

## Review article

# Child health problems in Ethiopia

### EPHA Expert Group

Amha Mekasha<sup>1</sup> Frew Lemma<sup>1</sup> and Tesfaye Shiferaw<sup>1</sup>

**1. Global situation or child health** The world population is growing at an alarming rate and particularly so in the developing nations. Over 80% of the world's children live in the developing world (1) where child mortality and morbidity rates are the highest. Each year about 14 million under-five children die from malnutrition and infection, i.e., 40,000 daily or 2000 per hour, of which 98% occur in the developing countries (1). The main causes of mortality in these countries are diarrhoeal diseases, pneumonia, perinatal and neonatal problems, measles, neonatal tetanus and malaria (Table 1), over 60% of which are preventable at low cost in these countries (2). In 1980, an estimated five million children under 5 years of age, died as a consequence of diarrhoeal disease (3). After the introduction of ORT, a quarter-century ago, over one million young lives are now being saved a year. Still over two million under-five children in the world's poorest neighborhoods die necessarily every year of diarrhoeal diseases (4).

Acute respiratory infections (ARI) are also major causes of mortality among children in developing countries accounting for over four million deaths per year (4). In 1980 there were 2.5 million deaths due to measles but now this is reduced to just over one million a year; and the non-fatal cases have also been reduced. Over the same

period, deaths due to neonatal tetanus fell from 1.1 million to less than 600,000 (4). However, they still remain as the main causes of under five deaths in developing countries. In addition to the above problems, new health problems like HIV I AIDS and substance abuse are emerging besides the resurgence of the old on such as tuberculosis and malaria.

The survival of children is also increasingly under threats of war and instability in Africa, Asia and Bosnia, famine and drought in sub-saharan African countries. Child labour and the life on streets for children are increasing in many countries due to economic recession and migration to the urban areas. Over 100 million 6-11 year-old were not attending school in 1990, the majority of which were girls (5).

With these problems still prevailing we are approaching the end of the century. The rights of child survival, development and protection have yet to be implemented. The observance of the Convention is the appropriate solution to the needs of children. The promises made by the World Summit of Sept. 30, 1991 should be translated from papers to deeds.

It should be noted that even though children are defined as those below the age of 18 years, in this section it refers to children under-five years and/or children under 15 years of age interchangeably, since most of the review materials address this group.

---

<sup>1</sup> From Jimma Institute of Health Sciences, P.O.Box 378, Jimma

### 2. National situation of child health

In 1992 the mid-year total population of Ethiopia was 53 million (6). Children below 15 years of age account for 48% of the Ethiopian population. Children under 5 years of age constitute about 18% and infants are 3.5%. In general, the majority of the Ethiopian population is very young with a mean age of approximately 17 years (7). The health of this large part of the population is featured by high morbidity and mortality. The basic health indicators are as follows (7):

**Table 1: Under - five deaths, developing countries, 1990**

Cause	Annual number of child deaths (thousands)
Diarrhoea	3000
Pneumonia	3560
Measles	880
Whooping cough	360
Neonatal tetanus	560
Tuberculosis	300
Malaria	800
Other peri & neonatal	2470
Others	970
Total	12900

In a community based national survey 38.2% of children (6-59 months) had some type of illness. Diarrhoea and fever were the most common symptoms reported, affecting 8.5% and 22% of sick children, respectively (8). It is also estimated that there are about half a million under-five deaths annually in Ethiopia (6). Hospital data (911) indicate that the major causes of morbidity and mortality are related to infections and malnutrition (Tables 2-5).

#### **Diarrhoeal Diseases**

A nation wide survey in the age group 6-59 months revealed that 8.5% had diarrhoea (8). In general, the median incidence of childhood diarrhoea is 5 episodes/year and mortality rate of 9.2/1000 with 46% of diarrhoea death ratio (12). Health institution reports from all over Ethiopia also show that diarrhoeal disease stands among the top 15 causes of hospitalization (5.7 % ) and are also one of the leading causes of new out-patient visits in both infants and children 1-4 years of age , accounting for 20.1% and 16.9% , respectively (9,10). On the other hand the ORS use rate is quite low i.e. 22% (12).

#### **Vaccine Preventable Diseases (VPD)**

In the developing world of all the under-five causes of death about 16% are due to VPD (6). Tuberculosis is one of the top ten causes of hospital admission and deaths (9). In a national survey among children of 6-10 years age group the incidence rate was 77/100000 (12). The BCG coverage by mid 1994 is 50% for infants (12).

A nation wide survey puts the prevalence rate of measles at 2.2/1000 (12). Recently, epidemics were noted in some parts of the country. During epidemics the mortality rate may reach 20% (12). Tetanus is identified as one of the five killers of infants (13). This may be related to harmful cultural practices related to the newborn care and unsafe delivery practices. The current DPT3 coverage of 38% and TT 17% (12) in accessible areas should be increased to the safest level. The prevalence rate of pertussis has been put at 3.8/1000 in the rural areas (8). In Ethiopia the polio lameness incidence rate is 11.51/1000 population (12). The OPV3 coverage is 38% in accessible areas. Acute Respiratory Infections (ARI) is an important health problem accounting for over a third of the causes of morbidity and mortality in Ethiopian children as elsewhere in the developing world. ARI are the leading causes of out-patient visits in infants and young children (1-4 years) accounting for 27.8 % and 22.3 % , respectively (10). Bronchopneumonia (7.9%) and lobar pneumonia (0.9%) were the second and the 14th causes of hospital admission, respectively, in children under 15 years(9). It is estimated that most children suffer 4-6 episodes per year(14), most of which die mainly as a result of pneumonia. A rural survey revealed that 4.7% of all the illness were due to whooping cough and other coughs (8).

### **Parasitic infections**

Parasitic infections are among the top ten causes of visits to health institutions for the 1 - 4 year age group (10). The prevalence of intestinal parasitism is extremely high (15). The rates vary from place to place; in general most of the children harbour one or more parasites .

### **Nutritional Disorders**

Breast-feeding is one of the determinants of infant survival. In rural surveys virtually all children are breast-fed at birth and the vast majority continue breastfeeding through the first year of life (8) whereas, the trend in the urban areas is on the decline. The weaning period is late with a median of 7.1 months (8). Furthermore, weaning diets are deficient in protein, energy and micronutrients in many parts of the country .

Protein-energy and micro nutrient deficiencies are rampant. Low income, reduced access to quality food, low health state, high rate of illiteracy of women, high fertility and population growth are among the major problems contributing to the increased rate of malnutrition. The daily per capita calorie supply is the lowest (73 %) in the world (6). In a nation wide survey in the 6-59 months age group, 64.2% were found to be stunted, 8% wasted and 47.7 % underweight (8). Hospital discharge summary reports of the Ministry of Health in 1982 E.C. indicate that, from the total discharges, 28.3% of them were children under 15 years (10). Out of these PEM accounted for 4.0% and it was also the 6th leading cause of all hospital deaths with a fatality rate of 151.81/1000 (9). Stunting was noted to set in earlier suggesting the importance of the infancy period in the causation. It is also worth to note that a contrasting difference was observed between urban and rural childrens' nutritional status; the rural children showed markedly worse condition (16).

Vitamin A deficiency leads not only to blindness but also to sharply increased risk of illness, poor growth and early death. A nation wide survey consisting of children from six months to six years old revealed 4.8% and 1 % prevalence of conjunctival xerosis and Bitot's spots, respectively. Both signs of deficiency status were more prevalent in cropping and pastoral agroecological zones compared with cash crop and 'ensete' zones (17).

Rickets is a disease of paradox in a country within the tropics. There are no data on the extent of the problem. However, it is a common problem at health institutions. The problem clearly reflects the virtual absence of health promotion in the health care delivery system. It is among the few preventable diseases with little or no expense or labour.

Iodine deficiency disease is prevalent in Ethiopia. Goiter survey conducted in all regions of Ethiopia, (except Tigray), showed that the prevalence of gross goitre among school children was 30.6% and that of visible goitre was 1.6%. More girls had goitre than boys. The prevalence of goitre was higher in children living at higher altitudes than those at lower altitudes. It is estimated that there are 59% cretins and 176,000 show some degree of developmental and neurological function impairment (17).

### **HIV/AIDS**

As many mothers get infected with HIV many babies are delivered infected; most develop the disease and die early in life. Parental infection leads not only to HIV transmission but also AIDS orphans. In the report of April 1994, among the total reported cases 1.69% were children (18). The orphaned girls join the pool of the high risk groups because of destitution completing a vicious circle of disease transmission.

**Disabilities**

An overall 2.3 % disability rate was reported in the under 15 years children during the 1983 census. Blindness (40.42 % ), physical disability (11.33%) and hearing disability (7.28%). In general the disabilities were higher among the rural children (19). Child abuse and neglect There is lack of systematicallycollecteddata on child abuse and neglect in Ethiopia. However there are events and/or practices such as excessive child discipline by parents or guardians, child abduction, child abandonment, use of children as means of begging, child prostitution, child labour, etc. which need an indepth study of occurrence and determinants (20).

**Adolescent Health Problems**

Adolescence is characterized by rapid biological and psychological turmoil. Risk- taking behaviours are the component of the psychological development in this age group. Most high school students have been found to have started sexual intercourse, consequently some get pregnant (21). Health institution data indicate most of the STDs are among this age group. Further more, because of the high correlation with HIV infection the reservoir appears to be massive. From the report of 1994 of the total HIV cases 4.18% were students and 5.58% between 15 -19 yrs age group (18). Among the high school students in south western Ethiopia 40% practice unprotected sexual intercourse (22). Surveys at schools have shown that use of khat ( catha edulis Forsk) is common mostly in association with cigarette smoking (23,24). Poly-drug abuse are not uncommon.

Use of alcohol is also a very common phenomenon. About a decade ago the problem of petrol and gasoline inhalation has been described to be on the increase (25). Over the recent years, the demonstration of drugs convicts on the media are the ominous signs of the spread, in particular among the young. The extent of the problem is not yet determined but it is a threat to the well-being of the young.

**Maternal Health**

The center of challenge of the health of the child is within the household. Child care is mostly the role of the woman. It would be incomplete to deal with issues of children without that of the mother. Ethiopian women work at home and out, especially in the rural areas. The illiteracy rate of Ethiopian women is exceedingly high. Elsewhere, education of the mother has been consistantly found to reduce birth weight which cosequently lowers child death rates.

In Addis Ababa women were found to eat less than 60% of the calories and 70% of the protein recommended by WHO (26). Over 40% of pregnant women are anaemic (27). Both of the above conditions have been demonstrated to result in intrauterine growth retardation and fetal deaths (26).

**Traditional practices**

A survey in rural Ethiopia has shown that during illness self-care and resorting to traditional healers were 9.2% and 5.1%, respectively (28). There are many kinds of traditional practices in this culturally rich country. It is of paramount importance to promote the useful ones and discourage the harmful practices. Application of dung to that: fresh umbilical stump leading to neonatal tetanus, removal of milk teeth to throat diarrhoea and uvelectomy to treat sore throat, are among the more harmful practices claiming the lives of many.

Table 2: **top 20 Diagnoses of 1-4 Year New Out-patients, Ethiopia**  
(IN BRACKETS ARE %)

1. Acute Upper Respiratory Infection	45193(10.3)
2. Gastro-Enteritis & Colitis	32063(7.3)

## Child health problems in Ethiopia 5

---

3. Infections of skin & subcutaneous tissue	30671(7.0)
4. *Other Helminths	22566(5.2)
5. Ascariasis	21972(5.0)
6. Bronchopneumonia	20349(4.7)
7. Hypertrophy of tonsils & adeno	18321(4.2)
8. *Other Malaria	17411(4.0)
9. Otitis Media & Mastoiditis	17073(3.9)
10. Gastro-Enteritis & Colitis	16980(3.9)
11. *Inflammatory Disease of Eye	16630(3.8)
12. Amoebiasis	11899(2.7)
13. *All other Infective & Parasitic Disease	11002(2.5)
14. Lobar Pneumonia	8563(2.0)
15. Pyrexia of unknown origin (fever)	8517(1.9)
16. *All other diseases of skin	8072(1.8)
17. *Other dysentery	7447(1.7)
18. Acute Bronchitis	5947(1.4)
19. Bacillary Dysentery	5654(1.3)
20. *Other Diseases & Conditions of the Eye	5215(1.2)
All ther diagnoses	105789(24.2)
Total	437143(100)

Source: Ref 10

Table 3: Number and percentage distribution of top 15 diagnoses by age, Ethiopia, 1982 E.C. (1989/90 G.C.) For children under 15 years.

Rank	Diagnosis	Number	Percent
	All Diagnoses	38836	100.0
1	Tuberculosis of respiratory system	15175	39.1
2	Bronchopneumonia	3055	7.9
3	Falciparum malaria (S.T)	1797	4.6
4	Gastro-enteritis and colitis (age 4 weeks to 2 years)	1614	4.2
5	Other accidental causes	909	2.3
6	Marasmus	809	2.1
7	Kwashiorkor	721	1.9
8	Other Meningitis (except meningococcal)	649	1.7
9	Gastroenteritis and colitis (age 2 years and over)	598	1.5
10	Homicide and injury	546	1.4
11	Meningococcal infections	460	1.2
12	Infections of skin and subcutaneous tissue	423	1.1
13	Unspecified Malaria	393	1.0
14	Lobar Pneumonia	376	0.9

15	Pyrexia of unknown origin	355	0.9
	Total of the above	27880	71.8

Source: Ref 9

**Table 4: Top 20 Diagnoses of Under-One year New Out-patients, Ethiopia**

1. Acute Upper Respiratory Infections	41619 (16.1)
2. Gastro-Enteritis & Colitis	40317 (15.6)
3. Hypertrophy of Tonsils & Adenoids	19701 (7.6)
4. Infections of skin & Subcutaneous Tissue	18484 (7.2)
5. *Inflammatory Disease of Eye	13538 (5.2)
6. Bronchopneumonia	12888 (5.0)
7. Otitis Media & Mastoiditis	8310 (3.2)
8. *Other Helminths	7030 (2.7)
9. *Other Malaria	6200 (2.4)
10. Lobar Pneumonia	5507 (2.1)
11. Ascariasis	5453 (2.1)
12. Pyrexia of Unknown Origin (Fever)	4933 (1.9)

13. *Other Dysentery	4873 (1.9)
14. Observation without need for further medical care	4502 (1.7)
15. *All other Diseases of skin	4455 (1.7)
16. *Other Diseases & conditions of the Eye	4277 (1.7)
17. Amoebiasis	3716 (1.4)
18. Acute Bronchitis	3506 (1.4)
19. Influenza	3148 (1.2)
20. Bacillary Dysentery	3130 (1.2)
All other diagnoses	42621 (16.5)
Total	258310 (100)

Source: Ref 10

Table 5: Mortality by diagnosis among 1815 admissions in the paediatric ward, Jemma Hospital, May 1992 to March 1993.

Primary Diagnosis	No. of Admissions	No. of Deaths	% mortality	% of Deaths
Pneumonia	553	45	8.1	32.4
Gastroenteritis	200	22	11.0	15.8
Tuberculosis (all forms)	172	13	7.6	9.4
Bacillary dysentery	44	10	22.7	7.2
Meningococcal infection	41	5	12.2	3.6
Malaria	65	5	7.7	3.6
Neonatal diseases	27	4	14.8	2.9
Others	713	35	4.9	26.2

Total	1815	139	7.6	100
-------	------	-----	-----	-----

Source: Ref 11

### 3. Review of the extent of child health problems in the regions (zones) of Ethiopia.

#### I. Background

The relatively large proportion of children, and the high Infant & Under-five Mortality rate in Ethiopia reflect that this vulnerable population group is of high priority, particularly in need of appropriate and accessible health care services.

Due to varying health service accessibility, level of utilization, etc. , some of the basic indicators differ among regions. For instance Infant Mortality Rate (IMR) shows differences among regions. Gondar, Wellega, Shewa, and Sjdamo had lower IMRs, while Arsi, Gojjam, Illubabor, and Wollo had higher IMRs. The worst IMRs were observed in Gamo Gofa, Keffa, Hararge and Bale. None of these IMRs is within an acceptable level (29). Fertility also varies by region and residence. TFR ranges from 5.1 children per woman in Wollo to 9 in Bale. In Arsi, Bale, Gamo Gofa and Hararge, the difference between rural and urban fertility is significant (29).

The National population density is 47 persons per sq. km. Shewa is the most densely populated with an estimated 120 persons per sq. km. and Bale is the least populated with approximately 14.5 persons per sq. km. (29). Regarding the proportion of urban-rural population there is considerable regional variation, that is, 7.7 % in Gamo Gofa and 28.2% in Showa. Urban settings have high growth rate (5.4%) than the total population (3.2%) (29).

In the previous section, an overview of the major childhood health problems have been described. Even though regional (zonal) level data are scanty and not disaggregated, this part of the review would attempt to present the extent of the problem in the various regions and zones of the country .

#### II. Major causes of childhood morbidity, disability, and mortality in the regions. I.

##### Nutritional disorders.

##### A. Protein-Energy Malnutrition (PEM)

Up to 1983, wastage in rural Ethiopia was between 5-10%. By late 1983, it increased to 15-20% in parts of Wollo, North Shewa and Hararge. In 1984, it further increased to 30 % in Bale and Sidamo (29). Child malnutrition in Bale, Kaffa, Gojam Region which perennially produce food surpluses, was found to be higher than the national average (29). At present, within those regions relatively unaffected by drought, it is estimated that about one third of rural children are chronically malnourished and nearly one-half are underweight (29).

The 1992 rural nutrition survey revealed that stunting affected most of the northern parts of Ethiopia, namely Gondar, Gojam, Wollo and Tigray and also Showa, Sidamo and Illubabor located in the southern part of the central plateau. Tigray and Gondar, in northern Ethiopia, were again most affected by wasting plus underweight and regions of the western plateau and extreme south (Sidamo, North Omo, Borena) were also more affected by wasting and underweight (30).

##### B. Micronutrient Deficiencies

**Anaemia:** In 1982, anaemia was the main cause of death recorded in Illubabor hospital (16.3%) and contributed to many deaths in Gondar (6.9%), Sidamo (2.7%), and Wollo (2.4%) (29). In the Paediatrics ward of Jimma Hospital, among 1730 patients with secondary diagnoses, anaemia (6.6%) was the most commonly diagnosed ailment (II). A relatively high incidence of anaemia prevalence was reported from farming cooperatives in Gondar.

**Vitamin A Deficiency:** Studies showed prevalence rates of Bitot's spot as high as 6% in Gondar and an average prevalence of Bitot's spot to be approximately 1.5%, with higher prevalences in Addis Ababa and lower in Harar, Jimma, Eritrea and Axum (29). Two studies were done in southwestern Ethiopia among children six months to six years old. The first revealed 6.9% prevalence of Night Blindness (XN) and Bitot's spot of 4.6% in Agaro town. This study also documented a significant association ( $P < 0.05$ ) between nutritional status, family income, and the

prevalence of xerophthalmia (31). The second study was done in Jimma town which revealed 1.2% prevalence of Bitot's spots and a significant association between conjunctival xerosis and PEM (32).

Blinding malnutrition was reported from 17 villages in Arsi among children six months to six years of age (33). In this area Vitamin A deficiency of as high as 28.3% was found, but the overall prevalence of xerophthalmia was 10.9% (Bitot's spots prevalence of .8%) (33). Reports of eye clinics showed that among new out-patients under six years old, the rate of xerophthalmia for Bale was 11.9%, Wollega 0.8%, and Shewa 0.3%, with an average of 4.5% (34). A 5.9% rate of xerophthalmia in Gamu Gofa (Gardula) was reported. DeSole reported hyperendemic Vitamin A deficiency in wheat farming areas of Bale & Arsi, i.e. average prevalence of 5.0% for Bitot's spots, 0.8% for corneal xerosis & ulceration and 0.5% for corneal scar (17). In Tigray and Gondar, vitamin A intake was less than 40 % of the requirements and in young children of Arsi pastoralists less than 30% (17).

**Iodine deficiency diseases:** Very low or zero rates of goitre were observed both in school children and household members of Alemaya, Jijiga, Awash and Yabello, while high prevalence rates were observed in both groups in areas such as Gondar, Debarck, Tis-Abay and Felegeneway, in northern Ethiopia (29). A goitre assessment survey was conducted in a peasant association located on a hill around the outskirts of Jimma Town. The study showed that the prevalence of goitre was 30.8% in the general population. The prevalence in the age- group 0-9 years was 27.5 % and in 10-19 years group 32.4% (35)..

**Rickets:** Unhealthy child-care practices such as non-exposure of infants to sunshine and complete covering while outdoors in fear of evil eye contribute to the occurrence of rickets in Ethiopian children. In 1963, a survey in Addis Ababa among 300 children showed that 41% had rickets (36). According to Kloos & Zein, recent observations indicated that rickets is still prevalent in Ethiopia. However, retrospective analysis of childhood admissions between May 1990 -March 1993 in Jimma hospital indicated that rickets was the second commonest diagnosis (4.5%) observed as a secondary diagnosis among 1730 children (11).

## **2. Infection diseases**

Community-based rural survey of perceived morbidity in south-western Ethiopia revealed that 65% of those studied reported illness within 2 weeks prior to the survey. Among the children less than 15 years of age 16.2 % had some kind of illness. The main symptoms reported by children were fever (22/57), cough (14/57) and diarrhoea (10/57) (28). In central Ethiopia (Butajira), the rate of reported illness was 5.8 per 100 person years among children below five years of age. The study also indicated that the mean number of illness episodes per child per year was 2.3, and children living in lowlands were found to experience more illness (28).

On the other hand, the rural national nutritional survey (1992) revealed that, North and East Shewa and Addis Ababa were the regions with the lowest illness prevalence ( $\leq 22\%$ ) while Tigray (61%), N.Gondar and Metekel  $\geq 50\%$  had the highest illness prevalences (30).

A three year review of 1815 Paediatric admissions to Jimma Hospital revealed that 64.2% of all admitted cases were children less than 5 years old. Pneumonia, gastroenterites and tuberculosis were the major causes of admission (11). Malnutrition was found in nearly half of the admitted cases. The study also found an overall mortality rate of 76 per 1000, with a significantly high mortality in severly malnourished children ( $P < 0.05$ ) (11). Major morbidity and mortality findings of recent community-based and hospital-based studies is displayed in Table 6 and 7.

Eventhough they differ in methodology (denominator, study pop., period of investigation), these findings would highlight the major causes of childhood morbidity and mortality in the regions.

Table 6: **Leading causes of childhood morbidity from different studies**

National Rural Nutritional Survey	Percieved Morbidity	Butajira Project	Peadiatric Admission Analysis
<u>Population:</u> Under 5 children	Children <15yrs	Children under 5	Children under 15
<u>Area:</u> All region	Jimma Zone	Central Ethiopia	Jimma Hospital
<u>Total No.:</u> UK*	57	UK	1815
<u>Leading Causes</u> 1. Diarrhoea 2. Fever 3. Dirrhoea + Vomiting 4. Cough 5. Vomiting 6. Whooping Cough 7. Malaria 8. Edema (Kwash) 9. Measles 10. Others	<u>Leading Causes</u> 1. Fever 2. Cough 3. Diarrhoea	<u>Leading Causes</u> 1. Acute Resp. infection 2. Diarrhoea	<u>Leading Causes</u> 1. Resp. disease 2. Gastroenteritis 3. Tb (all forms) 4. Relapsing Fever 5. Meningitis 6. Malaria 7. Typhoid Fever 8. Skin Infection 9. Bacillary Dysentery 10. Others
Total		5.8 per 100	
Proportion = 38.2%	16.2%	Person years	----

Table 7: **Leading Causes of Childhood Mortality of Different Studies**

Jimma Hospital Peadiatric Analysis	Gondar Hospital Childhood Deaths	Butajira Project
Population: child <14	Children 3 days to 15 yrs	Under 5 children
Area: Jimma Hospital	Gondar Hospital	UK

No: 1815	No. 656	
<u>Leading Causes</u>		
<ol style="list-style-type: none"> <li>1. Pneumonia (32.4%)</li> <li>2. Gastroenteritis (15.8)</li> <li>3. Tb (all forms) (9.4%)</li> <li>4. Bacillary Dysentery (7.2%)</li> <li>5. Meningococcal Infection (3.6%)</li> <li>6. Malraria (3.6%)</li> <li>7. Neonatal Tetanus (2.9%)</li> <li>8. Others (25.2%)</li> </ol>	<ol style="list-style-type: none"> <li>1. P.E.M. (24.5%)</li> <li>2. Bronchopneumonia (12.2)</li> <li>3. Pyogenic Meningitis (8.4%)</li> <li>4. Septicemia (7.0%)</li> <li>5. Disseminated Tb (6.1%)</li> </ol>	<ol style="list-style-type: none"> <li>1. ARIs</li> <li>2. Diarrhoea</li> <li>3. Measles</li> </ol>
Mortality		
Rate	73.6% in U5 children	U5MR* = 209/1000

\*U5MR = Under-five mortality rate

**A. Diarrhoeal Diseases (DDs).** The 1992 rural survey indicated a high diarrhoeal burden in Borena (24% ), followed by Tigray, Metekel & North Omo (16%). Low diarrhoeal burden was observed in North Shewa & Addis Ababa (30). However, the figure for the under-fives in Jimma town is 23.6%, with 7.7% having persistent diarrhoea (36). A longitudinal community-based survey in Butajira indicated that acute diarrhoea is the second commonest illness reported (2.4 per 100 person years) and the highest incidence was among children 2 to 6 months old. This study also indicated that in both infancy and children 1-4 years old, diarrhoea was one of the main causes of death (13). The paediatric admissions' review of Jimma Hospital also show that diarrhoea was the second leading cause of admission and hospital death, accounting for 11% & 15.8%, respectively (11).

**Table 8: Morbidity and Mortality due to Diarrheal Diseases in Elght Administrative Regions in Children Under-five years, 1984-1986.**

Region	2-week Prevalence	Projected No. of cases/year	Mortality rate (per 1000)
Arsi	15.5	4.0	10.0
Ababa Ababa	17.4	4.5	4.7
Eritrea	26.2	7.0	27.0
Gondar	23.0	6.2	15.0
Hararg	18.4	5.0	8.3
Kefa	16.9	4.0	7.7
Shewa	16.7	4.0	17.0

Sidamo	15.6	4.0	6.9
--------	------	-----	-----

Source: Ministry of Health, 1990

### B. Vaccine preventable diseases (VPD).

In 1989 in the southern regions of Ethiopia the mortality rate of tetanus neonatourm was found to be 6.7 per 1000 Live Births, accounting for 40% of all neonatal deaths and an estimated incidence rate was 8.4 per 1000

Live Births (12). Polio lameness survey conducted in Arsi, Shoa and Sidamo (1983) revealed a prevalence rate of 3.95 per 1000 and the estimated incidence of 11.5 per 1000 population. In Addis Ababa, the prevalence of the residual effects of poliomyelites in school children was assessed and revealed a 2.7 per 1 000 prevalence rate and an estimated incidence of 7.8 per 100,000 population (12). The Butajira study indicated that measles was one of the main causes of death in both infants and children 1-4 years (13). A community- based survey in rural and urban Gondar Regions reported a higher mortality rate among babies delivered at home (4.5/1000 than those delivered in hospitals (34). A household survey in Arsi, Shewa and Sidamo revealed a neonatal tetanus mortality rate of 0.86/1000 live births and estimated the incidence rate to be 4.3/1000 (34).

Retrospective analysis in the Ethio-Sewidish Paediatric Clinic found the incidence of diphteria to be 0.166 per 1000 population (12). In a community-based study in Konso (Gammo Gofa) during a measles epidemic in 1982, mortality rates between 7.1 and 20.9% were reported for children (34). In Debre Markos Awraja, Gojam region, measles incidence was 7.5% in unvaccinated children and 0.3% in vaccinated children (34). In Yebu town (Jimma Zone), the overall prevalence of tuberculosis was found to be 42.8 % , while the rate (excluding those with BCG scar) was 28.4%. This tuberculin survey also showed 91.3 % PPD test positivity with BCG scar. Among rural elementary school children the overall prevalence of tuberculosis infection is 28.4 % excluding those with BCG scar (37). In Addis Ababa Hospital 1 % of new patients were with TB (34). In tuberculin conversion study after BCG vaccination in infancy and childhood, 45 % of the well nourished and 55% of the malnourished children were found to have a positive Mantoux test. In general, it should be noted that a great deal needs to be done to assess the magnitude of vaccine preventable diseases in the regions.

### c. Acute respiratory infection (ARI)

The majority of cough and whooping cough symptoms reported during a national rural nutritional survey were from the northern part of Ethiopia (Tigray (14%), Metekel (9.5%) and North Gondar (7.5 % ), while the least were reported from East Shewa (1.6%) and Sidamo (1.7%) (2). Respiratory diseases were the first cause of hospital admissions accounting for 40 % of all paediatric admission to Jimma Hospital over three years period (3) (Table 5).

Table 9: types of Respiratory Minesses at Jemma Hopital, 1993.

Type of Respiratory Diseases	Primary Diagnosis	Secondary Diagnosis
1. Pneumonia	553	171
2. Bronchial Asthma	40	-
3. Others (Group, Otitis Tonsilopharyngites, etc.)	24	-
Total	617	171

Source: Meseret Eshetu, 1993 (11)

In addition, pneumonia accounted for 32.4 % of all deaths with 8.1% mortality rate (II). Assessment of childhood deaths in Gondar Hospital revealed that bronchopneumonia (12.2%) stood 2.U among the 5 primary leading causes of deaths (38). The Butajira project showed that ARI accounted for half of all reported illnesses in under-fives. ARI was also one of the major causes of death in this area (13).

### 3. DISABILITY

Prevalence survey of childhood disability carried out in Dedo (Jimma Zone), southwestern Ethiopia, showed a prevalence rate of 15% using WHO methodology (39).

#### D. Intestinal Parasitism (34)

**Amoebiasis:** In Gondar region, *E.histolytica* was reported in 1.5% of a group of 1,203 school children. In 50 farming communities covering five administrative regions an average of 19% of 1850 school children were infected with *E.histolytica*. On the other hand, among school-aged children in Shewa, 12% were found infected by *E. Histolytica*. Among school children in Addis Ababa prevalence rate was 6.5% , while in Deberzeit School children it was 2.2%.

**Giardiasis:** In the above 50 communities giardiasis prevailed in 11 % , the rate in Shewa was 3 % , and Addis Ababa and Deberzeit 9% . **Taeniasis:** In the school children of Gondar 7.11 % had Taeniasis. In Addis Ababa, Harar , Alemaya the rate reached 37% in school children. Doubled rates of Taeniasis in Addis Ababa and Alemaya school children between 1960s and early 1980s was observed. Lower taeniasis prevalence rates were reported from pastoralist population of Ogaden and Awash Valley. No *T.Saginata* was found among school children in two communities of Illubabor.

**Hymenolepiasis:** In 20 communities in and around Hararge, 65 cases of *H.nana* and one case of *H.diminuta* was found among school children. The highest of *H. Nana* in Ethiopia was 61 % among school children in Kemise town (S. Wollo) and < 2% of several pastoral nomads in Awash valley were positive. **Ascariasis:** Distinct geographic distribution of ascariasis show that between 50% and 75% of the children examined in Kefa, Gojjam, Wellega, and Gondar were infected; 10-40% in Wello Tigray, Gamu Gofa, Sidamo, Illubabor, Showa, Bale and Arsi were infected; and below 10% in semiarid regions of Eriteria and Harargie. In central and northern highlands rates ranging from 9-98% , were found. Somewhat lower rates were recently reported from Harargie, with mean prevalence of 19%. In Addis Ababa 50% of children were infected.

**Trichuriasis:** It commonly occurs together with *Ascaris* and mainly affects children. In central and northern plateaus *T. Trichuria* was found with a mean prevalence of 49% .Bure (Gojjam) had a prevalence of 100% whereas Mendida (Shewa) was found to be free of trichuriasis infection. It is in general lower than *Ascaris*, but higher rates were found in the Didessa Vally (Wellega) and in two irrigation schemes in the Awash Vally. In Addis Ababa & Harar infection rate was consistent with that of *Ascariasis*.

**HookWonn Infection:** It is most common in Ethiopia in the 800-1200m. altitudinal zone and in the humid western lowlands. Highest infection rates were found in lowlands of Illubabor, Keffa and Wollega and lowest rates in both dry lowland areas of eastern, southern and northern Ethiopian and highland areas. Prevalence rates in Addis Ababa and other larger towns are low, reflecting influence of the urban physical environment and the greater use of shoes by urban dwellers.

**Strongyloidiasis** -It is low in Ethiopia. Nevertheless, rates of up to 44 % have been reported. Infection is low in many lowland area, including Ogaden and pastoral areas in Awash Valley.

**Enterobiasis:-** Most surveys reported low *E. vermicularis* infection rate. Of 569 school children in rural communities in Gondar Region 5% had *E. vermicularis* eggs under their fingernails while only 0.5% of them were found to shed eggs in stools.

#### Conclusion

Recently, 31% of 569 school children in Gondar had ova, larvae, and/or cyst of *A.lumbricoides*, *E. vermicularis*, *T. Saginata*, *S.stercoralis* and *E.histolytica* from fingernail contents. Hence, the various environmental, social and educational measures must be systematically carried out to reduce the prevalence and intensity of intestinal parasitism in the intermediate and long term by raising the health consciousness of the population, by creating a more healthy physical environment and by promoting socio-economic development; particularly in rural areas.

#### 4. Adolescent health and HIV/AIDS

A study done among street children in 1976 G.C, showed that most Ethiopian boys and girls start sexual relationships at the age of 14 and 15 years (40). In 1990, another study documented that 70% of the youth began sexual intercourse between 14-16 years of age (40). In rural communities, 75% of females get married at the age of 13-15 years. Such early marriages would not last long, hence females tend to migrate to urban areas and are obliged to work in bars. Among high-school students in Jimma town 40% reported unprotected sexual intercourse with one or more partner, while 52.8 % in Gondar had one or more sexual intercourse, with substantial proportion never using condom (22,41). The majority of Gondar High School Students had their first sexual intercourse before reaching 16 years of age (41). In Nazareth town, 23% of the 114 men and 34% of the 126 women studied had more than one sexual partner, and 28% of the men visited prostitutes (42). The aforementioned situations have increased the number of STDs and AIDS among adolescents, the most economically active population group.

The surveillance report of the National AIDS control programme (ACP) indicate that between 1986-89, 1.8% of all reported cases were from regional hospitals. During 1989- 1990 this proportion reached 12.4%. Age distribution of cases revealed that infants accounted for 1.3% , 1-4 years 0.3% , none in 5-14 years, 15-19 years 5%, and 20-29 years 42% .In rural areas, high risk practices for HIV infection and transmission was documented among rural residing exsoliders, merchants and students. In this study 45-50% reported extramarital sex within 3 years and 25-37% had sex with urban commercial sex workers (43).

#### 5. Maternal health

Anthropometric measurements of women in reproductive age group in Jimma revealed that 60% of women weighed more than 40 kgs, 37% between 40-50 kgs and 3% lower than 40 kgs (44). The Body Mass Index (BMI) showed that 11.5% were below the 18.5 kg/m<sup>2</sup> cut-off point (44). In Sidamo, on the basis of BMI, 16% of the 226 women studied were classified as suffering from second or third-degree energy malnutrition (34). A community-based anthropometric assessment of Oromo, non- pregnant women of child bearing age in eight peasant associations in Jimma Zone found the mean weight to be 46.9 kgs, with 75% weighing less than 50 kgs. The mean BMI was 19.4 kg/m<sup>2</sup> and 35% of the women had a BMI lower the 18.5 kg/m<sup>2</sup> (45).

Anaemia in pregnant woman was assessed in urban (Addis Ababa) and rural (Wolliso) settings. In Wolliso 44 % of the urban attendants and 57% were found to be within 24% to 36% range, indicating the prevalence of mild and moderate anaemia (WHO) (46). Low birth weight (LBW) is one of the most important nutritional indicators in assessment of childhood malnutrition. Estimates of LBW from hospitals ranges from 3% to 17% and 7 % rate was reported from Addis Ababa (34). Community-based study around Jimma Town found a LBW rate of 10.6% (47), while reports from Jimma Hospital found 14.2% had very LBW rate and 31.4% had LBW. The majority of LBW were observed in mothers less than 19 years and 20-25 years old (48).

#### 4. Review of policy options, plans and ongoing interventions for child health in Ethiopia.

##### 1. The Problem (Magnitude, Pattern and context)

The review of major indicators on child health in Ethiopia shows that the situation is quite grave(49).

The rates of infant and under-five mortality in Ethiopia are very high. It is estimated that children below five years of age account for about 50% of total recorded deaths. Sixty percent of the under-five mortalities occur among infants, half of whom die before the age of one month as a result of high perinatal and neonatal deaths.

There is a high number of childhood 'streetism' in urban centers of Ethiopia resulting from broken homes, poverty, displacement, rural-urban migration, etc. The estimated prevalence of childhood disability is close to 15% which is much mgner than that for adults. The practice of child abuse and neglect, though not systematically reported, is rampant in Ethiopia.

The leading causes of morbidity, mortality and disability in Ethiopian children are malnutrition, diarrhoeal diseases, vaccine preventable diseases, acute respiratory infections and locally endemic diseases including malaria, tuberculosis, etc. For Ethiopian mothers, the leading threats to health are associated with pregnancy and childbirth. They also suffer from malnutrition, anaemia and from locally endemic diseases such as tuberculosis, malaria, etc.

The situation of health and disease of children and mothers in Ethiopia depicts three patterns (50):

1. There are interactions among health problems. The leading causes of morbidity and mortality in children are known to greater extent. But it is important to understand the ways in which these causes interact with one another, often reinforcing one another .

Thus, malnutrition renders children more susceptible to infectious diseases, such as diarrhoea and respiratory infections. Diarrhoea and other infections, in turn, exacerbate the malnutrition, and the child can thereby cycle downward in a deterioration of health.

2. The health problems are interactive with social and economic factors.
3. Ethiopian children and mothers have differential access to PHC and other levels of health services. Such interactions of the causes of disease/death are more common among children who live in poverty and deprivation. Managing such disease complexes often requires dealing simultaneously with more than one condition.

Efforts to limit morbidity /mortality are often thwarted. For instance, even though 20-25% of under-five mortality might be due to vaccine preventable diseases, immunizing the children they not decrease mortality by that amount. Even if protected by immunizations, the children might retain vulnerable to malnutrition and diarrhoea or respiratory infections.

Conditions affecting Child survival and development are interlinked(29). Those factors which cause high rates of child death are similar to those which prevent children from developing physically and mentally. Furthermore, the survival and development of children cannot be separated from the development of women. The women's situation is an integral part of child health.

The high morbidity and mortality burden in children and the women are the end result of a series of processes operating at various levels in the Ethiopian society. They are complex and may be addressed in the context of the country's low level of socio-economic Development(29,51,52).

## **II. Policy and Plans (53,54,55,56,57,58)**

Cognizant of the magnitude, prevailing, emerging and resurging health problems of children in Ethiopia, the various sectoral ministries have formulated policies and plans of action.

1. Ethiopia, a signatory to the Alma Ata Declaration in 1978 is committed to the implementation of Primary Health Care as the strategy for health development.
2. The Transitional Government of Ethiopia has adopted and ratified the convention on the rights of the child on December 9,1991. Following its ratification by the Council of Representatives, the convention has become part of the legal system of the country by proclamation No. 101/1992 and was published in the Negarit Gazette on January 30,1992. It empowers the Ministry of Labour and Social Affairs to undertake all acts necessary for the implementation of the convention.
3. To facilitate the task of addressing the vast economic and social problems, the TGE has enunciated the following major policies during 1992 -1994.
  - a) New Economic Policy
  - b) Health Policy
  - c) National Population Policy
  - d) National Policy on Ethiopian Women
  - e) National Social Policy
  - f) Education and Training Policy
  - g) National Disaster Prevention and Management strategy
4. The aims enunciated in the Health, Population, Women, Education and Social policies, in particular, are compatible with those provided in the convention on the rights of the child and Primary Health Care (PHC).
5. The Ethiopian government is committed to the realization of the provisions of the convention on the rights of the child subject to the objective realities of the country. Its commitment is reflected first and foremost, by the ratification of the convention and its incorporation into the country's legislation. It is also shown by the efforts made to prepare a National Program of Action (NPA) for children and women (1994-2000). Furthermore a proclamation (No 102/1994) to ratify the standard basic cooperation agreement between the TGE and UNICEF was enacted on 29 August, 1994

6. The draft NPA was formulated taking the specific realities and capacities of the society into account, hence the goals set are less ambitious than the global goals set by the summit.
7. The operationalization of the NP A is envisaged to be undertaken as part and parcel of the National Development plan, to be executed through existing governmental institutional structures and community organizations.
8. The main problems hampering the implementation of the convention on the rights of the child in Ethiopia lie in the poor socio- economic condition of the country, and the lack of adequate and effective implementation mechanisms.
9. The Health policy of the TGE incorporates the following major principles.-
  - a) Democratization and decentralization of the health service system
  - b) Development of the preventive components of health care
  - c) Assurance of accessibility of health care for all segments of the population, and
  - d) Promotion of the participation of the private sector and NGOs in health care. Child Health is one of the priority areas in the health policy.
10. The strategies which are given special emphasis within the health policy framework are:-
  - a) Democratization and decentralization of the health system
  - b) Intersectoral collaboration
  - c) Health Education
  - d) Promotion of Family health Services
11. The operational strategies of the health sector elaborated in the draft NP A is similar to that of the strategies of the health policy. In both cases, the PHC approach which constitutes curative, preventive, promotive and rehabilitative health care with focus on women and children, is taken as the relevant strategy for Ethiopia.
12. To ensure the implementation and monitoring of child health programs (Expanded Program on Immunization, Control of Diarrhoeal Diseases, Acute Respiratory Infections, Growth Monitoring, Adolescent Health), a Child Health team is designated in the department of Family Health of the MOH. In accordance with the guiding principle of decentralization and democratization, the MOH is responsible for issuing policies, setting national targets and monitoring implementation of programs. The regional health bureaus are responsible for planning, implementation and monitoring of health programs in their respective region in order to achieve the national targets.

The NP A has set the following goals for the improvement of child Health in Ethiopia by the year 2000 (53,59).

1. Reduction of infant and under-five mortality rates from the current 101 and 152/1000 Live births respectively, by 50%.
2. Reduction of MMR (from the current 700/100,000 LB to 420/100,000 LB).
3. Reduction in morbidity, mortality and disability caused by the six child hood diseases through immunization of at least 80% of children under one year of age.
4. Elimination of Neonatal Tetanus via immunization of at least 80% of pregnant women with Tr2 and through the promotion of hygienic and safe delivery practices.
5. Significant reduction in the number of polio cases as a step towards achieving the goal of eradicating polio.
6. Reduction by 95% of deaths caused by measles and a 90% reduction of measles cases.
7. Reduction in the current diarrhoea- associated mortality rate (9.2/100 cases) by 50%.
8. Reduction in mortality from Acute Respiratory infection in children under 5 by 30% 9. Reduction in severe and moderate malnutrition in children under 5 by 50%.
10. Provision of safe, adequate and reliable water supply services to at least 35% of the population.

### III. Ongoing Interventions (59)

#### 1. Expanded programme on Immunization (BPI)

This program was launched in 1980 with the aim of attaining a 10 % increase in coverage per year so as to gain universal coverage by 1990.

The objectives of EPI are to reduce morbidity, mortality and disability in children from the 6 diseases. The strategies adopted are, static, outreach and mobile. As part of the program, several managerial training courses have been conducted involving different levels of health personnel. In view of several constraints including access, logistics, community mobilization, management, etc the coverage remains one of the lowest to date (28%).

#### 2. Control of Diarrhoeal Diseases (CDD)

The objectives of the CDD program are the reduction of diarrhoeal mortality and morbidity. The primary strategy for reduction of mortality due to diarrhoea in Under-five children is effective case management. Morbidity reduction strategies are actions towards hygiene, clean water supply and sanitation, nutrition and immunization.

Few surveys indicated that ORS use rate is 22% and non-treatment rate at 64%. The program has conducted several high and mid-level health professionals training courses on the management of CDD.

The National CDD program became fully operational since 1983. Limited information suggests that these are important variations in mother's knowledge and practices in all the three major components of home case management, continued feeding, increased fluids and timely referral. The program lacks cohesive and systematic communications strategy to ensure the improvements in knowledge and the changes in behaviour at household level. Furthermore, the CDDP does not seem to have been accorded sufficient importance as a key public health intervention.

### 3. Control of Acute Respiratory Infections (ARI)

The ARI program was launched on pilot basis in 1990. The primary objective of the program is to reduce mortality from ARIs, especially pneumonia and secondarily, to reduce the severity and complications of ARIs and encourage the rationale use of antimicrobials and utilization of immunization services.

To enhance the program, physicians and nurses were trained on case management practices. Training was also given for trainers of the future.

The major constraints in the way of expanding the ARI program are insufficient training on proper diagnoses and case management, and the limited supply of drugs.

### 4. Growth Monitoring (GM)

Despite integration of OM and promotion in MCH activities in health units since 1988, these activities are not being adequately performed. Most of the time, they are reduced to weighing and charting of children. Outreach and community-based approaches are limited. Mothers' knowledge on child growth has been found very low in some surveys. The practices such as unhealthy traditional, improper weaning, etc are rampant.

5. Although there are variations of thought on the provision of day-care for children, there are a good number of them particularly in urban areas. Information on the practice, standards of care and the health status are scanty.

6. Available information on the state of health of students and school health service as a whole are scanty. In Ethiopia the overall responsibility of school health is that of Ministry of Education with some technical support from MOH.

7. Services for adolescent health are just starting in the form of generating advocacy from government and communities.

## IV. Considerations to Achieve Optimum and sustainable child Health Care in Ethiopia

### 1 Epidemiological (51,60)

1.1 The leading causes of infant and child deaths are known. But it is of paramount importance to understand the ways in which those causes interact with one another, so that interventions for simultaneous action could be projected.

1.2 In order to focus priorities on the most appropriate interventions for local child health problems and to target health services, reliable epidemiological information is needed. The health units that collect, collate, compile and transmit health related data should know the denominator and what changes are taking place in the catchment area. This is of importance not only for forward planning but setting priorities and use of resources.

1.3 Innovative techniques have been evolved in Epidemiology in recent times. The techniques are quick, easy and readily helpful to assess, analyze and act on health problems particularly in maternal and child health. The innovative techniques of rapid epidemiologic assessment are:-

- 1) Prevalence rates of maternal and child mortality
- 2) Prevalence of disability
- 3) Methods of Surveillance and monitoring
- 4) Indicators of risk and health status

- 5) Sampling methods
- 6) The 'indirect' Health interview Techniques
- 7) Ethnographic surveys

Using these Techniques, Regional, Zonal and Woreda Health Departments may produce data required for planning, prioritising, target setting and monitoring and evaluation within a short time and with less cost. A desirable option is to train front line health workers in the application of the techniques.

1.4 A good deal of research and many programs are aimed at food security. In the area of health, considerable research has been done linking nutrition and infections. But in the area of 'care', there is lack of information in terms of having good assessments of caring practices related to nutrition in our communities.

1.5 To monitor progress in child health, it is important to avoid "the fallacy of the average".

Average levels of immunization coverage, ORT use rate, U5MR, may mask serious disparities among boys and girls, ethnic groups, regions, woredas, economic strata etc. Therefore disaggregating health information and focusing action on specific groups is necessary 2 Technological(51,52)

2.1 Today, the technology and the knowledge are available to deal with many of the causes of disease and death in infants and children: 1) Effective Vaccines

- 2) Antibiotics for respiratory infections
- 3) Contraceptive techniques
- 4) Oral Rehydration Therapy
- 5) Food and Nutrition Technologies 6) Facts For Life Messages
- 7) Social Mobilization Technologies

2.2 The problems lie with application necessitating efforts to reach the population segments.

### 3 Organizational (50,61,62)

3.1 To bring better health for children in our circumstances, efforts need to be centered at household and community level. At this level, key health decisions are made on a daily basis. Households affect health through the food they produce or buy, their source and treatment of drinking water, self care practices, use of traditional healers, purchases from private pharmacies, and as clients of privately and publicly provided health services. The health system should focus on household capacity for health and conceive of health services as support to households.

3.2 Integration of services Child health is dependent upon a continuity between preconception nutrition, a healthy pregnancy, a safe delivery and the satisfactory establishment of lactation. Services should be integrated not only on vertical and horizontal dimensions but across time also.

3.3 Development of PHC that has the potential for incorporating the five cardinal principles: 1) Universal coverage, with care according to need (or risk)

- 2) Effective, Affordable, accessible, culturally acceptable
- 3) Promotive, preventive, curative, rehabilitative
- 4) Community participation so as to promote self-reliance
- 5) Interaction with other sectors of development.

.4

3.4 Realization of a shift from 'intervention' to 'involvement'. It should be recognized that there is a conventional wisdom in every community, and that people are able to think and act constructively in identifying and solving their own problems, the emphasis in health care is shifting from intervention to community involvement.

3.5 The Health sector should be supported by skilful, transparent and strategic management so that it is able to provide optimum care for the population.

3.6 The Health sector problems that need to be addressed: 1) Scarce resources are being used inefficiently

- 2) In the public health care people often face uncaring and inadequately trained staff, long waiting times, inconvenient working hours and they lack confidentiality or privacy.
- 3) In the private sector, people are at risk of financial exploitation with no safeguards against potentially dangerous treatment

3.7 Health institutions, structures and systems need to deal with issues of efficiency, access, cost containment and responsiveness to public demand

3.8 There is a growing body of knowledge about the relative merits of user charges, community financing, insurance, etc to raise cash for the health services

3.9 Governmental and Non-governmental health organizations should attempt to work for equity, avoid duplication of efforts and waste of scarce resources for health care in general and child health in particular.

4) Social-Political-Economic complex (50,55,61,62)

4.1 Health development to be considered as an essential component of social and economic development and not merely as a humanitarian issue.

4.2 One of the most important lessons of the past few decades is that respectable levels of human development have been achieved in low economy countries that have the right priorities. e.g. Sri Lanka, Democratic Rep. Korea, Viet Nam and Egypt.

The point is that human progress need not await national economic prosperity; political will to improve peoples' lives can work miracles even in the midst poverty and under development.

4.3 Culture and Tradition (55) The Ethiopian population exhibits variation and diversity in ethnicity/nationality , language, culture and religion. These variations have important influence on perceptions and concepts of health and disease, and practices which may have positive or negative influences on health including child health. Therefore assessments, analysis and action towards improving child health need to consider these issues.

4.4 Realistic social mobilization, decentralization of services and implementation of policies should be carried out.

4.5 Policy statements, however good they may be, do not generate good results of their own accord. The statements need to be perceived, accepted and understood by all concerned for implementation

4.6 The Economic environment that enables households to improve their own health should be created including poverty reduction schemes, improving the status of women, investment in education, etc.

**Conclusion**

Childhood deaths account for nearly 50% of all deaths in developing countries including Ethiopia. Although initial reductions in mortality can often be achieved through the existing health technology, it is now recognized that sustained reductions in infant and childhood mortalities could be achieved more effectively through programs that address the biomedical, socio-economic, cultural, political and environmental determinants. The design and implementation of Child Health programs that include socio-economic development and behavioral change require the collaborative efforts of planners, service providers and researchers.

**5. Some Areas in which the Ethiopian Public Health Association (EPHA) may play its advocacy roles to improve Child Health in Ethiopia.**

1. Definition of public health

" The science and art of preventing disease, prolonging life and promoting health through organized efforts of society "(63)

It is concerned primarily with health and disease in populations, complementing clinical medicine with its concern for the health of individual patients.

Its chief responsibilities are monitoring the health of a population, the identification of its health needs, the fostering of policies which promote health, and the evaluation of health services.

**2. The objective of Ethiopian public health association**

The Objective of EPHA is the advancement of measures for the promotion of health, prevention of diseases, care of the sick and rehabilitation of the disabled by various strategies including policy recommendations, advancing research, establishing forum of communication, etc.(64)

**3. Some activities EPHA may undertake to improve and advance Child Health in Ethiopia(65)**

1. Develop mechanisms /explore ways to dissolve institutional and sectoral barriers for child health care.

2. Propose resolution in support of the world summit for children which has been ratified by the TGE urging government, Non- government Organizations communities etc to implement it.

3. Formulate strategies to adopt smoke free work places and residential areas in Ethiopia. 4. Develop ways to formulate and enact Public Health legislation in Ethiopia
5. New approaches and strategies should be developed by the public health profession, so that international goals such as HFA/2000, Safe Motherhood and Baby Friendly Hospital Initiative, convention on the rights of the child, etc can be implemented.
6. Develop strategies for extending the benefits of Health Science Technology to children to prevent the proliferation of diseases, strengthen Capacity, spur sustainable development, slow population growth, ease stress on the environment, etc.
7. Establish a Clearinghouse of Child Health information. This would enable professionals from across the country to access important information on health and disease state of children in Ethiopia
8. The Association should collaborate with the Other sister associations or societies for assessment, analysis and action on child health problems.
9. The EPHA should set up sections within the association for M CH, Policy, Planning and Evaluation of Health Services.

### References

1. Forfar JO. Overview: Paediatrics in a changing world. *International Child Health* 1991, II: 1 -12.
2. Grant JP. The state of the World's children. Oxford University Press For UNICEF, 1993.
3. WHO/UNICEF. The Management of Diarrhoea and use of Oral Rehydration Therapy. 2nd. Geneva 1985:6
4. Grant JP. The state of the World's Children. Oxford University Press For UNICEF, 1994.
5. Grant JP. The state of the Worlds Children. Oxford University Press for UNICEF, 1991.
6. Grant JP. The State of the World's Children 1994. Oxford University Press For UNICEF
7. Transitional Government of Ethiopia. Office of the Prime Minister National Population Policy of Ethiopia. Addis Ababa, April 1993.
8. Central Statistical Authority. National Nutritional Surveillance System, statistical Bulletin 113. Addis Ababa May 1993.
9. Ministry of Health. Summary Report on Hospital discharges Addis Ababa, Nov. 1992.
10. Ministry of Health. Comprehensive Health Service directory 1981 E.C. Addis Ababa August 1991.
11. Messeret E. Analysis of paediatric admission to Jimma Hospital Paediatric ward: A three retrospective study. *Bull JIHS* 1994;4:1-11.
12. Ministry of Health Document of Child Health Team Office.
13. Desta S et al. The Butajira Project in Ethiopia: a nested case-referent study of under- five mortality and its Public Health determinants. *Bull WHO* 1993;71:389-396.
14. Pio A, Leowski I and Ten Dam HO. Magnitude of the problem of acute respiratory infections. From: Acute respiratory infections in childhood. Proceedings of International workshop sydney, 1984. ed. R.M. Douglas Kerbyeaton.
15. Sioum T, Yahya A and Fisseha HM. Intestinal parasitic infection in pre-school children in Addis Ababa. *Ethiop Med I* 1981;19:35-40.
16. Tadesse M and Tesfaye S. Review of student's anthropometric appraisal of pre- school children in South Western Ethiopia *Bull. JIHS* 1992;2:123-132.
17. Wolde Gebriel Z. Micronutrient Deficiencies in Ethiopia and their inter- relationship. March 1992 (Thesis)
18. Ministry of Health. AIDS case surveillance in Ethiopia: April 30, 1994. *Ethiop I Health Dec* 1994;8:71-86.
19. Transitional Government of Ethiopia. The 1984 population and housing census of Ethiopia. Dec. 1991. Addis Ababa.
20. Daka K. Workshop report on child abuse and neglect in Ethiopia. April 1991.
21. Filmona B and Pickering I. High School students knowledge, attitude and practice of contraception in Harar Town, Eastern Ethiopia. *Ethiop Med I* 1994; 32:151-159.
22. Tesfaye S, Silesy D and Messeret S. contraception, demography and sexual behaviours of high school students in Jimma, South-Western Ethiopia. *Ethiop J Health Dec* 7:177 (Abstract)
23. Zein AZ and Masresba A. The prevalence of cigarette smoking among secondary school children in Gondar city , Ethiopia. *Ethiop med* 11979;17:41-46.
24. Fekadu A, Cbali I and Tadesse M. Khat chewing among Agaro secondary school students, Agaro, WouthWestern Ethiopia. *Ethiop Med I* 1994;32 161-166.
25. Fikre W. Inhalation of petrol (Gasoline, Benzene) in Ethiopia. *Ethiop Med I* 1983;21:19-26.
26. Naeye RL and Nebiat T. Fetal growth In risk factors in pregnancy and diseases of the fetus and newborn. pp 5455. Baltimore. Williams and Wilkins. 1983:54 -55.
27. Solomon D. prevalenc of anemia in pregnancy. *Bull IIHS*, 1992;2:68-82.

- 
28. Tesfaye S et al. The illness burden and use of health services in a rural community, South-Western Ethiopia. *Bull JIHS* 1992;2:2-13.
  29. United Nations Children's Fund. *Children and Woman in Ethiopia A Situation Analysis*. Addis Ababa, 1989.
  30. Central Statistics Authority .Report on the National rural nutritional survey. *Statistical Bulletin* 113, Addis Ababa, March 1992.
  31. Abebe G/M, Ferew L, Wubshet W/M. Prevalence of xerophthalmia in children 6 months to six years of age in Agaro Town. Paper presented at the 4th Annual Conference of EPHA, Addis Ababa, Dec. 1993.
  32. Mahedere S, Fekadu A, Chil I, Fasil T. Prevalence of xerophthalmia among children in Jimma Town, southwestern Ethiopia. Paper presented at 4th Annual Conference of EPHA, Addis Ababa, Dec. 1993.
  33. Tezera F, Yonas T, Wondemu T and Jemal H. Blinding Malnutrition: a serious threat in a district of Arsi zone.
  34. Helmut K and Zein Az. *The ecology of health & disease in Ethiopia*; Oxford, 1993.
  35. Dabi B. Prevalence of Goiter in Irren Village. *IIHS (Thesis)*.
  36. Amha M, Asnake T. KAP study on childhood diarrhoea & its Treatment by mothers of different social status in Jimma town (Unpublished).
  37. Seid M, Fasil T, Assefa A. Tuberculin test survey in Yebu Elementary School children. Paper presented 4th Annual Conference of EPHA, Addis Ababa, Dec. 1993.
  38. Tilabun T. Causes of childhood mortality in Gondar hospital, Ethiopia. Paper presented 4th Annual Conference of EPHA, Addis Ababa. Dec. 1993.
  39. Tesfaye S, Mesfin S. Prevalence and perceived causes of childhood disability in southwestern Ethiopia (unpublished).
  40. Ministry of Health document of Adolescent Health, 1990.
  41. Asnake H et al. Knowledge, attitude and practice on HIV I AIDS among pupils of a rural High school in northwestern Ethiopia. Paper presented 4th Annual Conference of EPHA, Addis Ababa. Dec, 1993.
  42. Hailegnaw E et al. High risk behaviour and use of condoms in Nazareth town, Ethiopia. Paper presented 4th Annual Conference of EPHA, Addis Ababa. Dec, 1993.
  43. Shabir I. High risk behaviour for the spread of HIV infection into rural Ethiopia. Paper presented 4th Annual Conference of EPHA, Addis Ababa. Dec, 1993.
  44. Seid M, Beniam OIE. A cross-sectional study of anthropometric measurements of woman in childbearing age group attending family planning clinic in Jimma town. Paper presented 4th Annual Conference of EPHA, Addis Ababa. Dec, 1993.
  45. Zerihun T. Anthropometric status of Oromo women of child bearing age in rural southwestern Ethiopia (Thesis).
  46. Mathewos w. Abate O, Moller B. Prevalence of anaemia in pregnancy in an urban and rural community of Ethiopia: a preliminary study. Paper presented 4th Annual Conference of EPHA, Addis Ababa. Dec, 1993.
  47. Seleshi TM, Ahmed A. Prevalence of low birth weight in urban areas of southwestern Ethiopia (Thesis). 48: Abebe OM, Sisay W A, Seleshi D, Ayanlem A. A review of first pregnancy in Jimma Town. Paper presented 4th Annual Conference of EPHA, Addis Ababa Dec, 1993.
  49. UNICEF. *Situation Report on children and women in Ethiopia 1993*. Addis Ababa, Ethiopia.
  50. Bryant J, Khan H and Traver I. *Promoting Maternal and Child Health Through Primary Health Care*. In: Wallace H.M. and Giri K. *Health Care of women and children in Developing Countries*. 1990. Oakland, California, USA. 31d
  - Party publishing Company. PP 85-95
  51. UNICEF. *The state of the world's children 1993*. New York. UNICEF, 1993.
  52. UNICEF. *The state of the world's children 1994*. New York. UNICEF, 1994.
  53. Transitional Government of Ethiopia. *Initial Report on the implementation of the convention on the rights of the child*. Addis Ababa. Oct. 1994.
  54. Transitional Government of Ethiopia. *Social Policy*. Addis Ababa. Sep. 1994.
  55. Transitional Government of Ethiopia. *Health Policy*. Addis Ababa. Sept. 1993
  56. Transitional Government of Ethiopia. *Population Policy*. Addis Ababa. 1994
  57. Transitional Government of Ethiopia. *Education and Training Policy*. Feb. 1994.
  58. Transitional Government of Ethiopia. *Women's policy 1994*.
  59. Ministry of Health Ethiopia *Plan of Action for 1994-5 Department of Family Health*. Addis Ababa. 1994.
  60. *Front-line Epidemiology (editorial)*. *J. Trop Pediat* 1991;37:146-148.
  61. World Bank. *Better Health in Africa*. Human Resources and Poverty Division Africa Technical Department Washington D.C. Report No. 12577-AFR. Dec. 1993. PP 1-15.
  62. World Bank. *Health in developing countries: Success and challenges*. *World Development Report 1993*. Investing in Health. Oxford university press. New York. PP 1-35.
  63. Winslow CA. *The untilled fields of Public Health*. *Science* 1920;51:23.

64. Ethiopian Public Health Association [EPHA]. Constitution August, 1991.
65. World Federation of Public Health Association Newsletter. 1994. March 1:3;1-16.

