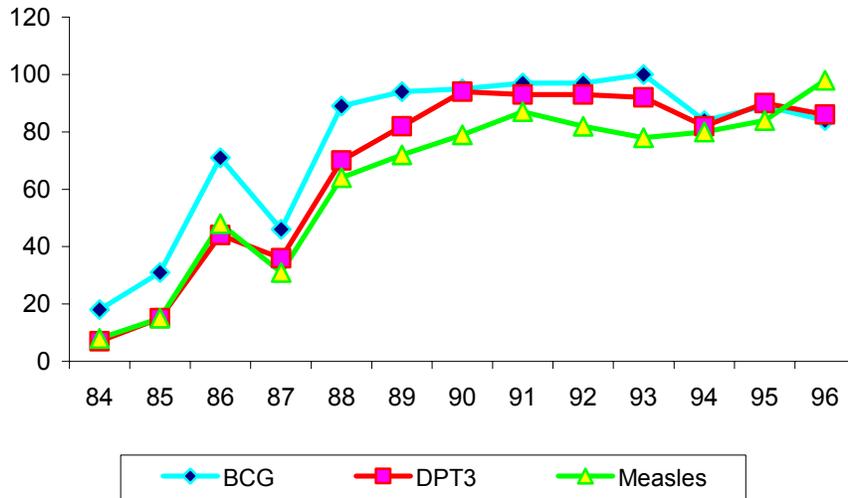


Figure 3 Vaccination coverage in children under one year of age

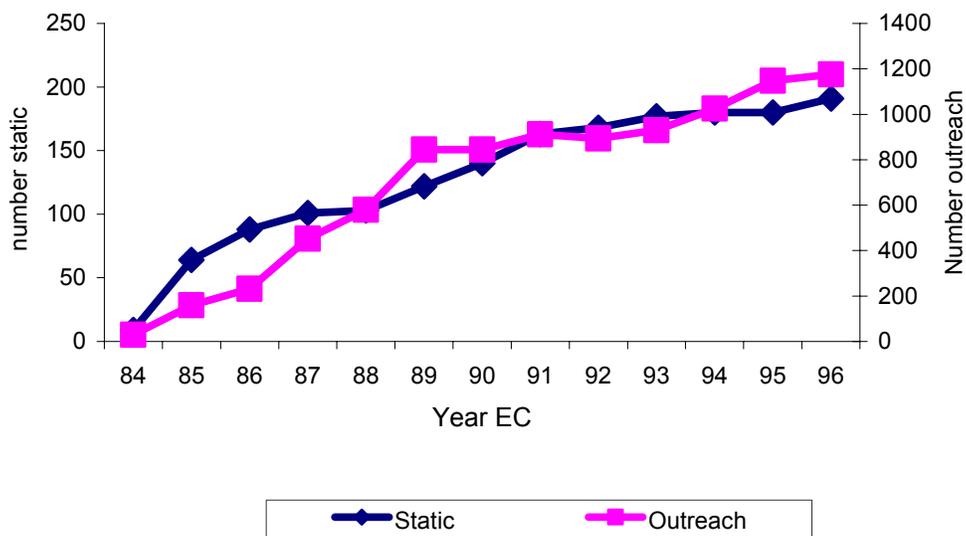


Figure 4 Vaccination service expansion

Hygiene and environmental health services

Most planned activities were performed very well, with the exception of the transfer of mandate of constructing new dug wells and springs to the Bureau of Water, Mines and Energy. Regarding water sites, the main responsibility of the Health Bureau was water quality control. Due to budget constraints, achievement in constructing new VIP latrines was very low. Whereas for other activities including inspection of establishments and water sources, and health education, achievements exceeded the plan.

Prevention and control of communicable diseases

Diseases with outbreaks and epidemics the past 4 years included measles, with incidence per under five children of 2.6/1000, and whooping cough, with incidence of 2.8/1000. Diarrhoea, dysentery, relapsing fever, and meningitis occurred in fewer than one person per 1000. There was good surveillance and epidemic control in the region, with a death rate from epidemic diseases of only 2%. Out of the 4,110 people affected, only 85 died due to diarrhoea, dysentery and vomiting. Poor environmental sanitation was incriminated as the cause of these diseases.

Three major strategies were implemented to decrease the spread of HIV/AIDs: 1) universal precautions 2) voluntary counseling and testing (VCT), and 3) condom distribution with health education to bring about behavioral change. All five zonal hospitals now offer screening and testing services, as well as pre and post-test counselling. On average 10% of blood donors were found to be HIV carriers. Twelve health facilities gave counselling services to 2,613 carriers. Condom usage rate increased two fold since 1987. Condom outlets include health facilities, public gatherings, social events and different clubs. The distribution of condoms distributed by social marketing is impossible to measure.

Malaria and other vector borne disease prevention and control

Malaria control strategies included early diagnosis and treatment at the village level by volunteer CHWs, institution-based diagnosis and treatment, residual indoor insecticide spraying, control of vector breeding sites by environmental management and larviciding, and distribution of impregnated bed nets in pilot areas.

The number of patients treated by CHWs, and the number of institution-based malaria diagnostic and treatment services increased through 1992, as seen in Figure 5. It is our impression that early detection and treatment at the village level decreased malaria workload at health facilities.

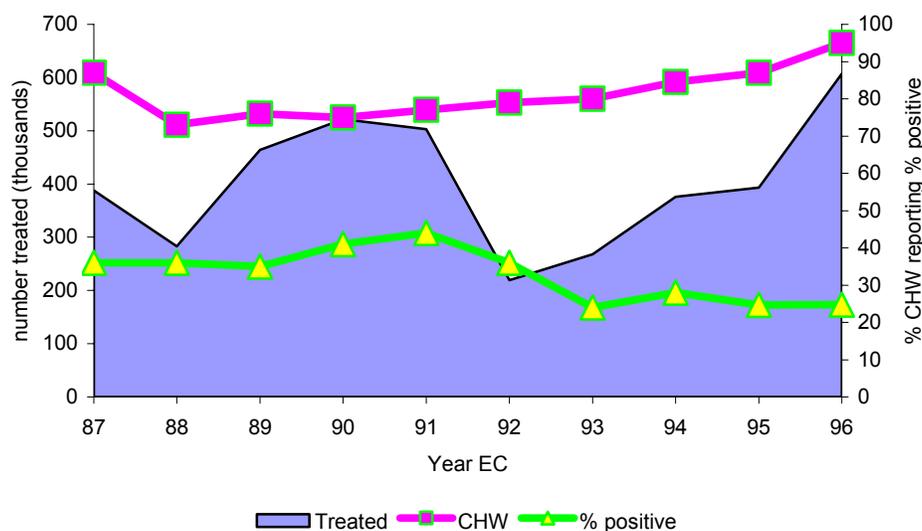


Figure 5 Number of clinical malaria cases treated, % CHW reporting and % of tested cases confirmed positive

Vector control strategies included indoor residual spraying, breeding site control, and distribution of bednets. Some desired targets were not met (e.g., coverage of spray operation was 46% only), yet the outcomes were good when compared to the existing situation elsewhere.

Table 4 Performance of environmental management and chemical spray at breeding sites

Activity	1985	1986	1987	1988	1989	1990
Filling (m ²)	222	25,122	*	32,730	4,580	461,288
Clearing (m ²)	784	6,327	*	449,070	387,674	1,554,119
Participants	14,128	81,781	65,707	80,468	127,819	366,365
Breeding sites, chemical spray (m ²)	**	**	**	468,765	676,872	823,900

Activity	1991	1992	1993	1994	1995	1996
Filling (m ²)	816,751	1,892,041	726,151	2,009,736	1,041,660	574,064
Clearing (m ²)	1,687,702	-	601,186	1,584,282	755,023	2,527,513
Participants	573,374	610,431	553,697	1,038,539	531,544	489,208
Breeding sites, chemical spray (m ²)	1,705,280	1,805,920	1,246,300	253,440	383,774	372,495

Control services tried to target the remote poor people. However, there was a problem in extending services in areas with migrant agriculture labour. To do this requires collaboration of other sectors, in order to decrease malaria related mortality and morbidity. Despite much achievement, certain basic problems remained. If the costs of bednets and insecticide for bednet impregnation are not lowered to minimum, this strategy will not be feasible because the people currently just cannot afford it. The government must subsidize the cost of nets if rural majority are to use the service. Many health professionals lack proper orientation and knowledge about vector control and thus focus only on treating patients. This is not in agreement with the county's health policy,

which emphasizes disease prevention. The causes of malaria are multifactorial (geographic, climatic, and manmade) and there has been poor intersectoral collaboration to address the manmade causes of the disease including migration to lowlands, and water resource development. In addition, serial studies showed that the efficiency of chloroquine, the first line antimalarial drug decreased by 50%, and change to sulfadoxine-pyrimethamine (SP, fansidar) was required.

Tuberculosis and leprosy control

Tuberculosis case detection reached 49% (versus the target for the 5 years of 70%). The number of patients with chronic cough suspected for tuberculosis was 39,271, out of which 14,891 were diagnosed as pulmonary tuberculosis cases. Among the pulmonary TB cases, 6,576 (44%) were found to be AFB positive. Cure rate increased from 55% to 83%, with institution of DOTs and closer supervision. Target cure rate was 85%

The target for leprosy control was incidence of 1 case/10,000 population. In the past few years incidence has dropped to 0.6/10,000. 1,750 leprosy cases were identified and treated, and 1,426 were cured. The degree of disability caused by the disease declined from 18% to 7% because of early detection and treatment of cases.

Human resource development

In the first five-year health sector plan it was expected that the number of health professionals would increase 5% by year. However, there was no increase in the number of medical doctors and pharmacists, rather there was a decrease. This was due to the expansion of private health facilities that pay better salaries than the government, and the imbalance between the need generated by expansion of the health facilities and the output of professionals from training institutions.

The shortage of health professionals in the region became acute with ongoing construction of new health facilities. In 1991 EC the Regional Health Bureau, in collaboration with the Ministry of Health, prepared minimal staffing standards for health professionals for all health institutions in the new four-tier system, from health posts to the referral hospital. A professional inventory in 1992 EC demonstrated a large gap between existing numbers and the standard for all types of health professionals. Most facilities ran their promotive, preventive and curative services with minimal professional capacity.

Decentralization and restructuring

In Tir 1994 a major step of decentralization was taken to the wereda level. Administrative boundaries were redrawn, with the region's 12 large towns becoming separate weredas, increasing the number of weredas from 35 to 47. In the health sector, existing zonal

health departments were dissolved. Mekelle became a special zone with a zonal health department, while 34 wereda health offices assumed primary responsibility for implementing health activities in the remaining 46 weredas. The boundary changes were accompanied by a shift of personnel and resources from both the bureau and the zonal health departments to wereda health offices. This has been an important first step to increasing capacity at the district level. New wereda health office heads (newly graduated health officers) were appointed.

At the same time as wereda decentralization, the organizational structure of the Bureau changed, with re-structuring of departments for better administration of the major components of the new five-year health plan. The new structure from Bureau to Wereda Health Office is shown in Figures 1 and 2, at the end of this document.

SWOT Analysis

Assessment of Tigray Regional Health Bureau

The internal environment of the Bureau was assessed using the 7's frame work, which focuses on structure, systems, style, skill, staff, shared values and strategy. The important weakness and strengths identified are presented below.

Weakness

The Bureau has many weaknesses that need to be addressed in order to achieve the stated objectives. Major weaknesses include the following.

Structure related problems: With decentralization, the bureau has undertaken restructuring at regional and wereda levels. The structure is wide and many vacancies remain. There is overlap of roles and responsibilities. There are orphaned activities. The structure is not stratified according to the nature of the activities and workload. The process of restructuring was not proper. Restructuring of health institutions and training schools was not considered.

Human resource development problems: There is no long-term human resource development plan. Expansion of services is rapid, and not accompanied by the necessary human resource development. Services are rendered by professionally under qualified and academically under trained health workers. The capacity of the two regional training schools to train competent professionals is very limited. There is discrepancy between the types of health professionals being trained and their work assignment and job description, i.e. training is specialized but actual work is comprehensive/integrated.

Human resource management problems: There is no up-to-date personnel inventory, which has created problems in assignment of new staffs, transfer and promotion. Staff

turnover especially of high-level professionals is high because retaining mechanisms and incentives are not satisfactory and the working environment is often not conducive. High-level professionals assigned to Tigray are not accepting assignment because the bureau is not attracting them and the country has an inadequate human resource management system. Guidelines on transfer, promotion and scholarship grants are not clear and transparent. The scholarship grants system is variable and not uniformly applied.

Poor planning system: With decentralization there is a problem to develop synchronized regional and wereda planning. The government budget is decentralized to weredas but donor assistance budgets are at regional level. The government wereda budget allocation formula may not consider the epidemiological pattern of diseases. With the limited health budget, there is resource duplication in some and shortage in others.

Poor program/project monitoring system: Health programs/projects are many and are usually donor dependent. Performance according to project agreements is crucial for timely release of budgets from donors. But our implementation capacity is very low and our financial management utilization system is very poor. The bureau is losing a significant amount of funds because of liquidation delay and poor utilization. There is also poor follow-up of budget, especially from donors.

Poor financial management and utilization: Lack of up-to-date balance of accounts and budget liquidation delay are the bottlenecks for program/project management. Without up-to-date balances it is very difficult to think of reprogramming and re-allocation. If budgets are not liquidated per agreements, it is hard to get the next budgets released.

Poor logistics system: The bureau deals with a huge amount of medical and non-medical supplies and needs to manage logistics systems well in order to accomplish objectives efficiently, effectively and timely. Logistics management is a very critical issue. Logistics related problems are many. The most important ones are unacceptable delay and poor quality of non-medical logistics system; non demand-based drug and medical supply systems; maldistribution of drugs and medical supplies and equipment, and poor maintenance capacity (for medical and non medical equipment).

Poor health information system: There is report redundancy, creating unnecessary workload at all levels of the health care delivery system. Reports are not timely and are of poor quality. Data are not maximally utilized for better project programming, management, and strategy formulation.

Poor management systems: At the RHB, with decentralization and civil service reform, power is delegated to respective department and service heads. But the delegated power is not yet exercised well and clients are still not satisfied with the service they are getting. The bureau is known for fast endorsing/adopting changes without adaptation. This has created an increased workload for and frustration in subordinates.

Low service utilization: Along with cultural/religious beliefs, poor quality of health services (low capacity of health workers, shortage of drugs/supplies and poor health education methods) impedes utilization of various health programs.

Strengths

Tigray Regional Health Bureau has internal strengths that should be retained, promoted, and maximally utilized to overcome internal weaknesses and external threats and to maximally exploit opportunities. Among the strengths of TRHB, are.

Staff commitment: The bureau has a large number of dedicated and committed staff, especially those in the frontline who face hardships but are dedicated and committed to improving the health status of the people.

Commitment to improve the management system: The management bodies at all levels of the health sector are taking the initiative and have shown the commitment to improve health delivery at all levels.

Delegation of power: Though not well exercised, it is a good and encouraging start to delegate power to subordinates at all level to facilitate performance.

Dissolving of Zonal Health Departments: With decentralization, the bureau has entirely demolished Zonal Health Department, and strengthens Wereda Health Offices. Though the measure taken was not with adequate preparation, in the long run it is expected to have a good effect.

Promoting community-based activities: Community based promotive and preventive activities are mainly accomplished through volunteer community health workers. The bureau gives great recognition to the role played by community health workers, and is trying to use them maximally.

Staff capacity building: The bureau is taking a good and encouraging in finding training opportunities to improve the capacity of its staff at all levels, including supportive and frontline health workers.

Influences from changing environment and growth

External factors directly or indirectly, positively or negatively influencing the performance of the health sector were identified and analyzed using the PEEST technique, which focuses on the Political situation, and Economical, Environmental/Ecological, Societal and Technological factors. These factors are identified as opportunities or threats to the health sector. The main opportunities and threats to the bureau are described below.

Opportunities

Tigray Regional Health Bureau has many opportunities to accomplish its performance in a better way. However, the opportunities are underutilized. The opportunities of the bureau include the following:

Political Support: There is strong government support for health. Health is one of the top priority sectors for resource allocation.

Organized community structure: There is a strong community structure all the way down to the level of twenty households. This is essential for community mobilization and for community based promotive and preventive services at household level.

Community participation: The secret behind the success of health programs such as immunization in Tigray is active participations of community health workers and the community. Other programs/projects need to use such opportunities to expand their services to the majority.

Decentralization: Decentralization is creating favorable condition for efficient and effective implementation of health programs and projects. By demolishing the intermediate bureaucratic structure, the health sector is one step closer to the health services delivery facilities and the community in general. This is important for realistic planning; better implementation; and close monitoring, supervision and evaluation of health services.

Health extension package: This is the current agenda of the government and is a good opportunity for TRHB to expand basic primary health care services down to household level.

Globalization: This could be an opportunity for those who use it, and a challenge for those who do not. TRHB could benefit a lot from globalization, through partnership, and transfer and use of medical and information technologies.

Health care Financing: With rapid expansion of health services, resource constraints are a major challenge. Such constraints will compromise service quality and lead to service under-utilization. The best way to alleviate this problem in a sustainable manner is to introduce additional health care financing options. The government has taken this initiative. TRHB has to use this opportunity to introduce feasible health care financing options to expand and improve quality of health services.

Threats

Tigray Regional Health Bureau faces many challenges in its environment against which it has limited influence. The Bureau considers these as potential threats because its ability to deal with them is so limited. The major threats identified include.

Low health budget: The per-capital expenditure for health is very low, and has not shown improvement with time. With rapid expansion of health services, if the health budget is not improving, the TRHB will face challenges in rendering quality service and in expanding services.

HIV/AIDS: HIV/AIDS has a great negative impact on the health sector. AIDS patients occupy a significant proportion of hospital beds for a longer period of time, and consume drugs and other supplies. This will compromise services and present a burden on the health budget.

Quality of service: Rapid expansion of services will compromise quality of service in two ways. First, expansion diverts attention from quality and second, with resource limitations; provision of standard inputs is difficult. So rapid expansion under resource constraints will compromise quality of services, leading to underutilization of services.

Attracting high-level health professionals: Competing for high-level professionals especially physician's remains a challenge for TRHB.

Retaining qualified professionals: The market demand for qualified and experienced professionals is high. The bureau will thus face a challenge to retain such professionals.

Poverty: Poverty is a major threat for the health sector. Poor people are at high risk of developing malnutrition, which in turn leads to high mortality, and high disease burden. The poor cannot afford health service fees.

Rapid population growth: In addition to the many other socio-demographic and environmental impacts, uncontrolled population has negative impacts on the health sector. Rapid population growth entails health service expansion. Rapid population growth is associated with environmental pollution, which in turn leads to high disease burden.

Environmental Control: The environment is the source of infection. Developmental endeavors bring about ecological/environmental changes, which in turn become health hazards if not managed properly. Water-harvesting activities, on one hand are good strategies for poverty reduction. On the other hand, they predispose to water borne and water related diseases if not managed properly from the onset. Currently different industrial companies and food and drink establishments are flourishing. These can lead to environmental pollution if they are not controlled well from the onset. They can cause immediate, intermediate and long-term health hazards.

Recurrent famine: Famine is a major threat for the health sector. During famine communities are malnourished and prone for epidemics. Managing and controlling epidemics is a challenge. People often migrate during famine, creating a challenge and burden for health service delivery.

Stakeholder analysis

The responses of important stakeholders are identified and analyzed below.

Major stakeholder expectation, impact and response

Important stakeholders whose contribution was vital were identified, and expectations, likely reaction to unmet expectations, and degree of importance were analyzed as below.

Table 5 Stakeholder analysis

	Stakeholder	Expectation	Likely reaction	Degree of importance	Institutional response
1	Community	Quality service	Under-utilization	1	Maintain excellence
2	Government	Quality service Timely report Proper budget use	Budget decrease Fire management body	1	Maintain good performance
3	Patients	Quality, timely service	Complaint to authorities Under-utilization	1	Provide quality service timely
4	Donors	Performance per agreed plan	Withhold or withdrawal	2	Perform per agreed plan
5	Staff	Adequate pay Career development Conducive working environment	Attrition Dissatisfaction Poor performance	1	Adequate salary, incentives, career development Create conducive environment
6	Private health institution	Clear working guidelines Technical support Prompt response to needs	Stop providing service	3	Provide clear working guidelines, support and follow up
7	Training schools	Adequate resources (budget, material and human) facilities and follow up.	Poor products	2	Allocate adequate resources, regular follow up.
8	CHWs	Refresher training, recognition, necessary supplies and supportive supervision	Attrition Poor performance	1	Regular refresher training, award good performers, provide adequate supply regularly, continued supervision.

Public opinion on specific health programs (Focus group discussions)

Family Planning (FP):

Most female and male participants stated that most women do not use FP methods because of lack of adequate and continuous health education about the need for and safety of different FP methods. Overwhelming illiteracy, backward traditions and false beliefs were claimed to tie them back from family planning service utilization. Ambition for numerous children, who are perceived as privileges and blessings, also played a negative role in FP service utilization. Fear of death of children, especially in lowlands where child mortality is high, has further aggravated the situation since there is a perceived need for more children as some are expected to die.

About half the women participants stated male dominance in decision-making influenced women's right to decide on family size. However, not one male participant shared this idea. Some men participants claimed instead better understanding of FP use among husbands. Some women participants also blamed the tradition of women not feeling free to express their needs/thoughts for the low FP coverage. Furthermore, some participants felt the possible perception of sexual infidelity whenever women started taking FP methods. The same number of men and women also stated that lack of confidentiality among service providers has a deterrent effect, since FP use is associated with sexual disloyalty.

Some women stated that underage marriage in Muslim communities influenced ladies to conceive early and continue child bearing when they were immature and devoid of health education.

Some men made it clear that there was no care as to how children grow once they were born. Some even said, "Let their fate take care of them." There is also ambition for child labor according to a few male participants. Surprisingly, some women urged the government to supply food so that they would keep on child bearing. Some male discussants even reported that food aid played a negative role, since it interfered with the perception that a smaller number of children got better care.

Most women and some men expressed side effects and misperception of sterility after FP use, influenced family planning use.

Solution: Most men and women recommended strengthening health education targeted on the safety and use of family planning method. Providing incentives to family planning service users was also proposed to increase the FP use. In addition, husbands' participation in health education was suggested, for better cooperation between husband and wife. Finally, upgrading health professional capacity and equipment was suggested.

Antenatal care (ANC) and Delivery Service:

All participants agreed that there was low service utilization, the main cause being illiteracy and lack of adequate health education about antenatal and delivery care. Most male and female participants stated distance to health institution and lack of adequate service and supply in the institutions were major contributing factors. Lack of confidence on health institution's service was mentioned, especially low capacity of staff and almost nonexistent supplies (including drugs). According to some participants, fear of referral kept most laboring mothers at home for the above reasons. Some even said "Almost every laboring mother is referred." Furthermore, bad outcomes as a result of late referral and lack of transportation were stated to have influenced service utility.

Almost all female participants from the countryside testified about TBA avoidance by the public, as they were believed to be unskilled and not well equipped. Furthermore, TBAs were said to turn reckless as they learnt the public view towards them and as they received no material or moral support for the services they rendered.

Some male and female participants from the towns stated that the bad hospital image was a deterring factor. Bad approach to patients and an inadequate supply of medicines and other materials were widespread complaints. The same number of participants gave emphasis to the fact that free service turned only free bed.

Some participants incriminated women's behavior for low service utility as they were shy and did not feel free to undergo gynecologic examination and to have attended delivery by professionals, especially when the professionals are male. Some male participants also reported women's physical weakness and feeling of uneasiness during pregnancy was compounded by distance to health institutions and transport problems, and played a negative role in service utility.

Some men and women discussants also mentioned the general trend of hiding pregnancy until it becomes obvious, especially in extra marital pregnancies. Self-assurance in well being as long as the conceptus continues to grow and move was reported to influence service utility. Furthermore, the general tendency of home delivery and preference for elderly ladies' attendance during labor, in addition to bad images of the hospital environment were claimed to be high. Some other factors contributing to low utilization include faith such as "Let Saint Mary take care of me", influence from elderly ladies, reassurance by previous obstetric history and lack of confidence in health institutions' service.

Solution:

- Taking into account the overwhelming culture of delay in seeking help after illness onset, health education targeted to break this trend was proposed by some participants.
- Most urged the government to strengthen the local health institutions with capable staff and adequate supplies.

- The same group of discussants also suggested strengthening the skill and equipment of TBAs.
- Improving health institutions image by providing adequate medical supply and improved patient approach was also suggested.

Maternal Vaccination (Tetanus Toxoid (TT)):

All male and female participants reported misperception of the vaccine as a FP method. Some even claimed there was widespread belief that TT vaccine caused infertility. According to some participants, improvement was noted as people saw mothers who had had TT vaccine continue to give birth. Some women participants blamed the influence of husbands and elderly ladies for low TT vaccination coverage. Side effects such as swelling and pain at injection site were also mentioned.

Solution: All discussants recommended extensive health education to alleviate misperceptions and false beliefs.

Health service utilization by children:

All agreed that health service utilization by children was low. Some women and most men attributed this to distance to health institutions, financial constraints and false beliefs towards childhood illnesses. Childhood illnesses were stated to be perceived either as self-limiting or related to evil spirit. As a result, most stated that community used alternative early treatment including herbs, prayer, holy water and other traditional practices.

Most participants mentioned lack of adequate service in local health institutions. They stated that the local health institutions were ill equipped and understaffed, in terms of quality and quantity. Dissatisfaction of parents with previous medication has a deterrent effect, when they continue to receive prescriptions for similar drugs (syrups). Shortages/lack of drugs were stated as key factor by all discussants.

Some women reported reluctance of parents to seek early medical care because childhood illnesses were considered self-limiting. This is due to inadequate knowledge about the importance of early treatment. Children are taken to health institutions when they are seriously sick. Because they arrive late, the outcome is usually bad, and that in turn affects the attitude towards health institutions, and finally the vicious circle continues.

Solution: Most suggested health education to alleviate deep-rooted false beliefs and to stress the importance of early treatment of children. Other proposals included capacity building in health institutions and sustainable drug and other medical supplies for free and paying patients.

HIV/AIDS:

Lack of adequate and targeted health education in the face of rampant ignorance and backward traditions were considered major problems by most men and some women discussants. Some even claimed the health education to be either lecture type or confusing or even self-contradicting. For example, health education in churches does not advocate condom use and distorts the understanding of prevention methods as some religious people tend to relate condom use with sin and suggest prayer, fasting and other religious duties.

The fact that victims were not encouraged to involve themselves in the fight, as a result of fear of stigma, was given emphasis by most discussants. Some men discussants from the rural areas even condemned the government for not isolating and publicizing cases so that people would understand the extent of the disease spread and ultimately halt expansion of the pandemic.

According to some discussants from urban areas, the key factors for the ongoing spread are poverty and its consequences like prostitution, unemployment, and war.

The absence of low enforcement of premarital screening and ineffectiveness of religious leaders to influence their followers towards sexual loyalty and marriage were mentioned as contributing factors by discussants from the country side. Surprisingly, nobody mentioned lack of awareness of prevention methods as a factor. But to the contrary, only one lady raised bad traditional practices like uvulectomy. Some discussants from the towns stated that increased risky behavior in schools was a contributing factor.

Lack of exemplary behavior from health education providers and administration bodies has influenced the credibility of their teaching, as society stresses more on what someone does than says.

Almost all discussants noted low condom use, as it was associated with promiscuity and sexual disloyalty. Some even stated the presence of some dilemma in the disease's existence. Some reflected the absence of consolidated understanding towards condom use.

Solution: All participants suggested the need for adequate health education. Some gave emphasis to creating a conducive environment to encourage victims to join the fight against HIV/AIDS. Social and medical support was also proposed for victims. Standardized teaching guidelines were recommended for religious people involved in health education. Some urged the government to set effective law enforcement for premarital screening and control of risky behavior in schools.

Epidemic Control and prevention:

All men and women discussants appreciated the ongoing malaria control and prevention activities. However, they noticed a very huge gap in dealing with other diseases. Defects in identifying new disease entities, as a result of low health professional capacity, were also noted. In addition, delayed/inadequate response to new reports from authorities was

claimed to be a tradition. Insufficient activity towards ensuring sanitary environment was noted by some discussants.

Solution:

- Adequate supply of drugs and medical supplies during an outbreak.
- Introduction of epidemic alerting systems, based on early case identification and predisposing environmental phenomena.
- Government and public participation towards ensuring sanitary environment, the way malaria control is conducted.

Environmental health service:

Most men and women discussants stated there was low awareness and practice towards securing environmental sanitation. Most food and drink establishments lack basic waste disposal facilities and latrines according by some urban discussants. All the defects were attributed to low control and follow up by environmental health professionals and administration authorities. Sanitarians were blamed for lack of scrutiny and recklessness during inspection and taking measures respectively. Some participants also mentioned poor integration between environmental health professionals and administrative bodies.

Even though some disagreed, about half of discussants stated there was public awareness of environmental health regulations (9A4/1989). However some indicated that communities did not comply with the regulation. If at all they did, it was out of fear of legal consequences; i.e., sanitary environment for health is not a well-assimilated motto. According to some female discussants, individual efforts were affected by over all practice of the society. For instance, local slaughterhouses, food and drink establishments as well as other households used street and residential vicinity for waste disposal, violating regulations. Other key defects include lack of space for waste disposal, poor control by town administration (municipalities), lack/absence of effective regulatory measures and generally poor infrastructure (sewerage systems).

Most female and male discussants stated that licensing of food and drink establishments was fair. However, as a result of poor follow up and control, the establishments do not sustain standards. Some urban discussants even complained that there was offering license with presumption of ongoing or forthcoming improvement. The fact that metal and wood workshops were scattered and located in residential areas was blamed for affecting the physical and mental well being of residents.

Lack of safe water was reported as a key problem by about half of the participants from the countryside, and leads to use of water from ponds and river. Compared with past conditions however, most appreciated the ongoing improvement in securing safe water. Almost all stated the willing of communities to construct latrines. However, financial constraints held them back from realizing their ambition.

Solution: Real integration between environmental health professionals and administration authorities to ensure sanitary environment was proposed by some discussants. Female participants from the countryside suggested strengthening efforts to

increase adequate and safe water supply. Provision of slabs for free and/or at reasonable price also was a suggestion.

Malaria prevention and control program:

Most discussants stated good public awareness on prevention methods including DDT spray, bednet use and vector control. Most agreed the role of the mentioned methods was vital. However, about half of the participants questioned the fairness of DDT spray coverage and bednet supply. Some even wondered why they were left aside during DDT spraying and bednet distribution, while living in malarious areas.

Some women preferred DDT to bednet, their rationale being the multi-purposefulness of DDT as it eradicates other insects and arthropods. On the contrary, most men preferred bednet as DDT was no longer potent and was harmful to environment.

Solution:

- Fair coverage of DDT spray and bednet provision for free or with reasonable price.
- Strengthening ongoing mass activities in vector control.
- Some urban discussants suggested proper infrastructure for fluid waste was mandatory.

Community health worker activities:

All discussants appreciated the service rendered by primary health workers. They urged the government to improve their skills and equipment. Financial/material and moral support for PHWs was sought by all participants. Extension/expansion of PHW service also was their strong proposal.

Health Institution s service:

Most discussants had a bad image of higher health institutions (hospitals) for having inadequate supply of medicines and bad patient approach by health professionals. They also emphasized the deterring effect of extremely high bed fees and inadequate services for free patients. As far as lower health institutions are concerned, all participants indicated non-existent health care delivery. The underling causes were low capacity of staff and very limited medical supply. Some female and male participants from the countryside described progressive deterioration of service in local health institutions, and they attributed it to restructuring/downgrading of existing health institutions to meet the standard of health posts.

Solution All discussants urged the government to provide adequate medical supply both for free and paying patients. They also added strengthening of staff capacity and equipment. Most suggested good patient approach, especially in higher institutions (hospitals). Some also recommend cut in hospital bed fee.

Free health care service:

Half of the participants agreed there was fairness in provision of free paper. But the other half questioned the fairness: “As long as one comes with three people to testify on his/her favor, he/she can get the paper” the later group added. Some male and female discussants

complained poverty parameters in some areas were too strict in comparison with other areas. Some even blamed wereda restructuring for progressively diminishing attention to their areas.

All discussants stated that although they know nothing for sure as to whether government expense was being reimbursed by service fee at the health institutions, they guessed not. A few participants from towns had an opposite view, and mentioned bed fee in hospitals as evidence, e.g., Shire Hospital.

Solution Most proposed to limit free service to the very needy so that they get complete service. But some objected to this idea because of the overwhelming poverty, and they suggested raising the health budget even at the expense of other sectors like education. At last, the 2nd group concluded by reminding that everything comes after health.

Patients opinion on health service delivery: exit interviews

A total of 934 patients were interviewed during the survey. Fifty-two percent were male and 48% were female. Seventy-five percent of them were paying patients and 25% patients were free patients. Among all interviewed, 92.8% agreed that the institution where they sought care responded to their health problems promptly. There was no difference by the type of institution attended or by geographic area. The proportion agreeing that there was prompt response ranged from 25% in Endalgeda Clinic to 100% in many other health institutions.

The percent agreeing that day-to-day activities of the institution were quality service oriented was 93.3% and did not vary much by geographic area or type of institution. However, at Endalgeda Clinic agreement about quality of service was only 18.8%. The overall percent agreeing that adequate drugs and medical supplies were available was 65.3 %, but this varied by type of institution, and was highest in health centers and lowest in health posts.

Table 11 Degree of patient satisfaction with various services rendered by institutions type, as assessed by patient exit interviews

	Hospitals	Health centers	Clinics	Health posts	Total
Prompt reply	85.2%	96.0%	95.3%	94.9%	92.8%
Daily activities are quality service oriented	89.0%	96.5%	94.0%	92.3%	93.3%
Institution prioritizes patient satisfaction	88.5%	90.9%	90.1%	71.8%	89.1%
Adequate drugs and medical supplies	59.7%	80.7%	60.5%	47.2%	65.3%

Community health worker views on the health services they render.

Local administrators and CHWs themselves assessed community health worker performance, and the role of the TRHB, local administrators and the community in ensuring strongly functioning and continued CHW service provision. Among the CHWs interviewed 98.3 % reported that their service is appreciated by the community. There was no difference by CHW category.

Seventy-two percent of CHWs reported that they get cooperation from the administration and the community in delivering their service. Eighty-nine percent, 70.8%, 66.2% of CBRHAs, TBAs and CHAs respectively reported good cooperation by the administration and community. Fifty-six percent of CHWs suggested that provision of free service by CHWs continue. This response varied by CHW category: 61%, 55.3% and 53.4 % of TBAs, CBRHAs and CHAs respectively suggested continuation of free service.

In regard to the role of the society in ensuring strongly functioning and continued CHW service, 29.6% of CHWs stated that society should provide labor and financial support to CHWs, while the rest (70.4%) suggested materialization of their service timely.

In order to continue providing their services, 46.6% of CHWs stated that the local administration needs to give due attention to CHW service and thus prioritize the health agenda in public gatherings. Thirty-seven percent of CHWs mentioned that the local administrators should mobilize the community for health related activities so as the CHWs keep on the serving the public.

Table 6 Role of administration to sustain CHW services as suggested by CHWs

	Role of administration	Response (n=206)
1	Giving more attention to CHW service	46.6%
2	Community mobilization	37.4%
3	CHW exemption from other responsibilities	6.3%
4	Salary	2.4%
5	Support of any kind	5.3%

For improved and continued CHW service, 35.5% of CHWs suggested that the health sector give refresher training. Twenty-six percent of CHWs reported that the health sector needs to provide medical supplies and stationary timely so as to ensure improved and continued CHWs service.

Table 7 Role of the health sector to sustain CHW services as suggested by CHWs

	Role of health sector	Response (n=200)
1	Employment	23.5%
2	Financial support	10.0%
3	Free health service to CHW families	1.0%
4	Timely material support	26.0%
5	Training	35.5%
6	Un-defined support	4.0%

Administration opinions on health service delivery

Health institutions

A total of 64 wereda and tabia administrators responded to the questions about readiness and willingness of health workers to render quality health care service. Eighty-four percent agreed that health workers strive to provide quality health service. Ninety-two percent claimed that they respond promptly to issues raised by health institutions in their respective areas.

Community based health services by CHWs

Out of 62 administrators, 88.7% agreed that the CHW service is given due attention; 75.4% reported that the public is satisfied with the CHW service and 97% agreed that CHWs need to be paid.

According to the opinion of local administration, materialization of CHWs advice by the public is key to keep CHWs service going. This was similar to what was suggested by the CHWs themselves. In addition labor support on farming and proper CHW selection were mentioned as second and third factors respectively for improved and continued CHWs service.

Table 8 Community role to improve CHW services as suggested by administrators

	Suggestions	Response (n= 68)
1	Labor support on farming	19.1%
2	Cooperate and implement CHWs advice/education	38.2%
3	Implement environmental sanitation	1.5%
4	Monitor CHW activities	3.0%
5	Cash support	11.8%
6	Undefined support	5.8%
7	Moral support	3.0%
8	Respect	1.5%
9	Proper selection	14.7%

The local administration reported that their role in strengthening continued CHW service would be to mobilize the community and provide incentives to CHWs.

Table 9 Role of administration to improve CHW service as suggested by administrators

	Suggestions made	Response (n= 63)
1	Evaluate CHW performance and take corrective action	11.1%
2	Mobilize community	25.4%
3	Create community awareness on health	7.9%
4	Substitute attrition	1.6%
5	Moral support	12.7%
6	Mobilize community to support CHWs	11.1%
7	Undefined incentives	25.4%
8	Exemption from other activities	3.2%
9	Labor support	3.2%
10	Proper selection	1.6%%

The local administrators stated that regular training along with cash support to CHWs would be the role of health sector to sustain the continued service provision of CHWs. Table-6.

Table 10 Health sector role to improve CHW services as suggested by administrators

	Suggestions made	Response (n= 73)
1	Improve supervision and reporting	4.1%
2	Provide adequate drugs/supplies	2.7%
3	Undefined support/incentive	4.1%
4	Regular training	35.6%
5	Material support	15.1%
6	Cash support	31.5%
7	Community mobilization	1.4%
8	Free health service to CHW families	2.8%
9	Involve administration in CHW activity plans	1.4%
10	Moral support	1.3%

Staff

Staff assessed their respective healthy facilities and the TRHB. More than half (56.4%) claimed that award of scholarship opportunities offered by the regional health bureau is not fairly done. About 42 % stated that they are not satisfied with their salary and other incentives. About one third stated that career development is not based on merit. More than one third of the staff stated that trainings are not needs based and problem solving oriented.

Table 11 Health service delivery as perceived by health staff

		Number of respondents	Strongly agree %	Agree %	Disagree %	Strongly disagree %
1	Service is satisfactory	524	39.1	51.1	5	4.8
2	Satisfied with my salary/incentives	529	18.5	39.7	20	21.7
3	Information flow is transparent	495	40	36.6	12.3	11.1
4	Performance appraisal is fair	504	55	33.5	5.6	6
5	Career promotion is merit based	471	36.7	34.0	9.3	20.0
6	I have a great value for my organization	524	68.3	22.3	3.6	5.7
7	My boss appreciates good performance	502	55.2	32.5	6.2	6.2
8	My organization strives for staff upgrading	476	35.7	34.0	8.6	21.6
9	Leadership is ready to respond to issues raised	444	43.5	46.2	6.8	7.2
10	Training is problem solving oriented	471	25.5	43.1	13.2	18.3
11	Scholarship opportunity grant is fair	117	12.8	30.8	9.4	47.0

Private enterprise view on health sector supervision and monitoring system

Representative of 174 enterprises, including food and drink establishments and workshops were surveyed. Ninety five percent responded that there is regular inspection, and 90% stated inspection is supportive. About 20% however, claimed that health inspectors tend to punish rather than to offer advice to bring change. Additionally, 90% commented that health inspectors disregarded economic status of the community when taking measures and/or proposing recommendations.

Table 12 Private enterprises opinion on supervisory role of the health sector

		Number of respondents	Strongly agree %	Agree %	Disagree %	Strongly disagree %
1	There is regular inspection in my institution	174	70.7	24.7	1.7	2.7
2	The inspection is constructive and helpful	170	78.2	12.4	3.5	5.9
3	Warnings and punishment are based on my defects	147	61.9	22.4	4.8	10.9
4	Inspection aims at prevention of defects rather than punishment	164	62.2	18.9	5.5	13.4

Among 42 enterprises that gave additional comments, 41% stated that inspectors should visit them frequently and regularly. Another 24 % commented that inspectors tend to punish than to give advice to correct them, and 19.0% commented that health inspectors need to realize the economic status of the community.

Private health institution opinion on the health sector

Six private health institutions (one hospital, two higher clinics, and three clinics) responded to the self-administered questionnaire. Five out of the six private institutions responded that the bureau provided good support and all six stated that they have a good relationship with the bureau. Four responded that the health bureau has a good enough transparent system. Only three stated that policies and regulations were clear. Three reported that they get prompt service when they go to the TRHB to seek any service, and four reported that the TRHB provides its services to all private institutions fairly.

Table 13 Health sector service as assessed by private health institutions

	Questions asked	Very good	Good	Satisfactory	Poor	Very poor
1	TRHB support to your organization	3	2	1	0	0
2	Relationship with TRHB	3	3	0	0	0
3	Transparency of doing things in TRHB	1	3	2	0	0
4	Clearness of policy and guidelines	0	3		0	0
5	Timely service to private institutions on request	1	2	2	0	0
6	Fairness of the TRHB	1	3	1	0	0

Strategic Issues

Based on the assessment of Tigray Regional Health Bureau (weakness and strengths); identification of influences from changing environments (opportunities and threats); and stakeholders opinion on services utilization and satisfaction, the Tigray Regional Health Bureau has identified and prioritized strategic issues. The prioritizing criteria are: biggest impact, most central, most immediate and close to our values. These strategic issues are considered to have a major role in attaining the organizational objectives, missions and vision. Selected strategic issues are listed below:

1. Structure at all levels
2. Programme/project planning and monitoring system
3. Human resource development and management
4. Financial management and development
5. Logistics
6. Expansion of services and quality of care
7. HIV/AIDS
8. Hospital management and administration
9. Health extension package
10. Health management and information system
11. Operational research

Strategies

Strategic options for the strategic issues were analyzed and appraised using the feasibility criteria (technical, economical, social, political and legal). The selected strategies are presented below.

1. Design proper structure at all levels

- 1.1 Review decentralization; study and design appropriate structure by independent body
- 1.2 Restructure at all levels: Health Bureau, Wereda Health Office, Hospitals, Health Centers, Health Posts, and training schools
- 1.3 Stratify structure based on past activities and work load (health facilities and weredas)
- 1.4 Recruit and re-deploy staff (fill vacancies)
- 1.5 Provide orientation/ training on new roles
- 1.6 Develop/ review job description for health personnel
- 1.7 On going assessment on the new structure

2. Hospital management

- 2.1 Review national guidelines or new proposals on hospital management
- 2.2 Develop and implement guide lines for hospital autonomy with all key actors(bureau, staff, administration, community etc)
- 2.3 Conduct study on hospital autonomy
- 2.4 Develop guidelines
- 2.5 Seek approval to grant autonomy
- 2.6 Publish and disseminate guidelines
- 2.7 Study and implement options of profit sharing and contracting out hospital services
- 2.8 Strengthen twinning with other hospitals

3. Expansion of services and improvement in quality of care

- 3.1 Upgrade national standards
- 3.2 Expand service to underserved areas
- 3.3 Ensure adequate and qualified staffing
- 3.4 Stratify health facilities
- 3.5 Continuous monitoring and supervision
- 3.6 Community contribution for sustainable supplies
- 3.7 Basic life saving services in all hospitals and health centers (Grades A and B)
- 3.8 Develop/review national framework and standards for public private sector collaboration
- 3.9 Select nucleus health posts and/or clinics for future health centers
- 3.10 Conduct studies and survey on users and providers satisfaction and take actions
- 3.11 Ensure adequate drugs and medical supplies

4. Human resource development and management

- 4.1 Develop and implement a human resource development plan
- 4.2 Emphasize comprehensive training
- 4.3 Strengthen and expand existing training schools
- 4.4 Establish or strengthen upgrading training in hospitals as extension of training schools
- 4.5 Encourage and control private health training institutes
- 4.6 Evidence/workload based assignment of staff
- 4.7 Promote gender sensitive capacity building
- 4.8 Revise and implement transfer and scholarship guideline
- 4.9 Invite volunteer expatriates
- 4.10 Provide advanced training opportunities (in land and/or abroad)
- 4.11 Promote correspondence education
- 4.12 Promote in-service training on competitive basis (among trainees and within health facilities)
- 4.13 Develop incentive system for remote areas
- 4.14 Promote career development
- 4.15 Feasibility study on stratified salary scale by area
- 4.16 Study the importance and application of periodic licensing of health professionals
- 4.17 Develop a computerized personnel information management system
- 4.18 Establish regional training center
- 4.19 Develop mechanisms for coordination of training activities
- 4.20 Capacity building for weredas
- 4.21 Promote professional associations
- 4.22 Implement the new civil service reform

5. Logistics

5.1 Efficient and integrated procurement, distribution and storage system

- 5.1.1 Carry out situation analysis on procurement distribution and storage system
- 5.1.2 Develop procurement protocols
- 5.1.3 Upgrade storage system
- 5.1.4 Study and implement partial decentralization of purchasing system to weredas and zonal hospitals

5.2 Efficient and effective drugs, equipment and other supplies management system

- 5.2.1 Disseminate updated guidelines on rational drug use and adverse drug reaction reporting
- 5.2.2 Develop and implement appropriate drug procurement plan
- 5.2.3 Develop and implement redistribution mechanism
- 5.2.4 Study/implement the option of selling excess drugs/medical supplies to private enterprises

- 5.2.5 Computerize the inventory control system with net working
- 5.2.6 Study the value/feasibility of contracting out drug/ supplies

5.3 Resource mobilization for logistics

- 5.3.1 Identify and mobilize resources required to stock health facilities
- 5.3.2 Strengthen and introduce drug revolving fund scheme in all hospitals and health centers

5.4 Institute monitoring system for private pharmacies, traditional healers and media advertisements on health

- 5.4.1 Develop/review and implement national guidelines for private pharmacies
- 5.4.2 Develop/review and implement national guidelines for traditional healers
- 5.4.3 Control media advertisements on health

5.5 Strengthen/establish maintenance system

- 5.5.1 Capacity building
- 5.5.2 Expansion of medical equipment maintenance services
- 5.5.3 Study and implement contracting out garage services.

6. HIV/AIDS /STD

6.1 Prevention and control of the transmission of STD/HIV/AIDS strengthened

- 6.1.1 Promote behavioral change through IEC programs
- 6.1.2 Awareness and knowledge creation
- 6.1.3 Promote and award exemplary behaviors
- 6.1.4 Involve/encourage religious centers by providing standard IEC guidelines
- 6.1.5 Encourage and promote expansion of entertainment services, like theaters, sport, cinema houses
- 6.1.6 Conduct epidemiological surveillance
- 6.1.7 Ensure availability and distribute condoms
- 6.1.8 Capacity building of health workers in STD /HIV/AIDS management, prevention and counseling
- 6.1.9 Provision of HIV free blood/injections at all levels
- 6.1.10 Provide and expand voluntary counseling and testing (VCT)
- 6.1.11 Expand sexually transmitted diseases (STD) syndromic management.
- 6.1.12 PMTCT
- 6.1.13 ARV

6.2 Promote medical and psychosocial support to victim and families

- 6.2.1 Identify resources to stock health facilities
- 6.2.2 Procure and supply drugs, medical supplies and diagnostic equipment
- 6.2.3 Provide medical care and counseling

6.3 Streamline HIV/AIDS related activities

7. Health Extension package

- 7.1 Health extension package geared with other sectoral developmental activities
- 7.2 Model approach
- 7.3 Capacity building/training
- 7.4 Health education/promotion of gender sensitive maternal and child health through health education and behavioral change, communicable diseases control and prevention emphasizing on TB, HIV/AIDS and malaria
- 7.5 Community organizations of influential community members
- 7.6 Demonstration
- 7.7 Regulation - personal household and community hygiene and sanitation promotion through health education and behavioral changes
- 7.8 Develop guidelines
- 7.9 Community mobilization
- 7.10 Revise health extension worker mandate
- 7.11 Integrate and implement all diseases prevention, promotion and control activities under one umbrella – the health extension package.

8 Project/program planning, monitoring and evaluation

- 8.1 Functional planning structure at all levels
 - 8.1.1 Monitor/compile plans
 - 8.1.2 Provide technical backup to weredas
 - 8.1.3 Establish planning framework at all levels
- 8.2 Functional monitoring, evaluation at all levels
 - 8.2.1 Develop verifiable indicators for programs and projects
 - 8.2.2 Develop supervision, monitoring guidelines
 - 8.2.3 Carry out quarterly review of programs and projects
 - 8.2.4 Conduct capacity building on planning, monitoring and evaluation
 - 8.2.5 Computerized project/program follow up
 - 8.2.6 Monitor and evaluate resource utilization on planned activities

9 Comprehensive information system in the health sector utilized and strengthened

- 9.1 Networking
- 9.2 Recording, reporting system and mechanism established
- 9.3 Data collection, compiling and analysis system and mechanism established
- 9.4 Disseminate information
- 9.5 Capacity building
- 9.6 Establish computerized data system at all levels
- 9.7 Information/data utilization for better planning and strategy formulation

10 Financial resource development and management

10.1 Efficient health care financial management established and operational

- 10.1.1 Carry out financial resource allocation analysis
- 10.1.2 Assess available health sector resource in relation to health needs
- 10.1.3 Delegate division heads to manage their finance
- 10.1.4 Develop & implement guide lines on proper financial management system
- 10.1.5 Monitor and evaluate resource utilization on planed activities
- 10.1.6 Develop and implement standards of accounting system (double entry system)
- 10.1.7 Capacity building in health sector financial management
- 10.1.8 Review the effect and impact of pool system
- 10.1.9 Computerize financial data base
- 10.1.10 Develop and implement trainers fee guideline

10.2 Efficient and sustainable health care financing system established and operational

- 10.2.1 Establish donor profile on contribution and support
- 10.2.2 Develop and implement guidelines for health care financing development
- 10.2.3 Promote revenue retention
- 10.2.4 Study and implement stratified users fee
- 10.2.5 Facilitate community contribution

11 Health Research-Health care delivery improved through health research

- 11.1 Reorganize health research center for Tigray
- 11.2 Develop capacity for research
- 11.3 Design, conduct operation and essential research
- 11.4 Disseminate and utilize research findings

Financial Plan

Components		Estimated budget in millions (Birr)			
		1996	1997	1998	Total
1	Health service delivery and quality of care	46.080	47.5200	50.4000	144.000
	1.1 Quality health care delivery	3.888	4.0095	4.2525	12.150
	1.2 MCH	14.400	14.8500	15.7500	45.000
	1.3 Communicable disease control and prevention	9.216	9.5040	10.0800	28.800
	1.4 Environmental health service	4.608	4.7520	5.0400	14.400
	1.5 TB Leprosy control	3.024	3.1185	3.3075	9.450
	1.6 Malaria other vector born diseases control	10.944	11.2860	11.9700	34.200
2	Health facility construction, rehabilitation, expansion	34.965	34.9650	29.9700	99.900
3	Human resource development and management	22.950	24.4800	29.0700	76.500
4	Pharmaceuticals supply and management	28.800	29.7000	31.5000	90.000
5	Health extension package and IEC	8.262	8.7480	7.2800	24.300
6	Establishment of efficient financial management	1.710	1.5300	1.2600	4.500
7	Project /program planning monitoring an evaluation,	.945	.9450	.8100	2.700
8	Health information and operational health research	2.907	2.7630	2.4300	8.100
Grand Total		146.6190	146.6415	156.7395	450.0000

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