

Ethiopia

A Country Status Report on Health and Poverty

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ACRONYMS

AIDS	Acquired Immuno-deficiency Syndrome	MMR	Maternal Mortality Rate
ARI	Acute Respiratory Infection	MOF	Ministry of Finance
BCG	Bacillus Calmette Guerin	MOH	Ministry of Health
BMI	Body Mass Index	MOJ	Ministry of Justice
BOD	Burden of Disease	NFFS	National Family and Fertility Survey
CSA	Central Statistical Authority	NGO	Non-Governmental Organization
DALY	Disability Adjusted Life Years	NMOVDC	National Malaria and Other Vector Borne Diseases Control
DLY	Discounted Life Years	PHC/U	Primary Health Care/Unit
DPT	Diphtheria, Pertussis and Tetanus	PHRD	Policy and Human Resource Development
EFY	Expanded Program on Immunization	PO	Project Office
EPI	Expanded Program on Immunization	RHB	Regional Health Bureau
FP	Family Planning	SD	Standard Deviation
GDP	Gross Domestic Product	SIDA	Swedish International Development Agency
GM	Growth Monitoring	SNNPR	Southern Nations, Nationalities and People's Region
GMP	General Medical Practitioner	SNNPR	Southern Nations, Nationalities and People's Region
GP	General Practitioner	SSA	Sub-saharan Africa
HC	Health Center	STD	Sexually Transmitted Diseases
HE	Health Education	TB	Tuberculosis
HF	Health Facility	TFR	Total Fertility Rate
HH	Household	TGE	Transitional Government of Ethiopia
HICES	Household Income, Consumption, Expenditure Survey	TT	Tetanus Toxoid
HIV	Human Immuno-deficiency Virus	UNESCO	United Nations Educational, Scientific and Cultural Organization
HS	Health Station	UNFPA	United Nation Fund for Population Activities
IEC	Information, Education and Communication	WB	World Bank
IMR	Infant Mortality Rate	WDR	World Development Report
IUD	Intrauterine Device	WH	Weight for Height
LE	Life Expectancy Rate	WHO	World Health Organization
MCH	Maternal and Child Health	WMS	Welfare Monitory Survey
MEDAC	Ministry of Economy Development and Co-operation		

EXECUTIVE SUMMARY

A country in transition

With a very low resource base and rapidly growing population, Ethiopia is one of the poorest countries in the world

1. Ethiopia is one of the poorest countries in the world. Its GNI per capita of US\$ 100 (US\$ 668 in purchasing –PPP-parity terms) in 2002 compares poorly with the average per capita GNI of US\$ 450 (PPP US\$ 1,683) for Sub-Saharan Africa (SSA) in 2002, and even more poorly as compared to the world average of US\$ 5,080 (PPP US\$ 7,415) (World Development Indicators, 2003).¹ Millions of Ethiopians continue to live in absolute poverty. The poverty head-count declined only marginally from 45.5 percent in 1995 to 44.2 percent in 2000. As the population grew by 9 million over the same period, the number of people living in absolute poverty has increased steadily.

The political system is in transition, increasing decentralization to the district level.

2. Emerging from civil war in 1991, Ethiopia replaced the Derg regime with a federal structure of government, introducing a new constitution in 1994. The country's first multiparty elections were organized in 1995. Ethiopia now has a parliamentary federal government administering nine regional states and two administrative councils (Addis Ababa and Dire Dawa) which are sub-divided into 560 Woredas (districts). These Woredas, in line with the country's decentralized policy, represent the basic units of planning and political administration. Under these districts are Kebeles or peasant associations.

Ethiopia has been progressively undertaking economic reforms over the last ten years

3. Ethiopia has operated a free-market economy since 1991. The Government introduced an Economic Recovery and Structural Adjustment Program in 1992 to stabilize the macro-economic framework and encourage private sector participation. These economic measures paid positive dividends, reversing years of persistent decline in real GDP which grew on average by 5.8 percent from 1992/93 to 2001/02 while population growth was about 2.7 percent over the same period. The Ethio-Eritrean Border conflict affected GDP growth rates in 1998-2000 and in 2003 the economy faced a sharp decline and a negative growth rate as a result of the drought which affected 14 million people.

Although the economy is highly dependent on the agricultural sector, the service sector is growing and is now the major contributor to overall GDP.

4. The agricultural sector continues to be a major contributor to the overall Ethiopian economy although its contribution has decreased from 54.4 percent in 1982 to 39.9 percent in 2002. Agriculture absorbs over four-fifths of the country's labor force. It

¹By another measure of GDP per capita (constant 1995 US\$), Ethiopia has only US\$ 116 compared to the World average of US\$ 5,631 and Sub-Saharan average of US\$ 564.

accounts for 90 percent of foreign exchange earnings, and the country is highly dependant on its major export, coffee. But agriculture productivity remains low. It is highly vulnerable to external shocks as droughts have occurred every three years during the past decade. The human base for agricultural development is also largely illiterate and inadequately equipped with modern skills, inputs and equipment. The services sector has emerged as the major sector in the economy, growing from 33.2 percent in the 1980s to 47.6 percent in 2002. Industry represents only about 11% of GDP .

A young and rapidly growing population is putting pressure on agricultural lands.

5. Life expectancy at birth (42 years) is slightly lower than the SSA average of 45 years. In 2003, Ethiopia's population was 69.1 million. It is the second most populous country in SSA. The population is growing at an average of 2 million annually between 2000 and 2005, representing a rate of 2.73 percent, which is slightly higher than the SSA average of 2.5 percent. The population is largely rural (83 percent). However, with an urban population growth rate of 4.1 percent as compared to a growth of only 1.9 percent in rural areas, the urban-rural breakdown of the population is slowly changing. Moreover, urban population growth is partly fuelled by internal migration. The population is young, with 44 percent under the age of 15. Such a structure results in a high dependency ratio as well as a future rapid exponential population growth. If this growth does not decline in the coming years, it is expected that the population of Ethiopia will double in about 25 years. Population density is moderate relative to some SSA countries, although it is twice as much as the average for SSA. However it is very high in the highlands, and lowest in the eastern and southern lowlands. About 23.2 percent of the population is concentrated in 9 percent of the land areas putting pressure on cultivable lands and contributing to environmental degradation.

Access to social services is very limited.

6. Despite efforts made by the Government to ensure basic social services, access to services such as water and sanitation is limited. Only 15 percent of Ethiopians have access to improved sanitation compared to the SSA average of 55 percent. Access to clean drinking water is slightly better at 24 percent but it is still much lower than the SSA average (55 percent). Fifty-nine percent of the adult population is illiterate, which is higher than the SSA average of 36 percent, and females have a higher rate of illiteracy. The primary school enrollment rate is 49 percent, also below the SSA average. More than 50 percent of Ethiopians also remain food insecure, particularly in rural areas.

A traditional society where women's social status is still low.

7. While the Ethiopian constitution recognizes the equal rights of women and men, the traditional societal structure keeps women in a vulnerable position. Traditional harmful practices are common with 80 percent of women having undertaken some type of circumcision. A high workload (on average, Ethiopian women work 15-18 hours per day and many domestic tasks in the rural areas are highly labor intensive) and early marriage (the average age of women at first marriage was 17.6 years in 1998) are common. Limited studies and police and media reports suggest that violence against women is

quite high and increasing every year (SCGA 2004). About 25 percent of Ethiopian women have experienced rape (W. Post 2004). Women still occupy a very small percentage of key government decision making positions: 7.7 percent in the House of Representatives and 13 percent in regional councils in 2000.

The Government has renewed its commitment to improve health outcomes.

8. The Government of Ethiopia has recently confirmed its commitment to accelerate progress on maternal and child health outcomes. A reduction in child and maternal mortality rates is among the key objectives of the Ethiopia Poverty Reduction Strategy (PRSP) published in 2002. This strategy outlines the Government's key policy objectives and strategic options for the next five years. One key strategic option of the PRSP for reducing maternal and child mortality is to expand the provision of essential health and nutrition services to the country's rural poor.

Health outcomes are slowly improving but remain low, particularly among rural dwellers and the very poor

Child mortality has declined in the last decade, albeit slowly

9. Starting in the 1960s, Ethiopia has shown a slow but steady reduction in child mortality. Infant and under-five mortality have continued to decline over the past 25 years with a more pronounced reduction in the last decade. Under-five mortality is presently 21 percent lower than it was five to nine years ago. Yet overall, infant and under-five mortality rates remain very high: between 1995 and 2000, almost one in every ten newborns (97 per 1,000) did not survive to celebrate its first birthday, and one in every six children (188 per 1,000) died before its fifth birthday.

Compared to other countries in SSA, Ethiopia's relative performance in reducing child mortality is quite good.

10. In 1960, the Ethiopian child mortality ratio was higher than the SSA average, but it has been slowly catching up. Its performance was good during the 1980s and 1990s when many of the other SSA countries showed a stagnation or even an increase in infant mortality. Ethiopia's performance relative to its per capita income is also rather favorable. It has lower infant and under-five mortality rates, as well as lower levels of wealth-based inequities relative to other countries with a similar per capita income.

At the current pace, reaching child survival MDGs is challenging.

11. Between 1990 and 2000, the rate of decrease in under-five mortality has been around 1.9 per 1000 live births. This contrasts with the estimated rate of 5.2 per 1000 live births needed by Ethiopia to be on a sustained trend towards the child survival MDGs. By 2003, it would have to reduce its under-five mortality rate by 7.4 per 1000 live births in order to achieve the child survival MDGs; this is quite a challenge given past trends and the extent to which the needs for child survival are presently unmet.

Moreover, inequities remain significant.

12. Under-five mortality rates are high in all regions and among all socio-economic groups. More affluent children are nonetheless doing slightly better on average. Infant and under-five mortality rates are 16 percent and 31 percent higher respectively among children from the poorest quintile compared to children from the richest quintile. The urban/rural difference is much more marked: in urban and rural areas, infant mortality rates (IMRs) are 96.5 and 114.7, and under-five mortality rates are 148.6 and 192.5 respectively. Moreover, mortality rates vary between regions. Addis Ababa has the lowest IMR (81) and under-five mortality rate (113), while Gambella has the highest IMR (123) and under-five mortality rate (233). There do not seem to be any gender differentials in child mortality.

The incidence of illnesses contributing to avoidable deaths (Acute Respiratory Infection and diarrhea) are higher in Ethiopia compared to other SSA countries.

13. The high rate of mortality is partly due to living conditions and a high incidence of illness. The prevalence rates of ARI (24 percent) and diarrhea among under-five children in Ethiopia is higher than its SSA neighbors. On average, children under five years experience two episodes of serious illness per year. The environment's infectious pressure is still high. The difference in illness incidence rates between rich and poor appears narrower in Ethiopia than in other countries. Yet the prevalence of diarrhea is higher in the poorest quintile (25 percent) compared to the richest quintile (19 percent).

In Ethiopia, diarrhea and pneumonia are the main causes of early death among children, which differs from the average profile regarding causes of mortality in SSA.

14. With an endemic-epidemic profile, the epidemiological profile in Ethiopia is slightly different from the SSA average. Malaria has a more epidemic profile in the highlands which comprise about 40 percent of the total land area. While malaria is one of the leading causes of morbidity and mortality in Ethiopia, it is estimated to represent only 4.5 percent of the causes of child mortality. According to recent estimates, most deaths among children under five years in Ethiopia can be attributed to pneumonia (28 percent) and diarrhea (24 percent)—a disappearing cause of death in many poor countries. On the other hand, measles (2.2 percent) is less important than a decade ago, the decrease in deaths due to measles having probably contributed to the reduction in child mortality in the 1980s and 1990s. However, HIV has emerged as a growing cause of early childhood death (6.2 percent).

High child malnutrition rates in Ethiopia present a significant obstacle to achieving better child health outcomes.

15. Although stunting has declined by about 14.7 percent from 1996/96 to 1999/2000, Ethiopia still has one of the highest malnutrition rates in SSA and in the world (higher than India and Bangladesh and similar stunting rates as those in Nepal). Severe to moderate stunting is 51 percent, while severe stunting is 26 percent. Forty-seven percent of children under five are moderately to severely underweight. Urban/rural differentials

are not significant but regional differences in child malnutrition are prominent. Stunting is also almost twice as high in SNNP and Amhara as compared to Addis Ababa. The prevalence of underweight children is more than three times higher in Tigray, Amhara and SNNP than in Addis Ababa. A multivariate analysis shows that these regional differentials are significant, with Tigray having higher stunting and underweight rates, while Somali and Gambella have higher wasting rates. Income also plays a greater role on nutritional status than on child mortality. Severe underweight is almost 260 percent higher among children from the poorest quintile compared to children from the richest quintile.

Heavy workloads and poor diets combined with frequent pregnancies also have an adverse impact on women's nutritional status

16. About one out of three women and one out of four mothers of children less than three years old have Body Mass Indices (BMI) that are less than 18.5 indicating that *the level of chronic energy deficiency among adult women is relatively high in Ethiopia compared to other SSA countries*. Among 17 countries surveyed by the Demographic and Health Survey (DHS) from 1998-2002, Ethiopia performs poorly, having the second highest percentage of mothers who fall below the BMI cut-off of 18.5.

Fertility rates have been decreasing dramatically in urban areas, yet more slowly in rural areas.

17. With a total fertility rate (TFR) of 5.9 children per woman in 2000, Ethiopia has already achieved some progress in decreasing its past high fertility levels. Between 1990 and 2000, fertility declined on average by 0.6 birth per woman and the fertility level is now comparable to the average in the SSA region. However, this declining trend will not suffice if Ethiopia is to achieve the national Population Policy targets of 4 children per woman by 2015. Yet some encouraging trends have emerged. The decline in TFR in urban areas has been extremely rapid over the last 10 years—the urban TFR is now 3.3. Addis Ababa even displays an exceptional fertility profile by SSA standards: its TFR of 1.95 children per woman is comparable to the rates found in developed countries. However the decline in rural areas has been much slower and the TFR is still at the much higher rate of 6.4. Fertility is particularly high among the young 15-19 years olds residing in rural areas.

High fertility is a major contributor to poverty.

18. Poverty and high fertility are directly linked. The TFR among the poorest quintile is 6.4 as compared to 3.9 in the richest quintile. An ILO study published in 2003 confirmed that a strong relationship exists in Ethiopia between demographic characteristics and the probability of a household being poor. Large family households with older heads are more likely to fall into poverty than smaller households with younger heads. The addition of one more child increases the incidence of poverty. Reduction in fertility in rural areas is clearly a priority for the poverty reduction agenda.

Maternal mortality is high, and reaching the MDG goal is daunting.

19. Information on maternal mortality is scarce but indirect evidence suggests that the rate is very high. According to 1995 WHO estimates, the adjusted maternal mortality ratio (MMR) in Ethiopia is 1800 per 100,000 live births, a high figure compared to other SSA countries and countries with similar levels of GDP. The MDG goal is to reduce the MMR by three-quarters by 2015. This means that Ethiopia will have to reduce its maternal mortality to approximately 450 in 2015. Countries with a GDP per capita twice as high as Ethiopia's have almost universally been unable to decrease their MMR below 400 per hundred thousand. Therefore, achieving the MMR-related MDG will be a particularly daunting challenge for Ethiopia.

The HIV epidemic has spread rapidly over the last few years.

20. The first AIDS case was detected in Ethiopia in 1986. The prevalence of HIV remained very low in the 1980s but spread quite rapidly during the 1990s. It has been estimated at 6.6 percent of the adult population in 2002, and the epidemic is considered generalized in Ethiopia. By the end of 2001, there were 2.1 million children and adults in Ethiopia living with HIV/AIDS. Although Ethiopia constitutes only 1 percent of the world's population, it contributes 7 percent of the world's HIV/AIDS cases, and in terms of the number of infected persons, Ethiopia ranks fifth after South Africa, Nigeria, Kenya and Zimbabwe in SSA. Tuberculosis is also widespread. Reported TB accounts for 3.1% of all deaths. The incidence ratio of all forms of TB in 2000 is 397/100,000. This ratio is slightly higher than the SSA average of 354/100,000 and significantly greater than the average for low-income countries of 233/100,000. About 30% of all TB cases also are HIV positive.

Household and community factors affecting health: knowledge, attitude and practices

Short birth intervals, a high birth order, a low birth weight, the young age of mothers, and being part of certain religious groups, are all are strongly linked to high child mortality levels.

21. An analysis of the proximate and underlying determinants of under-five mortality sheds light on the strong role played by fertility—birth interval—in driving the high levels of child mortality. Other strong associations are found with religion (lower child mortality rate among Orthodox Christians) and the mother's age (lower mortality rate among children of older women). Low birth-weight is also a key factor in both infant and under-five mortality, death being more prevalent among smaller children. Mother's education (secondary level and up) as well as wealth seem to be only weakly associated with infant mortality. The analysis indicates that there does not seem to be any association between antenatal care (ANC) and delivery by trained professionals and child mortality. However, infants whose mothers received ANC tetanus have a lower likelihood of dying.

Malnutrition is also largely associated with a low level of income and education, and birth intervals.

22. A similar analysis conducted on malnutrition shows that children of educated and more affluent mothers² have a lower likelihood of being stunted or underweight, but there are no differences in the proportion of wasting. Higher parity children are also likelier to be underweight.

While exclusive breastfeeding is high and linked to traditional practices, Ethiopian households lag behind when it comes to other household practices.

23. Early, exclusive and prolonged breastfeeding contributes largely to the nutritional status and Ethiopian mothers fare well in comparison with Ethiopia's neighbors. Exclusive breastfeeding in children less than 4 months' old is 63 percent, among the highest in SSA. Fifty percent of children are breastfed within one hour of birth. Timely supplementary feeding in 6-9 months' old children is also 77 percent. On the other hand, other household practices are less favorable (e.g., the use of iodized salt is still very limited). Less than 30 percent of households use iodized salt, and families from the poorest quintile and living in Tigray have a lower likelihood of using iodized salt. Mother's exposure to media and education is positively associated with iodized salt intake.
24. About 68 percent of the total Ethiopian population is at risk of acquiring malaria infections. However, bed nets are still largely unused in Ethiopia. In 2000 only 1 percent of households owned a bed net, out of which only 17.7 percent were insecticide treated. Even in high malaria prevalence areas such as Afar and Gambella, only 32 and 12 percent of households respectively had a bed net. As a consequence, less than 5 percent of women in endemic areas were sleeping under a bed net.

The use of oral rehydration therapy (ORT) is much lower than in other poor countries, largely explaining the high level of mortality still due to diarrhea.

25. The percentage of children with diarrhea who receive ORT in Ethiopia is one of the lowest in the world. Use of ORT during episodes of diarrhea is more than five times higher in households from the richest quintile compared to children from the poorest quintile. Sixty-two percent in the poorest quintile and 36 percent in the richest quintile do not get any home-based treatment. Forty percent of women in the poorest quintile and 13 percent of women in the wealthier quintile have not heard about ORT. Its use for a recent diarrhea episode is only 8 percent in the poorest, and 33 percent in the richest. Overall, an inexpensive and effective treatment like ORT is largely under-utilized and the potential for improvement in the use of this low cost and low technology intervention is very large.

² These results are similar to of Christiaensen and Alderman (2003) which indicate that household resources and parental education are the main determinants of child nutrition in Ethiopia. They also find prices to be a significant factor although we did not include these in our analysis.

Immunization levels remain low.

26. Ethiopia's immunization performance is mixed. The percentage of 12-23 months' olds who have received one or more of the EPI vaccines is high at 83 percent. However this percentage largely reflects the coverage achieved through the polio eradication program. Other important indicators reflecting the contribution towards a reduction in child mortality by immunizations (such as DPT 3 which, according to 2000 DHS and MIS data are 21 percent and 42 percent, respectively) place Ethiopia among the low performers by SSA standards, far behind Malawi, Zambia, Benin or Ghana. This is largely due to a high drop-out rate between the first and subsequent vaccination, showing that it is difficult for the Ethiopian health system to ensure continuity of services.
27. Various factors significantly affect the immunization status, including the child's order at birth, the mother's education, her partner's employment status, wealth, and region. Tigray and Addis are the best immunization performers. Eighty percent of children living in Addis are immunized for DPT 3 while only 1 percent children living in Afar receive a comparable level of protection. Around 17 percent of children from the poorest quintile have no childhood immunizations compared to 6 percent in children from the richest quintile. Muslim children have a greater likelihood of immunization compared to children from other religions. Boys have a higher likelihood of getting one to three doses of DPT compared to girls.

The use of Vitamin A supplementation is high.

28. Along with a high level of immunization against polio, Ethiopia's performance with Vitamin A supplementation is among the highest in SSA. Approximately 80 percent of children are covered, with the Tigray region having the highest level of coverage. Children from the poorest quintile have a lower likelihood of Vitamin A supplementation. Mother's exposure to media and education is positively associated with its intake.

Antenatal and delivery care are little used even among wealthier groups.

29. In contrast, Ethiopia's performance on antenatal care—including tetanus toxoid vaccination—and delivery care is one of the worst in SSA. The use of these interventions is particularly low in urban areas and almost negligible among the poorest quintile. Wealth-based differentials are most marked for delivery care: among the poorest quintile, less than 1 percent of deliveries were attended by a trained professional. Yet even within the richest quintile, the rate is extremely low, at 24 percent. The regional differences are striking: in Addis Ababa, 74 percent of women receive tetanus toxoid during ANC as compared to only 16 percent in Afar. Sixty nine percent of women used assisted delivery care in Addis Ababa as compared to only 3 percent in Amhara. Women exposed to mass media and with a higher education are more likely to receive maternal health care. On the other hand, women with a higher parity have a lower likelihood of receiving assisted delivery care.

In rural areas, there is a large level of unmet needs in family planning, especially among the poor.

30. Between 1990 and 2000, the rate of contraceptive prevalence in Ethiopia increased from 4 to 8 percent among married women. Yet it is still among the lowest in SSA. More specific to Ethiopia and along the findings regarding fertility, the urban/rural gap is dramatic. The urban contraceptive prevalence rate or CPR (36 percent) is nine times higher than the rural rate (4 percent). The rich/poor differential is also very marked, with 29 percent of wealthier women and only 2 percent of poorer women using any method of contraception. Modern contraception is little used, even among richer groups (12.8 percent). Some regions—Amhara, SNNPR and Tigray—have higher levels of family planning practice. According to a 2004 report,³ this is largely attributable to the role of development associations, including the use of community based distribution agents.
31. Knowledge of modern methods and women’s approval of the advantages of family planning are very high (81 percent), even in rural areas (85 percent for married women). It is striking that the level of unmet need, i.e. the proportion of women who want to space (22 percent) or limit (14 percent) births yet do not do it, is extremely large, at 36 percent nationally. This is the highest unmet need in SSA. It is even high in rural areas (37.3 percent). This suggests a failure of the supply side to respond to a currently high demand for family planning, even in rural areas. Large variations can be found between regions. Unmet needs are higher in Amhara (41 percent), Oromia (36.4 percent), SNNPR (35.5 percent) and Tigray (28 percent). Tackling the lack of family planning in the high fertility rural areas of these regions—which represent 80 percent of the country’s population—appears to be a priority, particularly in order to reach the population policy objectives of 44 percent CPR by the year 2015.

Demand side factors play an important role in affecting family planning use

32. In rural areas, among the poor, the older and less educated, and in large households, women are less likely to approve of family planning and more likely to say that five is the ideal number of children to have. Knowledge of modern methods is also more likely among Orthodox Christians than among Muslims. Significant regional variations are also observed. Tigray seems to have performed better in terms of tackling the demand side. Women in all other regions than Tigray were less likely to know about a modern method or a source for it, or approve of family planning, or have a husband who approves of it. Generally, the husband’s approval seems to be a major constraint. While 60 percent of women approve of family planning, only 34 percent of husbands do. Only among the wealthiest 20 percent of the population can we find a significantly higher proportion of men approving of family planning (close to 60 percent). The involvement of husbands is clearly warranted to tackle the demand-side factors.

Awareness of HIV/AIDS has increased dramatically but remains low among the poorest women.

33. A very high percentage of Ethiopian women (85 percent) and men (96 percent) have heard of HIV/AIDS. This is largely due to government efforts since most people cited community meetings as their main source of information on HIV/AIDS. However, urban and wealthier women are more aware of HIV/AIDS than the rural poor. It is striking that young women are less likely to know about HIV, although according to the latest data they are the ones most exposed to new infections.

Public and private health services are used equally, but mainly by wealthier groups.

34. Data from 2000 show that Ethiopian households seek care in about 41 percent of illness cases. While the poor to rich ratio for incidence of illness is 1.0, the poor/rich ratio for seeking care is 0.68, ranging from 0.54 in Afar to 1.12 in Tigray. Although females report higher levels of morbidity, they are less likely to seek care as compared to males.
35. Nearly 45 percent sought care in a public facility, while the rest sought care from a private facility. Except for the richest quintile, health stations and clinics seem to be the main providers of care, followed by health centers. Both public and private hospitals are frequented more often by the richest quintile of households. Households in the poorest quintile are more likely to use public clinics, pharmacies and other trained private providers instead of public hospitals. The poor/rich ratio is lowest in the case of treatment of a sick child and for immunizations, while it is highest for obtaining information about sexually-transmitted illness.

Care-seeking for children is very low by international standards, even among the richest groups.

36. When looking at the specific pattern of health-care use for children (ARI and diarrhea), care-seeking levels appear extremely low. The level of use of the richest quintile in Ethiopia does not match the care-seeking level of the poorest quintile in many countries of SSA. Seventy-nine percent of children in the poorest quintile and 57 percent among the richest quintile did not seek any treatment in cases of diarrhea, one of the lowest rate of use in the world.

Urban households have a significant advantage in terms of geographic access to health facilities. Residence affects outcomes most while income affects demand for services most.

37. In absolute terms, outcomes and utilization of health services remain low even in urban areas and among the richest households. Urban-rural differences are greater than rich-poor differences in terms of illness prevalence suggesting an important effect of lack of sanitation and other environmental factors on rural women and children's health status. Despite better access to services for urban dwellers, differences in utilization (for example, coverage rates for fully immunized children, DPT3, ANC, assisted deliveries, and family planning) are higher between poor and rich households than urban and rural dwellers (Figures 1 and 2).

Figure 1. Outcome indicators: richest-poorest households; rural-urban households

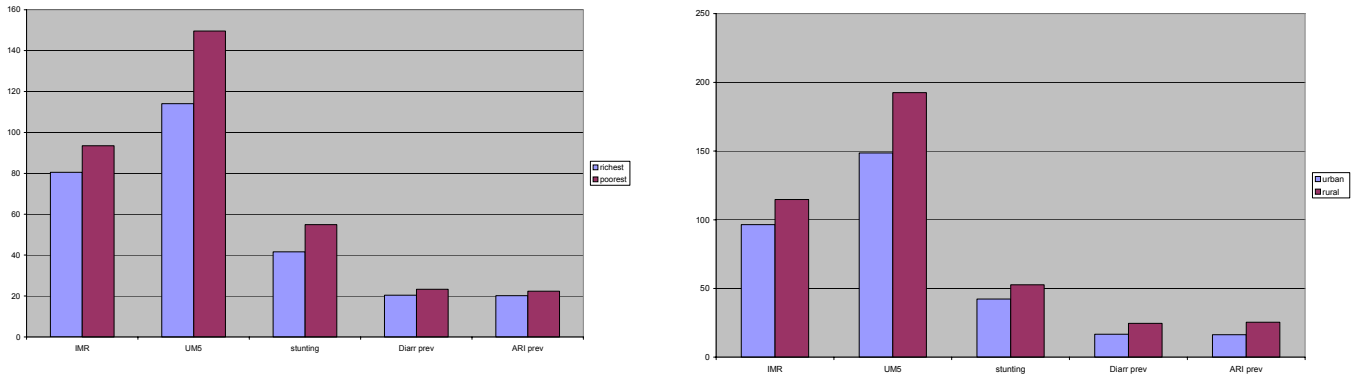
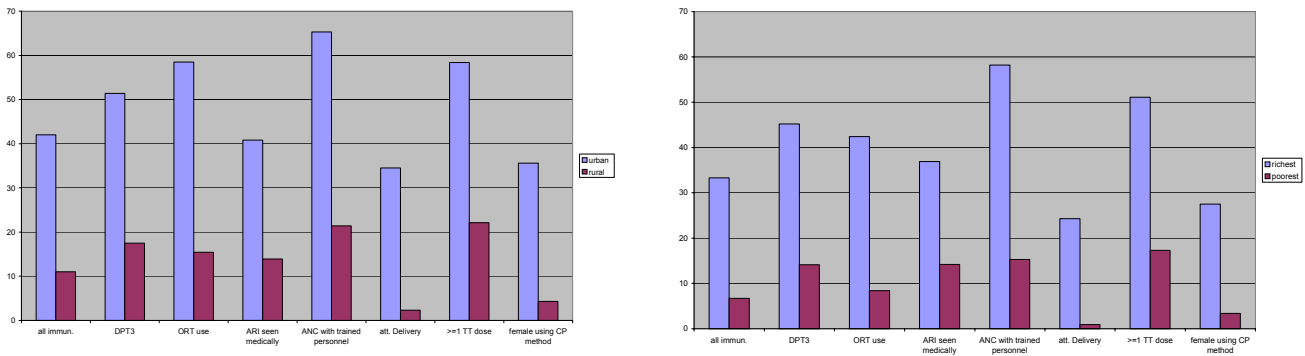


Figure 2. Utilization indicators:, richest-poorest households; urban-rural households



Poor groups do not invest much in health care.

38. In 2000, the average total expenditure for an Ethiopian household was 5,309 Ethiopian Birr (US\$ 67), of which 46 percent went towards food. This same average household spent only 0.9 percent of total household expenditure on medical and health care (50 Birr or US\$ 6.0) representing a small percentage (about 2 percent) of non-food expenditures. Average medical and health expenditures vary widely across regions, with more than 100 Birr in Harari and Addis, and less than 30 Birr in Tigray and Amhara. A large portion of these out-of pocket expenditures is spent on pharmaceutical products, especially in Afar where these represent 75 percent of medical and health expenditures. In absolute terms, the wealthiest quintile spend more than eight times on health than the poorest quintile. However, richer groups also spend more on health in relative terms. The poorest households spend around 0.7 percent of their expenditure on health care while richer quintile households spend 1.0 percent.

The price of health care is highest in public hospitals and lowest in health posts.

39. On average, the expenditure per episode of illness for which a provider was used is 23.5 Birr (US\$0.30 per visit), ranging from 15.3 Birr in Benshangul to nearly 95 Birr in Addis. These expenditures varied across income quintiles, from 15.8 Birr in the poorest quintile

to 37 Birr in the richest quintile. The range between poorest and richest quintile varies between 50.9 Birr and 131 Birr in Addis, to 9 Birr to 23 Birr in Amhara.

40. Average expenditure on the last consultation provides an indirect estimate of the price of services. Price is highest in government hospitals (70 Birr), followed by private hospitals (43 Birr). It is lowest in government health posts and government health clinics (around 10 Birr). Pricing in public facilities seem progressive but low prices may also represent differentials in the quality of care provided. Poor people pay lower prices in government hospitals (50 Birr) than richer groups (90 Birr on average). Pharmacies are an alternative source of care, with an average price of 16 Birr, ranging between 13 Birr to 18 Birr for poor and rich quintiles. In Mission/NGO facilities, the average price is 29 Birr, ranging from Birr 45 for the poorest quintile to Birr 21 for the richest quintile.

The two main reasons for choosing a facility are availability/access (38 percent) and quality of care (23 percent).

Transportation costs represent a high proportion of health care costs.

41. The average cost of transportation to a health provider is 15 Birr. The cost of transportation is highest for government hospitals (22 Birr) and lowest for health posts (5 Birr). The cost of transportation varies widely across regions: it is as high as 73 Birr in Gambella and 51 Birr in Somali, and as low as 4 Birr in Dire Dawa and 5 Birr in Harari.

The performance of health services

Public services are experiencing an extensive decentralization process .

42. Ethiopia has gone through two stages of decentralization over the last few years. During the first stage, functions were decentralized from the central to regional level. In the new health sector organizational framework, the Ministry of Health (MOH) is mainly responsible for the formulation of policies and supervision of implementation, determination of standards, issuance of licenses and qualification of professionals, establishing standards for research and training, and coordination of external loans and grants. During a second stage, decentralization was expanded to the Woredas (districts with an average population of about 100,000), which are now receiving block grants to ensure key public service functions. Woreda Health Bureaus have also been given the authority to hire, fire and manage health personnel. Woredas however still greatly depend on regional and central levels for many health system functions, including the recruitment and allocation of health personnel, and the procurement and distribution of supplies. In general, institutional capacity at the Woreda level for the planning and implementation of health programs and other programs is a concern.

The Government still runs most of the formal health facilities.

43. The Government runs most health facilities existing in Ethiopia today, and the public network has expanded dramatically over the most recent years. Seventy-one percent of hospitals, 94 percent of health centers, 82 percent of health stations and all health posts

are currently run by the Government. On the other hand, the pharmaceutical sector is dominated by the private sector: 85 percent of pharmacies, 81 percent of drug shops and all rural drug vendors are privately-owned.

44. The number of private sector providers has been growing rapidly over the most recent years. Between 1996 and 2002, the number of private clinics has increased from 541 to 1,235, but this formal private sector is present almost exclusively in urban areas. Twenty seven percent of all private clinics in Ethiopia are also located in Addis Ababa, where 50 percent of the hospitals are privately-owned. Outside urban areas, only private drug vendors—not always formal—can be found in the private sector. Between 1996 and 2000, the number of pharmacies increased from 541 to 1,235, drug shops by 108 percent from 148 to 309, and rural drug vendors by 27 percent from 1,460 to 1,856. There may also be some public health workers providing services “on the side,” as reported by some anecdotal information, but there are no firm data to support this. Faith-based organizations and NGOs are also numerous. There are 225 NGO projects in the health sector, health being the single largest sector for NGO involvement. NGOs are also involved in water supply, sanitation, and environmental areas which contribute to health outcomes.

Geographical access to health-care services remains one of the lowest in the world, particularly for clinical care.

45. Between 1996 and 2002, the number of health facilities has grown rapidly. The number of hospitals has increased from 87 to 115, health centers from 257 to 412, and health posts from 0 to 1311. The number of health stations has stayed stable and reached 2,452 in 2002. The average distance to the nearest health facility was 7.7 kilometers in 2000.
46. Seventy percent of households however reside less than 10 km away from a health facility while only about 40 percent of households have access to formal clinical care at less than 5 km or one hour’s walk, the usual standard to measure access. More than 90 percent of households travel on foot, even when the facility is further than 10 kms. Rural/urban differentials are very large, with the nearest health facility in 2000 being 1.4 kms away in urban areas and 8.8 kms in rural areas. Regional differentials are also very large, with distances as low as 1.3 kms in Addis and as far as 9.8 kms in Afar. The differential between income quintile is however less marked although, on average, poorest groups live further away from a health facility than richer groups.

The human resource base is very limited.

47. The human resource base supporting health services is very limited. Ethiopia has one of the lowest ratio of doctors to population in the world. The ratio of nurses to population is slightly more favorable but this number includes large numbers of “junior” or “assistant” nurses with only one year’s training. In 2003 it was estimated that Ethiopia had only 27,183 workers with more than one year’s training for a population of 67 million.
48. As many health staff operate in urban areas, rural areas face a continuous shortage of human resources. In the three largest regions (Oromia, Amhara and SNNPR), less than

one doctor is available per 55, 000 people and one nurse per 10,000 people. Midwifery skills are particularly lacking with large regions such as Oromia or SNNPR having less than one midwife per 100, 000 people.

49. The shortage particularly affects frontline service providers. The number of administrative staff tends to be greater than the number of health workers with a ratio of 2:1. In addition to the relatively large number of administrative and support staff, considerable numbers of trained health workers occupy non-clinical positions, which may not be very efficient in the context of a shortage of clinical skills. For example, in Benshagul-Gumuz, only 5 out of 18 health officers (27.7 percent) are in service delivery positions while the rest occupy either teaching or administrative posts. In Amhara, 38 percent of health workers are employed in Woreda and zonal offices.
50. However, this current bleak situation is already improving. Between 1996/97 and 2001/02, there was a significant increase in the number of health officers and nurses, from 30 to 484 for health officers, and from 4,774 to 12,838 for nurses. Para-medical staff also increased by 107 percent, from 1,788 to 3,706. The number of physicians increased by 27 percent, from 1,483 to 1,888. Yet, the population/personnel ratio has changed only marginally over time. Between 1996 and 2002, the midwife/personnel ratio increased in Tigray, Afar and Addis, but remained almost unchanged in Amhara and Oromia, nor did the population/doctor ratio change in any of the large rural regions. In the context of rapid population growth and increasing attrition in the private sector and migration, changing this situation will require drastic changes in the number of trained workers.

The health care work force is male-dominated, particularly in rural areas.

51. The health care force is male-dominated. Only about 13 percent of physicians, 11 percent of health officers, and 39 percent of nurses are female. Even among frontline workers, only 38 percent are female. In addition the large majority of female health-care workers are located in the urban areas. Addis has the highest female/male ratio (more than 60 percent) among health workers. This is particularly true for doctors and health officers, but even for nurses. As a consequence, rural areas where the need for maternal and child health services are the most acute are mostly served by men. Attracting more females into the health profession faces several hurdles: the rate of secondary education is still low among girls in Ethiopia; fear of AIDS seems to make the health profession less attractive than it used to be; married women tend to follow their husbands and not make independent professional moves; and unmarried women face security problems when living and working in rural areas.

A large number of health worker categories may provide flexibility to the regions but makes evaluation of performance and quality of curricula difficult to manage.

52. The public health system has recently undergone a transition from a six-tier to a four-tier system, and the current staffing status is a mix between the old and the new systems. Some aspects remain ill-defined. For example, staffing norms and the actual status of health stations are unclear because they were supposed to be phased out and replaced

with health posts. Yet regions have continued to construct health posts that offer both preventive and clinical services. Hence some regions have adapted the standard to their own requirements, regional realities and actual workload or utilization. While this approach allows flexibility and local adaptation, evaluating the efficiency of human resources has been complicated by the difficulty to track the relationship between the various types of training and the levels of performance.

53. This is particularly difficult when there are today more than 25 types of health workers, and some curricula are suppressed while others are created. The Qualification Requirements for Health Professionals (1999) contains salary scales and career structures for formally trained health workers, and job descriptions have been developed for at least 90 health cadres and post descriptions for senior positions. There is some overlap among the different job categories (e.g., there are at least 10 nurse categories) and these can be somewhat confusing given the relatively minor differences between some of them. For each type of cadre, there are in most cases five defined career paths. A new health extension worker category has been recently added as a result of establishment of the Health Extension Program. This experience will need to be carefully evaluated.

Training capacity remains inadequate relative to training targets.

54. There are about 30 training institutions located in several regions, which is quite a limited number for a country of close to 70 million people. Overall training capacity remains inadequate relative to training needs and objectives. For doctors and health officers, there are only five universities or higher-education colleges. Twelve nursing schools provide an annual training output of about 2,226 nurses. The actual numbers of trained doctors, health officers, midwife nurses and radiographers are even significantly lower—less than 50 percent for midwives—than targets planned by the Ministry of Health.

Training curricula are not well aligned with intended objectives.

55. Current training is also not well aligned with some objectives, for example, the reduction of maternal mortality. None of the various levels of midwives meet the internationally accepted definition of a midwife. Significant changes need to be made in midwifery training for it to be more in line with the FDRE's public health policies. Existing evaluations of health workers indicate that training for health officers is generally well conceived in terms of community orientation, and focuses on health promotion, illness prevention and essential medical services. It prepares graduates as managers in health centers and as "extensions" of physicians. However, there is a clear need to modify the curricula for junior, mono-disciplinary nursing and midwifery, and frontline cadres in order to better equip them with practical clinical skills, especially if they are expected to function in rural peripheral health units.

The newly developed health extension worker's curriculum aims at rapidly scaling up a program delivering key outreach services.

56. One important policy measure recently adopted by the MOH in 2002/03 was the development of the Health Extension Package Initiative. This program seeks to provide

health promotion and extension services to communities, and is being piloted in five regions. It has been recently revised based on discussions between the MOH, regions, and donors in order to become more responsive to regional/community needs. Different packages of services have been discussed, but health extension services are likely to include immunization, micronutrient supplementation, and family planning, and will link with community promoters' programs as well as clinical referral care.

Salaries of health workers are high relative to GDP, although low in absolute value and in comparison with the international market.

57. Ethiopian medical specialists and general practitioners are paid significantly less in dollar terms than physicians from other countries. The average salary for a medical specialist is equivalent to about US\$ 236 a month. This makes migration very attractive for doctors with prized skills on the international market, particularly surgeons and obstetricians. Yet public salaries for health workers appear to be relatively higher than the average in SSA. While doctors typically receive about 8-12 times GDP as an annual remuneration in SSA, Ethiopian doctors typically receive about 18-22 times. Those salaries have also increased overtime, likely by at least 21 percent in nominal terms and about 36 percent in real terms from 1999 to 2003. The HSDPI evaluation (2003) indicates that there were few recent complaints about salaries and remuneration. Health sector salaries seem to be more or less in line with the minimum cost-of-living increases, and favorable relative to other sectors.

While there have been improvements in salaries and allowances, there are other issues that could be addressed in order to improve job satisfaction among health workers.

58. Provision of staff housing was repeatedly mentioned as a possible motivating factor for higher qualified personnel to stay in remote areas. Training and career development are also important considerations. There is also a general concern of contracting HIV/AIDS and this seems to be increasingly a factor in determining whether to work in clinical services. A survey on quality of health services management (PHRD 1998) also mentioned the following as key problems: work overload, staff shortages, unclear or misunderstood job descriptions, budget shortages, unfair promotions, not getting annual leave at the right time, lack of transport facilities, lack of a safety policy and protective materials, and inadequate care for sick health workers.

Low absenteeism, high motivation and relatively strong work ethics still characterize the Ethiopian health workforce.

59. Despite some observations of absenteeism and high staff turnover among doctors moving from hardship areas, as well as among staff in Regional Health Bureaus, the rate of absenteeism in Ethiopia is relatively low compared to other countries. This may be explained by recent salary increases and the implementation of incentive schemes including hardship allowances, but low absenteeism as well as insights from recent focus groups seem to indicate that there is still a relatively high work ethic among health workers in Ethiopia. Non-salary motivating factors include the more visible opportunities for upgrading and post basic training, as well as an impression that "things

were gradually improving”. Health workers however are often not willing to be posted in rural areas and complain about their living conditions when out-posted. Few data exist on the local distribution of staff in regions and the situation has been quite volatile in the context of decentralization. However, there is clearly a large inequity within regions between the regional capitals and urban centers and rural areas.

Ethiopia still has very few hospital beds, and these are largely concentrated in Addis Ababa.

60. Ethiopia has a very low number of hospital beds in relation to its population. There are approximately 0.20 beds per 1,000 people, slightly less than one-fourth the average for SSA of 1.1 beds per 1,000 population (WDI 2003). Addis, the most developed region, has the largest number of beds, followed by the larger regions (Tigray, Oromia, SNNP, and Amhara). However all the rural regions—with the exception of Tigray—have bed/population ratios lower than the national average of 0.20 per 1000.

Half the existing health facilities need serious repair or upgrading.

61. In a detailed assessment of a sampling of health facilities in 1995, over 50 percent reported leaking roofs, electrical problems, plumbing and sanitary problems. An overall assessment of building conditions showed that 28.8 percent and 15.1 percent needed major repair or total replacements respectively. The availability of water was inadequate and scarce in about 30 percent of health centers. Minimal power supply and attempts for alternative power supply for the facilities did not yield good results. Rehabilitation of health facilities is often limited to preventive maintenance, such as replacing the damaged part rather than rehabilitating functional flaws, correcting the shortcomings for service delivery and adapting it to new health care technology or anticipated future expansions.

Availability of common medicines is generally good but remains a problem in rural areas.

62. In general, it appears that the availability of essential drugs has improved, but shortages of drugs are still common. There are significant differences between various missions and evaluations as to the status of drug and equipment supply in the public sector. A 2002 study indicates that government hospitals have the highest number of selected indicator drugs (82 percent), followed by private drug retail outlets and health centers (72 percent for both). Results for private facilities were unexpectedly low. Private hospitals also have a lower availability of essential drugs than public hospitals (63 percent compared to 72 percent).
63. There is a shortage of pharmacists and druggists in government facilities; they tend to seek employment in the private sector where salaries are more attractive. In 2000, approximately 500 pharmacists were working in the pharmaceutical sector. Only 121 of those were in the public sector as migration to the private sector expanded dramatically over the same period. The number of pharmacy technicians increased significantly in the public sector to compensate for the lack of trained pharmacists. About 26 percent of the surveyed government hospital pharmacies are being managed by druggists or pharmacy technicians, while another 22 percent are being managed by either nurses or health assistants. Forty eight percent of surveyed health center drugs stores are managed by

either nurses or health assistants, and another seven percent are being managed by non-health professionals. Meanwhile 98 percent of private pharmacies are managed by pharmacists, and about 78 percent of private drug stores are managed by the required druggists or pharmacy technicians.

The number of health-care facilities has increased, but utilization of curative services has not.

64. The trend of utilization of services has been disappointing as it has not matched the steady increase in facilities. Outpatient visits remains unchanged at the 2001 level: about 27 new consultations per 100 persons and per year. Utilization is still only about one fourth of the HSDP goal for 2004/05 of 1.0 visit per person per year. The top 10 leading causes of outpatient visits in 2000/01 account for 47.8 percent of total visits. They include consultations related to major causes of mortality: malaria (14.8 percent), pneumonia (8.9 percent), respiratory system infections (7.8 percent), accidents (6.2 percent), abortion (3.9 percent), pregnancy, childbirth and puerperium complications (3.8 percent), cataracts (2.4 percent), dysentery (1.6 percent), gastroenteritis and colitis (1.5 percent), and meningitis (0.9 percent). Few consultations occur for diarrhea which remains nonetheless the main cause of mortality in children under five. The national average bed occupancy rate (BOR) is also very low at 25.4 percent. Addis Ababa has the highest BOR at 175.2 percent. However, all other regions have occupancy rates of less than 50 percent with Somali and Benshangul displaying less than 10 percent.

The quality of care is highly variable.

65. Representative data on technical quality of care is quite limited. A quality index drawn from the 2000 DHS 2000 shows that quality of antenatal care differs significantly between urban and rural areas. The quality of care index in urban areas was 4.5 while only 2.4 in rural areas. This index also varied by region: Addis had the highest (5.1), while Afar had the lowest (2.0). Poor women also received a lower quality of care, although this difference was less than the geographic variation.

In general, clients have expressed satisfaction with NGO and private health facilities and public ones but a higher percentage find the care they receive from public facilities to be below average.

66. In 2001, about 52 percent of respondents perceived the quality of care they received as good. However, about 30 percent of households who visited a government facility consider the quality of care they received to be below average. A lower percentage of households who obtained care from NGOs (14%) and private facilities (12%) consider the quality of care they received to be below average.

Clients mainly complain about the lack of facilities and drugs, and the lengthy wait.

67. The main difficulties cited were lack of facilities (42.7 percent of the individuals), financing (33.8 percent), and essential drugs (23 percent). A consistent and sufficient availability of drugs was considered an important indicator of quality of service. About 37 percent of households who visited public health facilities were dissatisfied because drugs were not consistently available. Other main reasons cited for dissatisfaction with

the quality of care in public health care facilities included: inadequate skills/knowledge, lack of courtesy on the part of personnel, inconvenience of lengthy procedures, inadequate availability of diagnostic facilities, and the lengthy waiting time. The waiting time between arrival and being seen is very high, averaging 7 hours at government hospital outpatient departments, 6.2 hours at NGO facilities, and 2.7 hours in other private facilities. However, private providers were also considered inferior to large government hospitals because they provide limited laboratory and x-ray and surgical services. They were also cited for excessive charges by requiring more tests and expensive drugs.

Public and private spending on health

Both private and public spending have been on the increase between 1997 and 2002.

68. Ethiopia's total health expenditure remains dramatically low; the per capita health expenditure has been estimated at around US\$ 5.6 in 2000. Expenditures on health have substantially increased between 1997 and 2002, from US\$ 4 to US\$ 5.60, and this increase occurred in both public and private spending. However, public spending grew faster largely due to external sources, mainly from donors.

However, per capita health spending remains among the lowest in the world.

69. The overall per capita health spending in Ethiopia is among the lowest in the world and is significantly lower than the SSA average of US\$ 42. The recent increase over the last few years has only slightly narrowed the gap. This low level of spending mainly reflects a very low resource base or GDP. Ethiopia's total health spending as a percentage of GDP (4.1 percent) is comparable to the low-income countries' (LIC) average. Ethiopia's private health spending share of GDP of 2.8 percent remains close to the average SSA experience (2.6 percent). However, the private health expenditure share of GDP in Ethiopia is rather on the high side when compared to the LIC average of 1.1 percent.

Funding of the health sector in Ethiopia is shared equally between the public and the private sectors.

70. Public spending in the health sector, both domestic and from external sources, represents the largest share of total spending (49 percent) and amounts to US\$ 2.77 per capita. Private consumption through out-of-pocket spending also represents a large share of this spending (36 percent) or US\$ 1.96. Out-of-pocket spending by individuals includes direct payments to private practitioners, traditional healers, private pharmacies, and government facilities in the form of user charges. NGOs contribute a much lower although not trivial amount, their contribution reaching close to 10 percent of all health spending. On the other hand, the contribution of private enterprises remains marginal at 5 percent of health spending.

Public expenditures in Ethiopia have increased significantly in recent years.

71. Overall public spending has been increasing steadily over the last few years. Total government expenditures increased by 90 percent in nominal terms and 70 percent in real

terms from 1995 to 2002. The share of public expenditures to revenue has been at about 30 percent of GDP on average from 1997 to 2002, placing Ethiopia among the SSA countries with the largest level of relative public spending.

Public spending on health has also increased albeit at a slower pace as compared to total public spending.

72. The public expenditures monitoring system also captures a marked increase in public spending on health. Public spending on health increased by 80 percent in nominal terms and by 58 percent in real terms between 1995 and 2002. Per capita health expenditures in real terms increased by 10 percent over the same period. Capital and recurrent expenditures on health have increased at the same pace but questions remains as to whether recurrent expenditures are appropriately allocated along investments made.

Both capital and recurrent expenditures on health have increased although the rate of increase of capital expenditures is greater than recurrent expenditures from 1990-2002. Questions remain as to whether recurrent expenditures are appropriately allocated among investments made

73. Capital expenditures increased by 553 percent over the period EFY83-94 (1990-2002) in nominal terms, and by 244 percent in real terms. The increase in recent years (1995-2002) has been substantially less at 128 percent in nominal terms and 102 percent in real terms. Average capital spending per capita remains low at about US\$ 0.45 from 1995-2002, peaking at US\$ 0.47 per capita in 2001/02 in nominal terms and US\$ 0.42 in real terms. Recurrent spending increased significantly by 307 percent and by 114 percent in real terms from EFY83-94 (1990-2002). Over the more recent period of EFY99-94 (1995-2002), it increased by a more modest 59 percent in nominal terms and 42 percent in real terms. Similar to capital expenditures per capita, the average annual recurrent spending per capita remains low at about US\$ 0.88 from 1995-2002, reaching US\$ 0.91 in 2001/02 in nominal terms and US\$ 0.81 in real terms. These figures are substantially lower than the average per capita recurrent expenditures of low income countries (US\$2.50). The combined increase of both capital and recurrent expenditures is a positive development. However, HSDP reviews indicate that facility expansion tends to be unaccompanied by sufficient materials and health workers to provide good quality health services.

Expenditures on inputs have been relatively stable, but there are some indications that allocations to some priority programs, such as immunization, have decreased.

74. The Public Expenditures Review (2003) shows a relatively stable distribution of public spending over time. Wages and salaries represent the largest item of public spending. Between 1995/96 and 2000/01, there was a progressive shift in spending composition, with an increase in the percentage allotted to salaries, and a corresponding decline in materials and supplies, operations and maintenance, grants, contributions and transfers. As a result, in 2000/01, approximately 61 percent of the recurrent budget paid for salaries, while 26 percent went to medical materials and supplies, including medical equipment.

75. A large share of public money—about 40 percent—is allocated to hospital care year after year. This pattern of higher spending on hospitals is often found worldwide and the Ethiopian case is not the most extreme, with many countries spending 60 percent and more on hospital care. Given that most diseases that impose a heavy burden on Ethiopians are those that can be prevented or treated on an outpatient basis in primary care settings, it is likely that additional activities at the primary level will have a larger impact on the health status than at the hospital level. Yet, funding of basic immunization services may, for example, have declined over the last five years. As the Government's budget now projects a shift in emphasis toward primary level care, it will be useful to monitor whether future actual expenditures reflect the shift toward the newly established health extension program (which include the immunization program).

Spending rates are still low in all regions, justifying the reluctance of the Government to increase public funding for health.

76. However, even when significant amounts are allocated to health, low budget execution often undermines service delivery. Only about 41 percent of regional budgets ranging from 26 percent in Somali to slightly over 54 percent in Afar and Tigray were spent in 2000/01. Similarly, based on the available information from 9 out of 11 regions for 2001/02, execution rates ranged from 30 percent in Somali to over 92 percent in Addis and Amhara .

Regional spending varies considerably

77. In 2000/01, per capita expenditures across regions ranged from 4.7 Birr (US\$ 0.55) in Somali to 45.3 Birr (US\$ 5.3) in Gambella. Spending has been high in Benishangul-Gumuz, Gambella and Harari. These are small regions that are also less populated than the others and their high per capita health expenditures could reflect the costs of administrative overhead. Expenditures per capita in the three urban regions (Addis Ababa, Dire Dawa, and Harari) are also relatively high because these regions have a relatively larger number of hospitals and serve as referral points for service seekers from other regions. The most populated regions such as Amhara, SNNPR, and Oromia also have relatively lower per capita health expenditures. Among the populated (yet rural) regions, however, Tigray stands out as the region that allocates the most on health on a per capita basis.

Tigray seems successful in translating public health expenditures into results.

78. No systematic relationship can be found between the level of expenditures and the level of utilization of services. For example, immunization coverage in Benshangul and Harari are low, while attended births only marginally increased over the last years for both regions as well as for Gambella. Despite the fact that higher levels of spending have declined, Afar's already low EPI coverage decreased from 12 to 4 percent while its attended deliveries coverage marginally increased to 2.8 percent, which was below the national average of 9.7 percent. The three largest regions (Oromia, SNNPR, and Amhara) display a similar low level of performance with only 6-7 Birr per capita of public funds to finance their health services. Tigray appears more successful in

translating resources into success in terms of high impact health interventions. Tigray's immunization coverage increased and is significantly higher than the national average. The coverage of pregnant women with attended deliveries coverage in Tigray is the third highest across all regions. Tigray's performance can be attributed to its emphasis on community-oriented approaches—it has the largest number of frontline workers compared to all the regions. The region also revised its health center staffing standards based on location, having thrice as many surgery-related staff assigned to remote HCs while physicians and nurses could be added in the urban HCs to deal with outpatient needs. However, despite its good performance its stunting and underweight rates among under-five year old children are among the highest across the regions.

Donor funding has been flowing through extra-budgetary channels and is difficult to capture.

79. From 1997-2001, health received a yearly average of US\$ 57 million or 9.5 percent of the total aid available to all sectors. Meanwhile, agriculture had the highest share of annual aid, at 16.2 percent (US\$ 85 million). External assistance reaches the government system along three channels: loans are included in the budget and accounts, and most budgets support non-earmarked grants and some other grant funds. This is usually done on the basis of commitments presented by donors during budget preparation which are often not reflected in the government account. An unknown amount of donor funds are provided in kind; these resources are usually not captured in the budget process. All external technical assistance, direct procurement of pharmaceuticals, transport and equipment for hospitals directly provided by donors are examples of off-budget donor assistance. The Government has only partial information on the actual level of spending as public spending on medicines is largely done by aid. As a result, it affects the GOE's ability to accurately determine whether it is allocating an appropriate amount of its own budget for a specific item or budget category.

Cost-recovery represents a small share of expenditures in the public health system.

80. Cost recovery has been part of Ethiopia's health system since the early 1950s. Nominal amounts are charged ranging from small fees (1 to 5 Birr) for outpatient registrations, consultations, laboratory tests, and other routine diagnostic procedures, and inpatient beds, to higher fees (10 Birr and above) for prescription drugs and inpatient surgical procedures. No changes were made to this policy until 1998, with the initiation of the new Health Care and Financing Strategy. When originally introduced, fees recovered a substantial portion of the total costs of providing the services. However, the level of fees remained unchanged for almost 50 years and today it has become almost symbolic. This is condoned by the fact that close to 60 percent of users get exemptions. As a proportion of GOE health expenditures, fee remittances to the MOF have declined from 16 percent in 1986 to less than 6 percent in 1995/97. Fees represent small amounts and, in addition, they are not reinvested to improve services. Those fees are usually not kept at the facility level and therefore not reinvested to improve services at the point of delivery. With the exception of special pharmacies and some hospitals in SNNPR, all fees collected are remitted to Regional Finance Bureaus who forward them to the MOF where they are accounted for as general government revenue.

The poorest groups benefit little from public spending.

81. The richest to poorest ratios in terms of utilization are lowest for health posts and health stations/clinics (0.2 and 0.5), slightly higher for health centers (1.6), and highest for hospitals (about 6). However, the combined share of health centers and clinics in terms of public recurrent expenditures is about 30 percent in 2000/01-- lower than public recurrent expenditures allocated to hospitals (38 percent). There are marked differentials by income quintile across households in the use of basic health services. The poorest households consistently have the lowest utilization rates for immunization, assisted deliveries, and antenatal care by a trained professional. The richest to poorest ratio (27) is highest for the use of assisted deliveries. About 24 percent of women in the richest households have had an assisted delivery compared with less than 1 percent of women in the poorest households. *Nonetheless it is also important to note that while income differentials with regard to access are high, absolute levels of use are still low even among the richest households.* While some incremental increase can be gained by reallocating spending from hospitals to PHC, over-all public health expenditures would need to be increased to improve the quality and accessibility of health services.

Towards the future: progressing towards the MDGs

Identifying pathways for health services to contribute to the MDGs.

82. In light of this analysis, the Government of Ethiopia has been assessing the potential contribution of the planned expansion of health services in order to reach the MDGs. The cost and benefits of the various policy options envisioned by the Government for delivering high-impact health interventions have been examined by looking at:
- the cost and potential impact of strengthening the delivery of and demand for high impact interventions under different health service delivery options, taking into consideration the current severe physical access and human resource constraints faced by Ethiopia;
 - various health financing scenarios based on reasonable assumptions of economic growth, increase in public revenue, allocation of public funds to health services, and potential contributions from households and the NGO sector; and
 - implementation issues in the context of decentralization, particularly the role to be played by each level of the public sector, as well as the contribution of the private sector.
83. In order to conduct this analysis, a specific tool—developed by the World Bank, UNICEF and WHO: “Marginal Budgeting for Bottleneck (MBB)”—has been used to assess the marginal cost and impact of service packages delivered through three major service delivery modes: Population Oriented “Outreach” (Health Extension package), Community/ Family Oriented services (Community Health Promoters), and clinical care (hospitals and health centers and stations). For each mode of service delivery, several scenarios have been analyzed looking at the cost and potential benefits of implementing key strategies to reduce identified bottlenecks in terms of service quality, physical access, and demand.

The SDRP proposed health extension package offered through outreach health posts is affordable, can contribute to significant decreases in under-five mortality and number of maternal deaths. It could help build the backbone of more accessible health services.

84. This expansion of access to key professional preventive services delivered by two female health extension workers, trained in one year through the outreach component of the health extension package, is to be the backbone of the health system of Ethiopia. Increasing access to this basic extension package (which includes immunization and Vitamin A supplementation) to 65 percent of the population is estimated to cost an additional US\$ 0.59 per capita. This could buy a reduction of respectively twelve percent and four percent in under-five and maternal mortality rates.

Only a substantial effort in supporting family- and community-based services will address the most important causes of child mortality.

85. The outreach (Health Extension) package in Ethiopia will also build a foundation for community-based activities. Under the supervision of the health extension workers, a complementary community-based Health Promotion program would likely contribute to an even more significant level of impact on under-five child mortality rates. Under the an expanded access scenario, an additional US\$ 1.6 per capita per year invested in those services could achieve a reduction of about 27 percent in under-five child mortality. The impact of such a community-based package would however be much more limited, with a projected reduction of only two percent.

Expanding clinical services will take more time and more resources but this is the only route to significantly reduce the maternal mortality ratio.

86. The most expensive package is the clinically-based service through the expansion of health centers. This package costs about US\$ 2.19 per capita per year. It has a large impact on the rate of maternal mortality, decreasing it by almost 31 percent. Yet its impact on child mortality is more modest: a decrease of about 12 percent.

Scenarios for extension of health services could cost an incremental US\$ 1.6 to US\$ 4.87 per capita, and reduce under five mortality by 49 percent and maternal mortality by 37 percent.

87. Using the present cost and financing structure, the three main service delivery arrangements packages -health extension package/outreach, family/community-based and clinically-based services- could, under a realistic scenario, together contribute a reduction of 49 percent to the rate of under-five mortality and 37 percent to that of maternal mortality. Their implementation would require a level of incremental funding estimated at about US\$ 4.87 incremental per capita per year. This would have to be mobilized over and above the current US\$ 2.77 per capita spent by the Government of Ethiopia on health, and added to the US\$ 2.82 spent out-of-pocket on health by households.

Adding antibiotics and antimalaria drugs at the community level has a somewhat limited impact

88. Adding cotrimoxazole and antimalaria drugs to the health promotion package has a somewhat limited impact. This is largely due to the fact that, although pneumonia

contributes 28 percent to the under-five mortality rate, efficacy of antibiotics at this level is only 40 percent. For malaria on the other hand, efficacy is higher (67 percent) but since malaria is a somewhat lesser cause of mortality in Ethiopia (only 6 percent), it does not provide a major impact. Similarly, adding those interventions at the health post level has a limited effect on costs for the same reasons.

More ambitious scenarios could result in a higher reduction of under-five mortality, increasing the cost but also management requirements.

89. Under a more ambitious scenario, access to the health extension package could be raised to 85 percent, access to community care to 71 percent, access to primary clinical care at less than 5km to 70 percent, and access to primary and secondary referral care to 60 percent. Clinical care would be added both at the community level and through the health extension package. If this could be done through the current MOH strategy, increasing allowances to conduct mobile and outreach strategies and expanding supply, it would cost about US\$ 4.50. If performance incentives are added—a more realistic assumption—the marginal cost would increase to US\$ 5.00 per capita per year. Adding demand-side incentives for the poor to compensate for opportunity costs would increase the marginal cost per capita to US\$ 10.00.

Under a low-case scenario, the public sector can only fund the health extension package strategy and subsidize some of the family and clinical packages.

90. Under a low-case scenario where public spending increases to 3.4 percent of GDP by 2010, and to 5 percent by 2015, under a conservative growth scenario of one percent annually, about US \$1.46 per capita per year could be contributed by the public sector. This would cover the entire cost of the Health Extension package, either fully subsidizing the community-based package or providing various levels of subsidies to both the community package and the clinical service package. The remaining cost would have to be covered by private spending and/or extra-budgetary support. Under a high-case scenario, where public spending would increase to 3.4 percent of GDP by 2005 and five percent by 2010, with an economic growth of five percent, about US\$ 3.46 could be contributed by the public sector. This would cover most of the incremental cost of implementing the three packages.
91. In moving forward, Ethiopia would need to build on its existing strengths. These include the Government's commitment to poverty reduction and its recognition that health is a vital component of its Sustainable Development and Poverty Reduction Program (SDPRP). Despite being one of the poorest countries in the world, Ethiopia has been able to reduce infant and child mortality rates, as well as malnutrition rates although the level of stunting of under-five children is still among the highest in the world. It has been able to increase coverage rates for certain interventions such as polio immunization and vitamin A supplementation, as well as creating awareness for family planning and HIV/AIDS. However, it has not been able to move forward as well with other types of immunizations nor has it been able to generate sufficient awareness and use of other low-cost interventions such as ORS and the use of bed nets. Improvements are needed in deficient information and service delivery channels while

92. As outlined in chapter 8, the policy issues for discussion with the GOE , include:

- (a) Supply and demand side interventions that could work in Ethiopia
- (b) Health personnel: (i) the skill-mix of health personnel given that Ethiopia would have to rely on a predominantly lower-skill based population in the short to medium term and the medium to long-term strategy for upgrading their skills; (ii) the need for a strategy to attract and retain staff in rural areas. This would need to include career development and training opportunities, and also address staff deployment and rotation issues.
- (c) Roles of the private sector and NGOs vis-à-vis the public sector and a strategy for providing a more enabling environment for NGOs and the private sector
- (d) Budgeting and planning issues which include: what can be done with a costing system that is based on historical expenditure trends rather than strategic directions outlined in HSDP? What can be done to motivate woredas to focus their attention on health priorities? Will performance-based agreements and matching grants be workable? SNNPR, for example, has started piloting performance based contracts with its woreda officers and it would be important to learn from these experiences.
- (e) Coordinated actions with other sectors that will also be critical to success, particularly those taken to improve the status and role of women in Ethiopian society.

1. INTRODUCTION

93. Ethiopia is located in Northeast Africa (“Horn of Africa”) and is situated East of Sudan, North of Kenya, south of Eritrea, West of Djibouti , and Northeast of Somalia Ethiopia is a country endowed with many resources, a diversified topography, and many nations and nationalities. As a multi-ethnic society, it serves as the home of about 80 ethnic groups (CSA 1998).
94. ***Ethiopia is a country of great geographical diversity.*** Its main topographic features range from the highest peak at Ras Dejene, 4620m above sea level, down to the Afar depression (Kobar Sink) about 110m below sea level. The Great Rift Valley separates the Western and Northern Highlands from the south Eastern and Eastern highlands. These highlands give way to vast semi-arid lowland areas in the east and west and especially in the south of the country. The country is divided into three major ecological zones, Kolla (arid lowlands below 1,000 meters above sea level), Weina Dega (between 1000 meters and 1500 meters above sea level) and the Dega (between 1500 and 3000 meters above sea level). About 40 percent of the total area of Ethiopia is comprised of highlands, which are found at elevations above 1500m. The highland areas’ annual rainfall ranges between 500mm to over 2000 mm. The mean annual temperature in the highlands is below 20°C. The lowland part of Ethiopia covers about 60 percent of the total area of the country. Rainfall in the lowland areas is relatively low, often poorly distributed, and highly erratic. It ranges from 300mm to 700mm annually. The temperature in the lowland areas is greater than 20°C.
95. ***Ethiopia is one of the poorest countries in the world.*** Its per capita Gross National Income of US\$100 (US\$ 720 in purchasing power parity (PPP) terms) in 2002 compares poorly with the average per capita GNI of US\$ 450 (\$1,620 in PPP terms) for Sub-Saharan countries and is significantly lower than the world average of US\$ 5,080 (US\$ 7,570 in PPP terms) (WDI, 2003)⁴. Millions of Ethiopians continue to live in absolute poverty. The poverty headcount declined slowly from 45.5 percent in 1995 to 44.2 percent in 2000, with about 28 million Ethiopians below the poverty line (PRSCI PAD 2004, Work 2004).⁵ More than 50% of Ethiopians remain food insecure, particularly in rural areas. About 10 percent of the population are chronically food insecure.
96. ***Ethiopia has been progressively undertaking economic reforms over the last ten years.*** It has been operating a free market economy since 1991. The government introduced an Economic Recovery and Structural Adjustment Program in 1992 to stabilize the macro-economic framework involving the liberalization of foreign exchange markets; structural reforms were initially emphasized in the agricultural sector where various restrictions and

⁴ In terms of GDP per capita (constant 1995 US\$), Ethiopia’s is only US\$123 in 2002 compared to the sub-Saharan average of US\$ 575 and the world average of US\$5,654 (WDR 2003)

⁵ Using the absolute poverty line of Birr 1075 in 1995 prices, the Risk and Vulnerability study (WB 2003) also finds that the national head count poverty rate also declined between 1995 and 2000 although the % decline is much higher, i.e. from 61 percent in 1995 to 48 percent in 2000.

quotas were either lifted or lowered. Legal, institutional and policy reforms were also undertaken to promote private sector investment. These economic measures paid positive dividends reversing years of persistent decline in the per capita Gross Domestic Product (GDP). Real GDP grew on average by 5.8% from 1992/93-2001/02 while population growth was about 2.7% over the same period. The Ethio-Eritrean border conflict affected GDP growth rates in 1998-2000 and in 2003 the economy faced a sharp decline and a negative growth rate as a result of the drought which affected 14 million.

97. ***The agricultural sector continues to be a major contributor to the overall Ethiopian economy although its contribution has decreased from 54.4 percent 1982 to 39.9 percent in 2002 while the services sector is growing.***⁶ Agricultural productivity levels are low owing to traditional farming systems, which are worsened by environmental degradation and rapid population growth. The sector is also highly vulnerable to external shocks as droughts have occurred every three years during the past decade. The human resource base for agricultural development is also largely illiterate and inadequately equipped with modern skills, inputs, and equipment. Thus, within the span of two decades, the services sector has emerged as the most dynamic sector, increasing its sectoral share from 33.2% in the 1980s to 47.6 percent in 2002. Within the same period, the industrial sector has maintained its sectoral share of 12 percent, although it experienced some decline in the 1990s.
98. ***Decentralization decision making power and responsibilities have been devolved over time to regional and local governments.*** Emerging from civil war in 1991, Ethiopia replaced the Derg regime and introduced a new constitution in 1994, creating a federal structure of government. The first country's first multi-party elections were organized in 1995. Ethiopia now has a parliamentary federal government administering nine regional states and two administrative councils (Addis Ababa and Dire dawa) and these are subdivided into 560 Woredas (districts). These woredas, in line with the country's decentralization policy, represent the basic units of planning and political administration. Below the districts are Kebeles or peasant associations.
99. ***Ethiopia has a young and rapidly growing population putting pressure on agricultural lands*** With a population of around 69.1 million in 2003, Ethiopia is the second most populous country in sub-Saharan Africa, preceded only by Nigeria (140 million). The population has been growing on average by 2 million persons annually from 2000 to 2005 rate of 2.7 percent which is fairly close to the average annual growth rate of sub-Saharan Africa of about 2.5 percent. Its population increased by more than 10 million between 1984 and 1994 (Table 1.1) and an additional 10 million by 2001.

⁶ While the share of agriculture has declined over time, it is still the primary source of employment for about 80% of the work force. It also comprises about 80 to 90 percent of merchandise export earnings (PRSC 2004).

Table 1-1: Trends in population and fertility in Ethiopia

	1984	1994	2001	MOH	DHS
	Census	Census	UNPOP	2002	2000
Population (millions)	42.6	53.5	64.4		
Inter-Census growth rate (percent)	3.1	2.9	2.5		
Life expectancy (years)			44		
Male	51.1	50.9		53.4	
Female	53.4	53.5		55.4	
Total Fertility Rate*			6.8		5.9
HIV/AIDS adult prevalence rate				6.6	
Number of adults (15-49) living with HIV/AIDS (millions)				2.2	
Religion (%)					
Orthodox					50.5
Catholic					1.1
Protestant					15.8
Muslim					29
Others					3.5

* is 6.4 in 1990 NFFS

100. ***The majority of Ethiopians live in rural areas*** (5 (83%) However, the urban population is growing at a much faster rate of 4.1% per annum compared to the slower rate of 1.9% in rural areas. This can be explained mainly by large-scale migration of the rural population in search of better employment opportunities in urban areas.
101. ***Population density is moderate relative to some SSA countries although it is twice as much as the average for SSA*** (Table 1.2). However it is very high in the highlands, and lowest in the eastern and southern lowlands. About 23.2 percent of the population is concentrated in 9 percent of the land areas putting pressure on cultivable lands and contributing to environmental degradation (MOH 2002). On the other hand, about 50 percent of the land area is sparsely populated with nomadic or semi-nomadic tribes living in an arid or semi-desert environment. The population is young, with 44 % of the population under the age of 15 years. This population structure connotes both a high dependency ratio and future rapid exponential population growth. *If population growth does not decline in the coming years it is expected that the population of Ethiopia will double in about 25 year.*
102. The average Ethiopian household is comprised of 4.8 persons. Rural households have about 4.9 persons per household and are slightly larger than urban households who have on, average, 4.2 persons There are three times as many single-headed households in urban areas relative to rural households(13 percent versus 4 percent). Ethiopian households are predominantly male-headed with less than 25 percent headed by females (DHS 2000).
103. Approximately 85% of households rely on agriculture for their main source of livelihood. The Ethiopian households' average annual expenditures in 2000 was Birr 5401 of which 60 percent was spent on food and only about 1.1 percent on health and medical care.

104. ***Access to social services is limited despite efforts made by the government of Ethiopia to ensure basic social services.*** The SSA average for access to improved sanitation is 55% as compared with only 15 percent for Ethiopia. Approximately 24 percent of Ethiopians have access to improved drinking water. This is slightly less than half of the SSA average of 55 percent.
105. Life expectancy is 42 years which is slightly lower than the SSA average of 46 years. Sixty one percent of Ethiopians are illiterate, which is much higher than the Sub-Saharan average of 39 percent. Public health initiatives depend on the awareness and literacy of citizens for their success. Thus, low literacy levels in Ethiopia will pose a major challenge in achieving public health goals, a factor that needs to be noted and incorporated in planning and program implementation and information, education, and communication interventions.
106. Primary school gross enrollment rates have tripled from 20 percent in 1993/94 to about 62 percent in 2001/02. However, Ethiopia's primary GER is still lower than the SSA average of 86 percent (Ethiopia at a Glance 2002). Even if the adjusted GER of 68 percent is used (in order to make it comparable to the grades 1-6 levels used in other countries), it is only ahead of some countries such as Sierra Leone, Guinea, Sudan and the Democratic Republic of Congo (Education CSR draft 2004).
107. ***While the Ethiopian constitution recognizes the equal rights of women and men, its traditional societal structure renders women in a vulnerable position.*** Traditional harmful practices are common with about 80 percent of women having undergone some type of circumcision. The illiteracy rate for adult females is high at 66 percent compared with 51 percent for adult males. A high workload (Ethiopian women work an average of 15-18 hours per day and many domestic tasks are highly labor intensive), early marriage (the average age at first marriage was 17.6 years in 1998) are common. Limited studies and police and media reports suggest that violence against women is quite high and increasing every year (SGCA 2004). In 2000, women occupied a very small percentage of key government decision making positions: 7.7 percent in the House of Representatives, 5.6 percent in the House of Federation, 13 percent in regional councils, and 14 percent in kebele councils (Ashenafi, EWLA, 2000).

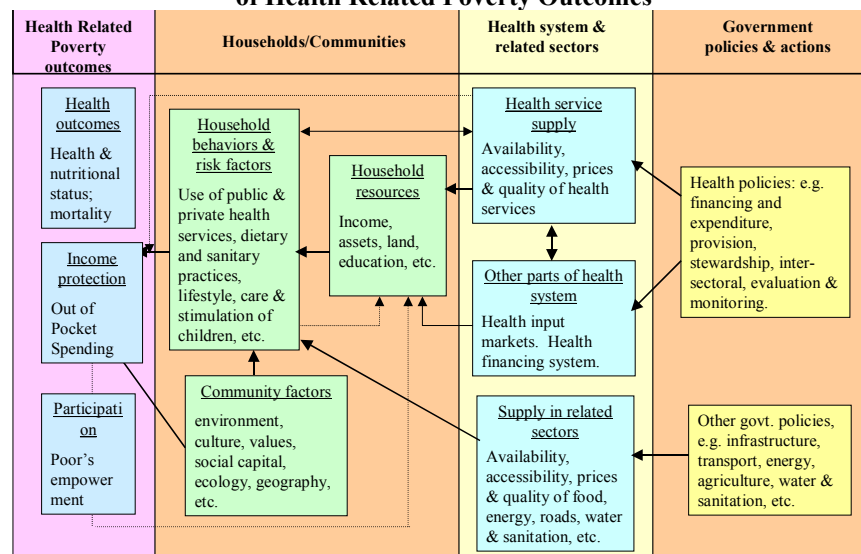
Purpose of the HCSR

108. The Ethiopia Health Country status report (HCSR) aims to consolidate sector knowledge in order to lay the groundwork for discussing and refining strategies and policies in the health sector in Ethiopia. The ideal sequence is first to prepare the HCSR, discuss it with government counterparts, and collaborate with them on designing a broad agenda for policy reform and implementation. In practice, however, the sequence has unfolded differently in Ethiopia, because while the preparation of the HCSR began in July 2002, a draft Poverty Reduction Strategy document was already prepared and was approved by the WB and IMF Boards in September 2002. The main objective of Ethiopia's Sustainable Development and Poverty Reduction Program (SDPRP as the PRSP is known in Ethiopia) is to reduce poverty by enhancing rapid economic growth while maintaining macro-economic stability. A reduction in child and maternal mortality rates

is among the key objectives of the Ethiopia SDPRP. One key strategic option of the PRSP for reducing maternal and child mortality is to expand the provision of essential health and nutrition services to the rural poor of Ethiopia.

109. The World Bank Country Assistance Strategy for 2003-2005 will provide support to Ethiopia's SDPRP and thereby assist in the country's program to reduce poverty and achieve the MDGs. In particular, it seeks to: enhance pro-poor growth; improve human development outcomes; reduce vulnerability; and improve governance. The CSR is also expected to contribute to the medium-term health sector strategic planning process for the period 2005-2010 and preparation of the Health Sector Development Program 3 (HSDP 3), a share of which will be funded under the Poverty Reduction Strategy Credits (PRSCs).
110. In support of the above SDPRP, WB CAS, and medium-term sector strategic planning process, the Ethiopia Health Country Status report seeks to:
 - (a) consolidate and improve sector knowledge, with a particular focus on identifying key HNP issues for the poor in Ethiopia;
 - (b) provide inputs towards the preparation of HSDP3 and the Poverty Reduction Strategy Credits (PRSCs), as well follow-up actions to the revised version of the SDPRP based on a menu of strategic options for the health sector and recommendations for public expenditure reform and poverty reduction; and
 - (c) establish an objective benchmark for tracking subsequent policy development and dialogue.
111. To structure the analysis in a systematic manner, the Ethiopia HCSR will follow the HNP and PRSP Framework, identifying the key factors at the household, community and health system levels that have an impact on health outcomes.

Figure 1-1: HNP/PRSP Framework: Determinants of Health Related Poverty Outcomes



Source: Claeson M. et al 2001 cited in Soucat and Diop 2001

112. Aside from this introductory section, the Ethiopia HCSR is comprised of six additional sections. It is structured in the following manner:
- Section II describes basic health outcomes in Ethiopia with comparisons over time, between urban and rural areas and across regions and income levels.
 - Section III analyzes to the extent that data allow, the factors at the household and community levels that affect health outcomes. These include knowledge about health issues such as appropriate feeding of infants; health-seeking behavior and utilization of preventive health and reproductive health services, as well as basic services of curative care for child and maternal health.
 - Section IV examines household expenditures on health care. This section on household spending will describe the pattern of household out-of-pocket spending in relation to income and types of services used.
 - Section V assesses the performance of the Ethiopian health service delivery system. The performance of the sector is analyzed using indicators of coverage of key health interventions, country-wide and disaggregated by geographic (urban/rural/regional) and income groups.
 - Section VI examines how public spending is allocated across the different levels of care, regions and urban/rural, to the extent possible; inpatient/outpatient services; whether the actual financing mix is in line with the FDRE's intended mix, and whether adequate levels of resources are allocated to address the needs of the poor.
 - Section VII evaluates the potential financing options, and the corresponding costs and impact of Ethiopia's efforts to increase health service coverage, with a particular focus on effective preventive and curative health interventions
 - Section VIII outlines the strengths of the health sector and policy issues for further discussion that emerge from the analysis.
113. The CSR relies on existing data sources including major surveys such as (a) the Demographic and Health Survey (DHS) 2000 for Ethiopia; (b) Welfare Monitoring Surveys (WMS); and (c) Household Income, Expenditure and Consumption survey (HICES) 1995/96 and 1999/2000; as well as reports produced by the Program and Planning Department(PPD)/MOH, service/program departments of the MOH, and facility level surveys including the PHRD health facilities 1996 study, and other sector reports such as those of the Health Sector Development Program(HSDP).
114. To set the stage for the rest of the report, a summary of HNP status indicators and HNP service indicators are presented by wealth quintiles (Table 1.).
115. Wealth-based differentials in health status and services indicators underscore the gap between the rich and the poor in Ethiopia although as the next sections will also show, this gap is relatively lower compared with other countries. In particular, infant mortality rates (IMR) are more than 16 percent higher and under-five mortality rates are 31 percent

higher among the children from the poorest quintile compared to children from the richest quintile. Severe underweight is almost 260 percent higher in children from the poorest quintile compared to the children from richest quintile. Around 17 percent of the children from poorest quintile had none of the immunizations compared to 6 percent in the children from the richest quintile. Oral rehydration therapy (ORT) use during episodes of diarrhea is more than five times higher in the households from richest quintile compared to children from the poorest quintile. Antenatal care is more than three times higher among the women from the richest quintile compared to the women from the poorest quintile. Deliveries attended by trained professionals is more than 25 times higher in the women from the richest quintile compared to women from the poorest quintile. A more extensive analysis of inequities will be presented later in this report. The evidence presented here should sufficiently underscore the need to have a closer look at health sector related issues in Ethiopia, assess what works and what does not work for the poor in order to enhance the responsiveness of HNP policy and programs in addressing equity issues.

116. This report will also look into urban/rural and regional comparisons. National averages tend to mask regional differences, particularly within the context of Ethiopia which is comprised of 11 regions (9 regions and two administrative urban councils: Addis Ababa and Dire Dawa). These regions have different agro-climatic zones; levels of development capacity, and organization; population size and characteristics, resulting also in different health outcomes(Table 1.3).
117. The regional states and administrative councils can be differentiated based on three broad categories (HSDP PAP 1998):
 - Large, central, highly-populated regions: Tigray, Amhara, Oromiya and SNNPR;
 - Urban regions/administrative councils: Addis Ababa , Dire Dawa and Harari; and
 - the newly emerging, peripheral regions: Afar, Somali, Benishangul-Gumuz and Gambella.
118. Tigray, SNNP, and three out of the four emerging regions (Afar, Benshangul Gumuz, and Gambella) have poverty head count ratios that exceed 50 percent. Tigray has the highest level of poverty ratio at 61 percent. The emerging regions generally have less favorable health indicators; less developed health infrastructure, including a more limited availability of qualified health providers and managers; and a high percentage of pastoralist communities.

Table 1-2: Health, Population and select economic indicators of Ethiopia and other sub-Saharan African countries 2000

Indicator	CF	TD	ZR	CG	ER	ET	KE	MW	MZ	NA	NG	NE	S0	SD	TZ	UG	ZM	ZW	BW	S.A.	SSA	WD
Birth rate, crude (per 1,000 people)	36.1	44.9	45.7	42.5	38.7	43.8	34.5	45.8	40.3	35.6	39.6	50.6	50.9	34.3	39.4	45.4	40.0	29.8	32.0	25.8	39.5	21.5
Death rate, crude (per 1,000 people)	19.5	16.3	16.5	14.1	12.8	20.1	14.2	24.2	20.4	17.0	16.2	19.3	17.5	11.5	17.2	19.2	21.4	17.7	19.9	16.0	16.8	9.1
Fertility rate, total (births per woman)	4.7	6.4	6.1	6.0	5.4	5.6	4.4	6.3	5.1	5.0	5.3	7.2	7.1	4.6	5.3	6.2	5.3	3.8	4.0	2.9	5.2	2.7
GDP per capita (constant 1995 US\$)	339	218	..	841	155	116	328	169	191	2408	254	203	..	319	190	348	392	621	3951	3985	564	5631
GDP per capita, PPP (current international US\$)	1172	871	..	825	837	668	1022	615	854	6431	896	746	..	1797	523	1208	780	2635	7184	9401	1683	7415
Illiteracy rate, adult total (% of people ages 15 and above)	53.3	57.4	38.6	19.3	44.3	60.9	17.6	39.9	56.0	18.0	36.1	84.1	..	42.2	24.9	32.9	21.9	11.3	22.8	14.7	38.5	..
Improved sanitation facilities (% of population with access)	31.0	29.0	20.0	..	13.0	15.0	86.0	77.0	43.0	41.0	63.0	20.0	..	62.0	90.0	75.0	78.0	68.0	..	86.0	54.8	56.2
Improved water source (% of population with access)	60.0	27.0	45.0	51.0	46.0	24.0	49.0	57.0	60.0	77.0	57.0	59.0	..	75.0	54.0	50.0	64.0	85.0	..	86.0	55.4	80.5
Life expectancy at birth, total (years)	43.5	48.5	45.7	51.3	52.0	42.3	47.0	38.8	42.4	47.2	46.8	45.7	48.1	56.2	44.4	42.1	38.0	39.9	39.0	47.8	46.5	66.5
Mortality rate, under 5 (per 1,000 live births)	152	188	163	106	103	179	120	193	200	112	153	248	195	..	149	161	186	116	99	79	162	78
Population (in millions)	3.7	7.7	50.9	3.0	4.1	64.3	30.1	10.3	17.7	1.8	127.0	10.8	8.8	31.1	33.7	22.2	10.1	12.6	1.6	42.8	659.0	60.6
Population density (per sq km)	6.0	6.1	22.5	8.8	40.6	64.3	52.9	109.6	22.6	2.1	139.3	8.6	14.0	13.1	38.1	112.7	13.6	32.6	2.8	35.1	27.9	46.6
Population growth (annual %)	1.4	2.7	2.7	2.8	2.6	2.4	2.3	2.1	2.2	2.2	2.4	3.3	3.6	1.7	2.3	2.7	2.1	1.9	0.9	1.6	2.4	1.3
Urban population growth (annual %)	2.4	4.1	3.8	4.2	4.3	4.9	5.0	4.6	5.5	3.7	4.5	5.7	4.9	4.4	4.9	5.1	2.8	3.9	1.9	2.2	4.3	2.1
Rural population (% of total population)	58.8	76.2	69.7	37.5	81.3	82.4	66.9	84.6	59.8	69.1	56.0	79.4	72.5	63.9	72.2	85.8	55.5	64.7	49.7	45.0	65.6	53.0
Rural population growth (annual %)	0.7	2.4	2.3	0.7	2.3	1.9	0.9	1.7	0.1	1.6	0.8	2.8	3.1	0.2	1.3	2.3	1.6	0.8	-0.2	0.9	1.4	0.6

CAR CF KENYA KE SOMALIA SO BOSTSWANA BW
 CHAD TD MALAWI MW SUDAN SD SOUTH AFRICA SA
 CONGO DR ZR MOZAMBIQUE MZ TANZANIA TZ SUB-SAHARAN AFRICA SSA
 CONGO R CG NAMIBIA NA UGANDA UG WORLD WD
 ERITREA ER NIGERIA NG ZAMBIA ZM
 ETHIOPIA ET NER-NIGER NE ZIMBABWE ZW

Source: World Development Indicators, 2002, World Bank; Note: obtained from Population Reference Bureau

Table 1-3: Summary of HNP indicators for Ethiopia by wealth quintiles

		Quintiles					Population Poor/Rich	
Indicator	Summary Definition (*)	Poorest	Second	Middle	Fourth	Richest	Average	Ratio
HNP Status Indicators								
IMR	Deaths under age 12 months per thousand births	93.5	86.9	110.4	95.4	80.5	97.0	1.16
USMR	Deaths under 5 years per thousand births	149.6	189	174	157.2	114.1	166.2	1.31
Children Stunted (%)	Below-2 sd z-score, height for age, children under 5 years	54.9	53.8	51.3	52.5	41.6	51.2	1.32
Children Underweight (% moderate)	Below-2sd z-score, weight or age, children under 5 years	53.9	48.0	48.2	46.0	36.7	47.1	1.47
Children Underweight (% severe)	Below-3 sd z-score, weight or age, children under 5 years	19.9	17.4	16.9	16.3	7.7	16.0	2.6
Low Mother's BMI (%)	Body Mass Index <18.5	26.5	23.0	27.5	26.1	25.3	25.7	1.05
Total Fertility Rate	Births per woman age 15-49	6.4	6.3	6.6	6.4	3.9	5.8	1.6
Age Specific Fertility Rate (15-19 years)	Births per 1000 women age 15-19	127	130	140	102	70	109	1.8
HNP Service Indicators								
Immunization coverage (%):	Children age 12-23 months, by vaccination card or mother's report							
- Measles		19.8	15.3	23.5	28.1	52.0	26.6	0.38
- DPT3		14.1	8.6	20.9	22.0	45.2	21.1	0.31
- All		6.7	5.6	15.4	15.1	33.3	14.3	0.20
- None		16.9	22.9	16.2	16.6	6.4	16.2	2.65
Medical Treatment of Illnesses								
<i>Treatment of Diarrhea (%):</i>								
- Prevalence	% Ill in the preceding 2 weeks	23.3	25.9	25.0	22.9	20.4	23.7	1.14
- ORT use	ORS, RHF	8.4	11.8	20.2	18.7	42.4	18.6	0.19
- Seen Medically	Brought to a health facility if ill	11.5	12.9	14.4	14.4	33.4	16.1	0.34
- % Seen in a Public Facility	Among those medically treated	7.8	7.9	9.9	9.0	21.1	10.4	0.36
<i>Treatment of Acute Respiratory Infection (%):</i>								
- Prevalence	% Ill in the preceding 2 weeks	22.7	25.8	26.7	26.2	20.2	24.5	1.12
- Seen Medically	Brought to a health facility if ill	14.2	13.7	16.2	17.8	36.9	18.4	0.38
- % Seen in a Public Facility	Among those medically treated	11.4	10.3	12.1	12.4	23.3	13.1	0.49
Antenatal Care Visits (%):								
- to a Medically Trained Person	Doctor, nurse, or nurse-midwife	15.3	16.4	20.6	28.7	58.2	26.5	0.26
- 2+ visits Delivery Attendance (%):								
- by a Medically Trained Person	Doctor, nurse, or nurse-midwife	0.9	1.5	1.4	4.8	24.3	5.7	0.03
- % in a Public Facility		0.7	1.0	1.1	3.7	21.0	95.9	0.03
- % in a Private Facility		0.13	0.09	0.3	0.7	1.1	4.7	0.11
- % at Home Family Planning		99.2	98.9	98.6	95.6	77.9	0.4	1.27
- Female married contraceptive use	A modern method	2.0	1.3	2.0	3.3	12.8	4.7	0.16
- Female married contraceptive use	Any method	3.4	2.3	4.1	5.7	27.5	8.0	0.12
- Women approves FP		57.7	55.7	53.6	64.5	77.8	62.6	0.74
- Husband approves FP		29.5	26.8	25.3	32.4	59.4	34.0	0.49
- Knows about a modern method		75.5	75.5	75.0	81.9	93.1	80.8	0.81
- Knows source of modern method		30.7	26.4	28.4	35.2	57.0	36.6	0.53
- Ideal number of children more than five		57.3	57.1	59.2	52.6	29.6	50.1	1.93
Knowledge of HIV/AIDS Prevention (%):								
- Females	Knows sexual transmission routes of HIV/AIDS	81.4	80.3	80.2	85.0	94.7	85.3	0.86

Source: DHS 2000 and authors' calculations

Table 1-4: Socio-Economic & Demographic Indicators of Ethiopia by Region

Region	Population (millions)		Percentage of Total Population	Poverty Head Count		Annual Population Growth Rate (%) 2000-2005	TFR (births/woman) 2000	Contraceptive Prevalence Rate (CPR) (%) 2000	Total Unmet need for FP (%) 2000	Infant Mortality rate (deaths per 1000 births) 2000	Under age 5 mortality (death/1000 births) 2000
	2003	2015		1995/96	1999/2000						
Tigray	4.00	5.42	5.83	56.1	61.4	2.67	5.8	10	28.0	104	169
Afar	1.30	1.66	1.93	33.1	56.0	2.22	4.9	8	12.3	129	229
Amhara	17.65	23.92	25.70	54.3	41.8	2.67	5.9	8	40.9	112	183
Oromiya	24.36	23.65	35.18	34.0	39.9	2.87	6.4	7	36.4	116	194
Somali	4.0	5.41	5.84	30.9	37.9	2.63	5.7	3	14.3	99	184
Ben-Gumuz	0.58	0.77	0.85	46.8	54.0	2.54	5.4	9	31.9	98	198
SNNP	13.66	18.80	19.67	55.8	50.9	2.92	5.9	6	35.5	113	192
Gambella	0.23	0.30	0.32	34.3	50.5	2.57	4.5	14	34.4	123	233
Harari	0.17	0.26	0.25	22.0	25.8	3.40	4.4	22	30.1	118	191
Addis Ababa	2.71	3.79	3.93	30.2	36.1	2.80	1.9	45	19.2	81	114
Dire Dawa	0.35	0.54	0.50	29.5	33.1	3.80	3.6	28	24.5	106	176
Rural	58.32	77.05	84.5	47.5	45.4	2.55	6.4	4	37.3	115	193
Urban	10.71	17.48	15.5	33.2	36.9	4.18	3.3	36	25.0	97	149
Total	69.13	94.53	100	45.5	44.2	2.73	5.9	8.1	35.8	97	166

Source: Population Profile of the National Office of Population and DHS 2000

2. HEALTH OUTCOMES

119. This chapter analyzes the status of maternal and child health outcomes which are key indicators targeted by the Millennium Development Goals (MDGs). The analysis includes:
- Basic health outcome indicators with comparisons over time;
 - An assessment of burden of health problems among the poor relative to the rich;
 - An analysis of the levels and trends in inequities over a period of time;
 - Sub-national analysis of health outcomes between urban and rural areas and across regions;
 - A description of the key health problems that affect the poor including priority diseases that contribute the most to the burden of disease, child and maternal mortality, etc.

Child Mortality

120. **Child mortality has declined in the last decade, albeit slowly.** Figure 2.1 presents neonatal, infant and under-five mortality rates for the three recent five-year periods before the Demographic and Health Survey (DHS) 2000. Almost one in every ten babies born in Ethiopia (97 per 1,000) does not survive to celebrate its first birthday and one in every six children dies before its fifth birthday. *Child mortality has declined in Ethiopia over the past 15 years and the decline has been more pronounced over the last 10 years.* Under-five mortality is 21 percent lower now than it is five to nine years ago. The corresponding decline in neonatal and post-neonatal mortality over the same period is 29 percent and 21 percent, respectively.

Figure 2-1: Ethiopia in the global trends in infant mortality and under-five mortality

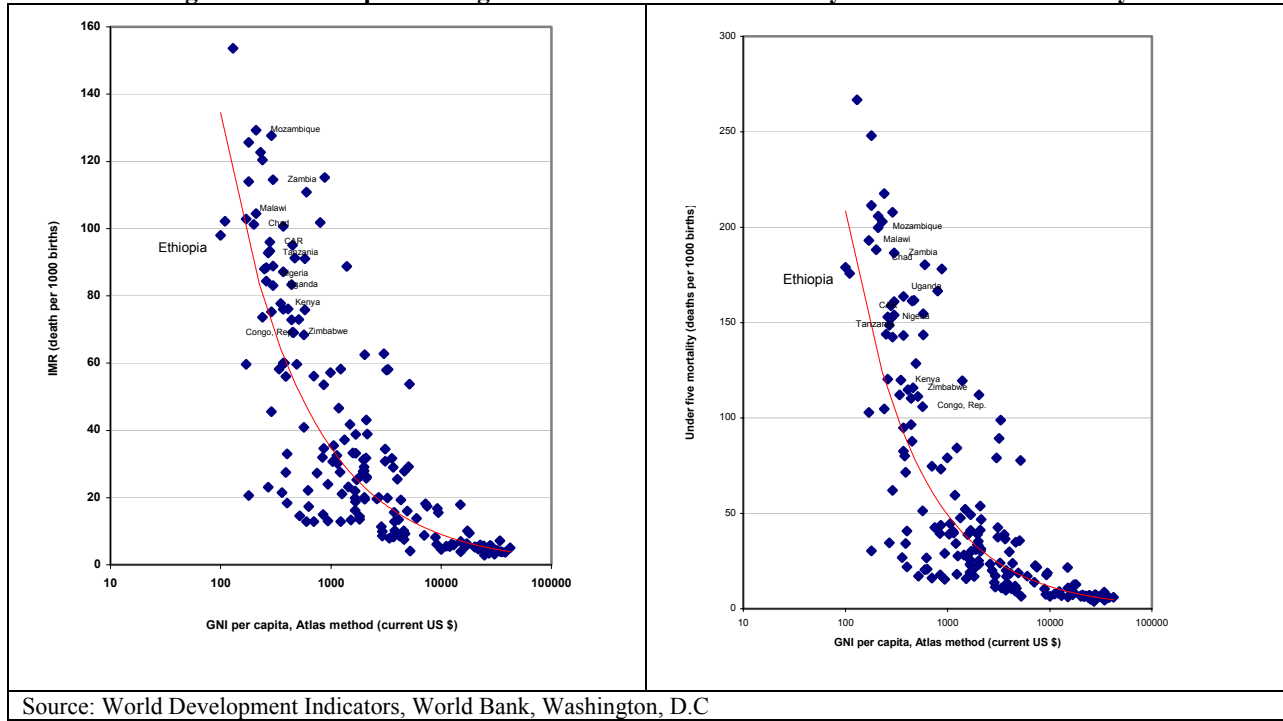
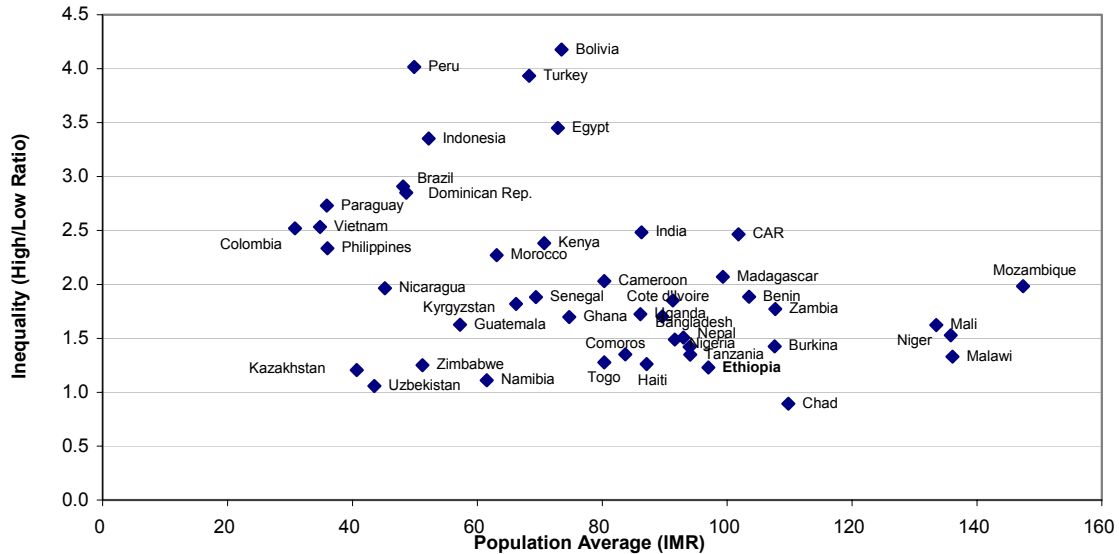


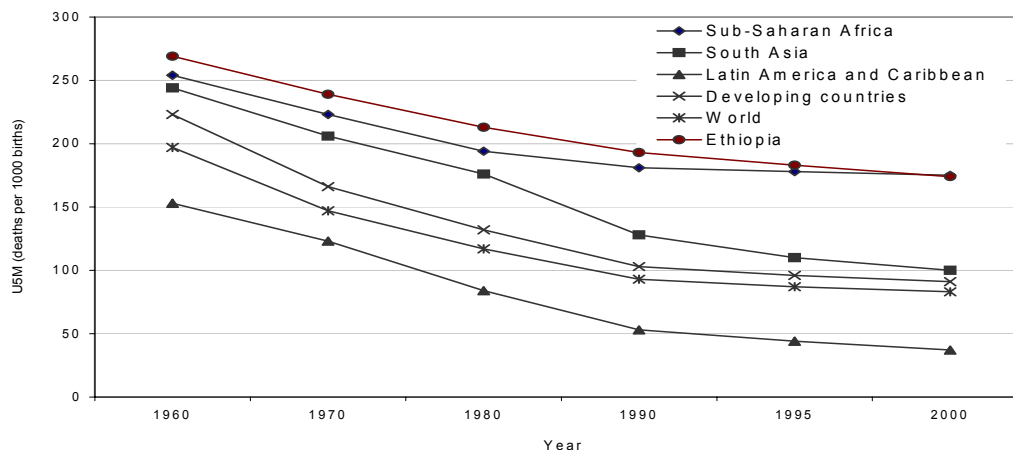
Figure 2-2: IMR and poor/rich inequalities in different countries



121. How does Ethiopia fare with regards to child survival relative to per capita income compared to other countries of the world? Figure 2.1 and Figure 2.2 and indicate that *although Ethiopia has very high IMR and U5MR it nevertheless has lower IMR and U5MR among countries with similar per capita incomes* (the scatter plot point of Ethiopia is left of the trend line in both cases as depicted in figure 2.1. Figure 2.2

confirms that *while Ethiopia's IMR is high, intra-country inequities between rich and poor are low*. Going forward, Ethiopia should try to maintain these low inequity levels while reducing the high levels of child mortality.

Figure 2-3: Trends in under five mortality in Ethiopia compared to other regions of the world



Source: Unicef, 2002

Table 2-1: Trends in infant mortality rate by selected countries in sub-Saharan Africa, 1960-2000

Country	Trends in IMR					Decadal decrease in IMR (negative indicate increases)					
	1960	1970	1980	1990	2000	1960-70	1970-80	1980-90	1990-2000	Rank in 1980-90	Rank in 1990-2000
	CAR	187	149	121	115	115	20.3	23.1	5.2	0.0	8
Chad	195	149	124	118	118	23.6	20.2	5.1	0.0	9	8
Congo	143	100	88	83	81	30.1	13.6	6.0	2.4	7	6
Congo DR	175	147	130	128	128	16.0	13.1	1.6	0.0	11	7
Ethiopia	180	160	143	128	117	11.1	11.9	11.7	8.6	4	5
Kenya	122	96	73	63	77	21.3	31.5	15.9	-22.2	2	12
Malawi	205	189	157	146	117	7.8	20.4	7.5	19.9	6	1
Mozambique	180	163	140	143	126	9.4	16.4	-2.1	11.9	12	4
Sudan	123	104	86	75	66	15.4	20.9	14.7	12.0	3	3
Tanzania	142	129	106	102	104	9.2	21.7	3.9	-2.0	10	10
Uganda	133	110	108	100	81	17.3	1.9	8.0	19.0	5	2
Zambia	126	109	92	108	112	13.5	18.5	-14.8	-3.7	13	11
Zimbabwe	97	86	69	53	73	11.3	24.6	30.2	-37.7	1	13

Source: UNICEF www.childinfo.org

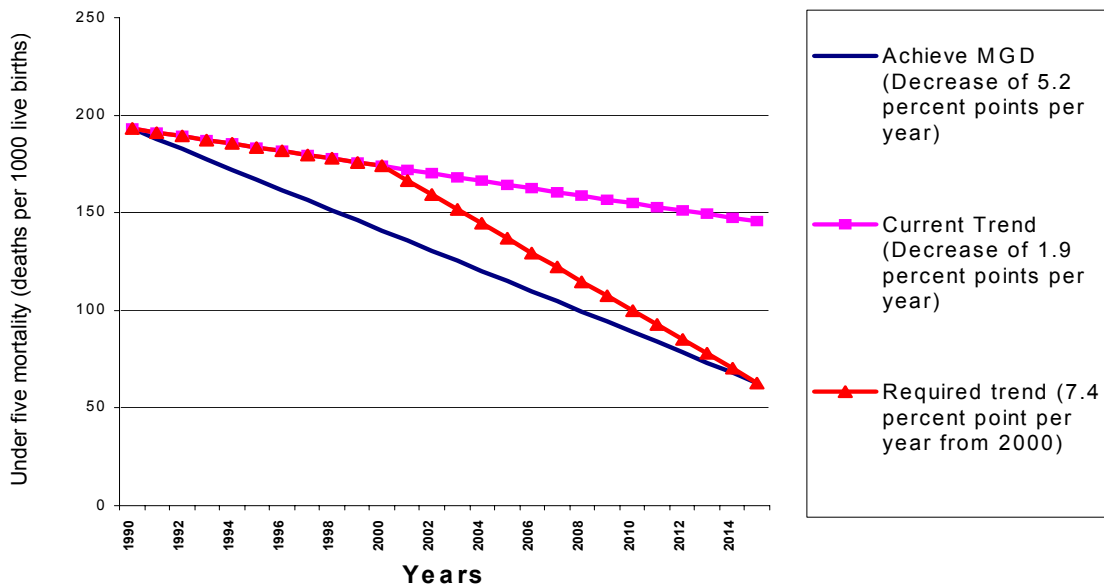
122. Table 2.1 shows that Ethiopia has experienced a slow but steady decline in IMR since 1960, averaging an IMR reduction of 10 percent for each decade. Its performance has been particularly good during the 1980s and 1990s when many of the other sub-Saharan African countries showed stagnation or even increases in IMR.⁷ Figure 2.3 shows the trends in under-five mortality in Ethiopia between 1960 and 2000, and compares it with other regions of the world. It indicates that Ethiopia's mortality rate which used to be

⁷ More analysis would be needed to explain this trend. Some possible contributing factors could be price stability and that community health agents were mobilized to undertake growth monitoring and health promotion activities during this period

higher than the sub-Saharan average in 1960, is slowly falling towards the sub-Saharan average. However, it is very high compared to South Asia and other developing countries.

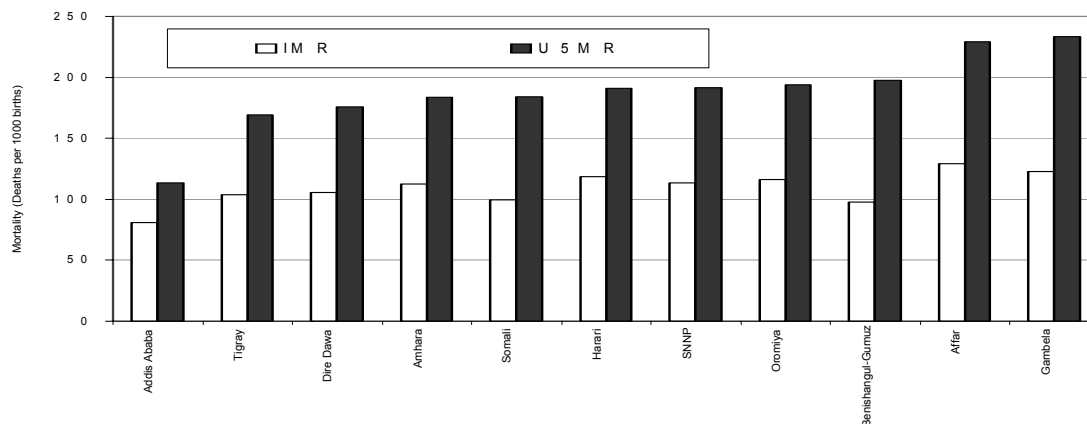
123. **Reaching child survival MDGs at the current pace will be challenging.** In order to reach the child survival MDG target by 2015, Ethiopia would have had to reduce under-five mortality at the rate of 5.2 per 1000 live births each year since the 1990s. However, between 1990 and 2000, the rate of decrease of under-five mortality has only been about 1.9 per 1000 live births per year (Figure 2.2). Ethiopia would have to reduce reducing child mortality by 7.4 per 1000 live births per year between 2003 and 2015. This is extremely challenging given the past track record as well as major unmet needs for child survival in Ethiopia, which the report will highlight. However, through appropriate, cost-effective strategies many of the child mortality factors can be mitigated

Figure 2-4 Achieving MDG for child survival



124. Wealth-based inequities remain large although they are lower relative to other countries with similar per capita. While infant and under five mortality rates are high in all regions and income groups. On average, more urban-based and richer children are doing better. The infant mortality rates are 96.5 and 114.7 in urban and rural areas respectively. Under-five mortality rates are 148.6 and 192.5 in urban and rural areas respectively. Regional variations are even more pronounced (Figure 2.1): Addis Ababa has the lowest IMR (81) and under-five mortality (113), while Gambella has the highest IMR (123) and under-five mortality (233).

Figure 2-5: Regional variation in IMR and U5MR in Ethiopia



125. **The differentials in child mortality by wealth quintiles are also prominent** (Figure 2.3). For example, the IMR in the poorest quintile is 93.5 while in the richest quintile it is 80.5. Likewise, the U5MR in the poorest quintile is 149.6, while in the richest quintile, it is 114. Girls have lower IMR (girls' IMR is 110 and boys IMR is 124) and under-five mortality rates (197 for boys and 178 for girls) relative to boys
126. **Morbidity.** *High mortality rates can be partly related to living conditions and high incidence of illness.*
127. Table 2.2 shows the reported morbidity by age category and income quintiles during the two months prior to the survey. Overall morbidity is 27 percent, but it is much higher among those greater than 50 years old and those less than five years old. Reported morbidity in children less than five years old during the two month survey period was 34 percent (Table 2.2)⁸ Reported morbidity does not differ much by income quintile.

Table 2-2: Age category-wise reported morbidity in the last two months before survey

Age Category	Population Average	Poorest Quintile	Richest Quintile
<5 years	34.29	32.99	36.11
5-14 yrs	16.7	16.69	17.12
15-49 yrs	27.23	29.32	24.63
>50 yrs	47.28	47.43	48.26
Total	27.2	27.36	27.14

Source: WMS 2000

Table 2-3 provides overall morbidity by regions of Ethiopia. Reported morbidity is highest in Benishangul (38 percent) and Dire Dawa (36 percent) and lowest in Addis Ababa (17 percent) which is the capital of Ethiopia and the most urbanized among the regions. The national rich to

⁸ Two sources of data are available to assess child morbidity levels in Ethiopia. The Welfare Monitoring Surveys (WMS), 2000 sought information about prevalence of illness in all age groups of population from which child morbidity can be determined. The other source of child morbidity is the DHS 2000. In DHS 2000 child morbidity relating to acute respiratory illness and diarrhea during two weeks prior to the survey was sought.

poor ratio is 1 indicating that the reported incidence of illness among the rich and poor is the same. The rich to poor ratio is highest in Harari (1.3) and lowest in Dire Dawa (0.7).

Table 2-3: Overall morbidity during the two months period prior to survey by region and income quintiles

Region	Yes	No	Poorest	2nd Poorest	Middle	2nd Richest	Richest	Rich to poor ratio
Tigray	31	69	33	34	30	31	29	0.9
Afar	25	75	27	17	23	30	30	1.1
Amhara	29	71	28	27	29	31	31	1.1
Oromiya	26	74	26	26	25	27	26	1.0
Somali	33	66	27	32	38	37	31	1.2
Benshangul	38	62	37	41	35	38	40	1.1
SNNP	26	74	27	24	24	26	27	1.0
Gambela	33	67	33	29	29	30	41	1.2
Harari	25	75	19	26	28	24	25	1.3
Addis Ababa	17	83	22	18	16	17	17	0.8
Dire Dawa	36	64	49	39	30	35	35	0.7
Total	27	73	27	26	27	29	27	1.0

Source: WMS 2000

128. The top ten reasons for outpatient visits, inpatient admissions and causes of death from service statistics of Ministry of Health are summarized in Table 2.4. Majority of the top 10 causes of morbidity are communicable diseases.

Table 2-4: Top ten reasons for outpatient visits, inpatient admissions and causes of death in Ethiopia

	Outpatient visits		Inpatient Admissions		Causes of death			
	Number	%	Number	%	Number	%		
1 All types of malaria	328760	10.4	All types of malaria	16782	14.8	Tuberculosis of respiratory system	1005	10.0
2 Helminthiasis	213195	6.7	Pneumonia	10090	8.9	Pneumonia	734	7.3
3 Acute upper respiratory infection	205129	6.5	Tuberculosis of respiratory system	8881	7.8	All types of malaria	462	4.6
4 Bronchopneumonia	173123	5.5	Accidents	6976	6.2	Bacillary dysentery	224	2.2
5 Infections of skin and subcutaneous tissue	145680	4.6	Abortion	4449	3.9	Accidents	156	1.6
6 Gastric and duodenites	137942	4.4	Pregnancy, childbirth & the puerperium	4326	3.8	Meningitis	149	1.5
7 Dysentery	111938	3.5	Cataract	2735	2.4	Hypertension	142	1.4
8 Tuberculosis of respiratory system	70526	2.2	Bacillary dysentery	1848	1.6	Gastroenteritis & colitis	109	1.1
9 Sexually transmitted infection	68733	2.2	Gastroenteritis & colitis	1707	1.5	AIDS	83	0.8
10 Bronchitis, chronic and unqualified	58594	1.8	Meningitis	1015	0.9	Leishmaniasis	48	0.5
Total of all the above cases	1513620	47.8	Total of above case	58809	51.9	Total of all the above cases	3113	31.1
Total of all cases	3167514	100.0	Total of all cases	113365	100.0	Total of all cases	10006	100.0

Source: PPD, MOH Health and Health-related Indicators. 2001

Note: PPD MOH 2002 version did not provide updated information based on the above format

129. The incidence of illnesses contributing to avoidable deaths caused by ARI (24.4 percent) and diarrhea (23.6 percent) are higher among under-five children in Ethiopia than its SSA neighbors. (Table 2.3). On average children under five years experience about two episodes of serious illness per year.⁹

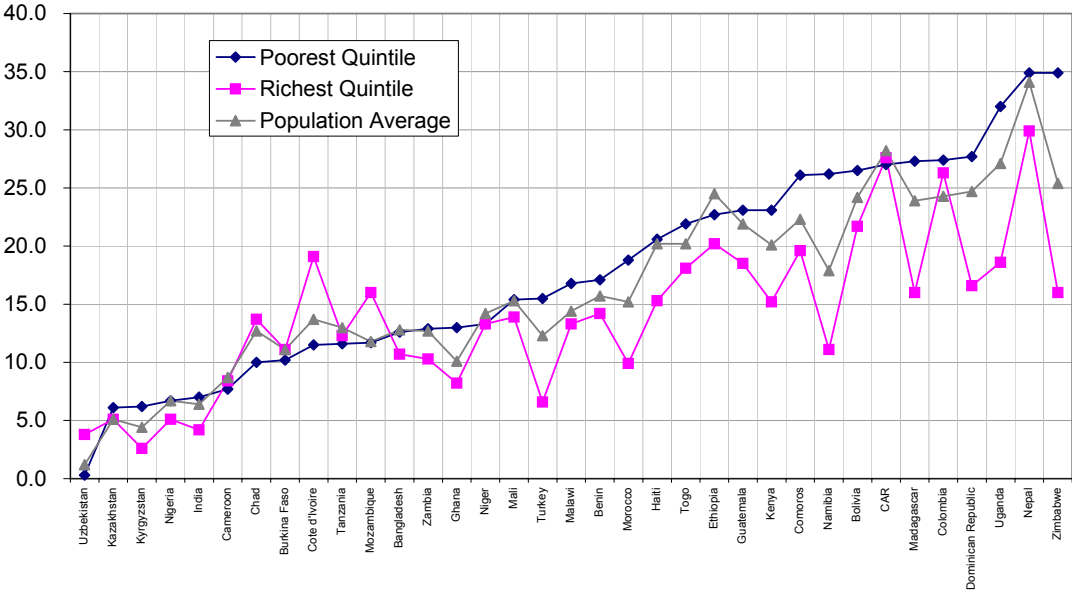
Table 2-5: ARI and diarrhea incidence (2000)

Country	Percent of children under 5 with ARI in the two weeks prior to the survey	Percent of children under 5 with diarrhea in the two weeks prior to the survey
CAR	28.2	26.5
Chad	12.5	31.2
Nigeria	11.3	15.3
Ethiopia	24.4	23.6
Kenya	20.1	17.1
Malawi	12.3	16.1
Mozambique	11.8	20.7
Tanzania	13.9	12.4
Uganda	27.1	23.5
Zambia	12.7	23.5
Zimbabwe	15.8	13.9

Source: Unicef, 2002

Figures 2.8 and Figure 2.9 show the prevalence of ARI and diarrhea during the two week period prior to the survey in the poorest and the richest quintiles along with the population averages for selected countries. Differentials exist between the rich and the poor quintiles (for example, the prevalence if diarrhea is higher in the poorest quintile (25 percent) compared to the richest quintile (19 percent) but the differences appear to be narrower than other countries.

Figure 2-6: ARI in children less than five years during two week period prior to survey sorted by prevalence in the poorest quintile of population



⁹ Acute Respiratory Infection (ARI) is one of the major causes of childhood morbidity and mortality throughout the world. Diarrhea has been selected for analysis because dehydration due to diarrhea is a major cause of death among young children.

Figure 2-7: Diarrhea in children less than five years during two week period prior to survey sorted by prevalence in the poorest quintile of population

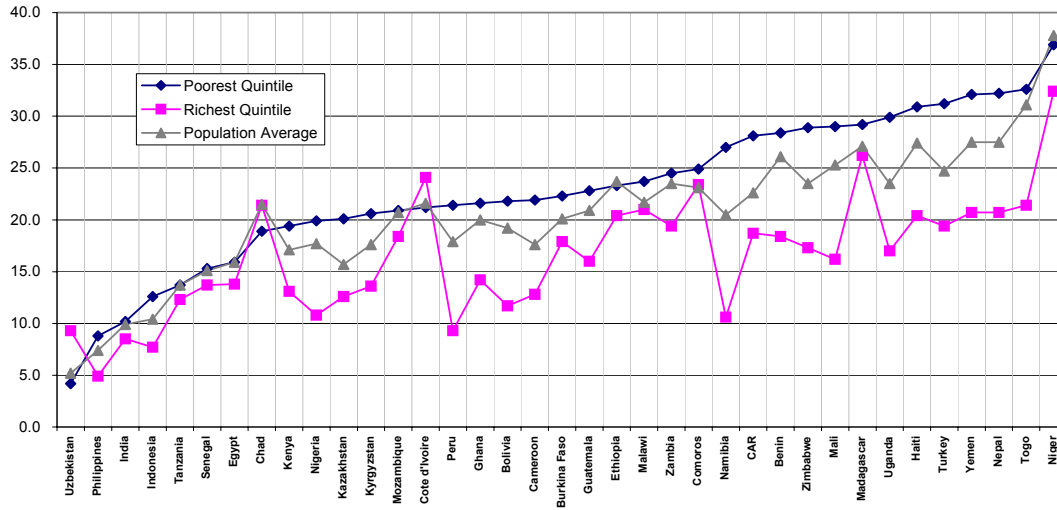
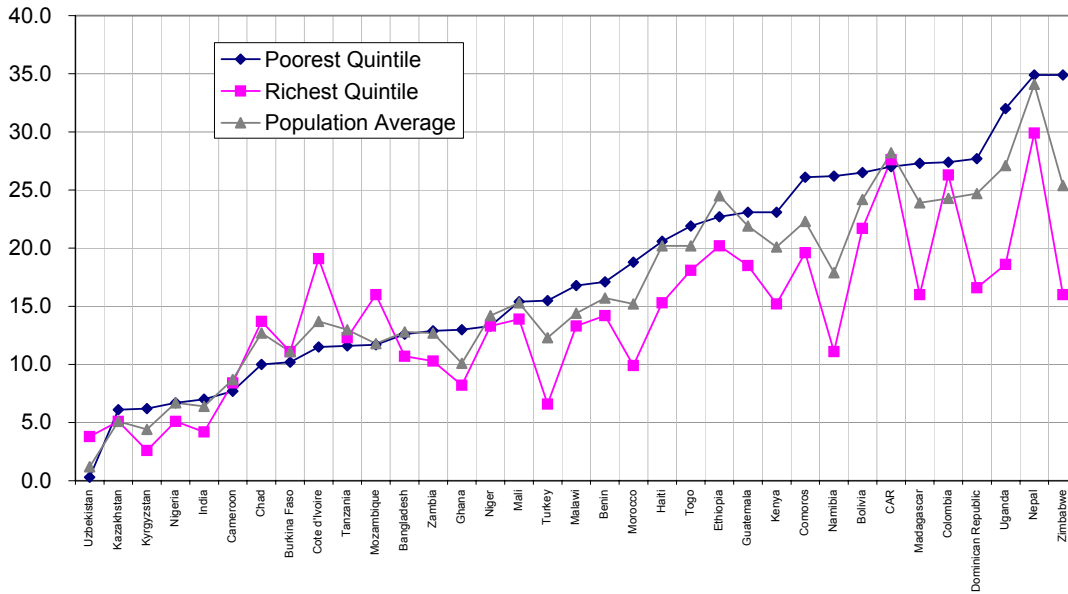


Figure 2-8ARI in children less than five years during two week period prior to survey sorted by prevalence in the poorest quintile of population



130. Based on DHS 2000 results, Tigray (29.2 percent) and Benshangul Gumuz (29.6 percent) have the highest ARI prevalence rates while Addis Ababa has the lowest ARI prevalence rate (10.4 percent). Children living in SNNP (29.4 percent), Oromiya (25 percent), Gambella (27.4 percent), and Benshangul Gumuz (26.3 percent) have higher prevalence rates compared to other regions. On the other hand, children living in Addis Ababa (12.2 percent) have the lowest prevalence of diarrhea while those living in SNNP have the highest prevalence (30 percent) as can be seen in Table 2.6. These results are discussed further in section 3 of this report.

Table 2-6: Diarrhea incidence among children under 5 years old

	Poorest Quintile	Richest Quintile	Below poverty line	Above poverty line	Average
Prevalence of diarrhea children < 5 years					
National average	25.4	19.3	24.1	21.0	22.6
Regional variation					
Tigray	18.3	13.2	18.3	17.2	17.7
Afar	23.1	19.5	16.2	16.4	16.3
Amhara	16.5	14.8	19.2	18.0	18.8
Oromiya	27.3	24.2	26.0	24.6	25.4
Somali	11.5	25.5	20.1	18.2	19.3
Benshangul-Gumuz	32.1	22.9	30.3	22.2	26.9
SNNP	29.4	27.3	30.4	28.4	29.6
Gambella	30.1	25.8	27.9	25.5	26.8
Harari	27.9	20.0	25.8	22.9	23.6
Addis Ababa		12.5		12.8	12.8
Dire Dawa	27.7	17.0	32.1	19.2	21.3

Source: DHS 2000

Table 2-7: Diarrhea incidence and care-seeking

	Poorest Quintile	Richest Quintile	Below poverty line	Above poverty line	Average
Prevalence of diarrhea children < 5 years					
National average	25.4	19.3	24.1	21.0	22.6
Regional variation					
Tigray	18.3	13.2	18.3	17.2	17.7
Afar	23.1	19.5	16.2	16.4	16.3
Amhara	16.5	14.8	19.2	18.0	18.8
Oromiya	27.3	24.2	26.0	24.6	25.4
Somali	11.5	25.5	20.1	18.2	19.3
Benshangul-Gumuz	32.1	22.9	30.3	22.2	26.9
SNNP	29.4	27.3	30.4	28.4	29.6
Gambella	30.1	25.8	27.9	25.5	26.8
Harari	27.9	20.0	25.8	22.9	23.6
Addis Ababa		12.5		12.8	12.8
Dire Dawa	27.7	17.0	32.1	19.2	21.3

Source: DHS 2000

131. ***On average, diarrhea and pneumonia are the main causes of early deaths of young children in Ethiopia.*** The relatively large proportion of highlands in Ethiopia results in malaria having an epidemic profile in these areas, in contrast with the more common endemic profile of SSA¹⁰. Thus, malaria is estimated to represent only 4.5% of the causes of child mortality in Ethiopia although it represents one of the leading causes of outpatient visits and inpatient days. According to recent estimates, validated by international experts, most deaths of children less than 5 years old in Ethiopia can be attributed to diarrhea (24%) - a disappearing cause of deaths in many poor countries- and pneumonia (28%). Measles (2.2%) is less of an important cause compared to a decade ago; the reduction of deaths from measles having probably contributed to the reduction in child mortality in the 1980s and 1990s. On the other hand, HIV has emerged as a growing cause of early deaths of children (6.2%).

Child malnutrition

132. High malnutrition rates in Ethiopia pose a significant obstacle to achieving better child health outcomes. Ethiopia has among the highest underweight and stunting rates among young children in SSA (Table 2-7). Almost one of out two children (about 47 percent) in Ethiopia are moderately to severely underweight; 16 percent are severely underweight. Chronic malnutrition in Ethiopia is worst than other SSA countries: about one in two children (51 percent) are moderately to severely stunted, of which slightly more than one in four children (26 percent) are severely stunted. On the other hand, severe to moderate wasting at 11 percent is relatively lower than some other SSA countries.¹¹

Table 2-8: Malnutrition in sub-Saharan Africa

Country	Underweight (Weight for age)		Stunting (Height for age)		Wasting (Weight for height)	
	Moderate and severe	Severe	Moderate and severe	Severe	Moderate and severe	Severe
	Benin	29.2	7.4	25	7.8	14.3
Burkina Faso	34.3	11.8	36.8	16.6	13.2	2.5
Cameroon	21	4.2	34.6	13.3	4.5	0.8
Central African Rep.	24.3	6	38.9	19.1	8.9	2.1
Chad	27.6	9.8	28.3	13.4	11.7	2.9
Congo	13.9	3	18.8	6.6	3.9	0.9
Congo, Dem. Rep.	34.4	10.2	45.2	24.6	9.6	3.5

¹⁰ Malaria transmission in Ethiopia is seasonal and unstable because of the varied topography. Its transmission is either perennial, seasonal or epidemic. Ecological conditions at high altitudes do not normally factor malaria transmission although major epidemics can occur at such high altitudes as a result of climatic changes rendering people living at such altitudes particularly vulnerable to severe malaria because they have been unable to develop the immunity that comes with regular exposure.

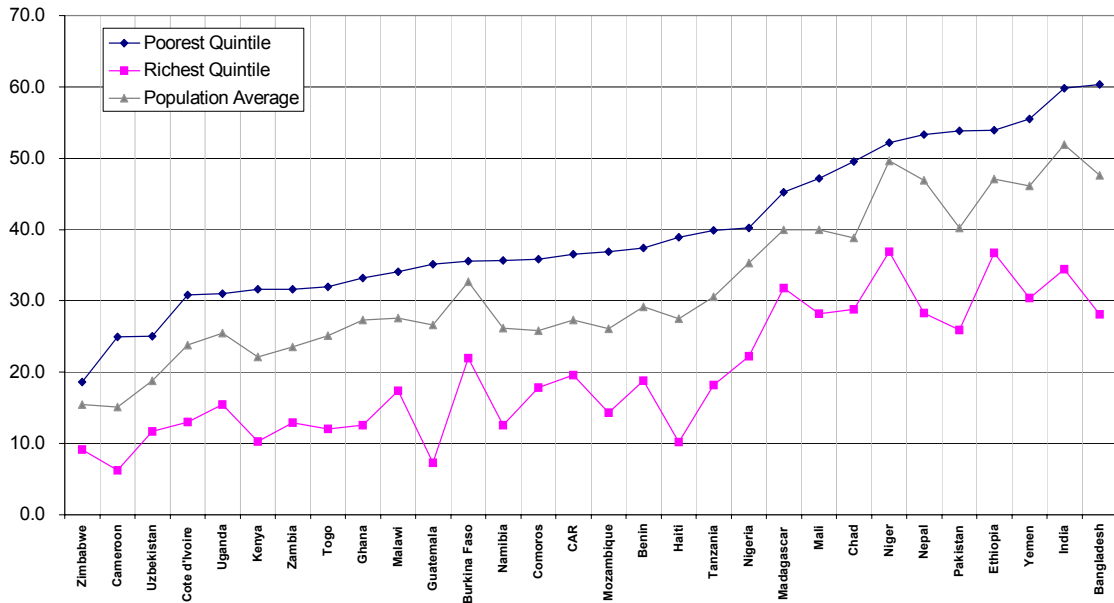
¹¹ Weight-for-age is a composite index of height for age and weight for height. Being underweight could mean that a child is stunted or wasted or both. Children whose weight-for age is below minus two standard deviations from the median of the reference population are underweight for their age, while those whose measurements are below three standard deviations from the reference population are severely underweight. Height-for-age measures linear growth retardation over a long period and does not vary with the season of data collection. Children who are below minus two standard deviations from the median of the reference population are considered short for their age or stunted. Children who are below minus three standard deviations from the reference population are severely stunted. Weight-for height measures body mass in relation to body length which shows current nutritional status and reflects the inability to receive adequate nutrition during the period immediately before the survey. Wasting can be due to seasonal food availability or the result of recent illness such as diarrhea. Children whose weight-for-height is below minus two standard deviations from the median reference population are too thin for their height or wasted. Those who measure below minus three standard deviations from the reference population are severely wasted.

Country	Underweight (Weight for age)		Stunting (Height for age)		Wasting (Weight for height)	
	Moderate and severe	Severe	Moderate and severe	Severe	Moderate and severe	Severe
	Cote d'Ivoire	21.4	4	21.9	7.8	10.3
Ethiopia	47.1	16	51.2	25.9	10.7	1.4
Gambia	17	3.5	18.7	5.9	8.6	1.2
Guinea	23.2	5.1	26.1	10.1	9.1	2.1
Kenya	22.7	6.5	37.2	17.6	6.3	1.4
Malawi	25.4	5.9	49	24.4	5.5	1.2
Mozambique	26.1	9.1	35.9	15.7	7.9	2.1
Namibia	26.2	5.7	28.4	8.3	8.6	1.5
Niger	39.6	14.3	39.8	19.5	14.1	3.2
Nigeria	27.3	10.7	45.5	25.6	12.4	4.9
Somalia	25.8	6.9	23.3	12.1	17.2	3.5
Tanzania	29.4	6.5	43.8	17.1	5.4	0.6
Uganda	25.5	6.7	38.3	15	5.3	0.9
Zambia	25		59		4	
Zimbabwe	13	1.5	26.5	9.4	6.4	1.6

Source: UNICEF, 2002

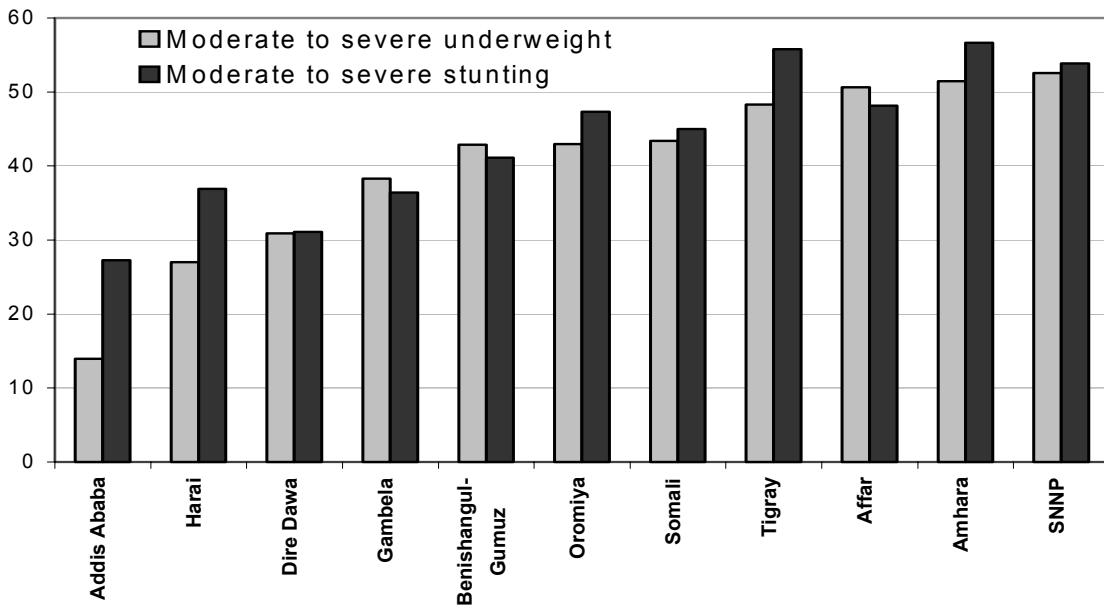
133. The rich to poor differences in terms of child moderate to severe underweight in Ethiopia relative to other countries are shown in Figure 2-10. Ethiopia has one of the highest malnutrition rates; these rates are similar to those in Nepal and slightly lower than only those Bangladesh, India and Niger. However, the rich to poor differences in Ethiopia are less than in many other countries.

Figure 2-9: Moderate to severe underweight sorted by underweight in the poorest quintile



Source: Gwatkin et al. 2002, World Bank

Figure 2-10. Regional differences in child malnutrition in Ethiopia



Source: DHS 2000

134. **Regional and urban/rural differences in child malnutrition are prominent in Ethiopia.** Regional differentials are illustrated in Figure 2-11. Prevalence of underweight is more than three times higher in Tigray, Afar, Amhara and SNNP compared to Addis Ababa. Stunting is almost twice as high in SNNP and Amhara compared to Addis Ababa. Urban/rural differences exist although they are as marked as regional differences. Severe to moderate underweight is 15 percentage points higher in rural areas compared to urban areas, and moderate to severe stunting is 10 percentage points higher in rural areas compared to urban areas.

Maternal mortality and MDGs

135. Information on maternal mortality is scarce but available indirect evidence suggests that the rate is very high. Based on 1995 estimates of the World Health Organization (WHO) that are comparable across the selected countries, the maternal mortality ratio of Ethiopia is 1800.¹² This estimate, however, has a very large confidence interval that ranges from 790 to 3200. Table 2-8 shows the comparative position of Ethiopia relative to selected countries in sub-Saharan Africa with regard to Maternal Mortality Ratio (MMR) in 1995. Figure 2-11 shows the scatter plots of MMR vis-à-vis per capita GDP for sub-Saharan countries and the world. Among the sub-Saharan African countries, Ethiopia's MMR is higher than other countries with comparable GDPs. Among the countries of the world, Ethiopia belongs to the cluster of sub-Saharan countries with high MMR and low per capita GDP.

Table 2-9 Maternal mortality in Ethiopia and other countries in Sub-Saharan Africa

Country	Maternal Deaths	Life Time risk	Maternal Mortality	Range of Uncertainty	
Congo, Dem Rep	20000	13	940	390	1800
Eritrea	1600	12	1100	830	1400
Ethiopia	46000	7	1800	790	3200
Kenya	13000	13	1300	1000	1700
Malawi	2800	21	580	410	750
Sudan	13000	12	1500	1000	1900
Uganda	10000	11	1100	900	1200
Somalia	7100	7	1600	770	2400
Tanzania, UR	13000	14	11000	800	1300

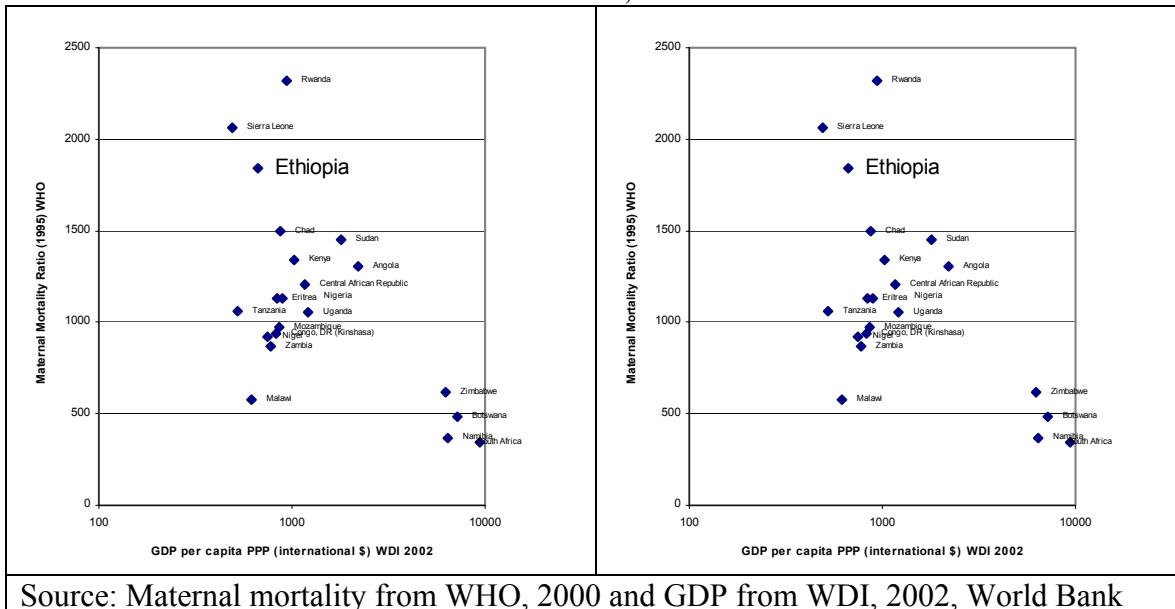
Source: UNICEF, 2002

136. **MMR is high and reaching MDGs is daunting.** The MDG for MMR is to reduce MMR by three quarters between 1990 and 2015. For Ethiopia, this would translate to a reduction of MMR from around 1800 in 1990 to approximately 450 by year 2015. Even though DHS 2000 MMR estimates for 1994-2000 are 871/100,000 births or approximately 9 deaths per 1,000 births (and HSDP estimates for 2001/02 are lower ranging from 500 to 700/ 100,000 births) which is less than 50 percent of the estimated MMR for 1990-1995, lowering MMR to 450 by 2015 would be challenging. At present, countries with a GDP per capita twice as high as Ethiopia's have almost universally all

¹² The maternal mortality ratio is obtained by dividing age-standardized maternal mortality rate by the age-standardized fertility rate. It measures the obstetric risk associated with each live birth.

not been able to decrease the MMR below 400 per hundred thousand. Achieving the MMR-related MDG will thus be particularly challenging for Ethiopia.

Figure 2-11 Estimated maternal mortality ratios for selected countries in the SSA and World, 1995



Source: Maternal mortality from WHO, 2000 and GDP from WDI, 2002, World Bank

137. MMR is one of the most difficult health outcomes to measure because it requires a comprehensive and accurate reporting of maternal deaths.¹³ Thus, it would be practical to use another indicator that could assess progress towards contributing towards this outcome and lessening the obstetric risk associated with each live birth: percentage of deliveries attended by skilled professionals, which this report examines further in section 3.
138. The maternal mortality rate which is the annual number of maternal deaths per 1,000 women from 15-49 years of age from 1994-2000 is 1.68. One out of 4 Ethiopian women (25 percent) died from pregnancy or pregnancy related causes during the seven years prior to the DHS 2000. The major causes of maternal death are related to emergency obstetric care and complications from unsafe abortions. Abortions account for about 50 percent of total gynecological and obstetric admissions. Other potential contributing factor towards childbirth and pregnancy related risks are the following: the low percentage of pregnant women who receive antenatal care from trained professionals (only 26 percent nationwide) and very few births are attended by skilled professionals (5.6 percent). Female genital mutilation is also widely practiced and this could also have

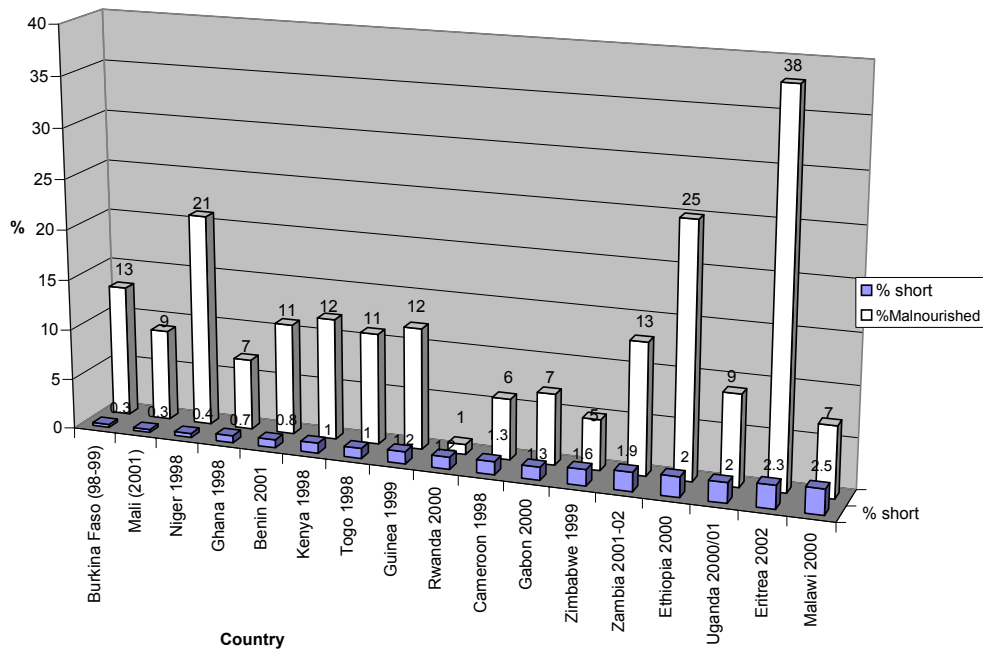
¹³.MMR estimates can be obtained from vital registration, longitudinal studies of pregnant women or repeated household surveys. Ethiopia has no vital registration system nor has there been a national household survey carried out that estimates maternal mortality. There is also the need for large sample sizes to calculate the point estimates with a reasonable degree of confidence. The DHS 2000 is the first population based national survey in Ethiopia to incorporate questions on maternal mortality.

detrimental health effects on women¹⁴. Four out of five women (80 percent) in the 15-49 years age group have been circumcised.

Maternal Malnutrition:

139. Women’s nutritional status is an important indicator of women’s overall health and as a predictor of pregnancy outcome.¹⁵ The average height of Ethiopian women is about 156 centimeters. Approximately 2 percent of mothers of children under three years of age are shorter than 145 centimeters¹⁶. This level is in the upper third of the 17 SSA countries surveyed by the DHS. ***Ethiopia has the second highest level of stunting among mothers of children less than three years old in 17 SSA countries surveyed from 1998 to 2002.*** About one out of 4 mothers (25 percent) in Ethiopia have a body mass index (BMI) of 18.5 indicating a relatively high level of chronic energy deficiency.

Figure 2-12: Malnutrition Among Mothers of Children less than 3 years old in 17 SSA countries



source: DHS 2002

¹⁴ The consequences of FGM on a woman’s physical health can include tetanus, infection, hemorrhage, long term pain, scarring, urinary tract infections, urinary incontinence, painful intercourse, and pregnancy complications (Tinker et al 2000).

¹⁵ Aside from the consequences on their own health, such as difficult deliveries due to their small stature, malnourished women also bear increased the risks of having low birth-weight babies, still birth, and miscarriage.

¹⁶ A women is considered at nutritional risk if her height is less than 145 cm and her BMI (weight/height squared) is below 18.5

Fertility

140. The current total fertility rate (TFR) in Ethiopia is 5.9 which means that, on average an Ethiopian women will give birth to approximately 6 children during her lifetime. *At its current TFR, Ethiopia has already achieved some progress in decreasing its previous high fertility levels.* Figure 2-12 shows the TFR of selected African countries in 1990 and 2000. Between 1990 and 2000, fertility has declined on average by 0.6 percent per woman in Ethiopia and this fertility level is now comparable to the SSA average. Congo, Uganda and Somali also have high fertility like Ethiopia, although their respective TFRs have remained unchanged at such high levels. On the other hand, Sudan, Tanzania and Kenya have shown higher reductions in TFR compared to Ethiopia. *Despite the declining fertility levels in Ethiopia, the current rate of change will not be enough to achieve the national Population Policy targets of 4 children per women by 2015.*
141. However, some encouraging trends emerge. *Fertility has been decreasing dramatically in urban areas but the decrease has been much slower in rural areas.* As shown in table 2.8, the TFR (3.3) in urban areas is much lower than in the rural areas (6.4). Table 2.9 shows that Addis Ababa is a particularly special case in SSA with a TFR of 1.95 children per woman, which is at the level of developed countries. The decline in TFR has been extremely slow in rural areas. TFR is also very high (6.4) in the poorest quintile compared to the richest quintile (3.9). Age specific fertility rates (ASFR) indicate that fertility rates are high in all age groups. However, the high fertility rate in the 15-19 age group in rural areas is of particular concern. Significant differentials in TFR and ASFR exist among regions. Addis Ababa has near replacement level of TFR of 1.95, while Oromiya has 6.4.

Table 2-10: TFR and ASFR by residence and wealth

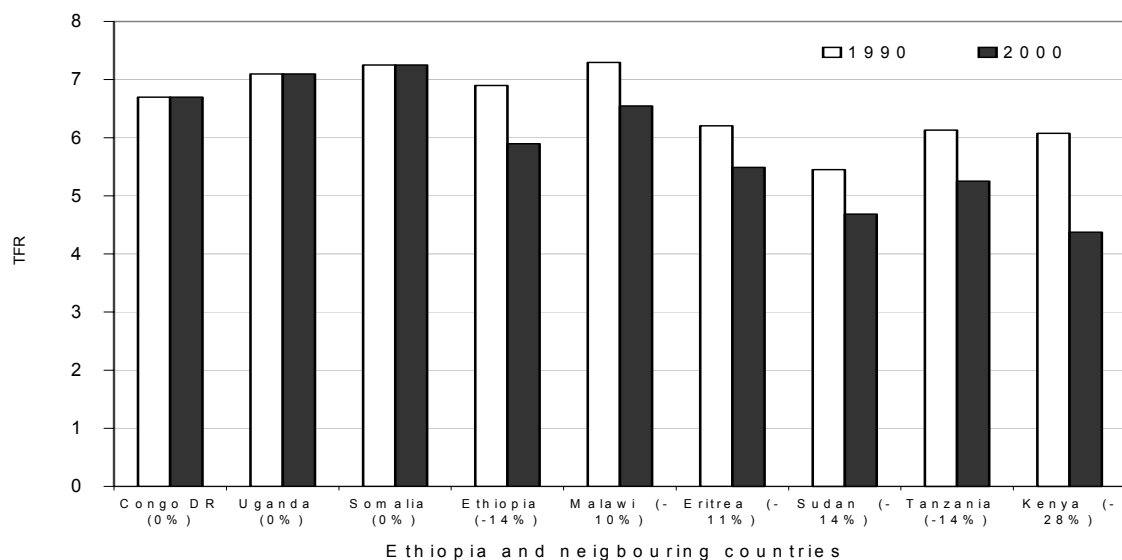
	Age	Urban/rural		Wealth		
		Overall	Urban	Rural	Poorest Quintile	Richest Quintile
ASFR						
	15-19	109.6	60.2	122.8	127.3	70.3
	20-24	244.2	148.8	266.1	273.7	160.7
	25-29	264.1	156.4	289	295.7	192.4
	30-34	248	160.1	264.1	251.1	191.6
	35-39	182.9	97.1	198.8	194.8	111.6
	40-44	99.9	33.2	109.3	110.9	54.5
	45-49	24.1	4.2	27	23.8	0.7
TFR		5.86	3.3	6.39	6.39	3.91

142. *It is crucial to address high fertility levels in Ethiopia because there is a strong link between poverty and high fertility.* Within Ethiopia, the TFR in the poorest quintile is 6.4 compared with 3.9 in the richest quintile. An ILO study (2003) confirmed that a strong relationship exists in Ethiopia between demographic characteristics and the probability that a household is poor. Households with larger family size and older heads are more likely to fall into poverty than households with smaller family size and younger heads. The addition of one more child increases the incidence of poverty.

Table 2-11: TFR and ASFR by region

	Tigray	Afar	Amhara	Oromiya	Somali	Ben-Gumz	SNNP	Gambela	Harari	Addis Ababa	Dire Dawa
ASFR											
15-19	123.8	140.8	152.5	111.4	70.2	121.7	73.2	99.1	97.3	23.1	45.8
20-24	230.6	238.6	249	271.8	220.8	271.8	230.8	198.9	180.8	90.8	131
25-29	243.3	217.4	256.9	289.6	252.2	254.4	272.4	217.1	202.7	116.2	188.6
30-34	263.5	198	236.4	272.1	241.0	235.3	251.7	184.8	197.3	96.7	195
35-39	188.4	99.2	173.7	206.7	177.2	163.8	187.4	139.9	132.6	50.7	105.2
40-44	101.2	69.3	107	97.7	122	83.7	112	43.1	41.9	8.7	50.2
45-49	15.2	16.5	14.3	22.7	43.4	0	49.4	13.4	28.7	3.3	0
TFR	5.83	4.9	5.95	6.36	5.7	5.38	5.88	4.48	4.41	1.95	3.58

Figure 2-13: Changes in TFR in sub-Saharan African countries including Ethiopia



Source: Unicef, 2002

Note: 2000 data for Ethiopia was updated using DHS 2000 Source: Unicef, 2002

143. *Women bear children when they are relatively young.* Ethiopian women would have more than 50 percent of their lifetime births (3.1) by age 30 nearly 75 percent of the total number of children they will have (about 4.3) by age 35. About 16 percent of Ethiopian women ages 15-19 are already mothers or are currently pregnant with their first child. Slightly more than twice as many women in this age group residing in rural areas compared to urban areas are either already mothers or currently pregnant. There are slightly more than twice as many uneducated mothers or pregnant women in this age group than those with at least primary schooling (DHS 2000).

HIV/AIDS

144. The HIV/AIDS epidemic has taken off rapidly during the past years. Currently, Ethiopia is classified as a country with a generalized ¹⁷HIV/AIDS epidemic. The first evidence of HIV/AIDS in Ethiopia was detected in 1984, and the first AIDS case was detected in 1986. Although HIV prevalence in the 1980s is low, it has spread quite rapidly during the 1990s. MOH estimates that about 2.2 million people in Ethiopia are affected with HIV/AIDS (2 million adults and about 200,000 children). The adult HIV/AIDS prevalence rate is 6.6 percent in 2001 (MOH, 2002).¹⁸ While this is lower than the 2000 estimate of 7.3 percent, it should not be automatically interpreted that the HIV/AIDS epidemic is declining in Ethiopia. The current estimate could be because of the following reasons: the possible stabilization of the epidemic, more extensive surveillance data, and the reclassification of Estie as an urban site.
145. ***HIV/AIDS prevalence rates in urban areas are significantly higher than rural areas.*** The average prevalence rate for pregnant women for all urban sentinel sites is 13.2 percent while the rural prevalence rate is 2.3 percent. Even when using the extrapolated prevalence rate of 3.7 percent from both rural sentinel survey sites and the army recruits data (a separate rural prevalence study for army recruits ages 18 to 25 indicates a prevalence rate of 3.9 percent (MOH))¹⁹, the urban prevalence rate is still about 3.5 times greater than the prevalence rates in rural areas. Addis Ababa has a current prevalence rate estimate of 15.6 percent. Among the urban sites surveyed, Bahir Dar in Amhara has the highest HIV prevalence rate of 23.4 percent, followed by Jijiga in Somali (19 percent), and Nazareth in Oromia (18.7 percent).
146. Based on the sentinel surveillance data, pregnant women in the 15-24 years age group have the highest average HIV prevalence (12.1 percent), representing recent infections. In terms of absolute numbers for both males and females, the largest number of HIV-infected persons are in the 20 to 29 years age group.
147. ***In terms of number of HIV/AIDS and tuberculosis cases, Ethiopia is one of the most heavily affected countries of the world.*** — Although Ethiopia constitutes only 1 percent of the world's population, it contributes 7 percent of the world's HIV/AIDS cases. In

¹⁷ A generalized HIV/AIDS epidemic refers to a situation where HIV has spread far beyond the original subpopulations with high-risk, which are now heavily infected. Prevalence among women attending ante-natal clinics is 5 percent or more.

¹⁸ MOH estimates are slightly higher than UNAIDS end 2001 estimates that 2.1 million children and adults in Ethiopia are living with HIV/AIDS (UNAIDS, 2002). UNAIDS December 2001 data indicate also a slightly lower national adult (15-49 yrs) prevalence of 6.4 percent in Ethiopia.

¹⁹ In general, there is underreporting of HIV/AIDS from rural areas due to lower rates of access to health care services as well as the lack of continuous data from sentinel surveillance sites. Therefore, it is possible that HIV prevalence in rural areas is higher. In 2001, there was an additional cause for concern because of the reclassification of Estie (a town in South Gonder zone) in the 2001 survey from a rural to an urban site. This reclassification is the main reason why there is a difference in the prevalence rates between 2001 and 2000. In order to address this potential underestimation issue, a separate survey was undertaken to provide additional evidence for rural areas.

terms of the number of infected persons, Ethiopia ranks fifth after South Africa, Nigeria, Kenya and Zimbabwe in SSA. However it ranks second to Nigeria in terms of the number of orphans who are 14 years of age or younger.

148. The relative situation of HIV/AIDS in Ethiopia compared to other countries in Africa is given in Table 2.12.

Table 2-12: Burden of HIV/AIDS in African countries

	Number of People Living with HIV/AIDS	Adults prevalence, 15 to 49 years	Orphans (0- 14 years old)	AIDS deaths, 2001
South Africa	5,000,000	20.1	660,000	360,000
Nigeria	3,500,000	5.8	1,000,000	170,000
Kenya	2,500,000	15.0	890,000	190,000
Zimbabwe	2,300,000	33.7	780,000	200,000
Ethiopia	2,100,000	6.4	990,000	160,000
Tanzania	1,500,000	7.8	810,000	140,000
DRC	1,300,000	4.9	930,000	120,000
Zambia	1,200,000	21.5	570,000	120,000
Mozambique	1,100,000	13.0	420,000	60,000
Cameroon	920,000	11.8	210,000	53,000
China	850,000	0.1	76,000	30,000
Malawi	850,000	15.0	470,000	80,000
Cote d'Ivoire	770,000	9.7	420,000	75,000
Sub-Saharan Africa	28,500,000	9.0	11,000,000	2,200,000

Source: UNAIDS 2002.

149. Aside from the negative emotional and social impact inflicted by HIV/AIDS on households and communities, it also has adverse economic consequences. Based on the data collected by the MOH, about 91 percent of infections occur among adults between 15-49 years old, this is generally the most economically productive segment of the population. Illnesses and deaths in this age group has potential negative effects on labor productivity and output, thereby increasing the likelihood of lower economic growth. Higher death rates in this particular age group also increases the dependency ratio because a smaller number of young adults will have to support large numbers of children and the elderly.

Tuberculosis

150. The incidence ratio of all forms of TB in 2000 is 397/100,000. This ratio is higher than the SSA average of 354/100,000 and significantly greater than the average for low-income countries of 233/100,000. Based on FMOH 2002 estimates the TB incidence ratio has declined to 292/100. Reported TB accounts for 3.1 percent of all deaths. There are no reliable estimates on the real incidence of TB and the reported notification rates may seriously underestimate the actual burden. About 30 percent of all TB cases also are HIV positive.

Table 2-13: TB Incidence Ratio

Indicator	FMOH estimates 2002	Population: 65,3 m.
Incidence ratio of all forms of TB	292/100,000	196,000 cases
Incidence ratio of smear-positive TB	123/100,000	82,000 cases
Proportion of all estimated incident TB cases that are also HIV-positive	30%	59,000 cases
Proportion of general population having both latent TB and HIV infection together	1.5% of the population	One million persons
Source: FMOH 2002 cited in HSDP I evaluation (2003)		

3. HOUSEHOLD AND COMMUNITY FACTORS AFFECTING HEALTH: KNOWLEDGE, ATTITUDE AND PRACTICES

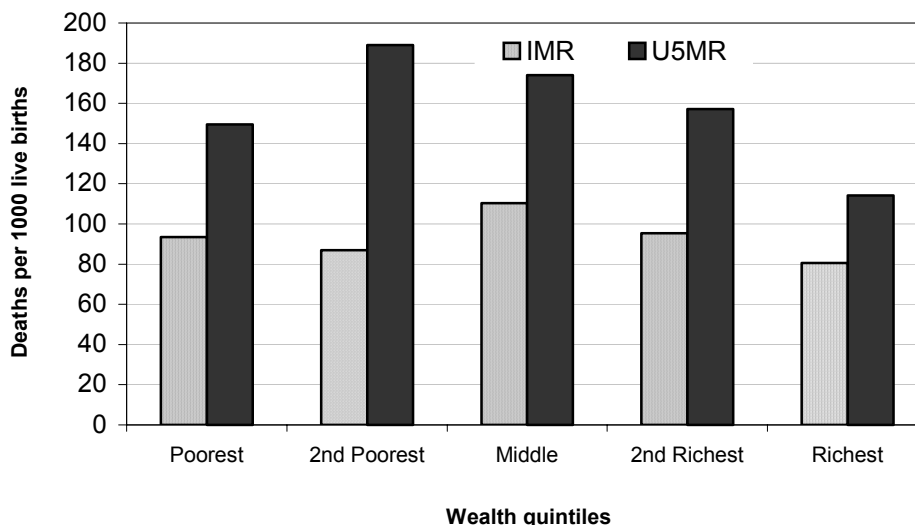
151. This section analyzes to the extent that data allow, the determinants of health outcomes in Ethiopia with a focus on factors at the household and community levels. This section will include knowledge about health issues such as appropriate feeding of infants; health-seeking behavior and utilization of both preventive health and reproductive health services and basic services of curative care for child and maternal health care. Household analysis is important because households produce health outcomes based on the resources they have, their socio-economic characteristics, and their environment.

CHILD SURVIVAL

152. Ethiopia has infant mortality (IMR) and under-five mortality (U5MR) rates that are within more or less the middle of the spectrum within sub-Saharan African countries. However, as discussed in chapter 2, wealth-based differentials are relatively lower in Ethiopia for IMR and U5MR.
153. Figure 3.1 shows the IMR and U5MR across different wealth quintiles while Figure 3.2 shows the concentration curves. IMR and U5MR by wealth quintile do not show a monotonic relationship. The rates are highest in the 2nd poorest quintile instead of the poorest quintile. The concentration curves show that wealth-based differentials in U5MR are much higher than in IMR.
154. Table 3-1 provides adjusted hazard ratios for child mortality obtained using the Weibull analysis. Three different models are used: the first model has just the proximate determinants, the second model has only the underlying determinants and the third model has both the proximate and the underlying determinants of childhood mortality.²⁰

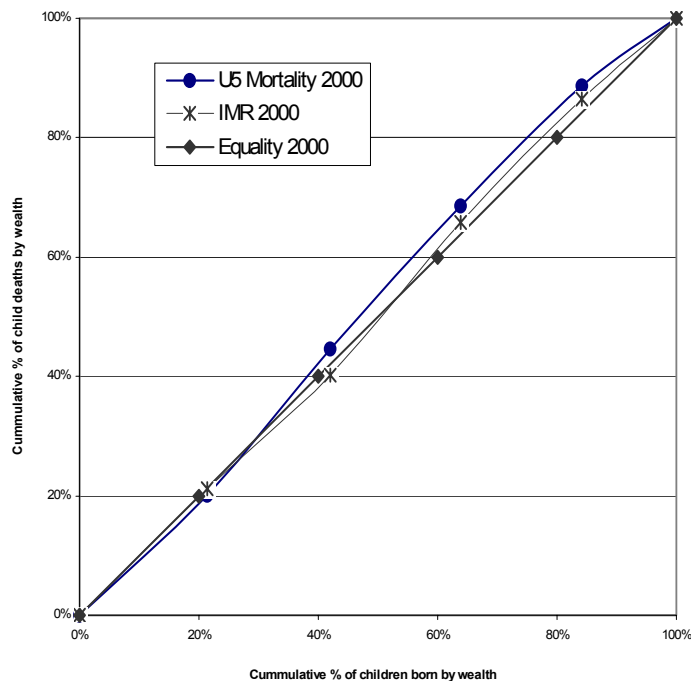
²⁰ Proximate variables are intermediate variables that directly influence the risk of mortality. All social and economic determinants operate through these variables (e.g. maternal factors such as age, parity, birth interval) to affect child survival. An example of a distal or underlying determinant is "poverty" which can lead to child death through "malnutrition" or "bad hygiene".

Figure 3-1: IMR and U5MR by wealth quintiles in Ethiopia



Source: DHS 2000

Figure 3-2: Concentration curves for IMR and U5MR in Ethiopia 2000



155. Results indicate that short birth intervals, high birth order, low birth weight (smaller children), and young age of mothers are strongly linked with high child mortality levels. The analysis emphasizes the strong role played by fertility in terms of short birth intervals and high birth order in driving mortality. Religion is also a factor with lower mortality among Orthodox Christians. Mother's education (secondary and up) as well as

wealth seem to be only weakly associated with infant mortality.²¹ Infants whose mothers received ANC tetanus have a lower likelihood of dying while other services such as antenatal care (ANC and delivery by trained professionals do not seem to have any significant association with child mortality when included in this analysis).²²

²¹ One possible reason could be the importance of supply side factors such as lack of accessible good quality health services which can enable well-informed mothers to seek care for their children. Mother's education and awareness, on the other hand, is significantly associated with child's nutritional status which could mean that there are key behavioral aspects that mothers themselves can control such as feeding practices without having to rely on health facilities.

²² In model-1 with only proximate determinants in the model, only birth order and birth interval are consistently significantly associated with child mortality. In model-2 with only distal determinants, regional characteristics seem to be weakly associated with child mortality. The most important association is seen with religion (lower mortality in Orthodox Christians) and age of mother (lower mortality in children of older women), and size of the child (children who are smaller in size at birth have a higher likelihood of death) for both infant and under-five mortality. Surprisingly, mother's education seem to have no association with child mortality in most of the models although secondary and above levels of education are negatively associated with IMR (although at the 10 percent level of significance).²² Wealth also has only a moderate effect on child mortality. In the combined model (model 3), only birth interval, birth order, and size at birth of the child were strongly associated with both infant and older five mortality. Infants whose mothers received ANC tetanus are less likely to die. Gambella region is the only region that has a higher likelihood of under-five mortality compared to Tigray.

Table 3-1: Results of Weibull hazard ratios for infant mortality and under five mortality

	Infant mortality rate						Under five mortality					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	HR	SE	HR	SE	HR	SE	HR	SE	HR	SE	HR	SE
Drinking water (Piped)												
Well	0.90	0.30			1.04	0.37	0.78	0.27			0.88	0.29
Others	1.02	0.33			1.03	0.37	0.96	0.32			0.99	0.32
Toilet (Flush/pit)												
None	0.88	0.22			0.95	0.28	0.84	0.19			0.90	0.25
ANC Trained (No)	0.97	0.22			0.96	0.23	0.89	0.19			0.87	0.20
ANC Tetanus (No)	0.67*	0.15			0.64**	0.14	0.70*	0.15			0.69*	0.14
Delivery by trained prof. (No)	0.69	0.22			0.70	0.24	0.66	0.18			0.68	0.20
Birth order/birth interval (first order and/or less than one year)												
2-3 order and years	0.39***	0.09			0.36***	0.09	0.48***	0.10			0.45***	0.10
+4	0.41***	0.08			0.35***	0.09	0.44***	0.08			0.37***	0.08
Urban (rural)			1.39	0.31	1.37	0.58			1.19	0.23	1.44	0.53
Region (Tigray)												
Afar			1.25	0.28	1.34	0.52			1.44*	0.28	1.51	0.55
Amhara			1.23	0.20	1.45	0.41			1.32*	0.19	1.50*	0.36
Oromiya			1.37*	0.24	1.48	0.44			1.38*	0.22	1.47	0.39
Somali			0.76	0.22	0.47	0.25			0.97	0.28	0.83	0.38
Ben-gumz			1.23	0.30	1.50	0.59			1.37	0.29	1.72*	0.55
SNNPR			1.35*	0.24	1.39	0.48			1.40**	0.22	1.69	0.57
Gambela			1.51*	0.35	1.88*	0.70			1.66**	0.33	2.01**	0.68
Harari			1.04	0.27	1.54	0.67			1.06	0.24	1.40	0.58
Addis Ababa			1.03	0.29	1.13	0.55			1.11	0.29	0.97	0.42
Dire Dawa			1.22	0.29	1.88*	0.71			1.41	0.31	1.73	0.64
Wealth Index (Poorest)												
2 nd Poorest			0.84	0.13	1.53	0.41			1.03	0.14	1.28	0.30
Middle			1.14	0.15	2.18***	0.62			1.14	0.13	1.66*	0.44
2 nd Richest			0.95	0.14	1.54	0.44			1.03	0.13	1.25	0.31
Richest			0.74	0.15	1.67	0.61			0.82	0.14	1.44	0.47
Religion (Others)												
Orthodox			0.75**	0.11	0.73	0.21			0.76**	0.09	0.57*	0.17
Muslims			0.95	0.12	0.85	0.19			1.01	0.11	0.95	0.21
Mother's education (None)												
Primary			0.83	0.14	0.96	0.24			0.84	0.13	0.91	0.24
Secondary or higher			0.59	0.22	0.42*	0.19			0.61	0.19	0.48	0.23
Mass media exposure (No)			1.11	0.23	1.25	0.42			0.99	0.19	0.97	0.33
Mother's age group (<20 years)												
20-29 years			0.72***	0.09	1.28	0.28			0.79**	0.09	1.24	0.27
30-39 years			0.62***	0.08	1.32	0.41			0.72***	0.08	1.38	0.38
40-49 years			0.65***	0.13	0.92	0.67			0.75	0.13	0.98	0.61
Sex of the child (female)			1.14	0.10	1.07	0.17			1.14	0.09	1.19	0.18

Size of the kid at birth (small)												
Medium			0.74**	0.09	0.56***	0.11			0.77**	0.07	0.61***	0.11
Large			0.75**	0.09	0.52***	0.10			0.74***	0.08	0.50***	0.10
/ln p	-0.38***	0.05	-0.47	0.02	-0.38	0.05	-0.59***	0.04	-0.70***	0.02	-0.58***	0.04
P	0.68	0.03	0.63	0.01	0.69	0.03	0.56	0.02	0.50	0.01	0.56	0.02
L/p	1.46	0.07	1.60	0.04	1.46	0.07	1.80	0.07	2.01	0.05	1.79	0.07
Number of failures	301		1120		301		376		1501		376	
Time at risk	51698		12533		51698		109259		336779		109259	
			0									
Log likelihood	-1525		-5346		-1496		-1889		-7007		-1857	
Wald	31.54		54.16		78.27		31.44		59.52		76.05	
Prob	0.00		0.00		0.00		0.00		0.00		0.00	

Child malnutrition

156. Child malnutrition in Ethiopia in comparison to other countries in Africa and regional variation in child malnutrition in Ethiopia were discussed in section 2.3. This section analyzes the predictors of child malnutrition in Ethiopia. Table 3.2 summarizes the adjusted odds for stunting (height-for-age), underweight (weight-for-age) and wasting (weight-for-height).
157. ***Malnutrition is largely associated with low income, mother's education, low birth intervals, and age of children.*** The children in the richest quintile have the lowest stunting, underweight, and wasting rates. Children of educated mothers have a lower likelihood of stunting and underweight, but not wasting. Higher parity children are more likely to be underweight, while children with greater preceding birth intervals are associated with lower stunting, but higher wasting. Child malnutrition is also associated with the age of the child, with older children having a higher likelihood of being underweight and stunted relative to children who are less than a year old. These results are similar to those found by Christiaensen and Alderman (2003), indicating that household resources and parental education are the main determinants of child nutrition in Ethiopia.²³ They also found that maternal nutritional knowledge²⁴ also plays an important role in determining child malnutrition. Therefore, they conclude that enhancing awareness of non-normal growth of children in the communities and their capability to identify it may be an effective and complementary response to address child malnutrition.
158. ***Urban/rural differentials are not significant for child malnutrition. However, regional differentials are significant*** with Tigray having relatively higher stunting and underweight rates compared to a number of regions (except for SNNPR which has significantly higher underweight rates), while Somali and Gambella have higher wasting rates. The lowest levels of child malnutrition were seen in Addis Ababa and Dire Dawa, the two most urban regions.

²³ They also find that food prices play a significant role in determining child malnutrition.

²⁴ Proxied by the community's diagnostic capability of abnormal growth.

Table 3-2: Adjusted odds ratios for prevalence of malnutrition

	Height for age		Weight for age		Weight for height	
	OR	SE	OR	SE	OR	SE
Urban (rural)	1.26	0.33	1.09	0.23	0.83	0.25
Region (Tigray)						
Afar	0.67**	0.12	1.05	0.19	0.95	0.21
Amhara	1.00	0.12	1.08	0.12	0.75*	0.12
Oromiya	0.68***	0.09	0.78**	0.09	0.85	0.15
Somali	0.57**	0.11	0.74	0.14	1.90**	0.56
Ben-gumz	0.52***	0.07	0.80	0.12	1.30	0.32
SNNP	1.06	0.14	1.39**	0.20	1.13	0.20
Gambela	0.52***	0.10	0.81	0.12	1.77**	0.38
Harari	0.44***	0.07	0.40***	0.07	0.49**	0.14
Addis Ababa	0.43***	0.11	0.28***	0.06	0.59	0.24
Dire Dawa	0.37***	0.08	0.53***	0.10	1.22	0.37
Wealth Index (Poorest)						
2 nd Poorest	0.99	0.10	0.81*	0.09	0.65**	0.10
Middle	0.88	0.10	0.82*	0.09	0.79*	0.10
2 nd Richest	0.97	0.10	0.78**	0.09	0.80	0.11
Richest	0.69**	0.09	0.73**	0.11	0.54**	0.12
Household member (1-5)						
6-10 member	1.04	0.08	0.93	0.08	1.07	0.12
11+ member	1.09	0.17	1.02	0.17	0.80	0.21
Religion (Others)						
Orthodox	0.87	0.09	0.85	0.09	0.82	0.14
Muslims	1.11	0.12	1.12	0.11	1.17	0.17
Mother's age group (<20 years)						
20-29 years	1.16	0.13	1.14	0.13	0.96	0.17
30-39	1.04	0.15	1.17	0.17	1.05	0.23
40-49 years	0.83	0.16	1.11	0.20	0.98	0.26
Mother's education (None)						
Primary	0.90	0.08	0.74***	0.07	0.90	0.14
Secondary or higher	0.56***	0.11	0.57***	0.11	1.19	0.30
Exposure to mass media (None)						
Yes	1.01	0.17	0.84	0.12	0.69*	0.14
Partner's occupation (Others)						
Agriculturists/unskilled	1.18	0.13	1.17	0.14	1.18	0.22
Parity (0-2)						
3-4 children	1.16	0.11	1.37***	0.13	1.19	0.16
5+ children	1.12	0.14	1.32**	0.17	1.08	0.20
Preceding birth interval (1 st or <2 years)						
2-3 years	0.96	0.07	0.99	0.08	1.43***	0.17
4+	0.69***	0.07	0.86	0.09	1.47**	0.24
Sex of the child (Female)						
Male	1.07	0.06	1.06	0.07	1.15	0.10
Age of the child(<1 year)						
1 year	5.40***	0.59	4.43***	0.46	2.60***	0.34
2 years	5.06***	0.55	4.21***	0.42	1.09	0.16
3 years	6.22***	0.69	3.20***	0.30	0.73**	0.11
4 years	5.88***	0.65	3.21***	0.32	0.91	0.14
Number of obs	8437		8437		9379	
Number of strata	1		1		1	
Number of PSUs	539		539		539	
Population size	9726		9726		10645	
F(33, 501)	18.43		17.24		5.50	
Prob>F	0.00		0.00		0.00	

Breastfeeding

159. Infant feeding practices such as early, exclusive breastfeeding for the first six months of a child's life are important determinants of the nutritional status of young children. ***Compared with selected SSA countries, Ethiopian mothers fare well in terms of breastfeeding indicators*** (Table 3.3). Fifty percent of Ethiopian children are breastfed within one hour of birth.²⁵ However, this rate is significantly lower than 81 percent in Mozambique and about 72 percent in Malawi, and hence there is room for improvement through maternal health education. Exclusive breastfeeding²⁶ in children less than 4 months old is high at 62.3 percent. Timely complementary feeding in 6-9 months old children is 77 percent, which can be improved to reach the greater than 90 percent rates seen in Kenya and Malawi .

Table 3-3: Breastfeeding practices in sub-Saharan Africa

	Breast feeding started within 1 hour	Exclusive Breastfeeding Rate (< 4 mos.)	Timely Complementary Feeding Rate (6-9 mos.)	Continued Breastfeeding Rate (12-15 mos.)	Continued Breastfeeding Rate (20-23 mos.)
Chad 1996/97	23.2	2	83.3	84.3	54.4
Ethiopia 2000	50.3	62.3	77.5	87.4	75.5
Kenya 1998	58.3	16.8	93.8	85.4	46.2
Malawi 2000	71.9	63.2	97.5	97.7	64.6
Mozambique 1997	81	37.6	87.3	82.1	56.8
Tanzania 1996	59.2	40.3	94.6	90.8	45.6

Source: DHS and UNICEF

160. The median duration of breastfeeding was highest among mothers in Amhara (4.6 months) and Tigray (3.2 months). However, mothers in Somali, Afar, Gambella, Harari, Addis and Dire Dawa practiced exclusive breastfeeding for less than 1 month.

While exclusive breastfeeding is relatively high, Ethiopian households lag behind when it comes to other household practices

Supplementary foods

161. Introducing solid foods into the infants' diet is recommended around the age of 6 months because at that age breast milk is no longer adequate to meet a child's nutritional needs in order to promote optimal growth. ***Only about one in three children in Ethiopia***

²⁵ The early initiation of breastfeeding is important because the first breast milk contains colostrum which is nutritious and has antibodies that protect newborn children from diseases. Early suckling also benefits mothers because it stimulates breast milk production and releases a hormone that helps the uterus to contract and reduce postpartum blood loss.

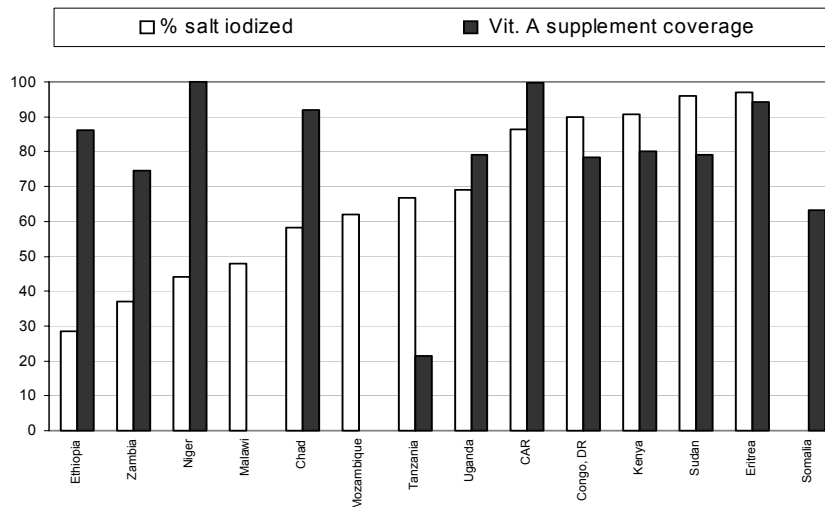
²⁶ Exclusive breastfeeding refers to children receiving only breast milk while children who are fully breastfed receive only plain water in addition to breast milk. Exclusive breastfeeding is recommended for the first 4 to 6 months of a child's life because breast milk contains all the nutrients necessary for children in the first few months of life. The mother's antibodies in breast milk provide immunity to disease to young children. Early supplementation is discouraged because it increases the risk of infection for children, especially diarrhea. In a particularly poor environment, supplementary foods tend to be nutritionally inferior to breast milk (DHS 2000).

consumes some type of solid or semi-solid food by 6 to 7 months old. This percentage increases gradually, with only 54.8 percent of children who are 8 to 9 months old receiving semi-solid or solid food. Almost all 2 year old children (98 percent) are fed solid or semi-solid food. However, only 59.5 percent of children under three years of age consume foods made from grains; and a smaller percentage (28.1 percent) consume vitamin A rich foods. An even smaller percentage (9.3 percent) consumed meat, poultry, fish, eggs, cheese and yogurt 24 hours prior to the DHS 2000 survey.

Iodized salt

162. Figure 3-4 shows the relative position of Ethiopia vis-à-vis other countries in Africa in terms of iodized salt distribution. *Less than 30 percent of the households in Ethiopia use iodized salt.*²⁷

Figure 3-3: Iodized salt and vitamin A supplement coverage in SSA



Source: UNICEF 2001

163. Table 3.4 summarizes the adjusted odds ratios for use of iodized salt in Ethiopia. Tigray households have a lower probability of using salt relative to households in the other regions. Children from the poorest quintile also had a lower likelihood of using iodized salt. Mother's exposure to media and education are positively associated with iodized salt intake.

²⁷ Ethiopia used to obtain iodized salt from Assab. After the Ethio-Eritrean conflict, Ethiopia has been obtaining its salt from other sources but these are mostly non-iodized. The Ministry of Health tried to address this by recommending that non-iodized salt be banned. However, this ban has not been implemented because importing iodized salt was expensive and local production of salt in Afar was encouraged although there was no facility to produce iodized salt. In order to encourage production of iodized salt by local salt producing firms, the MOH has recently bought and distributed 9 iodizing machines. Staff in the salt producing firms were also trained on iodization. The effect of these measures are expected to be noticeable after some time.

Table 3-4: Adjusted odds for additional vitamin A supplementation and use of iodized salts

	Vitamin A in Children > 6 months in the last six months			Living in household using adequately iodized salt		
	Odds Ratio		Std. Err.	Odds Ratio		Std. Err.
Urban (rural)	1.26		0.33	1.34		0.38
Region (Tigray)						
Afar	0.10	***	0.03	6.51	***	2.55
Amhara	1.10		0.20	4.76	***	1.41
Oromiya	0.51	***	0.09	7.49	***	2.19
Somali	0.24	***	0.08	3.30	**	1.53
Ben-gumuz	0.45	***	0.09	13.14	***	4.70
SNNP	0.39	***	0.09	3.46	***	1.20
Gambela	0.56	*	0.18	11.39	***	4.88
Harari	1.15		0.32	5.32	***	2.33
Addis Ababa	0.93		0.33	3.14	***	1.23
Dire Dawa	1.62	*	0.45	4.05	***	1.51
Wealth Index (Poorest)						
2 nd Poorest	1.16		0.15	1.55	***	0.23
Middle	1.41	**	0.19	1.14		0.18
2 nd Richest	1.32	**	0.17	1.24		0.19
Richest	1.49	**	0.29	1.47	*	0.30
Household member (1-5)						
6-10 member	0.92		0.09	1.04		0.10
11+ member	1.06		0.23	1.45		0.40
Religion (Others)						
Orthodox	0.70	*	0.14	0.39	***	0.08
Muslims	1.49	***	0.20	0.49	***	0.08
Mother's age group (<20 years)						
20-29 years	1.12		0.13	1.01		0.11
30-39 years	1.15		0.17	1.18		0.19
40-49 years	1.07		0.23	1.71	***	0.35
Mother's education (None)						
Primary	1.27	*	0.18	0.97		0.13
Secondary or higher	1.97	***	0.43	1.28		0.31
Exposure to mass media (None)						
Yes	1.78	***	0.28	1.01		0.17
Partner's occupation (Others)						
Agriculturists/unskilled Parity (0-2)	0.85		0.10	0.80		0.12
3-4 children	1.12		0.13	0.92		0.11
5+ children	1.01		0.17	0.79		0.12
Preceding birth interval (1 st or <2 yrs)						
2-3 years	0.99		0.08	1.05		0.09
4+	0.85		0.08	0.94		0.11
Sex of the kid (Female)						
Male	1.03		0.06	0.99		0.06
Age of the kid (0-12 months)						
1 year	1.26	*	0.15	1.10	*	0.12
2 years	1.19		0.13	1.18		0.12
3 years	1.13		0.13	1.07		0.10
4 years	1.04		0.11	0.95		0.09
Number of obs	8427.00		9262.00			
F(33, 501)	7.19		4.22			
Prob>F	0.00			0.00		

*p<0.1 **p<0.05 ***p<0.01

Use of Bed Nets

164. Malaria is one of the leading causes of inpatient and outpatient visits and deaths, but only one percent of Ethiopian households own bed nets (Table 3.5). The low ownership rates are expected in the highland areas such as Addis Ababa and Amhara where malaria is not endemic. However, even among the malaria-endemic regions, ownership rates are very low and the percentage of insecticide treated nets is even lower. Only Afar and Gambella have more than 10 percent of their households (32 percent and 12 percent respectively) using bed nets. Urban households are three times more likely to own bed nets but the total percentages for both urban and rural households (3 percent and 1 percent, respectively) are extremely low.

Table 3-5: Ethiopia: Percentage of households possessing bed nets, 2000

Characteristics	With bed nets	Percentage of which are impregnated
Residence	3.1	13.5
Urban	0.6	21.6
Rural		
Region		
Tigray	3.1	32.4*
Afar	30.5	2.5
Amhara	0.7	**
Oromiya	0.3	**
Somali	6.2	4.9*
Benshangul-Gumuz	1.9	**
SNNPR	0.2	**
Gambela	11.7	17.9*
Harari	1.2	**
Addis Ababa	0.7	**
Dire Dawa	2.0	**
Total	1.1	17.7
Note : * based on 25-49 unweighted cases ; data suppressed in DHS (2000) because the figure is based on less than 25 unweighted cases		
***include data on wealth quintiles		

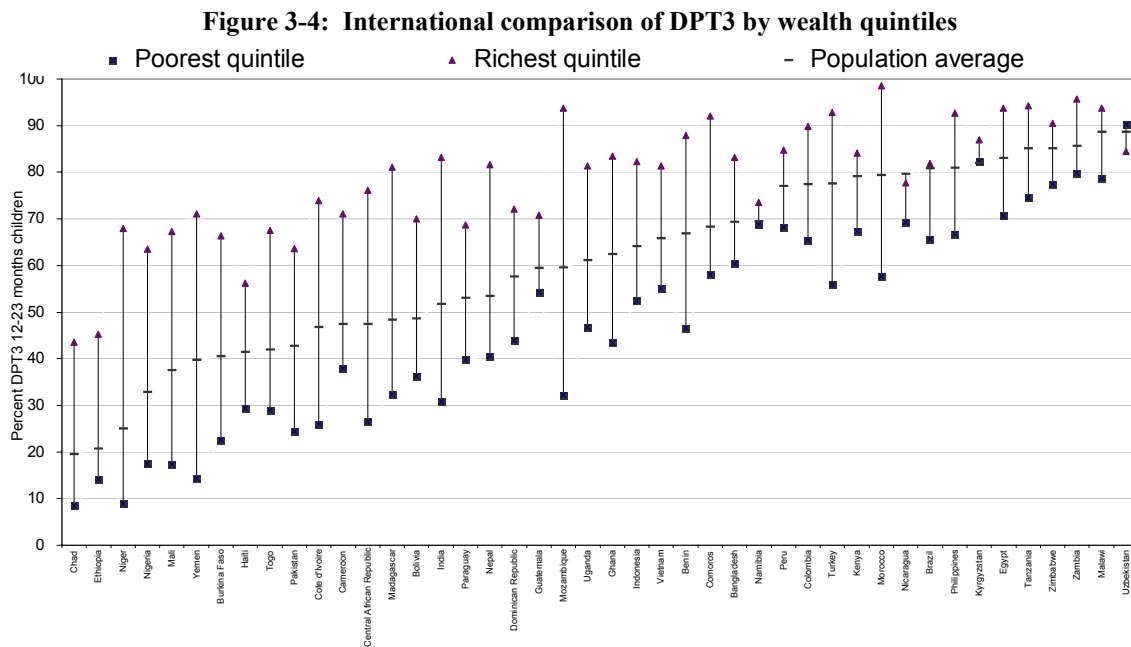
Use of Oral Rehydration Solution (ORS)

165. *Compared to other low-income countries, Ethiopia has one of the lowest percentages of children with diarrhea who received ORS* (table 3.). Forty percent of women in the poorest quintile and 13 percent of women in the richest quintile in Ethiopia have not heard about ORS. Use of ORS for a recent diarrhea episode is about 4 times higher in households in the richest quintile compared with children in the poorest quintile. Sixty two percent of households in the poorest quintile and only 36 percent in the richest quintile did not obtain any home-based treatment. Overall, ORS is significantly underutilized in Ethiopia, and the potential for improving its use is very high as an

inexpensive and effective way to reduce diarrhea-related disease problems such as dehydration .

Immunization

166. **Immunization levels remain very low and Ethiopia's immunization performance is mixed.** The percentage of 12-23 months old children who have received one or more of the EPI vaccines is high at 83 percent. However this percentage largely reflects the coverage achieved through the polio eradication program. However, with regard to other important immunization indicators which contribute to child survival, Ethiopia's performance is poor compared to other countries in Africa and other parts of the world. Figure 3-4 shows the international comparison of three doses of DPT in poorest and richest wealth quintiles in different countries of Africa and elsewhere. Ethiopia's DPT 3 coverage of 21 percent²⁸ is one of the lowest and the difference between the richest and poorest quintile is 30 percentage points. Countries like Malawi, Zambia and Zimbabwe with DPT 3 rates of more than 80 percent are some of the highest achievers in Sub-Saharan Africa. In these countries, the differences by wealth quintiles is also low. Mali, Nigeria, Niger and Chad are some of the sub-Saharan African countries which have comparable DPT 3 coverage as seen in Ethiopia.



Source: Gwatkin et al. 2002, World Bank

²⁸ HMIS (facility-based) data for Ethiopia for Ethiopia for 2000/01 indicates that the DPT 3 coverage is 41.9% or twice as much as the DHS results. Even if this higher figure is used, Ethiopia still ranks among the low-performing countries in SSA.

167. The DPT 1 coverage is approximately 44 percent in Ethiopia, which means that the drop-out rate between DPT 1 and DPT 3 is 23 percentage points.²⁹ DPT 1 gives some indication of the reach of public health services but the DPT 1 rate is still lower than the potential health service coverage rate of about 51.8 percent (for health centers and health clinics). The difference between DPT 1 and DPT 3 indicates the failure of health services to capitalize on opportunities provided by available initial outreach activities. The BCG coverage is around 46 percent.³⁰ *Only 14.4 percent of children 12-23 months old have received all EPI vaccines or have been fully immunized.*³¹
168. Table 3.6 provides the results of bivariate³² analysis of childhood immunization taking into account various socio-economic and demographic variables. Significant differentials by residence (urban/rural), birth order of the child, mother's education, wealth quintiles, and region are observed. The difference between urban and rural areas is around 30 percentage points, except for children receiving any single vaccine because of the fairly wide polio vaccination coverage. Immunization levels are significantly lower in children with higher birth orders. Immunization levels are higher among children whose mothers are educated, and highest among children with mothers having at least secondary or higher education. Children from poorer households have lower immunization coverage. *Regional differences in immunization coverage are wide-spread with Tigray and Addis emerging as the best performers.* In particular, Addis Ababa has around 90 percent coverage for BCG, while Afar has only 16 percent. For three doses of DPT, the regional differences were more striking. For example Afar has only 1 percent DPT 3 coverage compared to 80 percent in Addis Ababa. No child in Afar has received all the EPI. Around 17 percent of the children from the poorest quintile have none of the childhood immunizations compared to 6 percent of children in the richest quintile.

²⁹ HMIS data for DPT1 are not readily available. National level DPT1-DPT3 drop-out rates are not available for both 2001/02 and 2000/01. Available data for 7 out of 11 regions in 2000/01 indicate DPT1-DPT3 drop-out rates ranging from 5 % in Tigray to 43% in Afar.

³⁰ MOH BCG coverage estimate is 56 percent in 2000/01 and 58.6 percent in 2001/02.

³¹ According to MOH HMIS, only 21.1 percent of children have been fully immunized in 2000/01 and 29.97 percent of children have been fully immunized in 2001/02 .

³² Analysis of two data sets that determines whether or not the data are related and describes the best relationship between them. Cross plots are often used to “visualize” potential bivariate relationships

Table 3-6: Bivariate analysis: Vaccination by background characteristics among children 12-23 months old, the percentage who had received specific vaccines by the time of the survey

	BCG		DPT 1		DPT 3		Any Vaccine		All EPI vaccines	
Total	45.6		44.1		20.7		83.3		14.3	
Residence										
Rural	42.6	***	41.0	***	17.5	***	82.4	***	11.00	***
Urban	71.1		69.8		51.4		96.3		42.0	
Sex of the child										
Female	42.8	*	41.6		19.4		82.8		13.8	
Male	48.3		46.4		22.6		84.7		14.8	
Birth order of the child		***		***		***		***		***
First	52.5		49.4		22.4		88.0		17.7	
2-3 child	46.1		47.2		24.6		86.2		15.6	
4-5 child	46.0		41.4		16.6		83.2		12.0	
7+	38.2		38.4		21.0		77.0		12.7	
Mother's education		***		***		***		***		***
None	41.1		39.9		16.2		82.2		10.2	
Primary	56.5		56.1		35.0		87.3		24.8	
Secondary	80.7		71.6		53.9		97.9		45.0	
Wealth quintile		***		***		***		***		***
Poorest	40.3		39.5		14.1		83.0		6.7	
2 nd Poorest	32.8		29.9		8.6		77.1		5.6	
Middle	44.7		42.7		20.9		83.7		15.4	
2 nd Richest	45.4		43.5		22.0		83.4		15.1	
Richest	70.0		69.9		45.2		93.6		33.3	
Region		***		***		***		***		***
Tigray	79.6		83.5		56.8		96.6		43.5	
Afar	16.1		17.3		1.1		89.1		0.0	
Amhara	45.9		43.0		20.6		88.8		14.4	
Oromiya	41.6		39.3		16.5		85.7		9.8	
Somali	45.9		46.4		24.5		69.5		22.2	
Ben-gumuz	40.5		35.8		16.7		79.3		12.2	
SEP	41.5		41.3		16.9		69.5		10.5	
Gambela	40.1		36.1		12.7		77.3		10.8	
Harari	83.4		83.1		51.4		97.5		36.4	
Addis Ababa	90.2		92.6		80.9		97.8		73.8	
Dire Dawa	69.1		73.9		52.4		97.5		35.3	
Religion								***		
Traditional	45.3		43.6		22.9		85.0		16.3	
Orthodox Christian	40.0		39.1		16.8		74.4		10.4	

Vaccinations compared to 73 percent in Addis Ababa

169. Table 3.7 provides adjusted odds ratios³³ for immunization among children 12-23 months old. Compared to the bivariate analysis results, the effect of urban residence on immunization is reduced significantly, perhaps because of other related factors such as wealth, which is higher in urban areas. However, *regional differentials remain significant. Children in Tigray and Addis have a higher probability of being immunized after controlling for other factors in the model. Wealth, mother's education, and*

³³ The odds ratio compares the likelihood of observing an outcome among persons exposed to the factor of interest compared with those not exposed. In this case, what is the likelihood of a child being immunized based on the various socioeconomic/household factors listed. Results are presented as values above 1, equal to 1 or below 1. The ratios express how many times more likely one group is to be immunized than the reference group, providing a measure of the strength of the relationship.

partner's employment status remain significantly associated with childhood immunization although mother's exposure to media appears to have limited impact on the likelihood of being immunized. Based on the analysis, Muslim children have a greater likelihood of being immunized compared to children from other religions. Age of the child also has significant association, with two year old children having a lower probability of getting immunized compared to one year old children. Boys have a higher probability of getting one and three doses of DPT compared to girls.

Use of vitamin A Supplementation

170. ***Ethiopia's performance in terms of vitamin A supplementation is among the highest in SSA countries*** (refer back to Figure 3.3). Approximately 86 percent of children are covered (UNICEF)³⁴ The high coverage of vitamin A is a result of the practice of linking vitamin A supplementation campaigns with polio eradication campaigns.
171. Households in Tigray have a higher coverage likelihood of vitamin A use compared to 6 regions (Afar, Oromiya, Somali, Benshangul-Gumuz, SNNP, and Gambella). The children from the poorest quintile have a lower likelihood of vitamin A supplementation. Mother's exposure to media and education is positively linked with vitamin A supplementation.

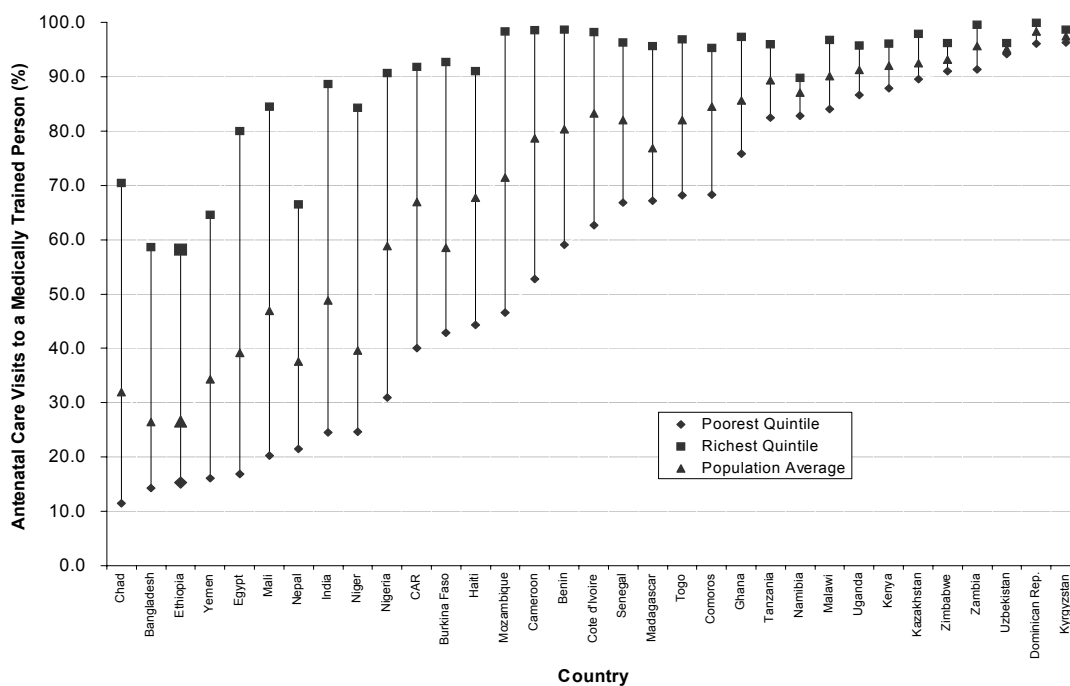
Antenatal Care and Delivery Care

172. The health care that a mother receives during her pregnancy and at the time of delivery is essential for her survival and well-being, as well as that of her child. However, ***utilization of antenatal and delivery care is minimal even among richer groups in Ethiopia.*** Figure 3.5 shows the relative standing of Ethiopia compared with other countries in terms of antenatal care (ANC) among the poorest and richest quintiles of women, while Figure 3.6 shows the relative standing of Ethiopia in terms of delivery care. *Ethiopia has one of the lowest levels of ANC (26 percent nation-wide) as well as delivery care by a trained health professional(5 percent³⁵) in Sub-Saharan Africa. Delivery care is almost negligible in the poorest quintile, while ANC is just over 10 percent among the poor.*
173. Only 1 out of 10 women make four or more antenatal care visits during their pregnancy. The median number of visits (2.5) made is about five times less than the recommended number of 12 or 13 visits (DHS 2000). Only one in four women who received antenatal care reported that they were informed about pregnancy complications during their antenatal care visits.

³⁴ DHS data indicate that about 56 percent of children under five years of age received vitamin A supplements in the six months prior to the survey while about 38 percent of them consumed vitamin A rich foods seven days prior to the survey.

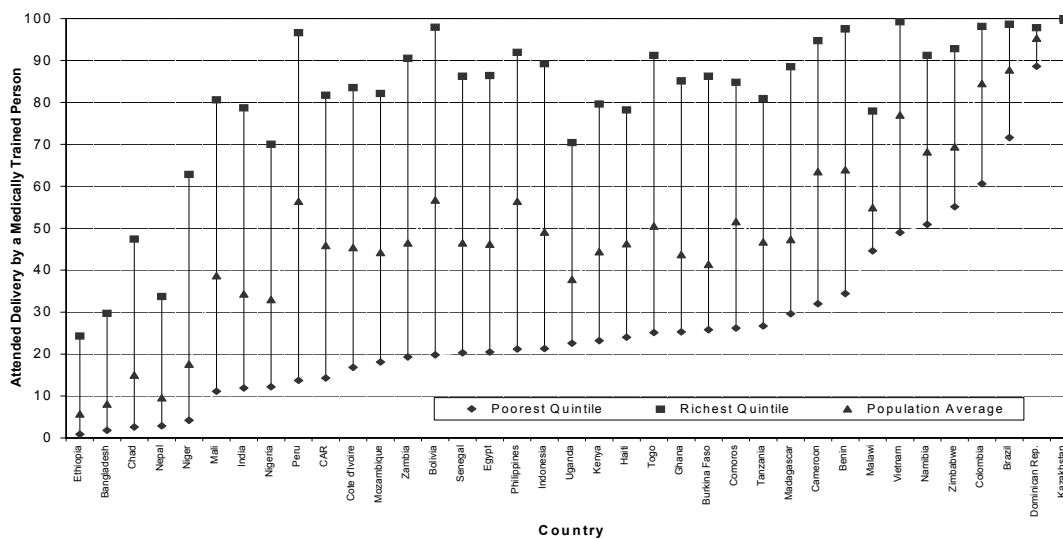
³⁵ MOH HMIS data also present low figures: antenatal coverage rates of 34.7 percent for 2000/01 and 34.1 percent in 2001/02 and attended delivery rates of 10 % in 2000/01 and 9.6 percent in 2001/02.

Figure 3-5: Countries ranked by ANC by a medically trained person in the poorest quintile



Source: Gwatkin et al. (2002), World Bank

Figure 3-6: Countries Ranked by Attended Delivery by a Medically Trained Person in the Poorest Quintile



Source: Gwatkin et al. (2002), World Bank

174. Table 3.8 shows the bivariate results of at least one dose of tetanus, ANC by trained professionals and delivery assisted by trained professional. The regional differences in maternal care are telling. About 74 percent of women in Addis has received one dose of tetanus toxoid during ANC compared to only 16 percent in Afar. The same differentials by regions are found in ANC and delivery care. Delivery care in Addis is the highest (69

percent) while Amhara had only 3 percent. Rural/urban differences are also more than 20 percentage points for tetanus toxoid, ANC and delivery care. Religion-based differences are minimal, and significant only for delivery care. Wealth-based differentials are again very high, and the maximum differentials are seen in delivery care. Less than one percent of the women in the poorest quintile have deliveries attended by trained professional, compared to about 24 percent of the women in the richest. Women with first birth had the highest probability of obtaining various preventive maternal care. Maternal health care increased with education of the women and decreased with the age of the women. Women who are delivering their first child have the higher likelihood of tetanus injection, ANC care and assisted delivery.

Table 3-7 Bivariate Analysis: Percentage distribution of women who had a live birth in the five years preceding the survey by at least one dose of tetanus toxoid injection, ANC by trained professional and delivery assistance by trained professionals³⁶

	At least one dose of tetanus		ANC by trained professional		Delivery assistance by trained professional	
Total	26.3		26.5		5.65	
Region		***		***		***
Tigray	27.35		36.25		4.832	
Afar	15.59		26.46		5.458	
Amhara	24.53		18.22		3.083	
Oromiya	23.8		26.95		4.917	
Somali	25.34		14.17		7.211	
Ben-gumuz	20.74		25.68		9.091	
SEP	28.69		28.33		4.946	
Gambella	37.99		49.01		23.76	
Harari	47.12		49.97		26	
Dais Ababa	74.48		83.06		69.13	
Dire Dawa	52.52		57.55		33.49	
Residence		***		***		***
Rural	22.17		21.54		2.295	
Urban	58.48		65.35		34.5	
Religion						**
Traditional	25.03		26.04		6.955	
Orthodox	27.2		25.35		4.37	
Muslims	28.16		28.08		4.065	
Wealth quintile		***		***		***
Poorest	17.38		15.32		0.8962	
2 nd Poorest	18.95		16.42		1.496	
Middle	23.08		20.55		1.449	
2 nd Richest	25.99		28.71		4.844	
Richest	51.17		58.2		24.26	
Birth order of the child		***		***		***
First	30.26		31.56		12.13	
2-3 child	28.45		29.09		5.235	
4-5 child	25.98		25.91		3.614	
7+	20.86		20.13		3.245	
Mother's education		**		**		**
None	21.36		20.81		2.549	
Primary	43.74		44.88		10.39	
Secondary	61.14		71.18		44.98	
Mother's age category		**		**		**
<20	26.86		28.27		6.002	
20-29	27.94		28.07		6.338	
30-39	25.01		24.79		4.687	
40-49	20.25		20.98		3.513	

*p<0.1 **p<0.05 ***p<0.01

³⁶ DHS defines trained professionals as including doctors, nurses, and midwives

175. Table 3.9 shows the multivariate analysis for the likelihood of getting ANC care, tetanus shot and assisted delivery. The analysis indicates that *women in urban areas have a significantly higher probability of obtaining comprehensive maternal care*. Maternal health care also increases with the level of female education. In particular, women with secondary education have a higher likelihood of receiving at least one tetanus injection. Muslim women have a higher probability of obtaining tetanus shots and ANC but have a lower probability of obtaining assisted delivery relative to women belonging to other (non-Christian orthodox) religions. Women having their first childbirth have the highest probability of obtaining various preventive maternal care. Women exposed to mass media have a higher probability of obtaining of at least one tetanus injection than women who have not been exposed to mass media. On the other hand, women with higher parity have a lower probability of assisted delivery care.

Table 3-8: Adjusted odds ratios for maternal health services

	ANC Tetanus at least one dose			ANC by trained professionals			Assistance during delivery by trained professionals		
	Odds Ratio		Std. Err.	Odds Ratio		Std. Err.	Odds Ratio		Std. Err.
Urban (rural)	2.15	***	0.37	1.82	**	0.47	2.63	***	0.65
Region (Tigray)									
Afar	0.35	***	0.09	0.53	**	0.13	1.89	**	0.57
Amhara	1.09		0.19	0.46	***	0.09	1.03	***	0.32
Oromiya	0.73	*	0.13	0.61	**	0.11	1.45	**	0.36
Somali	0.53	**	0.14	0.17	***	0.05	1.70	***	1.00
Ben-gumuz	0.66	*	0.14	0.60	**	0.11	3.96	**	1.07
SNNPR	1.09		0.20	0.79		0.15	1.42		0.39
Gambela	1.07		0.28	1.14		0.25	5.60	***	2.11
Harari	0.98		0.22	0.73		0.15	4.32	***	1.32
Addis Ababa	1.54	*	0.34	1.39		0.39	5.64	***	1.56
Dire Dawa	1.00		0.22	0.76		0.17	4.04	***	1.21
Wealth Index (Poorest)									
2 nd Poorest	1.14		0.18	1.09		0.18	1.61		0.62
Middle	1.49	**	0.23	1.35	*	0.22	1.40		0.55
2 nd Richest	1.48	**	0.23	1.79	***	0.29	3.71	***	1.30
Richest	2.19	***	0.44	2.89	***	0.56	3.87	***	1.35
Household member (1-5)									
6-10 member	1.02		0.09	1.15		0.11	1.43	*	0.27
11 + member	1.01		0.22	1.58	*	0.36	1.74		0.85
Religion (Others)									
Orthodox Christian	1.20		0.19	0.86		0.14	0.66		0.19
Muslims	1.60	***	0.20	1.36	**	0.19	0.77	**	0.17
Mother's age group (<20 years)									
20-29 years	1.09		0.17	0.97		0.14	1.38		0.30
30-39 years	1.11		0.19	1.00		0.17	2.36	**	0.78
40-49 years	1.05		0.25	1.02		0.24	3.38	**	1.63
Mother's education (None)									
Primary	2.17	***	0.27	2.17	***	0.27	2.23	***	0.43
Secondary or higher	2.23	***	0.41	3.06	***	0.68	5.42	***	1.20
Exposure to mass media (None)									
Yes	1.42	**	0.18	1.28	*	0.16	1.03	*	0.20
Number of children <5 years	1.00		0.06	0.91		0.05	0.78	**	0.08
Partner's occupation (Others)									
Agriculturists/unskilled	0.93		0.12	0.76	**	0.09	0.35	***	0.07
Parity (0-2)									
3-4 children	1.10		0.12	1.22	*	0.14	0.60	**	0.12
5+ children	0.97		0.13	0.86		0.14	0.40	***	0.10
Preceding birth interval (1 st or <2 yrs)									
2-3 years	0.89		0.09	0.91		0.10	0.57	***	0.09
4+	0.84		0.10	1.01		0.13	0.70		0.16
Number of obs	7058.00			7065.00			10661.00		
Number of strata	1.00			1.00			1.00		
Number of PSUs	539.00			539.00			539.00		
Population size	7855.23			7860.51			12121.57		
F(31, 508)	16.82			18.56			28.65		
Prob>F	0.00			0.00			0.00		

*p<0.1 **p<0.05 ***p<0.01

Women's Nutritional Status

176. About 4 percent of all women and 2 percent of mothers of children under three years have heights lower than 145 cm. About one out of three women and one out of four mothers of children less than three years old have Body Mass Indices (BMI) that are less than 18.5 indicating that *the level of chronic energy deficiency among adult women is relatively high in Ethiopia compared to other SSA countries*. Among 17 countries surveyed by DHS from 1998-2002, Ethiopia performs poorly, having the second highest percentage of mothers who fall below the BMI cut-off of 18.5.
177. In general, rural women, women who have little or no education are shorter and have lower BMIs than those in urban areas. The percentage of women whose height is below 145 cm is highest in Tigray (4.8 percent) and lowest in Dire Dawa (1.4 percent). On the other hand, the percentage of women with low BMIs is highest in Somali (48 percent) and lowest in Addis Ababa (18 percent). A greater percentage of young women (ages 15-19) have chronic energy deficiency. (Table 3.10)

Table 3-9: Table 3-9: Nutritional Status of Women in Ethiopia (2000)

Background	Height, % less<145 cm	Body Mass Index (kg/m ²), %<18.5
Age		
15-19	7	38.4
20-24	2.2	23.4
25-29	2.8	24.1
30-34	2.2	23.7
40-44	2.5	32.7
45-49		
Residence		
Urban	2.5	24.2
Rural	3.8	31.8
Region		
Tigray	4.8	34.9
Afar	4.3	42
Amhara	4.1	31.4
Oromiya	3	28.7
Somali	1.5	48.3
Ben-gumuz	2.7	38.1
SNNPR	3.9	30.7
Gambela	3.9	38.7
Harari	2.4	25.2
Addis	2.9	17.9
Dire Dawa	1.4	27.2
Education		
No education	3.7	30.9
Primary	4.4	30.5
Secondary	0.7	23.8
Total	3.6	30.1
Source: DHS 2000		

Female Circumcision (FC)

178. About 80 percent of women in Ethiopia have been circumcised. There is no difference between rural and urban women (79.9 and 78.8 percent, respectively). Tigray and Gambella have the lowest percentages of women who have undergone female circumcision (36 percent and 43 percent respectively). The rest of the regions have FC rates of more than 70 percent with four (Harari, Somali, Afar, and Dire Dawa) having rates of at least 94 percent, and Somali almost reaching 100 percent. Support for the practice is lower among educated women. Only 19 percent of Ethiopian women who have had at least a secondary level of education tend to support the practice compared to women who have no education (67 percent).

Table 3-10: Prevalence of female circumcision

Background	Percentage of women circumcised	Percentage who support practice
Age	70.7	53.4
15-19	78.3	57
20-24	81.4	58.5
25-29	86.1	65.2
30-34	83.6	63.6
40-44	85.8	66.3
45-49	86.8	66.7
Residence		
Urban	79.8	31
Rural	79.9	66.1
Region		
Tigray	35.7	25.3
Afar	98.6	76.5
Amhara	79.7	60.3
Oromiya	89.8	69.6
Somali	99.7	77.3
Ben-gumuz	73.7	53.8
SNNPR	73.5	59.8
Gambela	42.9	26.8
Harari	94.3	51.3
Addis	79.8	16.2
Dire Dawa	95.1	45.5
Education		
No education	80.4	67
Primary	78.4	48.5
Secondary	78.2	18.6
Total	79.9	59.7
Source: DHS 2000		

Family planning

179. Ethiopian contraceptive prevalence rate has increased from 4 percent to 8 percent among married women between 1990 and 2000. However, *Ethiopia still has one of the lowest contraceptive prevalence rates (CPR) even among African countries* (Figure 3.8) *although it has a relatively comparable total fertility rate*. More specific to Ethiopia and along the findings regarding fertility, the urban-rural gap is striking. The urban CPR (36

percent) is nine times higher than the rural rate (4%). The poor-rich differential is also very marked with 29 percent of richer women and only 2 percent of women in the poorest quintile using any method of contraception. Despite these differences, the poor-to-rich differentials are still relatively lower in Ethiopia when it comes to use of modern contraceptives compared to other countries in the region (Figure 3.7).

180. Some regions (Amhara, SNNPR, Tigray) have higher levels of family planning intake. According to a 2004 report this is mainly due to the role of development associations, including the use of community based distribution agents.
181. Figure 3.9 shows the knowledge, attitude and practices relating to Ethiopian women by different wealth quintiles. Knowledge of modern method is high (about 81 percent), followed by women's approval of family planning. However, knowledge of source of modern method and women's perception about husband's approval is low, and may suggest barriers at this level. The importance of husband or partner's approval is emphasized when about 66 percent of all women state that they use contraception based mainly on a joint decision with their husband or partner and another 10 percent state that their husband or partner is the main decision maker. Only about one in four women (23.6 percent) use contraception mainly based on their decision alone.
182. The pill and injectables are the most widely known modern methods among all females (77.5 percent and 65.3 percent, respectively) and among all males (84.7 percent and 62.2 percent, respectively). However, while condoms are also widely known among males (65 percent), only about 33 percent of all females know them.
183. Despite the relatively high knowledge of contraceptive methods, the actual use of modern contraceptives³⁷ is very low, even among the richest households (12.8 percent). Actual usage for all types of contraceptives is only 13 percent for all females and 17 percent for all males. About 11 percent of all females use modern contraceptives.
184. ***Despite the relatively high knowledge of contraceptive methods, the actual use of modern contraceptives³⁸ is very low***, even among the richest households (12.8 percent). Actual usage for all types of contraceptives is only 13 percent for all females and 17 percent for all males. About 11 percent of all females use modern contraceptives.
185. The pill is the most popular method ever-used by all females (8.6 percent) while periodic abstinence is the most common practice ever-used among all males (9.7 percent). However, *there is a discrepancy between ever-use and current use of family planning methods. For example, while about 13.4 percent of all women have used a family planning method at some point in time, only 5.9 percent of them are currently using a method.* The pill has the highest discontinuation rate among females with 8.6 percent of all females reporting having ever used it while only 1.9 percent of them report currently

³⁷ DHS collected information on 8 modern methods (Pill, IUS, injectables, implants, vaginal methods such as diaphragm, foam, jelly, cream, condoms, female and male sterilization), as well as 2 traditional methods (abstinence and withdrawal)

³⁸ DHS collected information on 8 modern methods (Pill, IUD, injectables, implants, vaginal methods such as diaphragm, foam, jelly, cream, condoms, female and male sterilization), as well as 2 traditional methods (abstinence and withdrawal).

using it. In terms of current usage, the most widely used contraceptives are the pill and injectables among married females and males while the pill and condom are the most widely used methods among sexually active unmarried females and males.

186. About 77.5 percent of current users obtain their family planning methods from the public sector, 16 percent from the private medical sector, and 6 percent from other private sources. The major sources of contraceptives in the public sector are the government health center and the rural health center, which are used by about 36 percent and 26 percent, respectively of women. Both the government and rural health centers are the leading sources of injectables (49.6 percent and 31.5 percent, respectively) and the pill (32.3 and 26.1 percent, respectively). On the other hand, female sterilization is mainly performed in government hospitals (85 percent), while about 59.3 percent of condom users obtain their supply from private sources, predominantly shops (23 percent).
187. ***There is a high unmet need for contraception in urban and rural areas.*** Majority of Ethiopian women and men (98 percent prefer to space or limit the number of children they have. However, more than one out of three (about 36 percent) of currently married women are not using contraception even though they either do not want to have more children (14 percent) or they would like to space them for about 2 years (22 percent). Unmet need is even higher in rural areas (37.3 percent) compared with urban areas (25 percent). This suggests a failure of the supply side to respond to a current already high demand for family planning even in rural areas. Large variations can be found between regions. Unmet need is largest in Amhara (41 percent), followed by Oromia (36.4 percent), SNNPR (35.5 percent), Gambella (34.4 percent), Harari (30 percent), and Tigray (28 percent). If all currently married women who would like to space or limit the number of their children were to use family planning, the contraceptive prevalence rate in Ethiopia would increase from 8 percent to about 44 percent (DHS 2000).
188. ***Demand side factors also play an important role in family planning.*** As can be seen in the multivariate analysis in table 3.12, in rural areas, among the poor, large households, women are less likely to approve of family planning and say that their ideal number of children are more than five. Moreover, women who are more educated and exposed to media are more likely to know a modern method, know source of modern method, approve family planning, use family planning.
189. Results also indicate religion-based differences. Knowledge of modern method is more likely among Orthodox Christians compared to other religions, while Muslims are more likely to know the source of modern method compared to other religions, as well as to mention having more than five children as ideal.

Figure 3-7: Use of Modern contraceptive in all women in richest and poorest quintiles sorted by average use

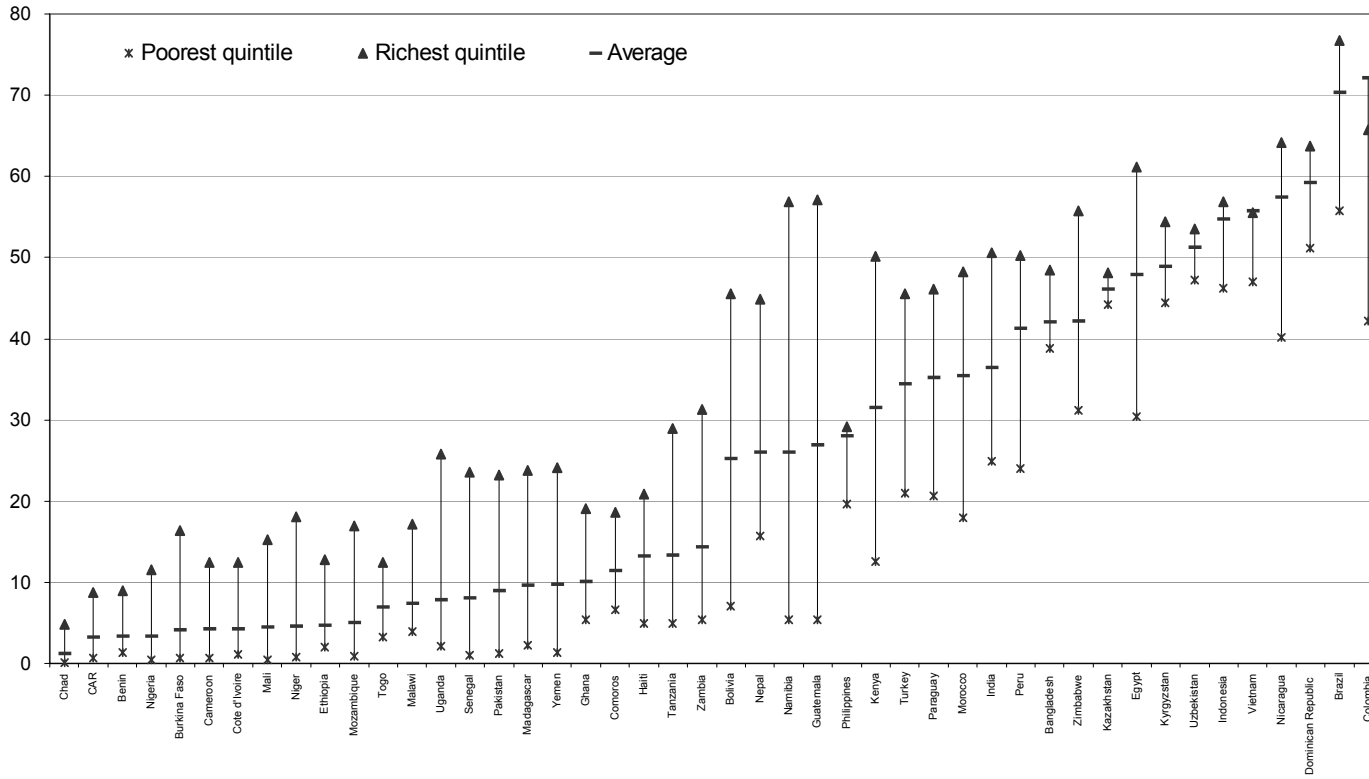
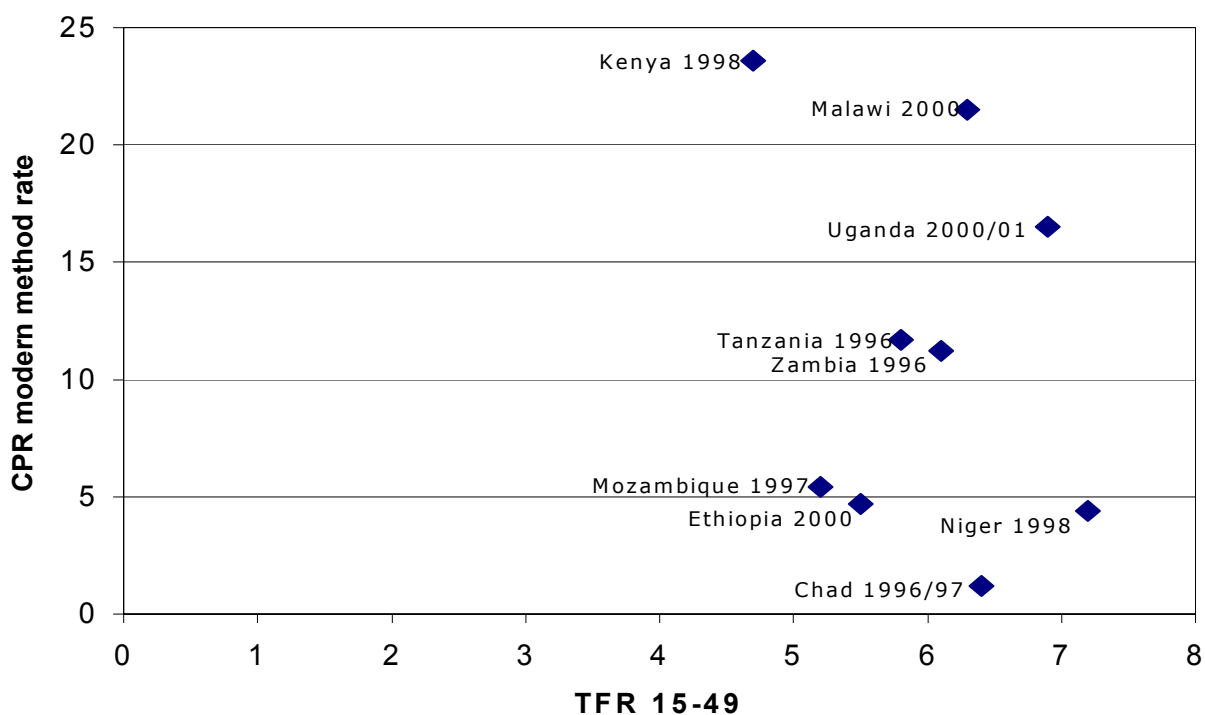
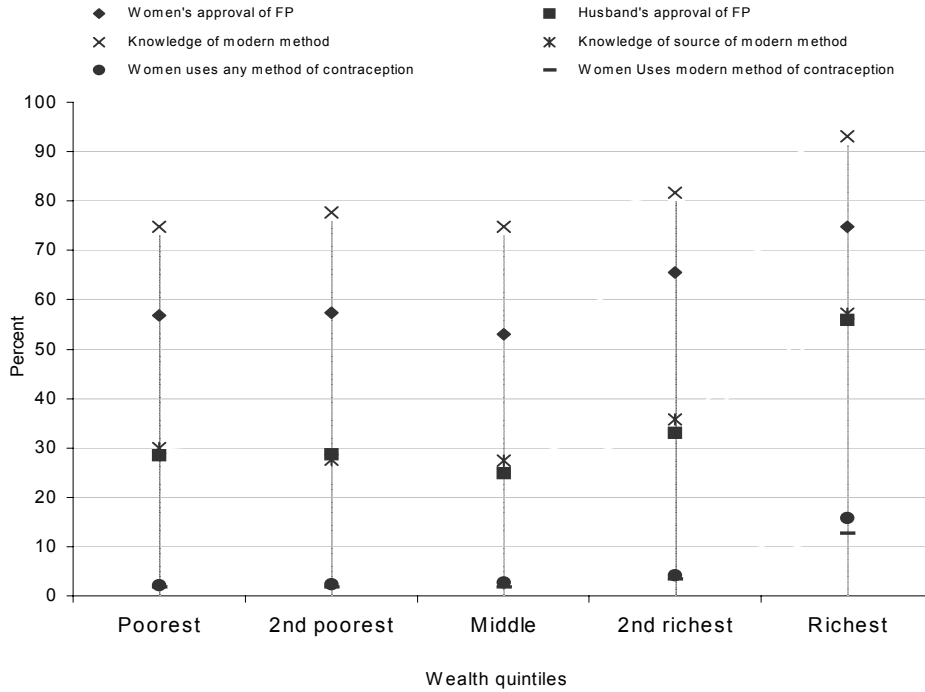


Figure 3-8: CPR and TFR in sub-Saharan African countries



190. *Significant regional variations are also seen.* Compared to Tigray, women in other regions were less likely to know about modern method, know source of modern method, perceive husband's approval as being low, and approve of family planning (except for women in Addis). However, actual use of modern method is more likely in Gambella than Tigray. Compared to Tigray, having the view that the ideal number of children as more than five is more likely in Benhangul-Gumuz but less likely in Amhara, Oromiya, SNNP, Gambella, and Addis.

Figure 3-9: Various family planning indicators by wealth quintiles in Ethiopia



Source: DHS

191. **General approval of husbands seems a major constraint.** Only in the richest 20% of the population can we find a significantly higher proportion of men approving family planning (60 percent). The involvement of husbands/partners is clearly needed to address demand side issues.

Table 3-11: Need for Family Planning for Currently Married Women in Ethiopia (2000)

Background	Unmet Need for Family Planning (FP)	Met Need for FP (currently using FP)	Total Demand for FP	Percentage of demand satisfied
Age				
15-19	40.4	3.9	44.3	8.8
20-24	37.8	7.5	45.3	16.5
25-29	37.2	9.6	46.8	20.6
30-34	38.8	9	47.7	18.8
35-39	35.8	10.9	46.7	23.3
40-44	37.2	7.9	45.1	17.6
45-49	18.1	4.1	22.3	18.6
Residence				
Urban	25	35.6	60.6	58.8
Rural	37.3	4.3	41.5	10.3
Region				
Tigray	28	10.2	38.1	26.7
Afar	12.3	7.7	20	38.6
Amhara	40.9	7.5	48.3	15.5
Oromiya	36.4	6.6	43	15.4
Somali	14.3	2.6	16.9	15.3
Ben-gumuz	31.9	8.7	40.7	21.5
SNNPR	35.5	6.4	41.9	15.2
Gambela	34.4	13.5	47.9	28.2
Harari	30.1	22	52.1	42.2
Addis	19.2	45.2	64.3	70.2
Dire Dawa	24.5	28.4	53	53.7
Education				
No education	35.3	4.6	39.9	11.5
Primary	41.6	16.4	58	28.3
Secondary	29.1	44.8	73.8	60.6
Total	35.8	8.1	43.8	18.4

Source: DHS 2000

Knowledge of HIV/AIDS

192. *A very high percentage of Ethiopian women (85 percent) and men (96 percent) have heard of HIV/AIDS.* Majority (80% of women and 71 percent of men) cited community meetings as their source of information on HIV/AIDS.
193. Multivariate results shown in Table 3.14 indicate that *women from richer, larger households and urban areas are more knowledgeable about HIV/AIDS prevention. Educated women and those exposed to media are more likely to know HIV/AIDS prevention.* Higher parity women are more likely to know how to prevent HIV. Younger women are less likely to know about HIV/AIDS intervention. It would be important to intensify information campaign efforts to teenage women, as well as those in their early 20s because the MOH (2002) sentinel survey findings indicate that the highest percentage of recent infections of HIV/AIDS among women is found in the 15 to 25 years age group.

194. Compared to women in most other regions, women in Tigray have a higher knowledge of HIV/AIDS prevention

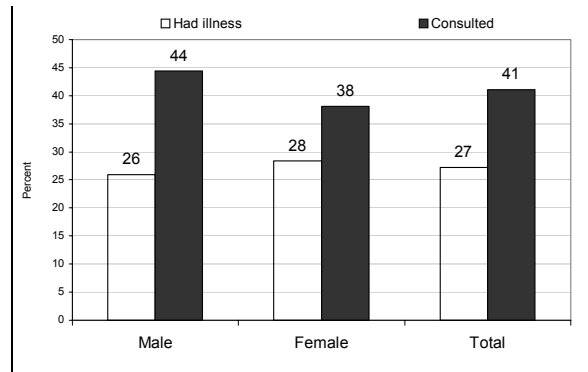
Knowledge of Sexually Transmitted Illnesses (STIs)

195. *While knowledge of LHIV/AIDS is very high, knowledge of STIs and their symptoms is much lower in Ethiopia.* Only 63 percent of women and 81 percent of men have knowledge of STIs. About 25 percent of women and 14 percent of men did not know of any male STI symptom. A similar pattern is observed in the case of STI detection for females with 27 percent of women and 41 percent of men having no knowledge of any female symptom. Lack of knowledge of STIs is especially high among the 15-19 year old age group (54.3 percent for women and 43.5 percent for men), those who have never married (50.5 percent for women and 33.6 percent for men), never had intercourse (52.3 percent for women and 41.4 percent for men), among rural residents (41 percent of females and 21.6 percent for males). Among regions, lack of STI knowledge was highest in Afar and Gambella (over 60 percent) compared to Addis (14 percent) and Dire Dawa (16.7 percent).
196. Among men who have had intercourse, about 3 percent had reported that they had an STI or had experienced physical symptoms. Of the men who had an STI or an associated symptoms, only half sought medical advice or treatment. It is worrisome that 54 percent of these men did not inform their partner while 58 percent did not take any action to protect their partner (DHS 2000).

Table 3-12: Adjusted odds for knowledge, attitude and practices relating to family planning and knowledge of HIV/AIDS prevention

	Knows modern method		Knows source of modern method		Husband approves FP		Woman approves FP		Uses modern FP		Ideal number of children>5		Does not know any method to prevent HIV/AIDS	
	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE
Urban (rural)	2.35***	0.48	1.17	0.25	1.61	0.39	1.21	0.21	2.30***	0.61	0.65**	0.10	0.56***	0.10
Region (Tigray)														
Afar	0.12***	0.03	0.11***	0.03	0.09***	0.02	0.08***	0.02	1.73	0.56	0.94	0.21	8.26***	2.03
Amhara	0.56**	0.13	0.33***	0.06	0.48***	0.09	0.38***	0.06	1.28	0.29	0.51***	0.07	1.36	0.28
Oromiya	0.39***	0.08	0.18***	0.03	0.31***	0.06	0.41***	0.06	0.52***	0.12	0.66***	0.08	3.10***	0.63
Somali	0.09***	0.02	0.08***	0.02	0.03***	0.01	0.03***	0.01	0.42	0.33	5.02***	1.79	11.04***	2.74
Ben-gumuz	0.14***	0.04	0.18***	0.04	0.26***	0.06	0.20***	0.04	1.55*	0.36	0.59**	0.12	4.72***	1.31
SNNP	0.19***	0.04	0.14***	0.03	0.23***	0.05	0.30***	0.05	0.89	0.26	1.17	0.17	5.62***	1.23
Gambela	0.09***	0.03	0.24***	0.06	0.12***	0.03	0.16***	0.04	1.83**	0.53	0.58***	0.09	11.26***	3.17
Harari	0.34***	0.09	0.19***	0.04	0.39***	0.10	0.30***	0.07	0.96	0.23	1.17	0.19	5.92***	1.43
Addis Ababa	0.47**	0.14	0.21***	0.05	0.44***	0.12	0.53	0.12	0.83	0.17	0.63***	0.10	2.83***	0.75
Dire Dawa	0.38***	0.11	0.23***	0.05	0.36***	0.10	0.36***	0.08	0.98	0.22	1.02	0.17	6.84***	1.89
Wealth Index (Poorest)														
2 nd Poorest	1.09	0.11	0.85	0.11	0.89	0.11	0.95	0.10	0.64	0.22	1.02	0.12	0.91	0.11
Middle	1.07	0.12	0.87	0.11	0.83	0.09	0.86	0.08	0.99	0.27	1.05	0.13	0.90	0.11
2 nd Richest	1.54***	0.18	1.20	0.16	0.85	0.10	1.23	0.13	1.59*	0.41	0.88	0.11	0.55***	0.07
Richest	1.72***	0.30	1.86***	0.32	0.88	0.15	1.28	0.17	3.72***	1.14	0.67**	0.11	0.37***	0.06
Religion (Others)														
Orthodox	1.34**	0.18	1.16	0.15	0.99	0.11	1.12	0.13	0.61*	0.16	1.01	0.15	0.55***	0.07
Muslims	1.13	0.13	1.41***	0.16	0.77	0.09	1.01	0.10	0.93	0.19	1.91***	0.23	0.97	0.11
Household member (1-5)														
6-10 member	0.71***	0.05	0.88*	0.06	1.01	0.09	1.05	0.06	0.88	0.11	1.02	0.06	1.20***	0.07
11+ member	0.94	0.16	0.83	0.13	1.09	0.24	1.49	0.23	0.98	0.26	0.90	0.13	1.29	0.22
Mother's age group (<20 years)														
20-29 years	2.68***	0.21	2.22***	0.18	0.86	0.11	1.43***	0.09	4.45***	1.17	1.29***	0.09	0.53***	0.04
30-39 years	3.36***	0.39	2.46***	0.30	0.76	0.12	1.08	0.10	3.78***	1.20	1.39***	0.13	0.51***	0.05
40-49 years	1.92***	0.25	1.86***	0.24	0.68	0.11	0.73***	0.07	1.84*	0.59	1.74***	0.20	0.56***	0.06
Mother's education (None)														
Primary	2.67***	0.32	2.34***	0.22	1.10	0.12	2.23***	0.18	2.23***	0.33	0.48***	0.04	0.26***	0.03
Secondary or higher	14.89***	6.17	3.49***	0.41	4.48	1.13	3.83***	1.04	2.38***	0.40	0.28***	0.04	0.04***	0.02
Exposure to mass media (None)														
Yes	2.44***	0.43	1.47***	0.14	0.97	0.15	1.48***	0.14	1.04	0.16	0.99	0.09	0.48***	0.08
Parity (0-2)														
3-4 children	1.80***	0.17	1.46***	0.11	1.27	0.12	1.40***	0.10	3.00***	0.50	1.91***	0.15	0.83**	0.07
5+ children	2.27***	0.29	1.59***	0.17	1.49***	0.18	1.55***	0.14	4.39***	0.97	2.57***	0.27	0.78**	0.08
Number of obs	15367		15345		9376		15357		15367		15367		15367	
Number of strata	1		1		1		1		1		1		1	
Number of PSUs	539		539		539		539		539		539		539	
Population size	15367		15362		9786		15362		15367		15367		15367	
F(31, 508)	32.96		28.35		17.26		23.74		21.62		45.08		33.30	
Prob>F	000		0.00		0.00		0.00		0.00		0.00		0.00	

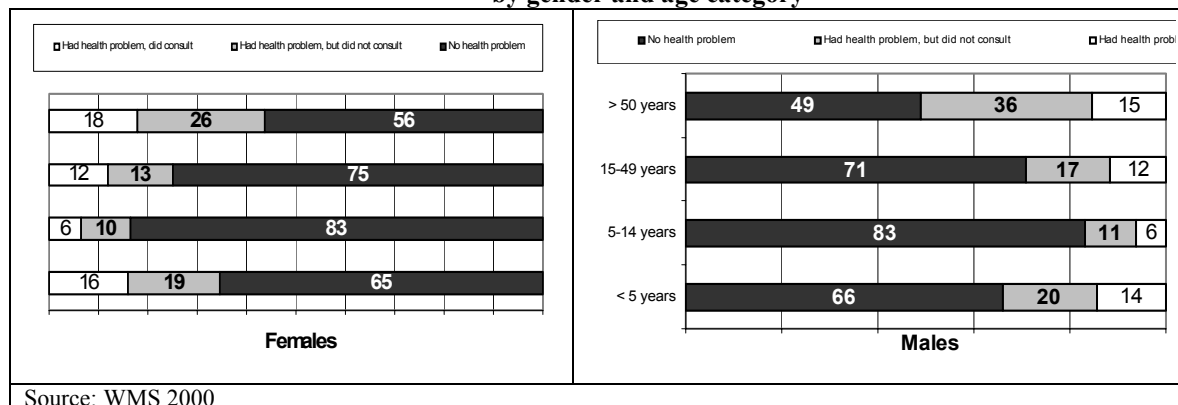
Figure 3-10: Illness in the last two months, and seeking percent of those ill seeking care by gender



Source: WMS 2000

197. The Welfare Monitoring Survey 2000 (WMS 2000) asked questions about illness/injury during a two month period prior to the survey. The results are summarized in Figures 3.10 and 3.11, and Table 3.11 to 3.16. About 27 percent of respondents reported having one or more health problems over the past 2 months with the incident being 28 percent among rural populations and 19.5 percent among urban ones. About one out of three children (33 percent) in the 0-4 year old age group have had health problems. On average, reported morbidity is highest in the less than 5 years age group and more than 50 years age groups. Morbidity is highest in Benshangul-Gumuz and lowest in Dire Dawa. The poor-to-rich ratio for morbidity is highest in Dire Dawa and Addis Ababa.
198. On average, out of the 27 percent reported cases of injury or illness, Ethiopian households sought care for 41 percent of these cases (38% in rural areas and 66.6% in urban areas). While the reported incidence of injury or illness is equal between rich and poor households, the national-level poor to rich ratio for seeking care is 0.68, range from 0.54 in Afar to 1.12 in Tigray. While females reported slightly higher levels of morbidity, a lower percentage of females who were ill sought health care compared to males (Figure 3.11). Seeking care is highest in the less than 5 years age group and lowest in the greater than 50 years age group (Table 3.16).

Figure 3-11: Illness in last two months, not seeking consultation and seeking consultation by gender and age category



Source: WMS 2000

Table 3-13: Reported illness/injury during two months period before survey by wealth quintiles in different regions of Ethiopia

Region	Poorest	2nd Poorest	Middle	2nd Richest	Richest	Average	Poor to rich ratio
Tigray	33	34	30	31	29	31	1
Afar	27	17	23	30	30	25	0.90
Amhara	28	27	29	31	31	29	0.90
Oromiya	26	26	25	27	26	26	1.01
Somali	27	32	38	37	31	33	0.87
Benshangul	37	41	35	38	40	38	0.92
SNNPR	27	24	24	26	27	26	1.02
Gambella	33	29	29	30	41	33	0.81
Harari	19	26	28	24	25	25	0.78
Addis Abba	22	18	16	17	17	17	1.32
Dire Dawa	49	39	30	35	35	36	1.42
Total	27	26	27	29	27	27	1.01

Table 3-14: Reported illness/injury during two months period before survey by wealth quintiles in different age categories

Age category	Overall	Poorest	2nd Poorest	Middle	2nd Richest	Richest
<5 yrs	34.35	33.06	33	34.18	36.42	36.14
5-14 yrs	16.71	16.7	15.12	17.2	17.92	17.12
15-49 yr	27.24	29.35	27.4	26.69	28.14	24.65
>50 yrs	47.28	47.43	47.59	44.66	47.6	48.28

Source: WMS 2000

Table 3-15: Distribution of individuals who had health problem and who consulted for treatment in different regions of Ethiopia

Region	Poorest	2nd Poorest	Middle	2nd Richest	Richest	Overall average	Poor to rich ration
Tigray	51	43	43	46	45	45	1.12
Afar	33	38	46	51	62	48	0.54
Amhara	20	23	26	31	31	27	0.65
Oromiya	46	46	48	48	49	47	0.94
Somali	46	46	48	48	49	40	0.94
Benshangul	55	61	60	65	78	60	0.71
SNNPR	36	39	47	47	53	43	0.68
Gambella	36	39	47	47	53	75	0.68
Harari	36	39	47	47	53	51	0.68
Addis Abba	36	39	47	47	53	64	0.68
Dire Dawa	36	39	47	47	53	46	0.68
Total	36	39	47	47	53	41	0.68

Table 3-16: Distribution of individuals who had health problem and who consulted for treatment by age category and income quintile

	Poorest	2nd Poorest	Middle	2nd Richest	Richest	Overall
<5 yrs	42.43	41.28	41.81	45.93	50.42	44.03
5-14 yrs	37.79	36.68	36.14	38.56	39.5	37.62
15-49 yr	39.39	40.54	42.91	43.51	50.93	43.37
>50 yrs	36.46	32.56	35.63	36.91	35.34	35.41
Total	39.35	38.71	40.11	42	45.76	41.1

199. Compared to other countries, Ethiopia has one of the lowest levels of care-seeking for ARI and percentage of children with diarrhea who received ORS (Table 3.21). Figure 3.12 shows the care-seeking behavior for ARI among the richest and poorest quintiles in different countries. Ethiopia's rich have a lower care-seeking rate for ARI compared to the poorest in many other SSA countries.

Table 3-13: ARI and diarrhea incidence and care-seeking behavior (2000)

Country	Percent with ARI taken to a health provider	Percent with diarrhea that received ORS packet
CAR	41.2	24
Chad	21.7	15.6
Nigeria	49.7	34.3
Ethiopia	15.8	13.1
Kenya	57.3	36.9
Malawi	46.1	49.7
Mozambique	38.5	41.9
Tanzania	67.5	54.9
Uganda	61.4	48.2
Zambia	70.7	53.9

200. Table 3.18 provides data on the care-seeking rates for diarrhea across wealth quintiles. Seventy-nine percent of the children in the poorest quintile and 57 percent among the richest quintile did not seek any treatment for diarrhea. Sixty-two percent in the poorest quintile and 36 percent in the richest quintile did not get any home-based treatment. About 40 percent in the poorest quintile did not know about ORS compared to only 13 percent in the richest quintile.
201. Table 3.19 summarizes the results of multivariate logistic regression to assess the independent effects of various socio-economic and demographic variables on prevalence and care-seeking for diarrhea and ARI. Prevalence of ARI is lower in urban areas, households with more than 5 members, agriculturist/unskilled families, and in older children. Significant regional differences are seen in the prevalence of ARI, with Tigray having a significantly higher prevalence rate relative to 7 regions.

Table 3-14: Diarrhea: care-seeking

	Poorest Quintile	Richest Quintile	Below poverty line	Above poverty line	Average
No treatment sought	79.1	56.8	79.8	67.2	74.2
Treatment sought					
Public Sector					
Hospital	0.7	9.8	0.8	4.8	2.6
Health Center	2.6	9.3	2.4	6.2	4.1
Health Post	0.4	0.3	0.3	1.0	0.7
Community Health	0.0	0.0	0.1	0.0	0.1
Worker					
Other Public Sector including Health Station	7.7	9.1	7.0	8.7	7.8
Private Sector					
Private	0.9	5.3	0.8	3.1	1.9
Doctor/Hospital					
Pharmacy/shop	4.2	6.0	4.9	5.7	5.3
Other Private Sector	4.6	3.5	3.7	3.2	3.5
Treatment given					
ORS	7.8	33.2	8.5	19.72	13.1
RHF at home	1.4	9.4	3.131	9.082	5.5
Home remedy/others	7.8	3.9	6.69	7.997	7.2
Others	21.2	18.0	20.28	18.38	19.5
(Injection/pills/syrup)					
None of the above	61.9	35.5	61.4	44.82	54.7
Knowledge of ORS					
Never heard of ORS	39.6	13.1	42.3	21.7	33.5
Used ORS	2.5	9.3	3.0	6.1	4.3
Heard of ORS	57.9	77.6	54.7	72.3	62.2

Source: DHS 2000

202. Seeking care for ARI is higher in other regions (Somali, Benshangul-gumuz, Gambella, Harari, Addis and Dire Dawa) compared to Tigray. Mothers who are exposed to mass media are more likely to seek care for ARI. Seeking care for ARI is more likely to be sought for male children while it is likely to be sought less for children of high parity and for older children.
203. The prevalence of diarrhea is lower in urban areas, in children with educated mothers, and in older children. Compared to Tigray, SNNP, Oromia, Benshangul Gumuz and Gambella have higher prevalence of diarrhea. Compared to other religions, Orthodox Christians and Muslims have higher prevalence of diarrhea. ORS use during diarrhea is lower in Amhara compared to Tigray, but higher in Somali. Richer quintiles and mothers who were exposed to mass media are more likely to use ORS.

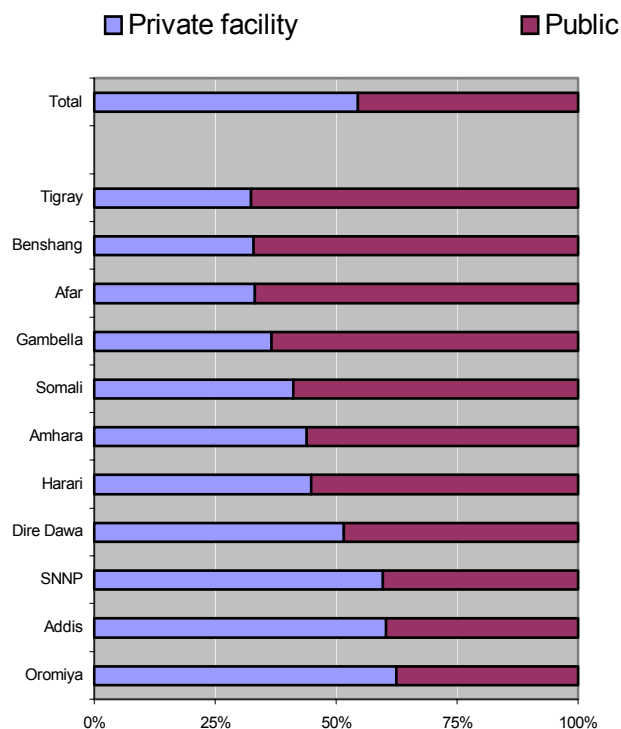
Table 3-15: Adjusted odds ratios for prevalence and seeking/giving care for ARI and diarrhea

	Prevalence		Seeking Treatment		Prevalence		ORT use during diarrhea	
	Odds Ratio	Std. Err.	Odds Ratio	Std. Err.	Odds Ratio	Std. Err.	Odds Ratio	Std. Err.
Urban (rural)	0.48***	0.09	1.40	0.59	0.60*	0.15	3.15**	1.43
Region (Tigray)								
Afar	0.69*	0.14	2.37*	1.09	0.72	0.15	0.70	0.35
Amhara	0.66***	0.10	1.12	0.41	1.09	0.17	0.49**	0.15
Oromiya	0.99	0.14	1.61	0.55	1.38**	0.20	0.69	0.22
Somali	0.80	0.16	5.84***	3.55	1.08	0.25	2.87**	1.19
Ben-gumuz	1.07	0.19	2.59**	0.92	1.50*	0.32	0.99	0.35
SNNP	0.69**	0.10	1.95*	0.75	1.58**	0.26	0.75	0.25
Gambela	0.70*	0.14	7.53***	3.28	1.49*	0.30	1.53	0.72
Harari	0.60***	0.12	2.68**	1.15	1.27	0.26	0.75	0.30
Addis Ababa	0.46***	0.11	2.66*	1.55	0.82	0.22	0.63	0.35
Dire Dawa	0.52***	0.12	2.49*	1.17	1.16	0.24	0.43	0.22
Wealth Index (Poorest)								
2 nd Poorest	1.23*	0.14	0.87	0.25	1.24*	0.16	1.42	0.42
Middle	1.25*	0.16	1.18	0.32	1.26*	0.15	2.37***	0.70
2 nd Richest	1.21	0.16	1.06	0.29	1.08	0.14	1.92**	0.58
Richest	1.15	0.18	1.74	0.60	1.15	0.17	2.36**	0.86
Household member (1-5)								
6-10 member	0.86*	0.08	1.41	0.30	0.85*	0.07	0.97	0.20
11 + member	0.59*	0.14	1.72	0.81	0.89	0.18	0.46	0.22
Religion (Others)								
Orthodox	0.95	0.13	0.95	0.32	1.53***	0.22	0.62*	0.18
Muslims	0.94	0.11	1.16	0.31	1.34**	0.14	1.02	0.20
Mother's age group (<20 years)								
20-29 years	1.02	0.12	1.08	0.34	1.11	0.13	0.68	0.17
30-39 years	1.06	0.17	1.13	0.39	1.00	0.14	0.64	0.21
40-49 years	1.37	0.27	1.43	0.58	1.13	0.22	0.84	0.34
Mother's education (None)								
Primary	0.90	0.10	0.99	0.21	0.77**	0.08	1.35	0.33
Secondary or higher	0.88	0.18	1.54	0.54	0.68*	0.15	1.48	0.81
Exposure to mass media (None)								
Yes	1.01	0.15	1.95**	0.49	1.09	0.15	3.16***	0.84
Partner's occupation (Others)								
Agriculturists/unskilled	0.68***	0.09	0.75	0.19	0.84	0.11	0.71	0.20
Parity (0-2)								
3-4 children	0.97	0.11	0.69*	0.15	1.13	0.10	1.28	0.26
5+ children	0.96	0.15	0.45**	0.14	1.09	0.14	1.24	0.36
Preceding birth interval (1 st or <2 years)								
2-3 years	1.08	0.09	0.91	0.17	0.95	0.09	0.88	0.16
4+	1.05	0.13	0.93	0.21	1.15	0.13	0.75	0.20
Sex of the kid (Female)								
Male	1.03	0.07	1.28*	0.18	1.07	0.08	0.99	0.15
Age of kid (<1 year)								
1 year	1.05	0.11	1.27	0.29	1.63***	0.17	0.86	0.18
2 years	0.89	0.09	0.99	0.23	0.96	0.10	1.00	0.23
3 years	0.68***	0.07	0.71	0.16	0.51***	0.06	0.76	0.22
4 years	0.62***	0.06	0.56**	0.16	0.35***	0.05	0.92	0.29
Number of observations	9368		2160		9368		2113	
Number of strata	1		1		1		1	
Number of PSUs	539		480		539		478	
Population size	10631		2599		10631		2517	
F(33, 501)	5.11		4.07		10.79		5.67	
Prob>F	0.00		0.00		0.00		0.00	

Household Utilization of Services

204. Figure 3.13 shows that among those who seek treatment about 45 percent of households seek care from a public facility, while the rest obtain care from some private or other type of facility (15.5% went to private pharmacies, 27.6% went to private facilities or private personnel, 12.4% to “other” and only 3.3% to NGOs). The WMS2000 states that only 0.9% sought traditional medicine.³⁹
205. Other than Addis, Oromiya, SNNP, and Dire Dawa, more than 50 percent of the consultations take place in a public facility.

Figure 3-12: Use of public or private facility by region for last consultation



206. Figure 3.14 shows the distribution of clients seeking curative care from different levels of health facilities by wealth quintiles. **While public and private facilities are used almost equally, both are mainly used by the richest households.** Except for the richest quintile, health stations/ clinics seem to be the main providers of care, followed by health centers. Health posts constitute only 5 percent of the total service provision.⁴⁰ Both health posts and health stations provide greater amount of services to the poor than the rich (Figure 3.9 and table 3.19).

³⁹ This is, however, in contrast to the information provided by the Ethiopia Health & Nutrition Research Institute and WHO which estimates that 90% of the population consultant traditional medicine practitioners.

⁴⁰ While this number may seem very low, it is also to be expected because health posts are responsible for providing preventive care and not curative care.

207. While public and private facilities are used almost equally, both are mainly used by the richest households. Public hospitals and private hospitals are utilized more by the richest quintile of households, while public clinics, pharmacies and other trained (private providers) are used more by the households from poorest quintile. The households from the poorest quintile utilize public hospitals the least. *The rich to poor ratio is lowest for health post and health station/clinics, and highest for government hospitals.*

Figure 3-13 Health facility-wise distribution of utilization in different wealth quintiles

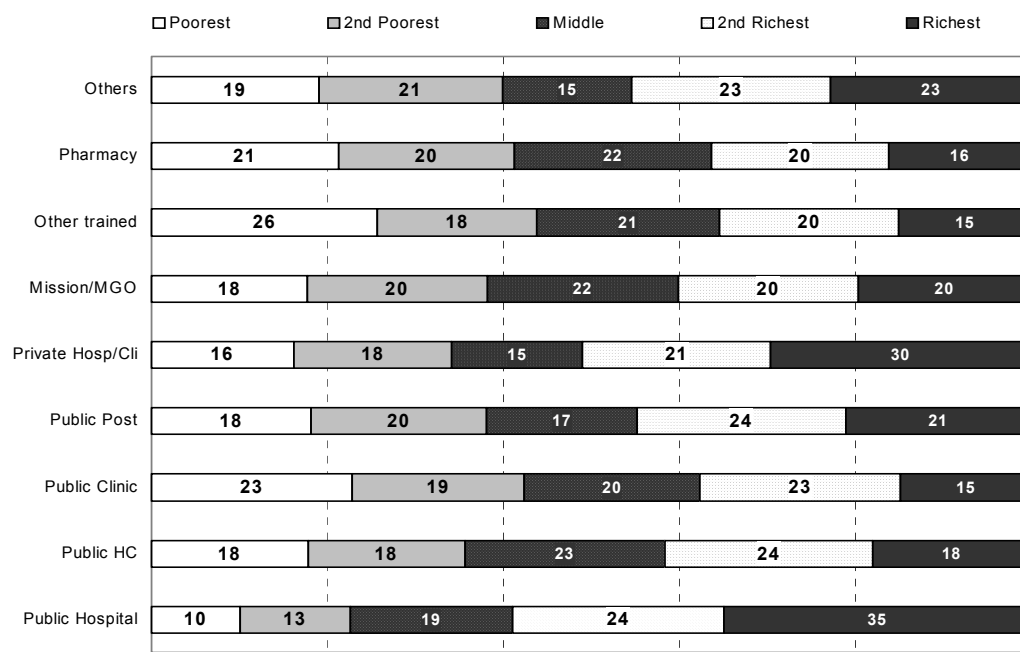


Table 3-16: Use of different types of public and private facilities for any service in each of the wealth quintiles

	Poorest	2nd Poorest	Middle	2nd Richest	Richest	Average	Rich-to-poor ratio
Government							
Hospital	3.2	5.2	6.7	4.9	18.4	8.5	5.7
Health center	26.3	20.3	23.4	28.5	41.9	29.5	1.6
Health station/clinic	49.5	53.3	44.5	45.9	26.2	42.3	0.5
Health post	4.8	5.1	10.0	5.2	0.9	4.9	0.2
Community-based outlet	0.2	0.8	1.0	1.4	1.7	1.1	10.3
Other facilities							
NGO	0.4	0.3	0.0	0.1	0.8	0.4	2.0
Private hospital/doctor/clinic	11.4	12.0	10.0	10.9	8.6	10.4	0.8
Kebele (during campaign)	3.7	2.3	3.2	2.1	0.8	2.3	0.2
Others	0.6	0.7	1.2	0.9	0.6	0.8	1.0

Reasons for choosing a health facility

208. Different reasons seem to motivate clients to use access different types of health facilities. Positive previous experience seem to be motivate clients to go to all hospitals (public hospital, mission/NGO and private). Use of private hospitals, NGO/mission and public hospitals seem to be based more on recommendations by others. Public clinics and public health posts seem to be accessed because of their proximity, while public

health centers, public hospitals and NGOs are used because they are less expensive. Pharmacies are favored because the waiting time is less in these facilities (Figure 3.5). Public hospitals, private hospitals, and mission/NGO facilities are used more because of their high quality of care (Figure 3.16).

209. Among all the reasons cited, *“availability nearby (38 percent) and quality of care (23 percent) emerge as the two most important reasons.* Poorer clients are more likely to mention “availability nearby” as their reason for choosing a facility compared to the rich. Richer clients are more likely to cite quality of care as a reason for accessing a particular health facility (Table 3.8). The different reasons for selecting a health facility by region are shown in Table 3.19.
210. In the DHS 2000, women were asked whether they sought care during illness, and if they did not, they were asked why they did not sought any care. Table 3.19 summarizes the results by wealth quintiles. Overall, 66 percent women sought care when ill, which ranged between 56 percent among the poorest to 86 percent among the richest. Among the various reasons mentioned for not seeking care, the most important reason was “no money for treatment” (56 percent) followed by “no health facility nearby” (27 percent) and sickness was not serious (10 percent).

Table 3-17: Reasons for choosing a particular health facility by wealth quintiles

	Positive experience from previous	Recommendation from other person	Available nearby	Cheaper than other / free of charge	Better quality than other	Short time of waiting	Others	Not stated
Poorest	5	7	42	12	20	5	8	1
2 nd Poorest	5	9	38	10	22	6	8	1
Middle	6	8	39	10	23	7	6	0
2 nd Richest	8	9	38	9	23	6	6	1
Richest	8	9	34	9	27	7	6	1
Total	6	8	38	10	23	6	7	1

Table 3-18: Reasons for choosing a health facility by regions

	Positive Experience from previous consultations	Recommendation from other person	Available nearby	Cheaper than other/free of charge	Better quality than other	Short time of waiting	Others	Not stated
Tigray	8	7	46	10	16	8	4	1
Afar	7	6	42	8	26	4	5	2
Amhara	5	8	43	7	20	8	7	1
Oromiya	7	10	34	11	24	6	8	1
Somalia	6	6	45	14	16	8	3	1
Benshangul	4	3	56	6	18	7	6	0
SNNPR	6	7	39	8	28	5	5	1
Gambela	4	3	45	16	19	4	7	2
Harari	8	14	29	17	16	5	11	0
Addis	7	9	26	23	20	5	9	1
Dire Dawa	9	6	28	23	21	7	6	1
Total	6	8	38	10	23	6	7	1

Figure 3-14: Distribution of reasons for choosing a facility

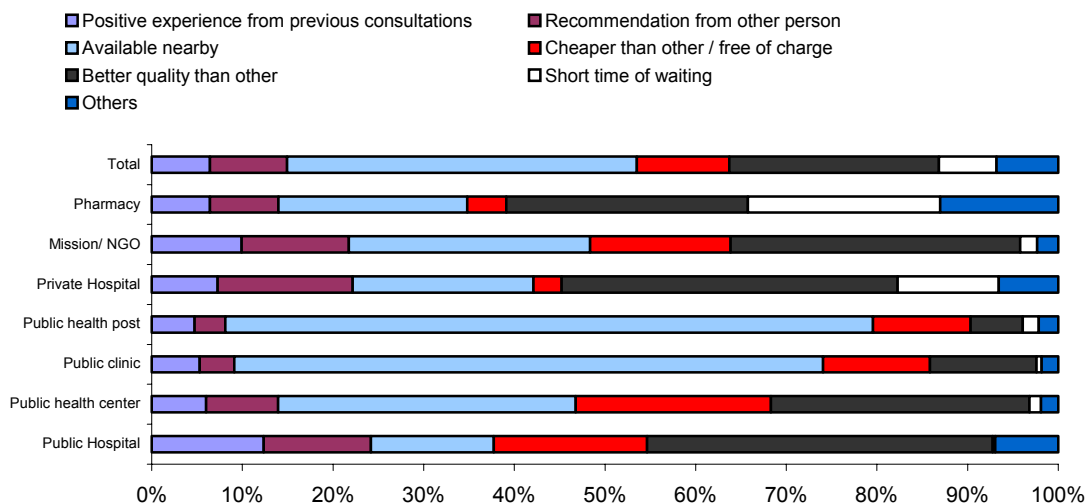
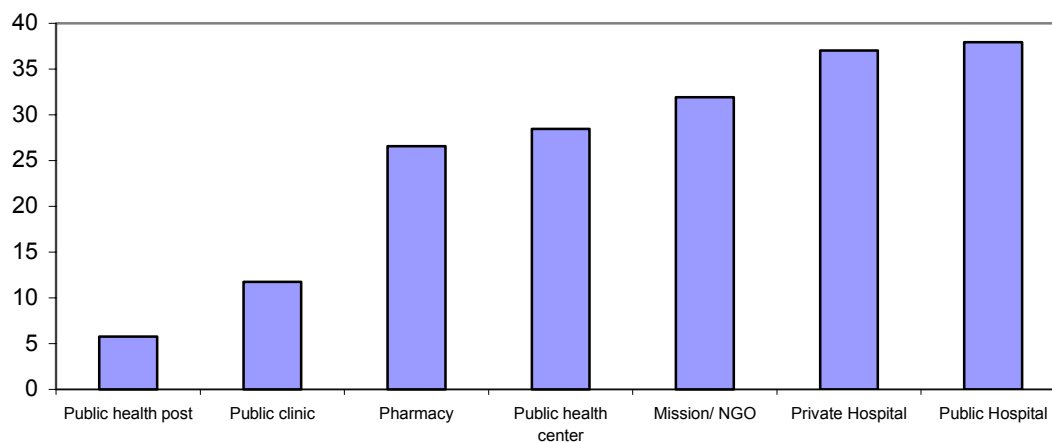


Figure 3-15: Proportion who mentioned better quality than others as reason for selecting a particular facility



Source: WMS 2000

Table 3-19: Percentage of women who sought care for illness, and reasons for not seeking care by wealth quintiles

	Poorest	2nd Poorest	Middle	2nd Richest	Richest	Average
Sought medical treatment when	57.8	57.7	59.0	67.8	85.6	65.8
Concern that there may not be a	0.3	0.0	0.4	0.3	0.0	0.2
Used traditional medicine	1.8	1.4	1.3	1.9	1.2	1.6
Does not know where to go	3.2	1.3	1.6	1.1	0.3	1.8
Scared of modern treatment	2.3	3.2	1.4	2.8	0.3	2.1
Did not want to go alone	3.2	2.2	3.8	4.1	2.4	3.3
Did not get permission to go	3.5	3.2	3.7	6.0	3.0	3.9
No transport	6.6	6.8	13.1	6.4	4.8	8.4
Believe that recovery would be	7.2	8.4	6.9	13.2	13.6	8.9
Sickness was not serious	9.5	10.3	6.4	9.0	27.3	10.2
No health facility nearby	24.0	29.5	37.6	21.1	5.8	26.8
No money for treatment	58.2	55.3	61.5	48.3	44.9	55.8

211. In Tables 3.20 to 3.23, households were asked whether they obtained health care for specific needs (treatment of sick child, immunization, maternal services), and the type of facility where care was sought.

Table 3-20: Reasons mentioned for use of health facility for various services by wealth quintiles

	Poorest	2nd Poorest	Middle	2nd Richest	Richest	Average	Rich-to-poor
Treatment of sick child	26.4	24.0	29.2	37.3	38.4	30.9	1.5
Immunization	19.8	18.5	21.6	30.1	32.1	24.3	1.6
Family planning	6.4	5.1	8.9	11.6	19.0	10.2	3.0
Prenatal, postnatal, and delivery care	4.1	4.1	6.5	7.0	12.1	6.7	2.9
Information on STI prevention	4.5	4.3	7.8	9.8	19.2	9.1	4.3
Information on breastfeeding and infant feeding	4.1	3.2	6.4	6.9	14.3	7.0	3.5
Any service	37.4	35.0	41.9	52.6	56.3	44.4	1.5

212. *The main reasons for seeking care are either child or reproductive health related.* There are big differences in utilization between urban and rural areas, with urban areas seeking health care by 10 percentage points more than rural areas. There are also big differences between the poorest and wealthiest quintiles with the wealthiest seeking care much more often, particularly for counseling and preventive services (table 3.20). *The poor to rich ratio is lowest in the case of treatment of sick child and immunization, while it is highest for obtaining information about sexually transmitted illness.*

Table 3-21: Use of different public and private health facilities for treating sick child by wealth quintiles

	Poorest	2nd Poorest	Middle	2nd Richest	Richest	Average	Rich-to-poor ratio
Government							
Hospital	3.8	7.1	8.2	5.5	21.6	10.0	5.8
Health center	24.1	19.7	23.0	28.2	37.9	27.7	1.6
Health station/clinic	53.4	51.5	43.8	45.6	26.2	42.7	0.5
Health post	2.3	3.5	9.3	3.6	0.7	3.6	0.3
Community-based outlet	0.0	0.0	0.6	0.3	0.3	0.3	
Other facilities							
NGO	0.0	0.0	0.0	0.1	0.2	0.1	5.8
Private hospital/doctor/clinic	15.1	17.3	14.0	15.4	12.3	14.5	0.8
Kebele (during campaign)	0.5	0.0	0.3	0.4	0.2	0.3	0.3
Others	0.8	1.0	0.8	0.9	0.5	0.8	0.6

Table 3-22: Use of different public and private health facilities for immunization by wealth quintiles

	Poorest	2nd Poorest	Middle	2nd Richest	Richest	Average	Rich-to-poor ratio
Government							
Hospital	3.8	2.7	3.8	2.4	19.8	7.8	5.2
Health center	30.1	22.1	23.4	30.1	40.7	30.8	1.4
Health station/clinic	48.8	58.1	48.2	51.1	30.6	45.3	0.6
Health post	6.6	6.4	12.5	7.0	1.4	6.3	0.2
Community-based outlet	0.3	0.9	1.7	2.1	1.9	1.5	6.4
Other facilities							
NGO	0.8	0.5	0.0	0.0	0.5	0.4	0.6
Private hospital/doctor/clinic	2.6	4.6	3.0	3.4	3.8	3.4	1.5
Kebele (during campaign)	7.0	4.4	6.1	3.5	1.3	4.2	0.2
Others	0.0	0.4	1.2	0.5	0.0	0.4	

Source: DHS 2000

**Table 3-23: Use of different public and private health facilities for maternal health services
by wealth quintiles**

Prenatal, postnatal, and delivery care	Poorest	2nd	Middle	2nd	Richest	Average	Rich-to-poor ratio
	Poorest	Poorest		Richest	Richest		
Government							
Hospital	8.8	7.7	9.2	9.4	21.4	13.6	2.4
Health center	26.0	23.0	23.3	26.2	45.9	32.8	1.8
Health station/clinic	60.3	60.7	46.2	56.7	28.7	45.0	0.5
Health post	0.6	6.5	13.2	5.8	0.7	4.6	1.2
Community-based outlet	0.0	0.0	1.8	0.9	0.9	0.9	48.9
Other facilities							
NGO	0.0	0.0	0.0	0.0	0.6	0.2	
Private hospital/doctor/clinic	4.3	2.1	5.4	1.0	1.8	2.8	0.4
Kebele (during campaign)	0.0	0.0	0.0	0.0	0.0	0.0	
Others	0.0	0.0	0.9	0.0	0.0	0.2	

Source: DHS 2000

213. Health stations/clinics are the major providers of care for sick child and immunization, especially among the poor, followed by health centers.

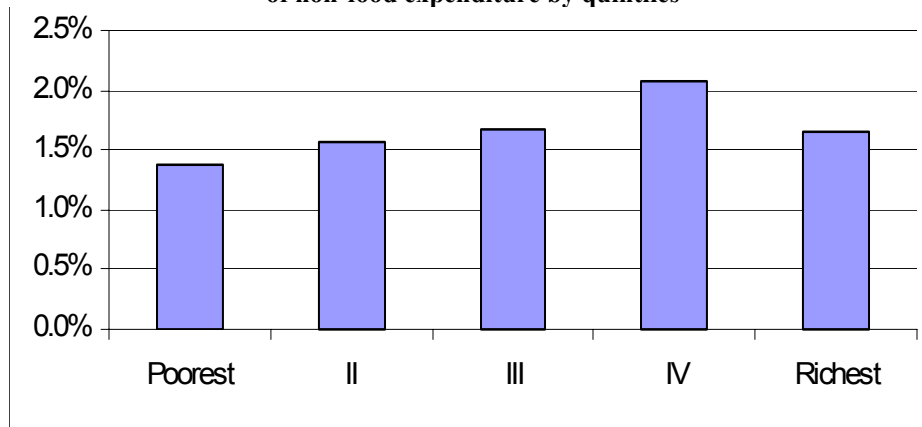
4. HOUSEHOLD HEALTH EXPENDITURES IN ETHIOPIA

Household expenditures on health compared to food and other expenditures⁴¹

214. Table 4.1 summarizes household expenditures by different regions of Ethiopia and expenditure quintiles. Ethiopian households' average annual expenditures in 2000 was Birr 5309. In Addis Ababa, the mean household expenditure (Birr 11,027) was almost twice that of the overall country average followed by the more urbanized regions: Harari and Dire Dawa (more than Birr 9,490.7 and Birr 7,421 respectively). The regions with less than average expenditures are Amhara, Benshangul, SNNP, and Tigray.
215. Food expenditures (an average of Birr 2,435) constitute 6 percent of total household expenditures. There are regional disparities with the share of food expenditures to total household expenditures ranging from 30 percent in Addis Ababa to 60 percent in Somali.
216. There are wide variations in household expenditures by expenditure quintile. The richest quintiles spent more than five times as compared with the poorest quintiles. Households from the poorest quintile spent 51 percent of household expenditure on food, while the households from the richest quintile spent 37 percent on food.
217. ***The average Ethiopian household spent only 0.9 percent (Birr 50) of the total household expenditure on medical and health care.*** This percentage is small compared to the percentage spent on food and considering that, on average, Ethiopian households spent 0.5 percent of household expenditure on tobacco products and 0.2 percent on alcoholic beverages. Health expenditures represent close to 2 percent of total household non-food expenditures. As shown in table 4.1, this percentage also varies across income levels, as the poorest households spend less (1.4 percent) than the richest (1.7 percent).

⁴¹ The data for this section came from Welfare Monitoring Surveys (WMS), 2000 and 1995/96 as well as Household Income, Consumption and Expenditure Surveys (HICES), 2000 and 1995/96⁴¹. HICES collected expenditure data on food, durable goods, and non-durable goods. Though HICES has limited data on health care expenditures, it enables us to compare the relative levels of expenditure on medical and health compared to expenditure on food, tobacco and alcohol etc. across different regions, as well as different expenditure quintiles. The WMS 2000 elicited information about "health problems faced during the preceding two months period", "if so, has consulted anyone about his/her health", "if obtained medical assistance, from where?", "why did you choose the health facility?", "what was the person consulted last?" and "what was the cost of the last consultation over the last two months?" From the above information, the authors were able to compute some data on private health expenditures for consultation in different regions and by different providers. However, even after pooling the data from WMS and HICES, the authors could assemble only limited information on household private expenditures on health care. The main gaps in the information relate to prevalence of inpatient care, cost of inpatient care, cost incurred on different aspects of care (X ray, other investigations, travel, cost of staying in hospital, etc.), costs incurred vis-à-vis severity of illness, etc.

Figure 4-1; Total health expenditure as percentage of non-food expenditure by quintiles



Source: WMS 2000 (based on table 4.1 in this report).

218. ***Expenditures on medical and health care varied widely among different regions:*** more than Birr 100 in Harari and Addis, while less than Birr 30 in Tigray, and Amhara. A large portion of household health expenditures was spent on pharmaceutical products. For example, in Afar, out of the 92 Birr spent by households on health care, 69 Birr (75 percent) was spent on pharmaceuticals.
219. The poorest households spend around 0.7 percent of their household expenditures on medical and health care while the households in the richest quintile spend 1.0 percent of the expenditures on medical and health. Overall, ***the richest quintile households spend more than 8 times more money on medical and health than the households from the poorest quintile.***

Table 4-1: Household expenditures on medical care and health in comparison to other household expenditures (in Ethiopian Birr)

	Mean Household Expenditure	Expenditure Food	% on food	Cigarette and tobacco	% on cigarette and tobacco	Alcohol beverage	% on alcohol beverage	Total medical care and health	% total medical care	Pharmaceutical products	% on pharmaceutical products
Region											
Tigray	5143.2	2534.7	49.3	0.9	0.0	7.9	0.2	29.1	0.6	20.2	0.4
Afar	6844.6	2840.0	41.5	55.9	0.8	0.2	0.0	91.9	1.3	68.8	1.0
Amhara	4116.4	2105.7	51.2	2.7	0.1	12.2	0.3	23.6	0.6	15.2	0.4
Oromiya	6102.1	2747.1	45.0	31.2	0.5	17.0	0.3	60.5	1.0	39.2	0.6
Somali	7285.6	4402.5	60.4	121.2	1.7	0.9	0.0	73.7	1.0	31.1	0.4
Benshangul	4680.6	2118.9	45.3	24.6	0.5	13.7	0.3	50.6	1.1	39.5	0.8
SNNP	4631.6	1976.1	42.7	16.3	0.4	24.7	0.5	56.5	1.2	31.9	0.7
Gambella	6343.0	2913.1	45.9	121.0	1.9	204.8	3.2	69.8	1.1	62.6	1.0
Harari	9490.7	4796.1	50.5	132.5	1.4	3.4	0.0	113.8	1.2	43.7	0.5
Addis Ababa	11026.9	3331.0	30.2	16.7	0.2	9.2	0.1	154.1	1.4	62.2	0.6
Dire Dawa	7421.8	3587.6	48.3	60.5	0.8	7.8	0.1	64.3	0.9	34.9	0.5
<i>Total</i>	<i>5309.1</i>	<i>2434.7</i>	<i>45.9</i>	<i>19.4</i>	<i>0.4</i>	<i>16.2</i>	<i>0.3</i>	<i>49.5</i>	<i>0.9</i>	<i>29.8</i>	<i>0.6</i>
Quintile											
2 Poorest	2069.6	1060.2	51.2	5.2	0.3	8.7	0.4	14.0	0.7	9.2	0.4
2 nd Poorest	3630.5	1820.3	50.1	8.4	0.2	15.6	0.4	28.2	0.8	19.3	0.5
Middle	5027.9	2501.9	49.8	16.2	0.3	15.4	0.3	42.4	0.8	26.2	0.5
2 nd Richest	6916.3	3326.4	48.1	29.2	0.4	21.0	0.3	74.9	1.1	46.6	0.7
Richest	12372.7	4630.4	37.4	56.1	0.5	25.4	0.2	128.0	1.0	67.5	0.5

Source: HICES 2000

Expenditures on last consultation

220. Table 4.2 summarizes average expenditures for the last consultation prior to the survey by different regions and by wealth quintiles. The average expenditure for a consultation was Birr 23.5 (about USD 2.7). Expenditures range from Birr 15.3 in Benshangul to nearly Birr 95 in Addis. Average expenditures for the richest quintile was slightly more than twice that of the poorest (Birr 37 in the richest quintile compared to Birr 15.8 for the poorest). Across the regions, the range between the poorest and richest quintiles is Birr 50.9 to Birr 131 in Addis to only Birr 9 to Birr 23 in Amhara. The poorest quintile in Addis spent twice as much (Birr 51) as the richest quintile (Birr 23) for a consultation in Amhara.
221. Table 4.3 summarizes the amount spent for the last consultation by the type of facility separately for different expenditure quintiles. *The cost of health care is highest in public hospitals, lowest in health posts.* Average expenditures for consultation were highest in government hospitals (Birr 70), followed by private hospitals (Birr 43). It was lowest in government health posts and government health clinic (around Birr 10). The amount spent on consultation in NGO and private clinics are higher than in public clinics. It was in government health posts and government health clinics (around Birr 10).

Table 4-2: Average amount spent (Birr) for the last consultation by those who sought consultation by region and expenditure quintiles

Region	Overall		Poorest Quintile		2 nd Poorest		Middle		2 nd Richest		Richest	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Tigray	20.5	84.5	28.8	127	12.6	16.3	22.1	105	12.4	18.9	26.5	98.2
Afar	29	103	11.8	21.4	30.8	31.7	43.1	226	21.4	46	32.2	81.1
Amhara	15.7	58.4	9.13	11.3	11.3	21.5	14.4	63.5	15.3	32.7	22.9	93.1
Oromiya	22.6	57.3	17	41.3	22.6	82.6	22.3	43.5	24.7	44.1	28.8	66.6
Somali	30.7	56.1	11.2	9.05	16.7	24.9	22.8	36.8	29	55.1	44.4	72.2
Benshangul	15.3	56.6	11.7	20.1	12.3	20.2	13.6	22.6	29.2	136	16.6	40.3
SNNP	22.2	89	13.4	27.1	16.3	24.8	23.1	110	31.2	156	31.3	92.5
Gambella	38	167	25	48.4	25.5	44.6	46.3	86.4	59.2	228	45.9	264
Harari	38.7	66	33.6	43	51.8	112	30.4	57	34.9	57.5	41	59.9
Addis Ababa	95.3	396	50.9	89.9	25.6	27	28.7	30.7	59.4	84.5	131	509
Dire Dawa	29.2	37.6	18.9	23.4	22.4	23.8	30.8	40.7	22.4	16.8	34.2	44.6
Total	23.5	98.1	15.8	42.4	18.6	60.4	20.9	72.2	23.5	75.8	37	171

Source: WMS 2000

Table 4-3: Average amount spent (Birr) on last consultation by type of facility and expenditure quintile

Facility	Aggregate		Poorest Quintile		2 nd Poorest		Middle		2 nd Richest		Richest	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Hospital (Govt)	70.5	152	50.5	73.1	50.3	89.5	51.1	94.8	74.7	134	89.7	203
Health Center (Govt.)	23.2	96.2	17.8	29.9	31.9	145	25	138	19.7	32.7	21.2	30
Clinic (Govt)	13.9	41.2	13.1	48.8	12.8	17.5	14.4	52.6	13.5	22.4	16.3	47.7
Health post (Govt)	10.5	15.5	7.85	6.79	11	21	12.6	17.9	9.36	8.92	11.9	17.2
Private hospital/clinic	43.2	182	23.1	38.5	24.1	28	36.5	69	38.8	51.8	71.6	321
Mission/NGO	28.7	71.2	44.9	155	21.2	26.7	20.4	17.2	39.5	48.7	20.9	18.5
Other trained health staff	14.1	22.2	10.9	12	12.7	12.9	14	19.1	15.1	18.9	19.4	41
Pharmacy	15.8	67.4	12.6	13	13.1	16.9	14.4	17.8	22.2	157	18.2	33.4
Others	10.2	26.9	7.79	14.1	9.27	17.7	9.23	26.6	8.5	11.7	14.7	43.8
Total	23.5	98.2	15.8	42.3	18.7	60.6	20.9	72.3	23.6	75.9	37.1	171

Source: WMS 2000

222. The poorest quintile pays less (Birr 50) than the richest quintile (birr 90) in government hospitals. This may be due to the exemption system which waives fees for persons who are certified to be too poor to pay. The cost of consultation at a pharmacy was Birr 16 and range between Birr 13 to Birr 18 for the poorest and the richest quintiles. The cost of consultation at Mission/NGO facility was Birr 29, which ranged between Birr 45 for the poorest quintile and Birr 21 for the richest quintile.

Table 4-4 Cost of transportation for last consultation (Birr)

Type of facility	Mean	Std. Dev.	Region	Mean	Std. Dev.	Quintile	Mean	Std. Dev.
Hospital (Govt.)	22.0	78.3	Tigray	9.2	31.9	Poorest	11.0	20.6
Health center (Govt.)	9.9	56.0	Afar	15.4	33.8	2 nd Poorest	15.1	79.5
Clinic (Govt)	13.8	56.7	Amhara	14.2	33.8	Middle	15.4	67.1
Health post (Govt)	4.6	8.7	Oromiya	16.0	66.0	2 nd Richest	18.7	76.7
Private hospital/clinic	17.0	66.3	Somali	50.7	270.7	Richest	11.3	44.9
Mission/NGO	19.3	62.7	Benshangul	17.7	34.7			
Other trained health staff	7.7	9.9	SNNP	13.2	33.5			
Pharmacy	11.1	68.9	Gambella	73.0	199.9			
Others	13.5	73.3	Harari	4.9	4.5			
Total	14.6	63.0	Addis Ababa	9.5	20.3			
			Dire Dawa	4.3	4.8			

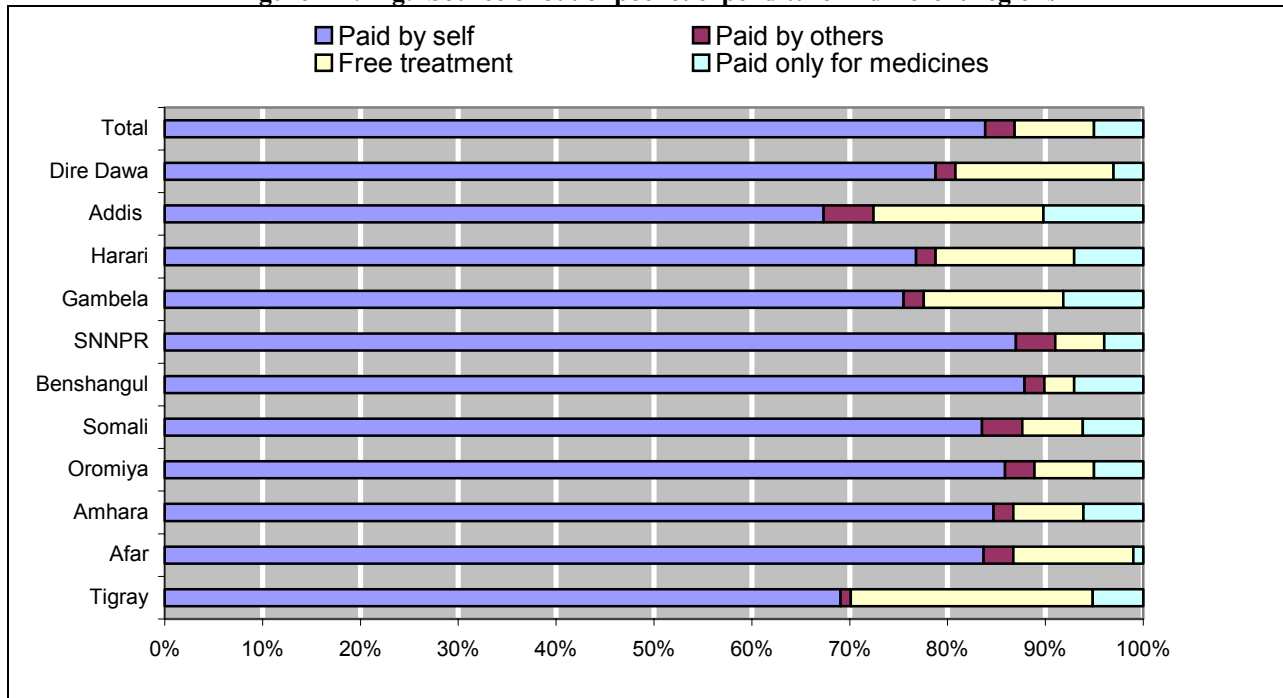
Table 4-5 Source of out-of-pocket expenditure by wealth quintiles

Income quintile	Paid by self	Paid by others	Free treatment	Paid only for medicines
Poorest	82	3	8	6
2 nd poorest	82	3	7	7
Middle	84	2	8	5
2 nd richest	84	2	9	3
Richest	82	3	8	5

Expenditures on transportation for last consultation

223. *Transportation costs represent an important part of out-of-pocket expenditures for health care in Ethiopian households.* Table 4.4 summarizes the transportation costs for the last consultation in different regions, by type of facility and by income quintile. The average cost of transportation for a consultation was Birr 15. The cost of transportation was highest for government hospital (Birr 22) and lowest for health post (Birr 5). Cost of transportation varied widely in different regions. It was as high as Birr 73 in Gambella and Birr 51 in Somali, and as low as Birr 4 in Dire Dawa and Birr 5 in Harari.
224. Out-of-pocket expenditures are mostly self-paid. The source of payment by wealth quintile is given in Table 4.5 and across different regions is given in Figure 4.2 “Self payment” of out-of-pocket expenditure was lowest in Addis and Tigray, while it was highest in SNNPR and Benshangul. Free treatment was highest in Addis, Tigray, Dire Dawa, Harari and Gambella. Overall, the source of out-of-pocket expenditure varies by region, and not so much by wealth quintiles.

Figure 4-2: Fig: Source of out of pocket expenditure in different regions



5. HEALTH SERVICE DELIVERY SYSTEM

225. This section reviews the performance of the Ethiopian healthcare system: its ability and effectiveness to meet the basic needs of the population with a core set of health care services. The focus is on the supply side of health care service delivery to the poor, particularly in the rural areas.

Policy and Institutional Framework

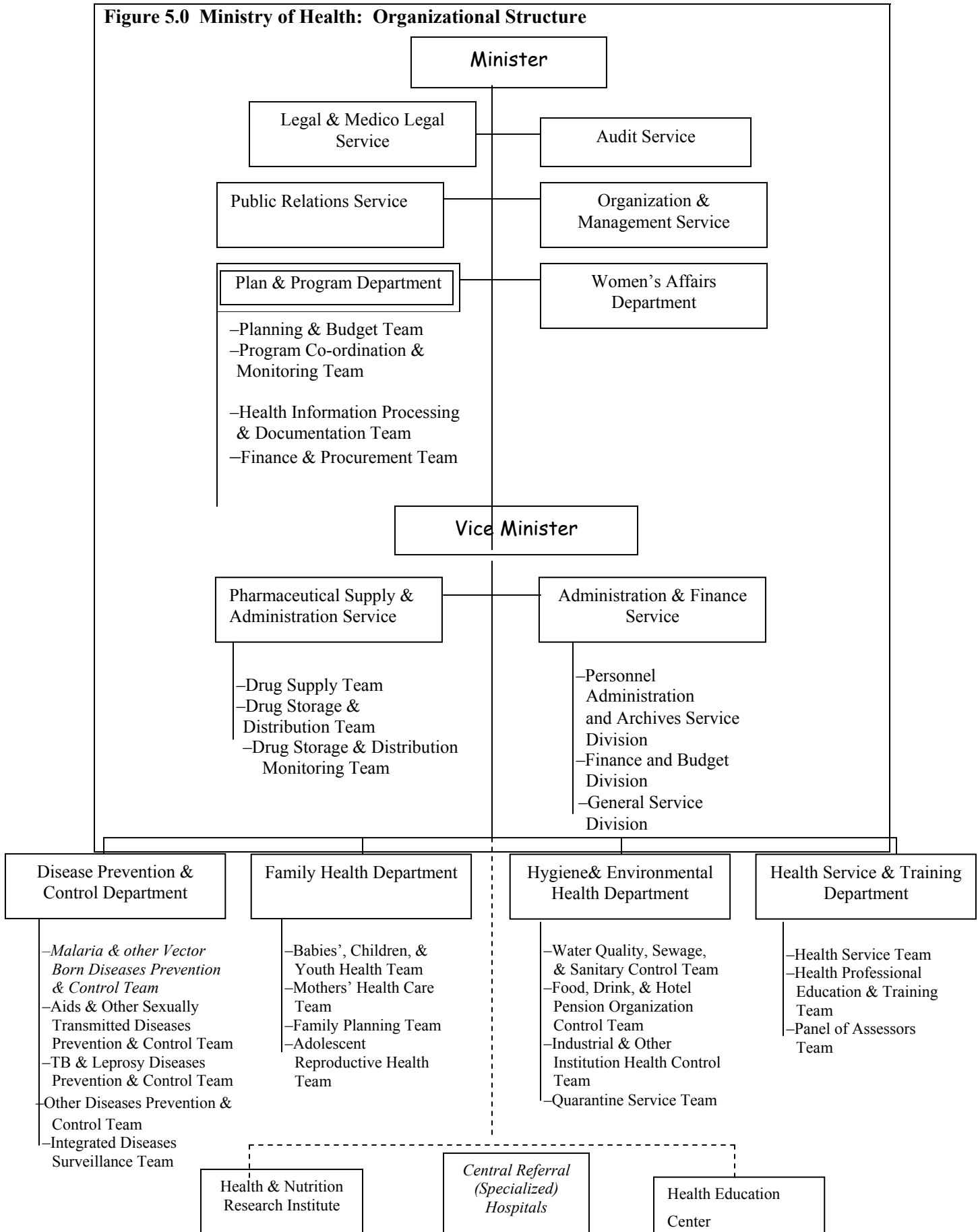
226. Ethiopia's National Health Policy was approved by the Council of Ministers in September 1993. This policy is based on ten principles:

- Democratization and decentralization of the health system.
- Development of the preventive and promotive components of health care.
- Development of an equitable and acceptable standard of health service system that will reach all segments of the population within the limits of resources.
- Promoting and strengthening of intersectoral activities.
- Promotion of attitudes and practices conducive to the strengthening of national self-reliance in health development by mobilizing and maximally utilizing internal and external resources.
- Assurance of accessibility of health care for all segments of the population.
- Working closely with neighboring countries, regional and international organizations to share information and strengthen collaboration in all activities contributing to health development, including the control of factors detrimental to health.
- Development of appropriate capacity, based on assessed needs.
- Provision of health care for the population on a scheme of payment according to ability, with special assistance mechanisms for those who cannot afford to pay.
- Promotion of the participation of the private sector and non-governmental organizations in health care.

227. To achieve the objectives outlined in this policy, the health care delivery system is being reorganized from the six-tier system into a four tier system (discussed below).

228. Figure 5.0 presents the organizational structure of the Ministry of Health. The managerial set up of Ethiopian health services has historically been centralized. A new Health Policy and Health Sector Strategy was adopted in the mid-1990s by the Government which involves the move towards democratizing and decentralizing the health system, and strengthening the Regional, Zonal and District/Woreda Health Departments. The roles and responsibilities between the Federal Ministry of Health (FMOH) and Regional Health Bureaus (RHBS) are defined by the national and regional constitutions.

Figure 5.0 Ministry of Health: Organizational Structure



229. ***Public service are going through a deep decentralization process*** Ethiopia has gone through two stages of decentralization with the first stage involving the decentralization of functions from the Center to the regions. Since July 2002, public services have been undergoing a deeper decentralization process with the primary responsibility for service delivery and management of government services having been further devolved to the woredas.⁴² The primary objectives of the political, administrative and economic decentralization policy are to increase local participation aimed at strengthening ownership in the planning and management of government services, to improve efficiency in resource allocation, and to improve accountability of government and public service to the population.
230. Under the new system, the woredas receive block grants and are responsible for setting priorities, delivering services, and determining budget allocations at the local level, within the framework of broad national policies (HSDP final evaluation, 2003). The woreda council is responsible for planning and implementation of all development programs in the woreda including health services. For example, the woreda is responsible for construction of health centers and health posts and procurement of drugs and equipment. However, in actual practice this process is still evolving because woredas still depend on regional and central levels for a number of health system functions including the recruitment and allocation of health personnel and the procurement and distribution of supplies.
231. The rapid decentralization has also resulted in some transitional issues, mostly related to rebalancing allocations, lack of clarity on responsibilities and expenditure assignments, and some disruption in budget formulation and reporting. These issues are being handled pragmatically by the regions (PER 2003) and will be discussed further in Chapter 6.
232. In general, institutional capacity at the woreda level for planning and implementation of health programs and other programs is a concern. Even prior to decentralization to the woredas, HSDP I evaluation data show that half of the regions have budget execution rates below 70%. Problems in planning and implementing investment plans, and difficulties in utilizing donor funds are cited as the main reasons for low execution. Capacity constraints can also exacerbate reporting lags and improving planning and budgeting skills and having the necessary trained staff to execute these plans in the woredas would be essential in moving implementation forward.
233. In the new organizational framework of the health sector, the *FMOH's responsibilities comprise policy formulation*, standard setting, issuance of licenses and qualification of professionals, establishing standards for research and training and coordination of external loans and grants.
234. Government policy also envisages a greater role for the private sector in health service delivery and financing. The enhanced participation of the private sector will be

⁴² The Ethiopian Federal Constitution of 1994EC established a four-tier system of government. The regions are divided into 66 zones, 6 special Woredas, and 550 Woredas. The average population size of a woreda is around 100,000.

encouraged, within an appropriate regulatory and monitoring framework to ensure coordination of public and private sector activities

235. In terms of *regulatory mechanisms*, the Health Policy documents recognize the involvement of NGOs in the Ethiopian health care system. Regulatory provisions have been made to encourage the activities of NGOs although there are still some issues regarding length of NGO appraisal and licensing (discussed below). The Department of the Ministry of Justice (MOJ) and Commission for Disaster Prevention and Preparedness (DPPC) are responsible for registering all NGOs wishing to operate in Ethiopia.
236. Certificates for the operation of private hospitals are issued only by the MOH of the Federal Government of Ethiopia, while certificates for clinics at all levels are issued by the concerned Regional Health Bureaus on the basis of the rules and regulations of the MOH.
237. According to the guidelines of the MOH, the Regional Bureaus have the responsibility for supervising, monitoring, and evaluating the activities of all clinics. The supervision of the operation of private hospitals is the responsibility of the MOH (Makuria, G and Mengiste, L,1996).
238. Another major initiative which has an impact on the implementation of health activities is the Civil Service Reform program which was introduced in February 2002. Its aim is to create a civil service which is both efficient and sufficiently competent to achieve the economic, social and political goals of the Government and to promote a culture of administration that is participatory. The CSR has five subprograms: (a) expenditure management and control, (2) human resource management, (3) service delivery, (d) management systems and (5) ethics. Reforms introduced under the Expenditure Management and Control sub-program are expected to improve budgetary processes and financial management, thereby addressing some of the issues raised during HSDP I (HSDP Review 2003).
239. One of the important policy measures recently taken by the MOH in 2002/03 was the development of the Health Extension Package (HEP) Initiative which seeks to provide health promotion and extension services to communities. The HEP intends to provide communities with four essential packages of services in the following areas:
 - (a) *Hygiene and environmental sanitation*: excreta disposal, solid and liquid waste disposal, water quality control, food hygiene, proper housing, arthropod and rodent control, and personal hygiene;
 - (b) *Disease prevention and control*: HIV/AIDS and other STD prevention and control, TB prevention and control, malaria prevention, and first aid;
 - (c) *Family health services*: maternal and child health, family planning, immunization, adolescent reproductive health, and nutrition; and
 - (d) Health education.
240. For a poor country like Ethiopia, where only an estimated 52 percent of the population has physical access to primary health care (PHC), with unfavorable health staff to

population ratios and very low per capita income, the move towards complementing facility based care with outreach services such as the HEP is an important strategic move.

241. The HEP is being piloted in five regions. The original MOH design for health outreach was based solely on prevention, hygiene and sanitation education but this has since been amended to ensure that the two health extension workers (HEWs) who will be assigned to each kebele are also trained to provide reproductive health information and service. The HEWs will also liaise with PHC facilities for patients referrals particularly for high risk pregnancies and emergency obstetric care. While there is a clear need to expand coverage of both preventive and curative care, especially in rural areas, the MOH has expressed concerns that it might not be realistic to expect two health extension workers per kebele to be able to effectively providing both preventive care and some curative based services. It would also be important for curative care services to be provided by properly trained health staff. This policy has experienced some degree of resistance at the local level, and health posts in some regions are providing curative care. Discussions are ongoing regarding whether anti-malaria drugs and antibiotics for child acute respiratory infections (ARI) could be provided as part of the family/community based package of services of the HEP; these are oral medications that could be provided by HEWs or CHAs. These issues as well as the potential contributions of the HEP to the realization of the child and maternal MDGs are discussed in detail in Chapter VII.
242. There appear to be some differences, if not contradictions, between what was intended and described in various HEP concept and/or briefing papers and what was piloted in the five regions. The initial piloting started with the existing junior public health nurses and junior environmental health technicians, who had already been trained at certificate or diploma level. These health workers had not been selected from local Kebeles, nor are they necessarily local residents of the Kebele. The majority are men (while the plan specifies female HEWs) and the two cadres are trained for different purposes (most probably to divide areas of responsibilities although this would need to be clarified), although both are dealing with primary health care.
243. Preparations are underway in order to fully launch the program and training and implementation packages have been developed. To implement the HEP, the Government plans to upgrade the existing health posts (HPs) and construct new ones in 10,000 rural kebeles in five years. During this period, 20,000 health extension workers (HEWs) will be trained and deployed to HPs.
244. In moving forward with the HEP and prior to expanding its coverage, it would be essential to learn from the experiences of the pilot and integrate lessons learned in the planning and implementation of the activities.

POLICY AND PROGRAM REFORMS

Health Sector Development Program (HSDP)

245. The initial Health Sector Development Program which was drafted in 1993/94 was designed for a period of 20 years, with a rolling five-year program period. Its main goals

were threefold: (1) build basic infrastructure, (2) provide standard facilities and supplies and develop and (3) deploy appropriate health personnel for realistic and equitable primary health delivery at the grassroots level. The first phase, HSDPI, was implemented from 1997 to 2002. It sought to: (a) increase access to health care from 40% to 50-55%, (b) improve the technical quality of PHC services, including restructuring of the pharmaceutical sector and expanding the supply and productivity of health personnel, (c) develop an Information, Education, and Communication plan to communicate PHC messages to isolated areas, (d) improve health systems management at federal and regional levels, (e) improve financial sustainability of the health sector, and (f) promote greater private sector investment in the health sector

Performance of the HSDPI (1997-2002)

246. The measures taken so far have resulted in increasing potential health coverage from 33% to 52%, because of the steady increase in health facilities. However, utilization of the available maternal and children services remain low. Less than 10 percent of deliveries are attended by health professionals and trained traditional birth attendants. There has been a very marginal increase in the number of women who receive antenatal care (from 30 percent in 1996/97 to 30.2 percent in 2001/02. EPI coverage rates are below the end of HSDPI target of 80% (DPT3 was 46 percent). Some improvements were also observed such as the increase in the number of health personnel especially nurses. There is also a rising trend in most regions in the use of family planning services and the national contraceptive prevalence rate rose from 9 percent in 1996/97 to 14.6 percent in 2001/02. A multi-sector effort to address the HIV/AIDS pandemic is also underway.

Table 5-1 Overall health targets and goals of the HSDP, PRSP and MDG

Objective	HSDP Targets/Measures (2002/03-2004/05)	Millennium Development Goals (MDG)	SDPRP Indicative Target
Increase life expectancy of the population	Increase life expectancy at birth from 52 in 2000/01 to 58 years		85/1000 by 2004/5 50/1000 by 2017
	Reduce infant mortality from 97 per 1000 live births in 2001/01 to 85	Reduce by two thirds, between 1990 and 2015	160/1000 by 2004/05 300/100,000 by 2017
	Reduce Maternity Mortality 500-700/100,000 live birth in 2000/01 to 400-500	Reduce by three quarters, between 1990 and 2015.	
Increase access for health services	Increase health care coverage from 52% in 2000/01 to 65%		65% by 2004/05 90% by 2017
	Promote contraceptive coverage from 18.7% in 2000/01 to 65%		40% by 2017
	Expand EPI coverage from 41.9% in 2000/01 to 65%. Increase Health Budget Share		90% by 2017 From 5.2% to 8.2% of total budget by 2004/05
Enhance health opportunity and promote disease prevention and control	Reduce malaria prevalence from 7.7/1000 in 2001/02 to 6.2/1000	Halted by 2015 and begun to reverse the incidence	
	Maintain HIV/AIDS prevalence 7.3% in 2001/02 the same 7.3%	Halted by 2015 and begun to reverse the spread of HIV/AIDS	Reduce transmission by 25% by 2004/05. Contain prevalence at 7.3% by 2004/05

HSDP II and III

247. HSDP II started in July 2002 and covers a three-year period from July 2002 to July 2005. It follows the same component format as HSDP I. Many stakeholders consider HSDP II a transitional plan covering three years until the start of HSDP III (2004/05 – 2009/10) that will fall in line with the planning process of the Second National Development Plan of the FDRE (NDP II).

SDPRP

248. The overall objective of the Ethiopian Government-led Sustainable Development and Poverty Reduction Program (SDPRP) is to reduce poverty by enhancing economic growth while maintaining macroeconomic stability. It is built on four pillars (agricultural development-led industrialization and food security, governance, decentralization and empowerment, reform of the justice system, and civil service and capacity building). In

addition, the SDRP identified key sectoral measures and cross-cutting issues including education, roads, water and sanitation, HIV/AIDs, health, and gender and development. In health, in particular, it seeks to improve the balance between preventive and curative health care through a community based health care delivery system aimed at creating a health environment and lifestyle.

249. Aiming to reach the MDGs, the SDPRP envisages progress in three interrelated areas: (i) expanded coverage of current public sector programs and improvements in the quality of service delivery; (ii) faster and more equitable economic growth, and; (iii) a reduction in Ethiopia's vulnerability to weather, sickness, and trade related shocks. Table 5.1 presents HSDP II, MDG and SDPR targets.

Organization of Health Services Delivery

250. Health care services are provided through four sectors: Public sector, Private sector, NGO sector and Traditional Healers. The focus of this report was intended to be primarily on the first three sectors – together comprising the “modern health care sector.” However, apart from number of facilities, the reviewed literature contain limited information on the NGO and private sectors. Literature is more limited in the case of traditional medicine.

The Public System

251. In the mid 90s, prior to the implementation of HSDP, the public health system was structured into a six-tier system:

- Central referral hospitals (covering app. 588,000 persons)
- Regional hospitals (N/A)
- Rural hospitals (N/A)
- Health centers (covering app. 223,000 persons)
- Health stations (covering app. 45,000 persons)
- Community health posts (Covering app. 21,000 persons)

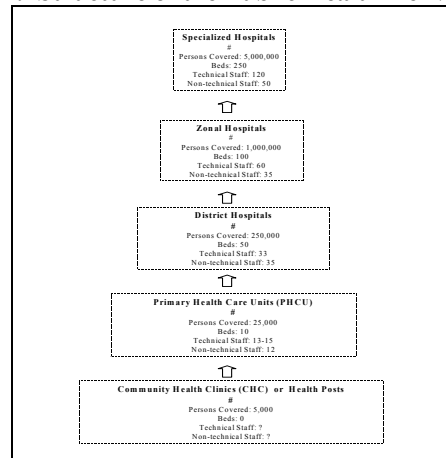
252. A change in the service delivery structure to a simpler 4-tier system (figure 5.2) was planned during HSDPI. The main change is to replace health stations (popularly known as ‘clinics’) with Primary Health Care Units (PHCUs): with each PCU having a health center surrounded by (ideally) five satellite Community Health Clinics (CHC) or Health Posts, each serving a population of 5,000 for a total of 25,000 for the PHCU. The PHCU is expected to provide comprehensive, integrated and community-based preventive and basic curative services, in particular:

- Maternal and child health care, immunization, family planning advice and services, nutritional health, and micronutrient supplementation;
- Curative services for common ailments such as parasitic infections, diarrhea, acute respiratory infections and tuberculosis;
- Perform minor surgery and life saving operations such as appendectomies and caesarean sections;

- Give technical assistance in establishing and monitoring environmental and occupational health standards within their catchment areas;
- Record basic vital statistics and undertake disease surveillance;
- Train Community Health Agents (CHA) and Traditional Birth Attendants (TBA) who will staff the CHCs or Health Posts (HPs).

253. Each district hospital functions as a referral and training center for 10 PHCUs. Zonal Hospitals (ZHs) provide specialist services and training while Specialized Hospitals (SHs) provide comprehensive specialist services, and in some instances serve as centers for research and post basic training.

Figure 5-1: Structure of the Public Health Delivery System



Source: authors based on MOH document

254. ***Restructuring of the public health delivery system is still underway and is not being consistently implemented.*** This is mainly because the proposed concept of replacing health stations by health posts that do not provide both preventive and curative services has not been fully accepted by regional stakeholders (HSDP reviews and based on discussions during July CSR 2003 mission). The staffing of health posts (HPs) with minimally trained staff almost exclusively for preventive purposes has generated substantial debate because of the view that HPs are not meeting the basic needs for both preventive and curative care of the population. For this reason, for example, Oromia region expressed its intention to not establish HPs. Nationwide the number of health stations (HS) has not changed significantly; declining slightly in 2000/01 but increasing again in 2001/02 by almost 7 percent. It has proven difficult to reduce the service package of HS and downgrade them to HPs, mainly because of popular opposition to having only facilities that offer preventive services especially in remote areas .

255. The issue of having the appropriate health service delivery structure is strongly linked to the issue of the core service packages, intended to directly address the most pressing needs of the poor rural populations. These have not been finalized and until they are, the staffing and resource allocation issues cannot be adequately addressed. Similarly, the planning for new facilities and human resource development is based on the needs that are to be met, how they are going to be met in terms of packaging of services, types of personnel needed, and service delivery structure. It would also be important to have a

transitional strategy and guidelines to facilitate the move from the previous service delivery mode to the current one.

256. *The Government runs most of the formal health facilities* (table 5.2) and the numbers have increased significantly over recent years. Seventy-one percent of hospitals, 94% of health centers, 82% of health stations and all of Health Posts are run by the government. As shown in table 6.3 the pharmaceutical sector is dominated by the private sector: 85% of pharmacies, 81 of drug shops and all rural drug vendors are privately owned. The regional distribution of facilities is uneven with urban areas being better covered.

Table 5-2: Distribution of Health Facilities by Ownership and by Region, 2001/02***

Region	Hospitals				Health Centers				Health Stations			Health Posts
	MOH	Others*	Total	Beds	MOH	Others*	Total	Beds	MOH	Others*	Total	
Central	4	1**	5	1,871	0	0	0	0	0	0	0	0
Addis	5	15***	20	2,346	20	4	24	122	6	144	150	47
Harari	3	2	5	440	2	4	6	20	9	1	10	7
Dire Dawa	1	1	2	350	3	0	3	30	5	17	22	17
Gambella	1	0	1	93	5	3	8	0	32	1	33	18
Ben-Gumuz	2	0	2	254	7	0	7	254	66	8	74	44
Tigray	12	2	14	1,260	28	0	28	400	167	15	182	112
Oromia	20	8	28	2,000	112	3	115	0	770	182	952	244
SEP	11	2	13	1,260	110	4	114	550	305	52	357	306
Amhara	15	2	17	1,246	82	0	82	318	517	10	527	385
Afar	2	0	2	208	8	0	8	70	47	3	50	49
Somali	6	0	6	382	11	6	17	167	94	1	95	82
Total	82	33	115	11,710	388	24	412	1,931	2,018	434	2,452	1,311

Source: PPD, MOH. Health and Health Related Indicators Addis Ababa. 2001/02.
 * Facilities owned by NGOs (Non-Government agencies) and OGA (Other government agencies)
 ** Includes 5 central hospitals (St. Paul, St. Peter, Amanuel, ALERT, and Black Lion)
 *** Includes private hospitals
 **** Regions are ranked based on the development index used by the GOE (annex 1.1 explains the criteria and also presents other types of indices such as poverty and revenue/capita). Addis ranks highest in terms of development and Somali the lowest

Table 5-3: Distribution of Pharmaceutical Retail Outlets By Region & Ownership, 1994EC (2001/02)

Region	Pharmacies				Drug Shops				Rural Drug Vendors		
	Public	NGO	Private	Total	Public	NGO	Private	Total	NGO	Private	Total
Tigray	0	1	14	15	14	1	10	25	0	207	207
Afar	0	0	1	1	0	0	4	4	0	45	45
Amhara	8	7	23	38	1	0	38	39	0	251	251
Oromia	16	8	41	65	35	2	105	142	0	813	813
Somali*	0	0	0	0	0	1	4	5	0	20	20
Benishangul	0	0	0	0	0	0	3	3	0	32	32
SNNPR	7	3	23	33	8	1	39	48	0	473	473
Gambella	0	0	0	0	1	0	1	2	0	14	14
Harari	1	0	6	7	0	0	3	3	0	3	3
Addis Ababa	10	0	128	138	1	0	38	39	0	8	8
Dire dawa	2	0	12	14	1	0	3	4	0	10	10
National	44	19	248	311	61	5	248	314	0	1876	1876

The NGO sector

257. As of December 2002, there were 508 NGOs registered with Center for Disaster Preparedness and Prevention (DPPC)⁴³, 377 of which are indigenous and 131 are international (DPPC 2002). About 77 percent of NGOs are concentrated in Addis, Oromia, SNNP, and Amhara. Regions and areas of intervention are selected by NGOs themselves although the DPPC, MOJ, DPPBs, and RHBs might set national and regional priorities. The GOE is making efforts to increase the NGOs in the emerging regions (Afar, Somali, Gambella and Benshangul-Gumuz).
258. The health sector is one of the oldest sectors where faith-based organizations and NGOs started their operations. There are 225 NGO projects in the health sector; the highest number for a single sector (Table 5.4). There are also other NGO projects in water supply and sanitation, and environment that have a direct impact on health, and there are some health components in the integrated programs as well as in the other sectors.

Table 5-4: Sectoral distribution of NGO projects (2001)

Sector	Number of Projects	Percent
Agriculture	87	7.3
Education and training	97	8.1
Health	225	18.8
Environment	55	4.6
Integrated rural development	124	10.4
Water supply and sanitation	101	8.5
Urban development	31	2.6
Others*	475	39.3
Total	1195	100

Source: DPPC, August 2001 cited in Federal Ministry of Health, HCF Secretariat, 2003. NGOs involvement in the Ethiopian Health Sector: facts, challenges, and suggestions for collaborative environment.
*Note: projects in HIV/AIDs, income generation, work for orphans, elderly, and the disabled.

259. Despite the government's interest and policy commitment to increasingly involve NGOs in the health sector, there appears *little articulation on how such policy commitments are to be translated into action*. The absence of NGO guidelines that would direct their involvement in the health sector has created problems. There are two standards for health facilities: one for government facilities and another for private facilities (FDRE 1996) that could also impact on NGO facilities. NGO facilities are supposed to follow the government facility standards based on the understanding that these will be transferred to the government in the future. However, the private hospital guidelines are also applicable for hospitals constructed by private not-for-profit agencies including NGOs.
260. Legal procedures and guidelines exist for NGO licensing and operation and the requirements and follow-up during implementation. However, actual processes followed have been extensive and vary across regions. Thus project formulation, appraisal and

⁴³ The role of regulating NGOs was assumed by the DPPC because NGOs in Ethiopia were traditionally involved in relief and humanitarian activities. Over time, NGOs have increased and diversified their areas of involvement with more of them moving into development interventions (FDRE/HCF 2003).

final agreement take time because of the way the NGO licensing and legal procedures are organized, lack of coordination between various stakeholders, procedural differences across regions, human resource shortage, and bureaucratic red tape (FDRE/HCF, 2003).

261. NGOs whose contributions are not channeled through the government budget also represent an important share of the total health expenditure. The exact amount of this expenditure and its impact are not certain. The CSA Survey in 1989EC (1996/97) estimates that NGOs provided fewer than 6 percent of all outpatient visits; however, many NGOs are focused on providing services such as immunization and family planning or nutrition -- services that would not show up in a survey that only asks about coverage of curative care visits.

The Private Sector

262. The private sector has expanded but no coherent implementation strategy and guidelines exist to enhance their participation in meeting health sector objectives. Before 1995, private sector involvement in the health sector was negligible because there was no legal framework within which private practices were allowed to operate. Since then, a number of private for-profit hospitals, numerous private for-profit clinics and pharmaceuticals manufacturing firms have opened across the country, mostly in urban areas. The current role and impact of the private sector in Ethiopia is not well covered in recent literature. This is worth noting because the HSDP strategy calls for “expanded private sector involvement and the development of innovative strategies and partnerships to leverage the private sector towards public health ends”. In spite of these policy intentions, there appears to be no coherent strategy and approach to mobilize the private sector to meet health sector objectives.
263. *Private providers are concentrated in urban areas.* In Addis, in particular, it appears that significant portions of health needs are met by the private sector (for example, as shown in Table 5.5, 50% of the hospitals in Addis are privately-owned while table 5.6 indicates that 27.5 % of all the private clinics are located in Addis).

Table 5-5: Distribution of Hospitals By Type and Ownership, 1994EC (2001/02)

Region	MOH			OGA	NGO	Private	Total
	Specialized Hospital	Zonal Hospital	District Hospital				
Tigray	0	5	7	0	0	2	14
Afar	0	1	1	0	0	0	2
Amhara	0	6	9	2	0	0	17
Oromia	1	13	6	4	4	0	28
Somali	0	1	5	0	0	0	6
Benishangul	0	1	1	0	0	0	2
SNNPR	0	6	5	0	2	0	13
Gambella	0	0	1	0	0	0	1
Harari	0	2	1	2	0	0	5
Addis Ababa	0	5	0	3	2	10	20
Dire Dawa	0	0	1	1	0	0	2
Central	4	0	0	1	0	0	5
National	5	40	37	13	8	12	115

Table 5-6 Distribution of Private Owned Clinics By Type and Region, 1994EC (2001/02)

Region	Types of Clinics				
	Lower	Medium	Higher	Special	Total
Tigray	18	2	1	0	21
Afar	2	0	0	0	2
Amhara	154	40	8	4	206
Oromia*	NA	NA	NA	NA	435*
Somali	0	2	0	0	2
Benishangul	5	1	0	0	6
SNNPR	139	37	7	0	183
Gambella	6	3	0	0	9
Harari	0	11	0	0	11
Addis Ababa	125	93	65	57	340
Dire Dawa	13	0	7	0	20
National	462	189	88	61	1235

Source: MOH/PPD. Health and Health Related Indicators, 2001/02.
*data for Oromia is taken from 2000/01 MOH PPD report.

264. As shown in table 5.3, *the pharmaceutical sector is dominated by the private sector:* 85% of pharmacies, 81% of drug shops and all rural drug vendors are privately owned. The regional distribution of these facilities is uneven with better coverage in urban areas.
265. Apart from drug vendors, there seems to be few private providers outside the towns. Those that exist may be public health workers providing services “on the side,” although with the exception of case studies/anecdotal information, there are no firm data to support this.

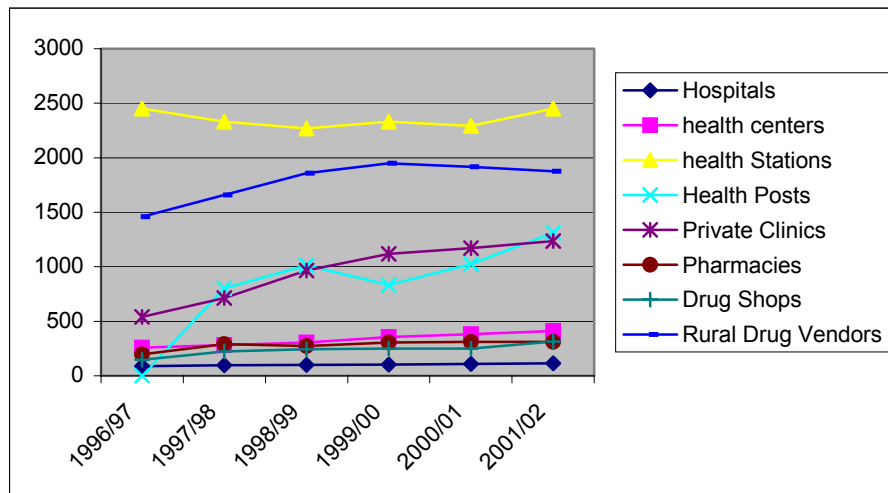
Traditional Healers

266. In Ethiopia, Traditional Medicine (TM) includes the use of herbs for addressing both physical and mental illness, the belief in the healing powers possessed by Healers, Holy Water and other remedies.
267. Little literature exists regarding traditional medicine. While the WMS2000 pegs the use of TM at 0.9%, the Ethiopian Health and Nutrition Research Institute and WHO estimate that the use of TM is 90%.⁴⁴ From key interviews during the July 2003 site visits, it is clear that TM plays an important role in health care for a large majority of the population. It appears that it is fairly common for people to seek TM first and modern medicine (MM) only when TM fails. Interviews during the July 2003 field visits revealed that in the cases where TM was sought first and the patient did not get better, it delayed getting the patient to a health facility – sometimes to the point that it was too late. Some health workers (HWs) expressed frustration with this practice, as it often resulted in the HWs being blamed.

⁴⁴ The 1995 Ph.D. dissertation by Dr. Azene estimates the use of TM at 70%..

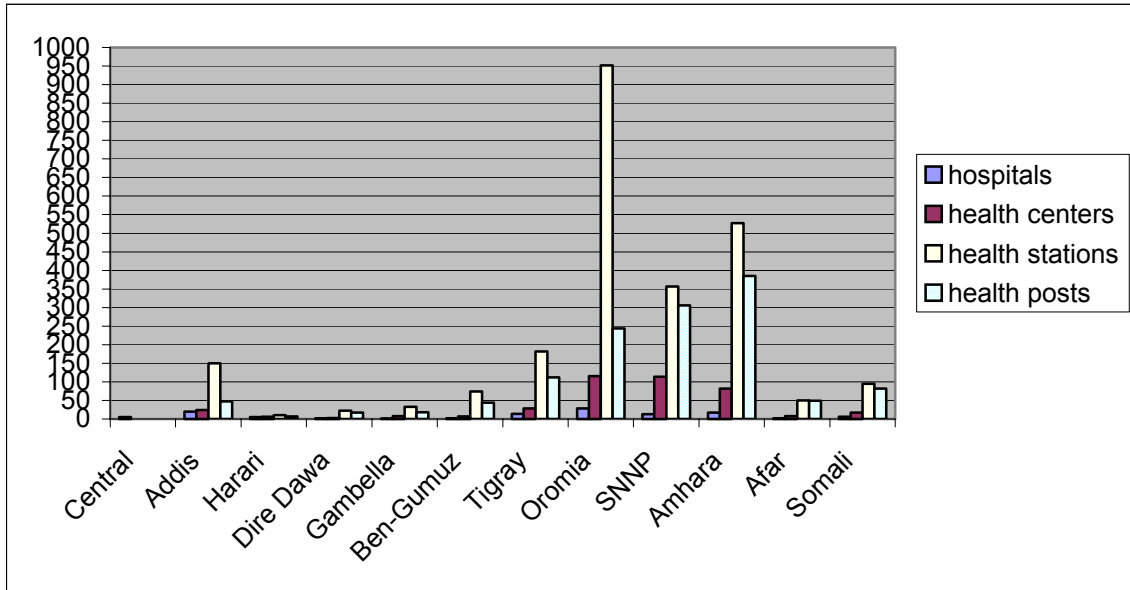
268. There is ongoing discussion at the MOH about how to better integrate TM into the health care delivery system. A task force has been established to develop policy and guidelines.
269. *Number and Distribution of Health Facilities.* There has been a steady increase in the number of health facilities provided nationally with an emphasis on the establishment of health posts and health centers. As shown in figure 5.3, there has been a steady increase in the number of health facilities provided nationally with an emphasis on the establishment of health posts and health centers. From 1996/97 to 2001/02, the number of hospitals have increased by 32 percent, from 87 to 115, health centers have increased by 60.3 percent from 257 to 412, and health posts from 0 to 1311. However, it is interesting to note that health stations which are supposed to be phased out only marginally decreased by 6 percent from 1996 to 2001 (from 2451 to 2,293) and even increased to 2,452 in 2002.
270. From 1996/97, private clinics have increased by 128 percent from 541 to 1,235; pharmacies by 57.8 percent from 197 to 311, drug shops by 108 percent from 148 to 309, and rural drug vendors by 27 percent from 1,460 to 1,856.

Figure 5-2: Fig Number of Health Facilities by Type from 1996/97 to 2001/02



Source: PPD MOH. Health related Indicators, 2001/02

Figure 5-3: Figure 5.4: Ethiopia Regional Distribution of Facilities



Source: PPD, MOH. *Health and Health Related Indicators* Addis Ababa. 2001/02
 Regions: aligned based on level of development from most developed (Addis) to least developed (Somali)

Accessible to Health Services

271. Approximately 51.8 percent of the population has access to clinical services (provided by health stations and health centers). Coverage increases to 61 percent when health posts are included in the coverage calculation, and to 70.7 percent if private clinics are included.⁴⁵ In terms of service delivery it is estimated that only 75 percent of urban households and about 42 percent of rural households are within 10 kilometers from a health facility (Table 5.7).

⁴⁵ Previous MOH/PPD publications have excluded health posts in calculating coverage of services.

Table 5-7: Potential Health Service Coverage and Visit Per Capita, 2001/02

Region	Population	Facility Type				Access to health facilities within 10 kms (Potential Health Service Coverage, %)*		
		Health Center (HC)	Health Station (HS)	Health Post (HP)	Private Clinics (PC)	HC, HS	HC, HS, HP	HC, HS, HP, PC
Tigray	3,901,000	28	182	112	21	64.60	78.95	81.65
Afar	1,272,000	8	50	49	2	55.03	74.29	75.08
Amhara	17,205,000	82	527	385	206	42.55	53.73	59.72
Oromia	23,704,000	115	952	244	435	52.29	57.44	66.61
Somali	3,898,000	17	95	82	2	35.27	45.79	46.05
Ben-Gunz	565,000	7	74	44	6	161.95	200.88	206.19
SNNPR	13,293,000	114	357	306	183	48.30	59.81	66.69
Gambella	222,000	8	33	18	9	238.74	279.28	299.55
Harari	172,000	6	10	7	11	145.35	165.70	197.67
Addis Ababa	2,646,000	24	150	47	340	79.37	88.25	152.49
Dire Dawa	342,000	3	22	17	20	86.26	111.11	140.35
National	67,220,000	412	2,452	1,311	1,235	51.80	61.55	70.74

Source: MOH/PPD. Health and Health Related Indicators, 2002

Note: *Population covered in percentage based on existing health facilities (HP,HS,HC,PC) in catchment area.
Health Centers, Health Stations, Health Posts & Private Clinics are included in the calculations which consider to serve with the capacity of 25,000, 10,000 & 5,000 patients each for Health Posts & Private Clinics, respectively

Geographical access

272. Are health facilities available and sufficiently accessible to the poor Distances as well as travel time and availability of public transportation are very important in determining access.
273. Despite the increase in the number of facilities, geographical access to health services in Ethiopia remains one of the lowest in the world. Physical access has slightly improved over five years with the average distance to the nearest health facility providing curative care (hospitals/health centers/health clinics) decreasing from 8.8 kms in 1995, to 7.7 kms in 2000 (Table 5.7). Large rural to urban differentials exist with the nearest health facility providing curative care being 1.4 kms in urban areas and 8.8 kms in rural areas in 2000. Regional differentials are also very large with distances as low as 1.3 kms in Addis and as far as 9.8 kms in Afar. The average distance for the poorest quintile of households is 8.8 kms and 6.1 kms for the richest quintile. The percentage distribution of population by distance from the nearest hospital/health center/health clinic in different regions is given in Table 5.9 and by income quintiles is given in table 5.10. Around 30 percent of the household live beyond 10 kms of the nearest hospital/health center/health clinic, this figure does not differ much across income quintiles.

Table 5-8: Average distances to hospitals/health centers/health clinics (kms)

	1995		2000	
	Mean	Std. Dev.	Mean	Std. Dev.
Total	8.8	9.3	7.7	8.1
Region				
Tigray	10.7	10.6	7.6	6.7
Afar	5.1	9.2	9.8	13.1
Amhara	9.2	9.6	8.0	7.0
Oromiya	8.7	8.6	8.3	8.6
Somali	7.6	7.8	6.4	10.0
Benshangul	9.6	8.3	9.6	15.0
SNNPR	9.3	9.6	7.6	8.2
Gambella	5.7	8.1	6.9	8.8
Harari	2.1	2.6	2.2	2.8
Addis Ababa	0.9	3.6	1.3	4.7
Urban rural				
Rural	10.2	9.3	8.8	8.2
Urban	0.9	2.3	1.4	3.4
Income Quintiles				
Poorest	10	10	8.5	9.5
2 nd poorest	10.1	10.2	8.1	8
Middle	9.2	9.4	7.6	7.5
2 nd richest	8.7	8.8	7.5	7.6
Richest	7.0	8.0	6.1	7.4

Source: WMS, 1995 and 2000

Table 5-9: Access to nearest hospital/health center/health clinic by income quintiles

Quintiles	<1 KMS	1-4 kms	5-9 kms	10-14 km	15-19 km	20+ kms
Poorest	6	29	32	17	9	6
2 nd Poorest	8	30	33	16	8	6
Middle	8	29	32	15	9	6
2 nd Richest	9	31	32	15	9	4
Richest	15	34	26	13	8	4
Total	9	31	31	15	9	5

Source: WMS, 2000

Table 5-10: Access to nearest hospital/health center/health clinic by region

Region	<1 kms	1-4 kms	5-9 kms	10-14 km	15-19 km	20+ kms
Tigray	7	31	31	19	9	4
Afar	17	20	13	37	3	9
Amhara	8	26	34	14	11	6
Oromiya	7	30	33	16	9	6
Somali	19	41	15	13	4	7
Benshangul	16	27	27	10	7	13
SNNPR	7	33	31	17	7	4
Gambella	19	36	25	3	11	6
Harari	32	53	12	3	0	0
Addis Ababa	48	48	4	0	0	0
Dire Dawa	23	65	10	2	0	0
Urban	39.8	54.4	5.2	.1	-	.2
Rural	4.2	26.8	35.3	17.6	10	6.1
Total	9	31	31	15	9	5

Source: WMS, 2000

274. Potential coverage is defined within the Ethiopian context as having access to health facilities which are 10 kms away. While this definition may not pose problems with regard to accessing preventive services, the international standard for access to clinical/curative services is a distance of 5 km. Using this metric is particularly important in Ethiopia because the WMS (2000) indicates that most health service users (90 percent) travel by foot to get to the nearest hospital/health center/health clinic. It would be especially difficult for sick individuals to walk and for parents to carry their sick children if they have to travel a long distance. The general condition of roads in Ethiopia is also poor, making travel to these facilities more difficult.⁴⁶
275. Access to curative health services in Ethiopia becomes even lower when the 5 km measure is use, especially in the case of rural households. Only about 40% of households have access to curative care that is less than 5 kms. away. Only about 30 percent of rural households compared with 94.2 percent of urban households live less than 5 kms. to facilities that provide curative care.

⁴⁶ Only about 12 % of the road network is paved. As a result of the road sector development program, the percentage of roads in good condition has increased from 14 percent in 1995 to 30 percent in 2001. The share of Road density has increased from 21 km per 1000 sq km in 1994 to 29 km per 1000 sq km in 2001 but it is still about 40% below the average of 50 km/1000 sq km for Africa. It is estimated that 70% of the total area of Ethiopia is more than a half-day's walk from all weather roads (RSDP PAD 2003).

Table 5-11: What is the means of transport to health facility?

Region	On foot	Bicycle	Motor Bicycle	Own Vehicle	Public Transp	Office Vehicle	Animal	Other	Not Stated
Tigray	97.2	0.1	0.0	0.0	1.8	0.2	0.2	0.1	0.4
Afar	90.9	1.3	0.2	0.0	3.4	0.4	3.6	0.0	0.2
Amhara	95.8	0.0	0.0	0.0	1.1	0.0	2.3	0.4	0.3
Oromiya	84.5	0.2	0.0	0.0	5.9	0.0	9.0	0.4	0.0
Somali	94.2	0.0	0.0	0.0	2.1	0.0	2.3	1.4	0.0
Benshangul	95.6	0.4	0.0	0.0	1.5	0.0	2.1	0.2	0.1
SNNPR	92.1	0.2	0.0	0.1	3.5	0.1	3.6	0.4	0.1
Gambella	96.6	0.0	0.0	0.1	2.8	0.2	0.1	0.0	0.2
Harari	89.9	0.1	0.0	0.0	8.4	0.0	0.0	1.6	0.0
Addis Ababa	81.8	0.0	0.1	1.7	15.2	0.2	0.9	0.1	0.0
Dire Dawa	86.2	0.3	0.0	0.2	10.9	1.2	1.1	0.0	0.2
Total	90.2	0.1	0.0	0.1	4.0	0.1	5.0	0.4	0.1
Income quintiles									
Poorest	94.0	0.1	0.0	0.1	2.4	0.0	3.2	0.2	0.1
2 nd Poorest	92.0	0.0	0.0	0.0	3.3	0.0	3.9	0.5	0.2
Middle	89.5	0.1	0.0	0.0	4.3	0.1	5.5	0.3	0.1
2 nd Richest	87.4	0.2	0.0	0.0	4.6	0.1	7.1	0.4	0.2
Richest	84.8	0.2	0.1	0.5	7.4	0.2	6.3	0.5	0.1

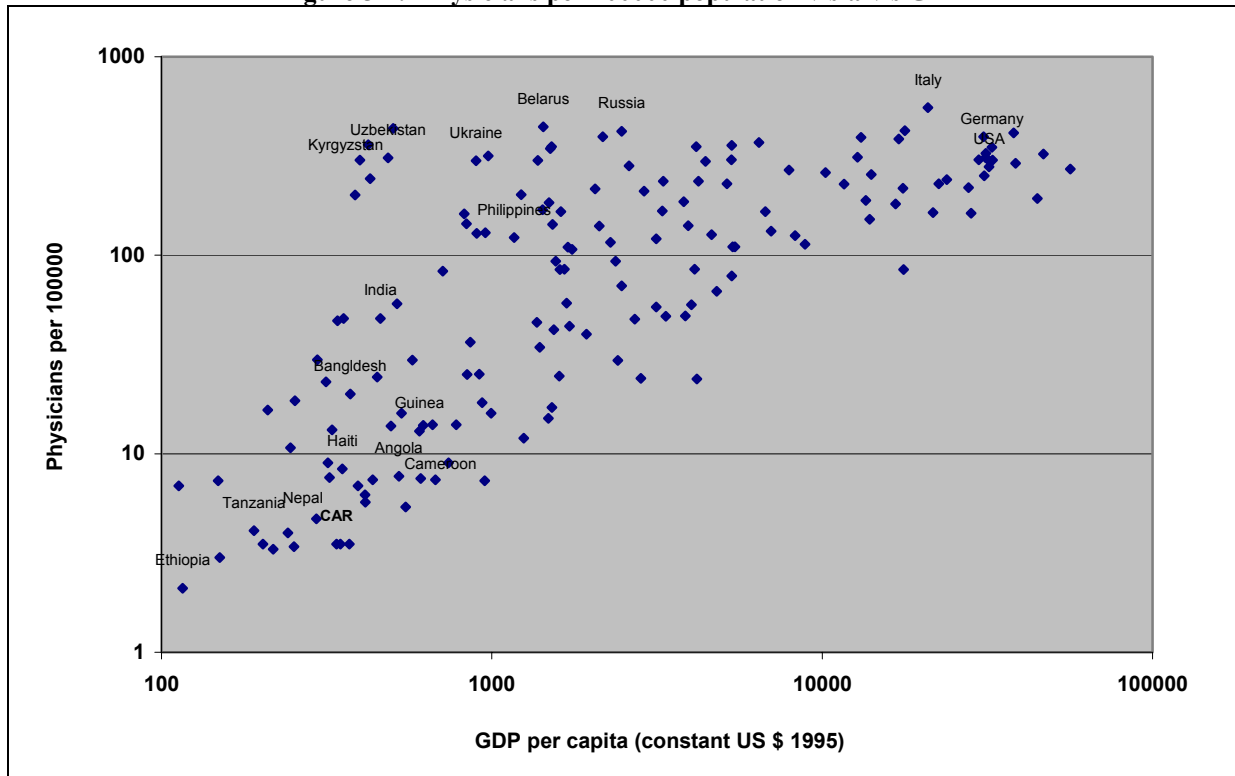
Source: WMS 2000

HUMAN RESOURCES

Availability

276. ***Ethiopia faces a serious human resource constraint in the health sector.*** For example, the ratio of physicians to population in Ethiopia is 1:35,603. Ethiopia has about .028 physicians per 1,000 people which is 3.5 times lower than the SSA average of 0.1 per 1,000 people (WB WDR, 2001). It has the lowest physician-per-1000-persons ratio in the world (Figure 5.3). One nurse in Ethiopia serves 5,236 persons. This ratio has improved considerably from the previous year's ratio of one nurse for 8,460 persons (Table 5.12). However, this particular figure must be treated with caution because clinical nurses and staff nurses constitute a large part (81%) of the total and it is not clear whether these nurses graduated from the 2-year diploma program or the 1-year certificate program or whether the figures presented have combined nurses graduating from these programs. The HSDP I evaluation (2003) states that the largest increase comes from junior clinical nurses who only one have year of training and who not well prepared for practical work.

Figure 5-4: Physicians per 100000 population vis-à-vis GDP

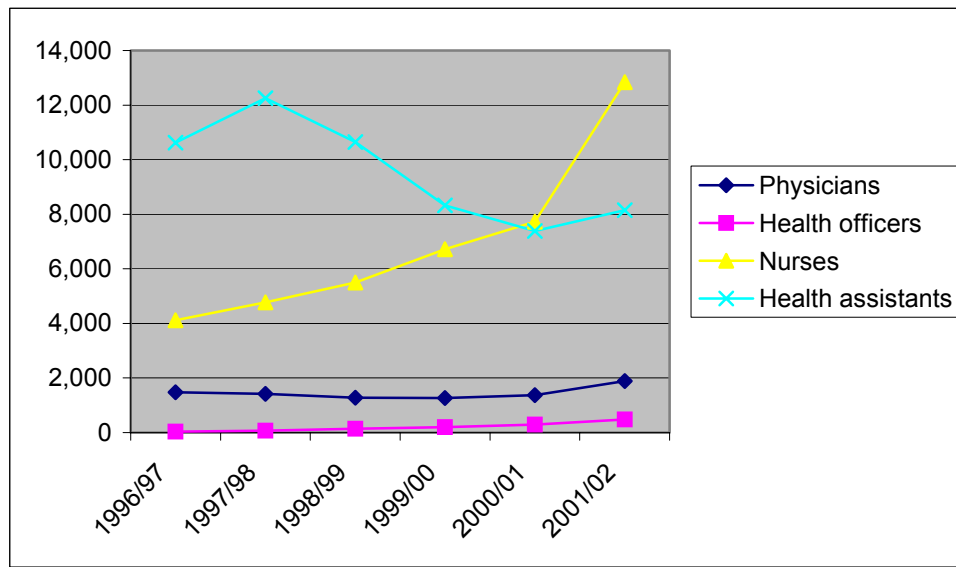


Source: WDI 2002 (incorporating MOH/PPD figures)

277. Even with the inclusion of junior nurses, population to health worker ratios remain very low with only 27,183 Health workers with more than one year training (excluding Frontline health workers) for a population of 67 million (HSDPI Final evaluation 2003).
278. **There are concrete efforts to train more people and the number of health personnel have been increasing.** Figure 5.6 shows that from 1996/97 to 2001/02 there has been a significant increase in the number of health officers and nurses. In particular the number of health officers increased by 1513 percent (from 30 to 484) and 212 percent for nurses (from 7,723 to 12,838)⁴⁷. Para-medicals also increased by 107 percent from 1,788 to 2,758 to 3,706. The number of physicians by 27 percent from 1,483 to 1,888 while health assistants declined by 23.3 percent from 10,625 to 7,386 but increased to 8,149 (PPD/MOH. 2000/01 and 2001/02).

⁴⁷ The 12,838 nurses were classified as follows: nurse Bsc (90), midwife nurse (862), psychiatric nurse (62), Anesthetist nurse (224); MCH nurse (64), dental nurse (36), clinical nurse (7710), public health nurse (521), staff nurse (2704), other nurses (529). (MOH/PPD 2001/02 and HSDP I evaluation.

Figure 5-5: Trends in Growth of Health Professionals, 1996/97-2001/02



Source: PPD,MOH. *Health and Health Related Indicators*. Addis Ababa. 2001/02

Table 5-12: Health Personnel: In service and graduates 1997/98-2001/02

Indicator	1997/98	1998/99	1999/2000	2000/01	2001/02
Total population	59,882,000	61,672,000	63,495,000	65,344,000	67,220,000
Human Resources (in service)					
Physicians	1415	1283	1263	1366	1888
Health Officers	75	144	201	296	484
Nurses	4774	5498	6713	7723	12838
Health Assistants	12521	10641	8330	7386	8149
Para Medicals	1772	1989	2201	2758	3706
Human Resources (graduates)					
Physicians	140	136	152	128	152
Health Officers	83	79	157	181	183
Nurses	1129	1416	1399	2164	1437

Source: MOH/PPD Health and Health related Indicators, FMOH 2001 and 2002

Table 5-13: Health Personnel: Number and Personnel to Population Ratio, National Level 1996/97 and 2001/02

Health personnel	1996/97		2001/2002		1996/97 – 2001/2002
	Number	Ratio	Number	Ratio	% Change
Doctors	1,483	1:39,188.80	1,888	1:35,603	27
Health Officers	30	1:1,937,233	484	1:138,884	1610
Doctors + Health officers	1,513	1:38,412	2,372	1:28,338	56.7
Nurses	4,114	1:14,126	12,838	1:5,236	212
Health Assistants	10,625	1:5,469	8,149	1:8,248	-23.3
Para medicals	1,788	1:32,503	3,706	1:18,138	107

Source: PPD, MOH. *Health and Health Related Indicators*. Addis Ababa. 2001/02.
 Note: data may not be directly comparable because 1996/97 data only includes health staff under the MOH while 2001/02 figures include staff from both the public (including other government agencies) and private sector.

279. *Attrition rates for lower and middle level cadres have been steadily decreasing* (HDSP I evaluation). Average attrition rates for doctors from 1996/97 to 2000/01 is 15.42 percent; there has been a sharp decline from double digit attrition rates from 1996/97 to 1999/2000 (ranging from 10.2 percent to 26 percent) to only 4.2 percent in 2000/01 (Kebede 2002).
280. However, based on the annual population growth rate of 2.9 percent, an annual attrition rate of 3% among public service health staff, and an assumed continued expansion of output from health worker training schools of 2.8 percent, the HSDP Mid-Term Review estimates that adequate staffing levels will not be attained within 25 years.

Regional distribution

281. The distribution of the healthcare workforce is inequitable. There are significant regional differences and, in general, the urban areas have a better health care worker to population ratio than rural areas. The tables show only public health workers. Given that the large majority of private facilities are located in the urban areas, the coverage there is much better than reflected here and the difference between urban and rural areas is even greater than these numbers show. A detailed breakdown by type of health worker, region and gender is provided in table 1.2 in Annex 1.
282. As shown in table 5.13, among the predominantly rural regions Afar and Somali fare the worst. These regions are also ranked the lowest in terms of the development indices used by the FDRE. Even though the most populated regions (Amhara, Oromia, and SNNP) have the most health personnel, they also have low health personnel to population ratios, constrained by a limited number of health staff relative to their large population size. These regions, particularly suffer more from extremely low nurse- and health assistant- to population ratios. Afar, Benshangul Gumuz, and Gambella have no specialist physicians; they only have general practitioners (MOH/PPD 2001/02). Tigray has the largest number of frontline health workers compared to other regions. This is because of its emphasis on community-based health care delivery.
283. Figures 5.7 and 5.8 illustrate the changes in physician/population and midwives/population ratios from 1989EC (1996/97) to 1994EC (2001/02). Marginal

increases in the number of physicians including health officers can be observed in most of the regions with some declines in SNNP, Benhangul Gumuz, and Harari. As shown in Figure 5.8, the numbers of various categories of midwives relative to population has increased in all regions, but midwife to population ratios (particularly female to midwife population ratios), remain inequitably distributed.

Table 5-14 Population to Physicians, Nurses, Health Assistants, Frontline worker Ratios by Region, 2001/02*

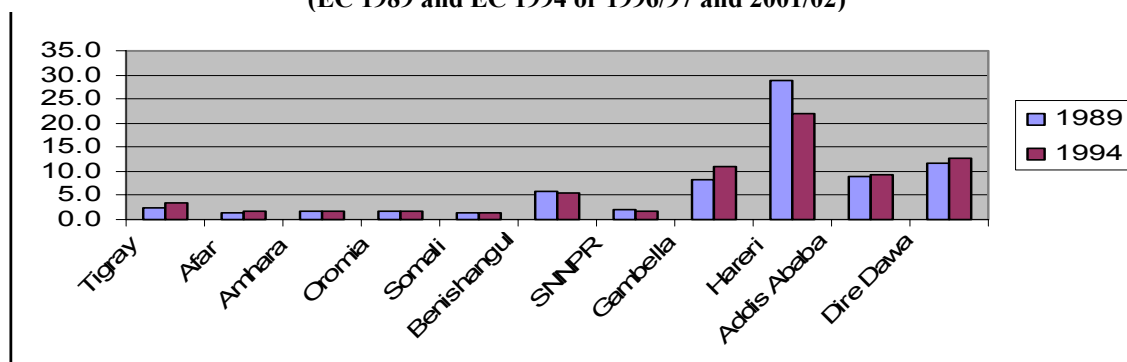
Region**	Population (000)	Physician	Po/ physician	Nurse S	Pop/ nurse	Health Assistant	Pop/ Health Ass.	FHLW	Pop/FH LW
Central		242		575		258		6	0
Addis	2,646	242	10,934	781	3,388	412	6,422	25	102,800
Harari	172	38	4,526	129	1,333	64	2,688	42	3,952
Dire Dawa	342	44	7,773	130	2,631	5	68,400	9	36,666
Gambella	222	24	9,250	156	1,423	65	3,415	39	5,538
Ben-Gumuz	565	31	18,226	212	2,665	135	4,185	95	5,800
Tigray	3,901	128	30,477	1,008	3,870	1,087	3,589	3073	1,235
Oromia	23,704	411	57,674	2327	10,187	2,538	9,340	345	66,733
SNNP	13,293	243	54,704	1299	10,233	1,126	11,806	469	27511
Amhara	17,205	278	61,888	1,553	11,079	1,617	10,640	702	23,857
Afar	1,272	22	57,818	195	6,523	66	19,273	113	11,000
Somali	3,898	59	66,068	345	11,299	185	21,070o	205	18,521
Total	67,200	1,762	38,138	8,710	7,715	7,558	8,249	4927	13,262

Source: PPD, MOH. Health and Health Related Indicators. Addis Ababa. 2001/02.

*Note: Numbers here are less compared to previous tables because while the MOH/PPD report also provides data on health workers in NGO, OGA, and private entities, it did not provide information regarding the regional location of these non-public entities so they could not be included in the above table. Data on physicians also includes health officers.

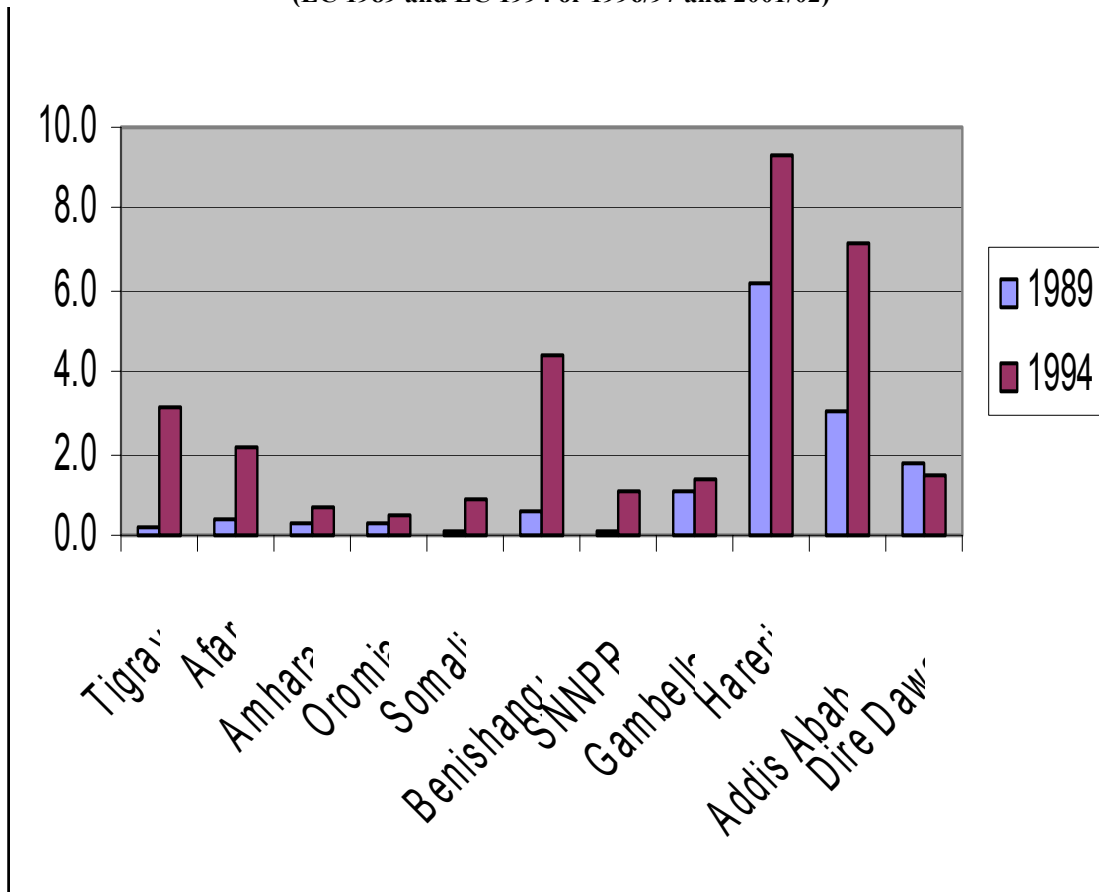
**Regions ranked above based on development index used by the FDRE, with Addis the most developed region and Somali the least developed.

Figure 5-6: Public Sector Physicians and HO per 100,000 Population per Region (EC 1989 and EC 1994 or 1996/97 and 2001/02)



Source: HSDP I Evaluation 2003

Figure 5-7: Public Sector Midwives per 100,000 Population per Region (EC 1989 and EC 1994 or 1996/97 and 2001/02)



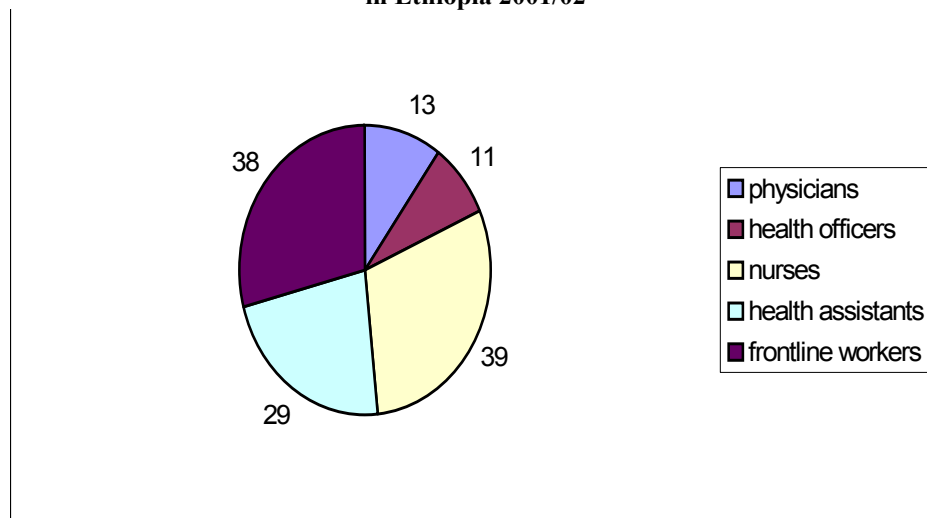
Source: HSDP I evaluation 2 003

Gender

284. ***The health care work force is male-dominated.*** As can be seen from Figure 5.9, based on data from the Center and 10 regions (statistics on the number of female staff for Tigray are not available), only about 13 percent of physicians are female; 11 percent of health officers, and 39 percent are nurses. Even among frontline workers, only 38 percent are female. This is worth emphasizing, as a major part of the health issues facing the poor are maternal and child health issues.
285. Looking at the breakdown across regions presented in A5.1 in Annex 5. ***Most female health workers are located in urban areas.*** This is particularly true for doctors and health officers, and even for nurses, is the only region where female comprise more than 50% of the total work force while Gambella has the lowest percentage of female health staff (11 percent). Most of the frontline health officers are located in Tigray and Amhara and only about half of them are women.
286. On the policy level there are ongoing efforts to develop “gender guidelines” and there is discussion about implementing a gender quota (3 Females:1Male) for admission to nurse

training. However, it is problematic to attract more women to the profession because (ICN 2002) young women lack the necessary basic education. It is difficult to significantly increase the number of females in nursing programs until the number of females completing secondary education has increased (As of 2002, secondary GER for girls is only 14.3% based on the FRDE's PRSP Progress Report, 2003). In addition, married women in Ethiopia tend to follow their husbands and not make independent professional moves while unmarried women face security problems when living and working in rural areas.

Figure 5-8 Percentage of Females by health worker category in Ethiopia 2001/02



Source: data from PPD, MOH. Health and Health Related Indicators. Addis Ababa. 2001/02

Staffing Norms

287. The staffing standard at various health facility levels, based on the new four-tier system, is outlined in table A5.1 in Annex 5.
288. Since the transition to the 4-tier system has not been taking place as planned, current staffing is a mix between the old and the new systems. While this provides some flexibility it also makes it difficult to design and evaluate training programs and assess performance. The staffing norms and actual status of health stations is unclear, because they were supposed to be phased out and replaced with HPs and yet regions have continued to construct HPs that offer both preventive and clinical services. Health posts have been staffed with Primary Health Workers (PHWs), Community Health Assistants (CHAs) and Traditional Birth Attendants (TBAs). However, because the CHAs and TBAs are not trained to handle both preventive and curative aspects and because of the low health service coverage and high morbidity status, communities have resisted the plan to downgrade health stations to health posts. Some regions such as Tigray, Amhara, Oromia, and SNNPR have assigned junior clinical nurses and upgraded PHWs replacing CHAs and TBAs in health posts (HSDP MTR, 2001). Site visits to Oromia and SNNPR during the July 2003 mission confirm that staffing standards are not adhered to because these regions believe that offering only preventive services does not meet the needs of the

communities. For example, Oromia agrees that there is a need for health facilities to be closer to people but argues that the minimum service level that any facility should offer is similar to what health stations currently offer. The health posts visited in SNNPR also provide basic curative care such as malaria treatment.

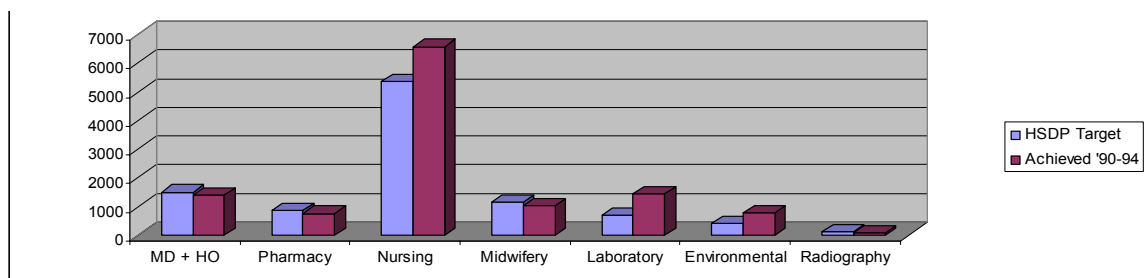
289. This current standard number of technical staff set for health centers, district, and zonal hospitals does not allow for some adjustment based on actual workload or utilization. Hence some regions have adapted the standard to their own requirements or regional realities. For example, the MOH staffing standard only provides for health officers and general practitioners in district hospitals; surgeons and gynecologists are not part of the staffing requirements for district hospitals. However, district hospitals are expected to cover a population size of 250,000 and transport costs and travel time faced by poor patients to reach zonal hospitals may serve as substantial barriers to utilizing needed health services. In order to address this issue, it is reported that some regions (Tigray and Amhara) have surgeons and/or gynecologists as part of their standard staffing (MTR 2001). Tigray, in particular, has three health center staffing standards based on location: (1) HC A located in remote areas and providing emergency surgical care, (2) HC B located in rural areas and referring patients for emergency surgical care to the closest DH and (3) HC C located in urban type health centers. Staffing and equipment are revised accordingly, i.e. surgery related staff would be threefold in the remote HC while a physician and nurses could be added in the urban HC to deal with outpatient needs.
290. The HSDPI (2003) evaluation reports that many regions are discontinuing training of junior staff and frontline health workers or modifying curricula to suit their own needs. For this reason, for example, Oromia has not established HPs that provide only preventive services.
291. In terms of administrative to health staff ratios, the HSDPI evaluation found that the number of administrative staff tends to be greater than the number of health workers (ratio of 2:1). In addition to the large number of administrative and support staff, considerable number of trained HWs occupy non-clinical positions. For example, Addis Ababa Public Health Services' administrative and support staff (about 3,270) exceeds the total number of health workers. In Benshagul-Gumuz, only 5 out of 18 health officers (27.7 %) are in service delivery positions while the rest occupy either teaching or administrative posts. In Amhara, 38% of health workers are employed in woreda and zonal offices. Afar has an underutilized 78-bed zonal hospital with 58 technical health staff and 129 administrative and support staff.
292. Overall, there are staff shortages; at the same time, there are large numbers of staff whose skills do not match the community health needs for both preventive and curative services, variations in the use of staffing norms, and deployment of needed health service delivery staff in administrative positions.
293. The introduction of the Health Extension program which will be discussed in further detail in chapter 7 would also entail a clear delineation as roles and responsibilities of each health staff at the health post level. For example, what will the roles and responsibilities of TBAs and community health workers be vis-à-vis health extension

workers, and how will they be financed, e.g. will the community be responsible for paying the TBA and CHW?

Training

294. There are at least 30 training institutions located in several regions (5 universities or colleges for higher education, 12 senior training schools, and 16 junior training schools) MOH/PDD 2001/02) of which there are 12 nursing schools with an annual training output of about 2,226 nurses.
295. The physical capacity, number of teachers with a minimum of pedagogical training, and the availability of materials for training health workers has improved during HSDP I. Two existing MOE-run institutions with health worker training programs (Health Faculty of Alemaya University and Dilla College) started operating diploma and degree training programs in 1997. New training programs and schools under RHBs were started in SNNPR, Gambella, Somali and Borena. Six other schools were physically rehabilitated and two of them were expanded. As planned, 30 training institutions received training materials while 81 teachers (four times more than planned) received some short-term pedagogic training. In addition, 17 curricula were revised. However, the schools were overloaded beyond their designed capacity.
296. From 2001 onwards, private training schools started to open. The “Ethiopian Health Professionals Council” was established in 2002. However it does not have the legal mandate to oversee the training and accreditation of health workers.
297. ***In general, training capacity remains inadequate relative to training targets.*** In terms of training outputs from 1996/97-2001/02, the numbers trained in some physician categories [surgeons (113%), internists (113%), gynecologists (103%), ophthalmologists (153%)], some nurse categories [anesthetist nurse (118%), clinical nurse (131%)], pharmacists (197%), laboratory technicians (199%) and frontline health workers (146%) are greater than planned. However actual numbers of trained doctors, health officers, some nurses (midwife nurses, public health nurses) and radiographers are significantly lower than planned. The most serious gaps are in the categories of anesthesiologists (28% of target), midwife nurses (43% achieved relative to target) and public health nurses (47% of target), radiologists (49%) and pediatricians (78% of target).

Figure 5-9: Planned and Achieved Training Outputs , EY 90-94 (1997/98 to 2001/02)



Source: HSDP evaluation 2003 based on MOH/PPD and PAP data

Note: while total number of actual nurses trained are greater than planned, certain categories of nurses such as public health nurses did not even reach 50% of the target

298. The medical and nursing schools and training institutions for paramedical professionals attempt to increase the annual output of trained personnel to meet the demand for health personnel. However, in general, the quality of trained personnel is believed to be unsatisfactory based on existing reviews and evaluations (HSDP I evaluation, 2003; ICN, 2003, WHO 2002). Schools lack funds and resources for community oriented training and health facilities are not sufficiently equipped to adequately provide students with practical training (HSDP JRM3, 2003). According to the MTR (2001), junior professional schools tend to use diploma holders as teachers which is below prescribed standards. Many teachers lack training in teaching methods. The training approach used is mainly cognitive and the curriculum needs to be strengthened in terms of community orientation, management approach, problem analysis and team building, and applied research skills to students.
299. ***The amount, coordination and planning of in-service training programs need to be also improved.*** Continuing education hardly exists (Bach-Baouab et al, Health Manpower Study Proposal, 2002). “Regional Training Centres” (RTCs) were established to coordinate all continuing education and training efforts. However, aside from Oromia SNNPR, and Amhara, other regions have no physical training structure for RTCs. Over the years, the capacity of the RTCs has declined because of inadequate budget, staff, and training materials (HSDP I evaluation 2003).
300. An overview of the main cadres of health care personnel and their educational and training requirements are provided in Table 5.14:

Table 5-15: Current Types of health care providers and their training

Health officer - Baccalaureate prepared (4 years) - Generic (4 years), Accelerated for diploma nurses (3 years)
Nurses - Baccalaureate prepared Nurse: - Generic Program (4 years), Accelerated Program (3 years) - Diploma prepared – “senior Nurse” (2 years) - Public Health Nurse - Clinical Nurse - Certificate prepared Nurse – “Junior Nurse” or “Assistant Nurse” (1 year) - Public Health Nurse - Clinical Nurse
Midwife - Diploma Prepared – “Senior Midwife” (2 years) - Certificate Prepared – “junior Midwife” or “Assistant Midwife” (1 year) - Primary Midwife (6 months) - Trained traditional Birth Attendants – TBA (3 months)
Frontline workers - Community Health Agents (3 months) - Primary Health Care Workers (6 months) - Health extension Worker
*Community Health Agents are part of the health team at the health post level, recruited from the local community and are preferably traditional healers. They have 3 months training
*Community Health Agents are part of the health team at the health post level, recruited from the local community and are preferably traditional healers. They have 3 months training
*Primary Health Workers are the coordinators of the health team on the health post level. They have 6 months of training
**Health Extension Workers: a new cadre of health providers - “Health Extension Worker” or “Agent” (HEWs or HEAs) will be assigned to the health post. They should be at least 10 th -grader female graduates. They will have one year of training. There will be two HEWs per kebele
Note: There has also been recent move to upgrade training of junior/assistant nurses to two years (check when this became effective)
Source: ICN 2002, *Note: Based on the November 2003 mission discussions, the roles of the CHAs and PHWs are expected to change and they are expected to provide support to the HEW but working and financing arrangements still need to be confirmed. **updated description based on November 2003 mission.

301. ***Training curricula needs to be better aligned with intended objectives.*** Existing evaluations of health workers indicate that the training for health officers is generally well conceived in terms of community orientation and focuses on health promotion, illness prevention and essential medical services that prepare graduates as managers in health centers and as “extensions” of physicians. However, there is a clear need to modify the curricula for junior, mono-disciplinary nursing and midwifery and frontline cadres in order to better equip them with practical clinical skills especially if they are expected to function in rural, peripheral health units. None of the various levels of midwives meet the internationally accepted definition of a midwife. Significant changes need to be made in midwifery training for it to be more in line with the FDRE’s public

health policies, particularly in being responsive to maternal and infant health issues using a practical community-based approach (ICN 2002).

302. About 20,000 health extension workers (HEWs) will be trained and deployed to health posts over the next five years. This can be a particularly challenging goal for rural peripheral areas because HEWs are required to have a minimum education level of 10th grade, to be females, and to be from of the kebele that they will serve so that they are familiar with the local culture and language. ***It would also be very important to factor in lessons learned from the evaluation of the HEP pilot in five regions in improving the training and deployment plan for the HEWs*** (MOH/CSR Nov 2003 mission discussions).

Salaries, Incentives and Staff Retention

303. The Ministry of Health has undertaken initiatives to standardize job titles and outline salary scales and a career structure in order to motivate and retain health staff. The Qualification Requirements for Health Professionals (1999) has salary scales and a career structure for formally trained health workers
304. *A large number of categories for health workers provides flexibility to the regions but makes evaluation of performance and quality of curricula difficult.* For each type of cadre there are in most cases 5 defined career steps (for example, junior Assistant Public Health Nurse, Senior APHN, Chief APHN, and Expert APHN). Moreover, job descriptions have been developed for at least 90 health cadres and post descriptions for senior positions. There is some overlap among the different job categories (for example there are at least 10 nurse categories) and they can be somewhat confusing given the relatively minor differences in some categories. The recent creation of the Health Extension worker and the training of a large number of these to provide outreach services adds another category. This experience will need to be carefully evaluated.
305. *The HSDPI evaluation (2003) indicates that there were few recent complaints about salaries and remuneration and that health sector salaries seem to be more or less in line with the minimum cost of living increases and favorable relative to other sectors.* This may be explained by the recent salary increases and implementation of incentive schemes including hardship allowances.
306. *Based on available data, on average, base salaries of health personnel increased by at least 21 percent from 1999 to 2003 in nominal terms and by 40 percent in real terms.* Health assistants' base salaries increased by about 37% in nominal terms and 54 percent in real terms but they were also among the lower paid health staff (table 5.15).

Table 5-16: Ethiopia: Average Base Salaries (per month) among Selected Health Staff, 1999 and 2003*

Position	Average salaries across within-profession categories (Birr, nominal terms)		% nominal change from 1999 to 2003	Average salaries across within-profession categories (Birr, constant terms, 1995=100)		% real change from 1999 to 2003	Annual base salary as a multiple of GDP per cap 2003 ⁴⁸
	1999	2003		1999	2003		
Medical specialist	2233	2697	21	2419	3286	36	39.4
General Practitioner	1373	1650	21	1488	2010	35	24
Health Officer	1059	1288	21.6	1148	1569	37	18.8
Professional Nurse	1059	1288	21.6	1148	1569	37	18.8
Clinical nurse/public health nurse	930	1145	23	1008	1517	51	16.7
Pharmacist	1211	1470	21	1312	1791	36	21
Health assistant	380	520	37	412	634	54	7.6

Source: MOH files 1999; GDP deflator data from SIMA
* Note: there are, on average, about five grades per category of health personnel

307. On average, medical specialists and general practitioners in Ethiopia are paid about 39 times and 24 times the annual GDP per capita, respectively⁴⁹. Professional nurses are paid on average almost 19 times (ranging from 11.7-27) GDP per capita while junior nurses are paid about 17 times GDP per capita.
308. *Public salaries for health workers appear to be relatively higher than the average in Sub-Saharan Africa.* Based on the available data from other SSA countries, the salary-GDP per capita ratios for general practitioners in Ethiopia are much higher than all the five other comparator countries which have ratios ranging from about 5 in Cameroon and 23.5 in Burkina Faso. This also holds true in the case of professional nurses: those in Ethiopia have higher salary-GDP ratios than five other comparator countries that have ratios ranging from 2 in Cameroon to 13.5 in Burkina Faso. Even the salary-GDP ratios of Ethiopia clinical nurses/public health nurses who graduated from one-year certificate courses are higher than the salaries of state diploma nurses in the five other countries. Ethiopian physicians and nurses seem to be well-paid in terms of GDP per capita relative to the other countries although it is also true that Ethiopia has the lowest GDP per capita relative to these countries (Table 5.17).

⁴⁸ While there is a difference in time periods (2001/02 vs. 2003), which should be taken into account, a teacher in Oromiya with a Bachelor's degree or Master's degree earned on average about ETB 1,182 (including pension and allowances of about 8%) in 2001/02. A Teacher Training Institute-certified teacher earned about ETB 755 and a Teacher College trained teacher earned ETB 797. A teacher for grades 9-12 received an annual salary that was 11.8 times GDP per capita in 2001/02 (Education CSR 2004).

⁴⁹ GDP per capita in 2003 of \$96 or ETB 821 was estimated based on a total GDP estimate of \$6,623 million divided by the estimated population of 69 million.

Table 5-17: Range of Salary-GDP per capita ratios for general practitioners and physicians in 6 countries

Country	General practioner	Diploma Nurse
Chad	10.3-18.8	5-10.6
Burkina Faso	7.3-23.5	4.2-13.5
Mauritania	5.67-9.45	3.2-5.7
Cameroon	4.7	1.7
Niger	10.6-20.8	5.3-12.0
Ethiopia	18.3-30	11.7-27
Source: WB HD, Africa Region, Country Status Reports.		

309. While salaries relative to GDP are high, Ethiopian medical specialists and general practitioners are paid significantly less than physicians from other countries such as S. Africa, the Middle East, and the USA. The average salary for a medical specialist is only USD 387 per month while a general practitioner receives about US\$ 236 per month. This makes migration very attractive for doctors with prized skills in the international market, particularly surgeons and obstetricians.
310. *While there have been improvements in salaries and allowances, there are other issues that affect job satisfaction among health workers.* Training and career development opportunities were cited as important concerns by health workers in various reports. While most workers interviewed explicitly acknowledged the need to address the health needs in rural areas, concerns were also expressed about remaining indefinitely in rural areas without acquiring learning, job enrichment, and career advancement opportunities (Lindelov et al. 2003).
311. Provision of staff houses was also repeatedly mentioned as a possible motivating factor for higher qualified personnel to stay in remote areas (HSDP I evaluation). As a result, some regional HSDP 2 plans have made some provisions to support staff housing. Moreover, health worker morale would also improve if health staff are provided with the necessary equipment and materials to enable them to perform their jobs well. The importance of having materials to work with are underscored in the focus groups discussions among health workers conducted in 2003 (Lindelov et al. 2003). Some of the quotes are as follows:
- in public facilities there are times when health workers are obliged to sterilize gloves for re-use while they are disposed off in private facilities...” Health assistant in Addis Ababa
 - there is inadequate supply of materials. It is not possible to work efficiently and meet expectations. If you try to work with what is available your service will be substandard...” Health assistant in a provincial town.
312. The ICN (2003) study also mentions that TBAs are equipped with one delivery kit each, which would not be adequate to support all of the deliveries that each TBA is expected to carry out.

313. A survey on quality of health services management (PHRD 1998) also raises the above concerns together with the following: work overload, staff shortage, job descriptions not clearly known by staff, budget shortage, promotion is not done in a fair way, not getting annual leave at the right time, lack of transport facilities, and that health workers do not receive adequate care when sick.
314. There is also a general concern about contracting HIV/AIDS which seems to be increasingly a factor in influencing health workers' decision to work in public health rather than in clinical services. This concern is compounded by the lack of a safety policy and inadequate protective materials such as gloves (CSR team field visit and Lindelow et al).
315. *In general, the level of satisfaction regarding salaries and benefits has been mixed and Box 5.1 illustrates some of the views expressed by health workers. It is clear however, that more incentives need to be in place to attract and retain health staff in the regions. Additional measures must also be taken to attract female workers particularly in ensuring their safety when working in remote areas. The current thinking on the Health Extension Package which seeks to recruit and train health extension workers who live in the same kebele is a strategy to address the issue of local staff recruitment. However, the extent to which this can be done in the short to medium term in the case of other health professionals such as doctors and nurses may be more limited and other strategies need to be in place.*

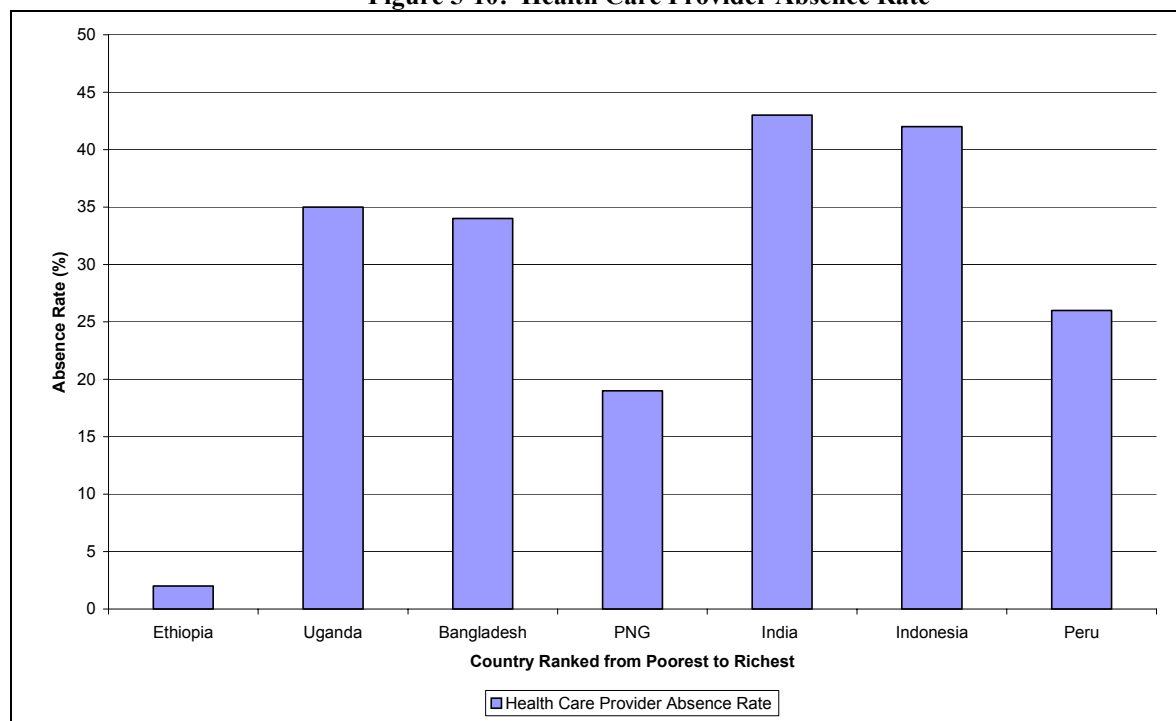
Box 5-1: Salaries, benefits, overall job satisfaction: What do health workers say?

Things are improving...	Concerns
<p>The profession is good. Although there are various problems...It is about helping the poor, particularly the public sector (health assistant in Addis)</p> <p>Even though there are many problems, I would advice even my own children to join the health profession...Any profession has its own unique hazards and problems. The most important things in Ethiopia are education and health, and the need in these sectors is great. (physician/health officer in Addis).</p> <p>...Now the salary in the public sector has increased to Birr 670 per month. In the private sector it is about Birr 600. This in addition to the education opportunities that have opened up in the public facilities helped me decide to come back to the public sector...It seems that the public sector is getting better (nurse/midwife in provincial town)</p>	<p>I would not advice a person to join the health sector. I want to leave this sector because of the workload and the low payment... (health assistant in Addis)</p> <p>No physician would leave the private sector if he or she was paid well...By moving to the private sector we can earn 3 or 4 times as much. The payment to physicians needs to be improved if there is a genuine drive to help the poor.” (physician/ health officer in a provincial town.</p> <p>...Although the people in the rural areas need our support, the working conditions are not good for us and facilities for other basic services are not fairly distributed in the country. (nurse/midwife in a provincial town).</p> <p>...Once you are dumped in the most remote area, no one will remember your transfer back to a central area. In addition, there are no medicines, books and you cannot access information and opportunities needed to improve your professional standards...such problems can be resolved by policy makers. (physician/health officer in a small town).</p> <p>Many health workers choose public health. Surgical training is more risky...After the advent of HIV/AIDS, things have changed (physician/health officer in Addis).</p> <p>In some places, sexual harassment is a problem for women unless they live in the facilities... (nurse/midwife in Addis)</p>
<p>Source: Lindelow et al. (2003)</p>	

316. The HSDP I evaluation noted some signs of work neglect such as working for only a few hours per day and/or absenteeism and high staff turnover among doctors moving from hardship areas as well as among staff in Regional Health Bureaus. Some absenteeism was mentioned as well in the focus group discussions conducted by Lindelow et al (2003) that provide quotes of health workers not respecting working hours by going to work in the private sector or attending to personal commitments. However, a recent survey of facilities that were visited unannounced in Amhara indicate that only two out of 96 health providers (2.1 percent) in 32 health facilities were absent. This absenteeism rate is very low compared with six other countries surveyed that had absenteeism rates ranging from 19 percent in Papua, New Guinea to 35 percent in Uganda (Figure 5.11). *There still seems to be a relatively high work ethic among health workers in Ethiopia as exemplified by the relatively low absenteeism rates when compared with other countries that have higher incomes.* Appreciation for working in the health profession especially in being of

service to the poor—in spite of the challenges inherent in the medical profession – was mentioned during the health worker focus group discussions (Lindelov et al. 2003).

Figure 5-10: Health Care Provider Absence Rate



Source: Ethiopia facility based survey, draft findings from Chaudhury et al. 2004.

Health Care Workers And The Private Sector

317. As the private sector expanded over the years, it has attracted health staff from the public sector. Based on existing policies, staff trained in public sector institutions are required to spend a certain number of years working in the public sector. However, in reality this appears not to be the case (Barr, A et al., April 7, 2003).
318. In Addis Ababa more than 50% of the nurses and doctors are employed in the NGO /OGA/Private sector. In addition, many publicly employed health workers are also doing part-time work in the private sector. The phenomenon is not limited to Addis Ababa. In Afar, about 30 percent of the health workers were involved with private/NGO sector work: 50 Health Assistants were reportedly working as private Rural Drug Vendors, while about 150 paid CHWs and 100 volunteer TBAs were engaged by NGOs. There are other examples in other regions such as Tigray and Amhara, emphasizing the need to include the private sector in overall human resource planning and monitoring. (HSDPI final evaluation).
319. Information obtained based on focus group discussions with health workers reflect the mixed feelings and perceived advantages and disadvantages of working in the private and public sectors. In particular, while health workers appreciate the higher salaries and performance-based salary increases, better equipment and less bureaucratic procedures in

the private sector, they also find the profit motive, lower job security and lack of career development unattractive (Barr et al., 2003; Lindelow et al, 2003). Thus in order to obtain “the best of both worlds” many work in both the public sector (mornings) and private sector (later in the day). While this is commonly practiced, there is also some resentment about the “unofficial privatization” within the public sector in terms of “informal payment” or referral to the provider’s private practice. These informal private activities are officially not allowed. However, these activities are becoming increasingly accepted. Policies are currently being considered to allow the combination of public and private work in public facilities(Barr, A et al., 2003).

320. Various HSDP reviews have already suggested that there should be rules and regulations developed in collaboration with the MOE on how to retain professionals by the Government so that the Government can obtain a return on its investment. Incentives need to be established in order for health staff to prefer to remain in the public sector. In this regard, studies are being planned to better understand human resource dynamics and issues in the health sector such as the PHRD-WB supported health worker study. In moving forward, it would be essential to have clearly defined guidelines to facilitate the transition from the six-tier to the four-tier system which should also be accompanied by a human resource strategy based on a comprehensive human resource assessment. This HR strategy would need to address deployment, transfer and training of health workers and the development of draft HRD guidelines governing the partnership, cooperation and control mechanisms between the public and private sectors including NGOs

Quality of Health Human Resources Management

321. Another study reviewed for this report is “Quality of Health Services and Management” (February, 1998). While much of the data and specific information (collected August 1997) is outdated, many of the general conclusions, lessons learned and recommendations are still valid based on review of other assessments and discussions. This study, however, did not include health posts, a major component of the current strategy to deliver services.
322. The study identifies the following priority areas to be addressed in order to improve the health management system:
- (i) clear policy and procedures related to human resource management and improved skills in personnel management;
 - (ii) proper and regular supervision, adequate plan for supervisory activities and written guidelines for protocols for supervision;
 - (iii) relevant data for management decision making;
 - (iv) well-defined organizational charts, written job descriptions and technical norms ;
 - (v) in-service training and training based on needs assessment;

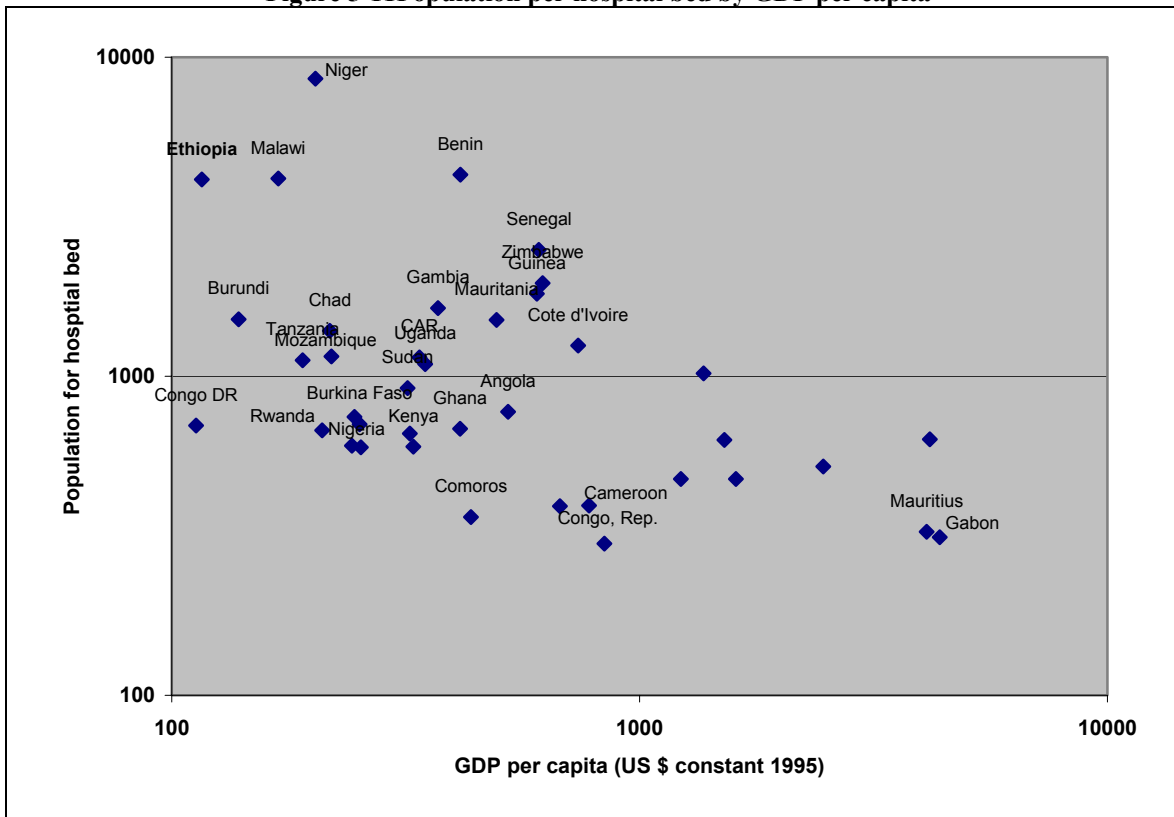
- (vi) access to transport for facilities; and
- (vii) adequate budget and participation of staff in the preparation of budgets.

AVAILABILITY OF MATERIAL RESOURCES

Availability of Beds

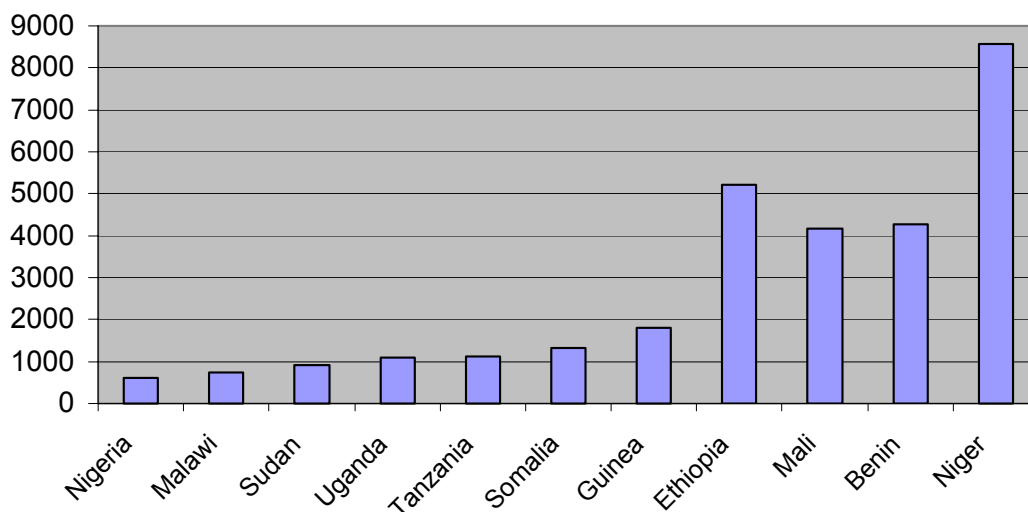
323. Ethiopia has very few hospital beds. As shown in figures 5.12 a and b Ethiopia has a very high population/bed ratio compared to most other countries, including those in SSA. This translates to approximately 0.20 beds per 1,000 population, which is slightly less than one-fourth the average for Sub-Saharan Africa of 1.1 beds per 1,000 population (WDI 2003). As shown in Table 5.2. in the earlier section of this report, approximately 86% of the beds are located in hospitals.

Figure 5-11 Population per hospital bed by GDP per capita



Source: WDI World Bank

Figure 5-12 : Population per hospital bed in sub-Saharan African countries



Source: WDI World Bank

324. *Bed occupancy rates remain very low. Regional bed to population ratios vary widely ranging from .08 in Oromia to 2.67 per 1,000 population in Harari. Addis, the most developed region, has the largest number of beds, followed by the larger regions (Tigray, Oromia, SNNP, and Amhara). However the larger regions also have to contend with their large population size and thus, with the exception of Tigray, their bed to population ratios are less than the national average of .20 per 1000. Only Harari and Dire Dawa are at least equal to or greater than the SSA average of 1.1 beds per 1000 population (table 5.9).*

Table 5-18 Beds by Facility Type, Total number of Beds, and bed to 1000 population ratios by region, 2001/02

Region	Beds/health facility type		Total no. of Beds	Bed/1000 population
	Hospital	Health center		
Addis	2,346	122	2,468	0.93
Harari	440	20	460	2.67
Dire Dawa	350	30	380	1.11
Gambella	93	0	93	0.41
Ben-Gumuz	254	254	508	0.89
Tigray	1,260	400	1,660	0.42
Oromia	2,000	0	2,000	0.08
SEP	1,260	550	1,810	0.13
Amhara	1,246	318	1,564	0.09
Afar	208	70	278	0.21
Somali	382	167	549	0.14

Source: MOH/PPD 2001/02
 Note: beds at Central level were excluded from calculations for the regional comparisons

325. The latest available national average bed occupancy rate (BOR) data is for 2000/01. It is very low at 25.4 percent although data are missing for 5 regions (Afar, Amhara, Oromia, SNNP and Gambella). Addis Ababa has the highest BOR at 175.2 percent. All other

regions have BORs of less than 50 percent with Somali and Benshangul having BORs of less than 10% (MOH/PPD 2000/01).

ESSENTIAL DRUGS AND COMMON MEDICINES

Policy background

326. The goal of the pharmaceutical sector of Ethiopia is to ensure the regular availability and the rational use of safe, effective, quality drugs at an affordable price. The strategies and the specific objectives related to this goal are described in the National Drugs Policy (NDP, MOH 1993GC).
327. A number of major legislative and organizational reforms have taken place based on the Proclamation to Provide for Drug Administration Control 176/1999. Discussions with donors were held to develop a master plan for the pharmaceutical sector. The Pharmaceutical Department of the MOH has been reorganized into an autonomous drug regulatory body and a supply agency.
328. New pharmaceutical legislation was prepared and submitted to the government for approval. The List of Drugs for Ethiopia (LIDE 2002) and its sub-lists have been distributed. This List contains the drugs that are allowed to be registered and marketed in Ethiopia, categorized into lists by level of health care facility (Zonal and District Hospitals, HC, HS and HP, and by different drug retail outlets) (JRM3 2003).
329. A list containing priority drugs that should be available at all times in adequate quantities, especially in the public sector, is being developed as part of the Basic Health Care Package and will be used as the basis for procurement. However, the Essential Drug List (1987EC) has not been revised as planned (HSDPI evaluation 2003).
330. A Policy on Supply and Use of Anti-Retroviral Drugs has been developed and distributed all over the country. The related Treatment Guidelines have been prepared and printed. Guidelines for ARV Procurement, Storage, Distribution and Use have also been prepared. (JRM3)

Sourcing

331. Drugs are supplied through the following four channels: (1) private commercial market, (2) the government parastatal (PHARMID), (3) MOH and other government agencies (Ministry of Defense, Research and training institutes, etc), and (4) nongovernmental organizations (NGOs), donors, United Nations, and other multilateral agencies.
332. The total value of supply moved through the pharmaceutical market is estimated to be around Birr 939 million in 2000/01 (Table 5.19). According to these estimates, 87 percent of the country's drug needs is met through imports (purchase and donation) and 13 percent through local production. The per capita availability of drugs is estimated at around Birr 14 in 2000/01 (ESHE/HCF 2002).

Table 5-19: Ethiopia: Supply of Pharmaceuticals: value (000 Birr) by Sources 2000/01

Type of Supply	Sector	Value	percent
Imports	MOH	279,936	
	Other Government agencies	210,481	
	PHARMID	151,784	
	NGOs	52,269	
	Private for profit	123,726	
	Sub-total	818,196	87
Local Production	Government	63,646	
	Private	56,813	
	Subtotal	120,459	13
Grand Total		939,655	100

Source: MOH ESHE/HCF. National Baseline Study on Drug Supply and Use in Ethiopia, 2002

333. In the private sector the number of importers and wholesalers increased from 44 and 17 in EC 1989 (1996) to 49 and 24 respectively in EC 1994 (2001). Also, the local production of pharmaceuticals and medical supplies has increased considerably during HSDP I. In EC 1989 there was only one manufacturer (state-owned) and one under construction. Currently there are 11 manufacturers, of which 2 are reported to be licensed by DACA while 9 have a provisional license (HSDPI evaluation 2003).

Availability

Drug outlets

334. *Pharmaceutical retailers are expanding significantly.* The number of all types of outlets for drugs has expanded significantly over recent years in the private sector. As shown in tables 5.20 and 5.21, the vast majority of pharmaceutical outlets are private.

Table 5-20 Distribution of Pharmaceutical Retail Outlets By Region & Ownership, 1994EC (2001/02)

Region	Pharmacies				Drug Shops				Rural Drug Vendors		
	Public	NGO	Private	Total	Public	NGO	Private	Total	NGO	Private	Total
Tigray	0	1	14	15	14	1	10	25	0	207	207
Afar	0	0	1	1	0	0	4	4	0	45	45
Amhara	8	7	23	38	1	0	38	39	0	251	251
Oromia	16	8	41	65	35	2	105	142	0	813	813
Somali*	0	0	0	0	0	1	4	5	0	20	20
Benishangul	0	0	0	0	0	0	3	3	0	32	32
SNNPR	7	3	23	33	8	1	39	48	0	473	473
Gambella	0	0	0	0	1	0	1	2	0	14	14
Harari	1	0	6	7	0	0	3	3	0	3	3
Addis Ababa	10	0	128	138	1	0	38	39	0	8	8
Dire Dawa	2	0	12	14	1	0	3	4	0	10	10
National	44	19	248	311	61	5	248	314	0	1876	1876

Source: Health and Health Related Indicators, MOH 2002

Table 5-21: Number of Drug Outlets per Region from 1989 to 1994 EC (1996/97 to 2001/02) without Budget and Special Pharmacies

Regions	Pharmacies						Drug Shops						Rural Drug Vendors					
	1996/ 97	1997/ 98	1998/ 99	1999/ 00	2000/ 01	2001/ 02	1996/ 97	1997/ 98	1998/ 99	1999/ 00	2000/ 01	2001/ 02	1996/ 97	1997/ 98	1998/ 99	1999/ 00	2000/ 01	2001/ 02
Tigray	17	10	15	16	29	14	8	7	10	14	10	25	167	223	224	224	204	207
Afar	1	1	1	1	1	1	3	3	3	3	3	4	52	52	52	52	46	45
Amhara	22	36	36	35	40	23	27	42	43	45	40	39	236	258	258	268	243	251
Oromia	35	62	62	62	54	41	48	91	97	97	96	142	565	585	771	840	851	813
Somali	0	0	0	0	0	0	2	3	4	3	5	5	13	10	16	19	20	20
Benishangul	0	0	0	0	0	0	1	1	1	2	2	3	24	24	24	35	34	32
SNNPR	20	27	26	30	27	23	16	42	42	45	43	48	362	470	470	471	480	473
Gambella	0	0	0	1	1	0	0	1	1	0	0	2	6	10	10	17	17	14
Harari	6	6	7	7	7	6	2	1	3	3	3	3	6	6	3	4	4	3
Addis Ababa	85	137	137	137	137	128	38	30	29	34	43	39	15	12	18	10	10	10
Dire Dawa	11	13	15	15	15	12	3	1	10	4	4	4	14	9	12	10	8	8
Total	217.58	312.38	319.18	304	2311	1248.5	168.58	242.38	263.18	250	2249	1314.5	1480.58	1679.38	1878.18	1950	3917	2876.5

Source: FMOH, 1990 to 1995 EC (1997/98-2002/03)

Drug Availability

335. The main objective of the pharmaceutical component of the HSDP is to ensure a regular and adequate supply of effective, safe and affordable essential drugs and medical supplies of high quality in the public, private and NGO sectors. Interviews conducted during the July 2003 CSR field mission confirm that drug availability is a key determinant in the public's view of the usefulness of health facilities. Improving drug availability is important not only for its role in better treatment, but also, because unavailability of drugs is the major factor behind low utilization rates of lower tier facilities.
336. There are significant differences between various missions and evaluations as to the status of drug and equipment supply in the public sector. Table 5.12 shows the main findings of the HSDPI evaluation on some of the key issues in drug availability. Although the LIDE and REDL list were often not available, the drugs themselves were mostly available. In all but: one case, however, storage and inventory control was poor. Availability in the Ethiopia Red Cross Pharmacies, Special Pharmacies (SP) and private pharmacies was good during the whole of HSDP (HSDPI evaluation).

Table 5-22: Main Findings by HSDPI Final Evaluation in Regions, Feb. 2002

Regions	LIDE (DACA 2002)	REDL	Basic Guidelines	Availability of EDs in R – HFs	Storage and Inventory Control	Availability of Equipment in R - HFs
Benishangul Gumuz	Yes	No	Yes	100 -43%	Poor	60% to good
Oromia	No	No	Yes	66%	Poor	80-100%
Gambella	N/A	N/A	Yes	64%	Poor	N/A
Amhara	Yes	No	Yes	85-79%	Poor	>85%
Harari	N/A	N/A	Yes	100%	Poor	60%
Somali	N/A	N/A	Yes	Poor	Poor	Good
Dire Dawa	N/A	N/A	Yes	Good	Poor	Good
Tigray	Yes	Draft	Yes	86-93%	Poor	85%
Addis Ababa	Yes	N/A	N/A	Good	Satisfactory	Good
SNNPR	Yes	Draft	Yes	100%	Poor	90%
Afar**	No	No	No	N/A to poor	Poor	Good

Source: HSDP I evaluation 2003

Note: REDL = Regional Essential Drug List; ED = Essential Drugs; R = Regional level; HF = Health Facility level; N/A = Not Available

337. In terms of drug availability by type of provider, table 5.23 shows the findings for drugs in stock of the day of visit. Government hospitals have the highest number of selected indicator drugs (82%) followed by private DROs and health centers (72 percent for both). Results for private facilities were unexpectedly low. In the case of drug retail outlets, it could be because drug vendor shops are more numerous than pharmacies and drug shops; these facilities are not permitted to carry all of the indicator drugs (in other words the type and variety of drugs allowed decreases at lower levels of drug retail outlets). However, private hospitals also have a lower availability than public hospitals (63 percent compared to 72 percent).

Table 5-23: Average Availability of the basket of 10 indicator drugs on the day of visit by type of provider

Facility	Availability (percent)
Government hospitals	82
Private hospitals	63
Private DROs	72
Health centers	72
Red Cross	63
Kenema	70
Source: ESHE/MOH HCF, National Baseline study on Drug Supply and Use in Ethiopia, 2002	

338. *In general, it appears that availability of essential drugs has improved, but that shortages of drugs are still common.* For example, during the July 2003 field visit, every HS and HC visited in both Sidama zone (SNNPR) and Arsi zone (Oromia) were out of Depo-Provera. While most had pills to offer instead, women did often not accept pills as a substitute, even though the pills usually were free and the Depo-Provera were 2 Birr. Even the special pharmacy in Alessa (capital of Arsi Woreda) was out of stock. However, the local DKT outlet across the street, as well as the private pharmacies, did have Depo-Provera in stock.
339. The availability of cold chain equipments and supplies has increased in most regions but their functionality has been affected by the availability of spare parts. Regions also raised concerns about the inadequate and delayed operational budget for outreach EPI activities (HSDP I evaluation 2003).

Personnel.

340. *The number of pharmacists has fluctuated in recent years but there is a clear shortage of pharmacists and druggists while the number of pharmacy technicians has increased significantly.* The number in EC 1994 (2001/02) is still less than that of EC 1989 (1996/97). At the end of HSDP I approximately 500 pharmacists were working in the pharmaceutical sector of which only 121 are in the public sector.
341. Pharmacies and drugs stores can only legally be managed by pharmacists and druggists (pharmacy technicians), respectively. However, table 5.15 shows that about 26 percent of the surveyed government hospital pharmacies are being managed by druggists or pharmacy technicians while another 22 percent are being managed by either nurses or health assistants while 48 percent of surveyed health center drugs stores are being managed by either nurses or health assistants and another 7 percent are being managed by non health professionals. On the other hand, 98% of surveyed private pharmacies are being managed by pharmacists while about 78 percent of private drug stores are being managed by the required druggists or pharmacy technicians.

Table 5-24: Qualifications of Personnel in charge by Provider and Facility Type, 2001

Facility	Pharmacist	Druggist (pharmacy technician)	Nurses	Health Assistant	Non Health professionals	Total
Govt. hospital pharmacy	13 (48)*	7(26)	3 (11)	4 (11)	-	27
Health center	4 (7)	24 (39)	8 (13)	22 (35)	4 (7)	62
Private pharmacies	42 (98)	-		1(2)	-	43
Private drug stores	-	36 (78)	-	8 (17)	2 (5)	46
Private drug vendors	4 (4)	10 (11)	-	68 (72)	12 (13)	94

Source: ESHE/MOH HCF, National Baseline study on Drug Supply and Use in Ethiopia, 2002

Note: Figures in parentheses are row percentages

342. In terms of prescribing practices, according to the study conducted by HCF/MOH (2002), the average number of drugs per prescription is 2.1; this is slightly higher than the HSDP II target of 1.84. However, the percentage of generic drugs prescribed is about 94 percent which is higher than the HSDP II target of 92 percent (table 5.xxxx).

Table 5-25: Selected Drug Prescription Indicators

Indicators	Overall average
Average number of drugs prescribed per encounter	2.1
Percentage of generic drugs prescribed	94
Percentage of encounters with an antibiotic prescribed	69
Percentage of encounters with an injection prescribed	21
Percentage of drugs prescribed from the LIDE	98

Source: National Baseline Study on Drug Supply and Use in Ethiopia, 2002.

Special Pharmacies

343. The concept behind Special Pharmacies (SPs) is to allow patients to obtain drugs when these are not available in the “budget” pharmacies. SPs add a markup of about 20-30% to the cost of drugs but they are still a lower cost alternative relative to private pharmacies and drug stores. They also raise funds for health institutions. They are often staffed by at least some health workers (HCF/MOH, 2001 and HSDPI final evaluation 2003).
344. Since 1990, when the first two SPs were started in Addis Ababa, approximately 100 SPs have been set up under the Health Care Finance Strategy (HCFS) all over the country. There are another 150 SPs planned with the support of USAID (HSDPI final evaluation 2003). A crude comparison of surplus generated by SPs to hospital’s operational budget

suggest that the surplus from SPs could cover close to 30% of the hospitals' operational budget (HCF/MOH 2001).⁵⁰

345. Efforts to expand special pharmacies face the following challenges: (a) retention arrangement problem. At present, almost all SPs have managed to retain 100% of their proceeds, deposit it in a separate account and use the surplus for priority activities when decided by the management committee. It has become an accepted practice but the country's financial law does not back it; (b) shortage of pharmacy professionals; (c) storage space. SPs have to share limited storage space with budget pharmacies. This arrangement makes control difficult and does not accommodate storage requirement of the pharmacies as the volume of sales increases; (d) financial management capacity of most facilities particularly in the rural areas and at lower levels is limited. Most of the time, SPs use the financial staff of the health facility on part-time basis. Endorsement of National Special Pharmacy Guidelines would be a short-term solution; and (e) possible reaction from the private sector. With the lifting of price controls, private retail pharmacies are charging higher prices. There are incidences, however, when the introduction of SPs resulted in reduced prices for drugs in private retail pharmacies. Thus the further expansion of SPs could pressure private retail pharmacies to further cut their prices. This could potentially crowd out private pharmacies but the private sector could also react because SPs are subsidized by the facility (HCF/MOH 2003).

AVAILABILITY OF EQUIPMENT

346. The HSDPI 2003 evaluation did not encounter records of inventories for medical equipment. It notes that while equipping and furnishing are being undertaken based on national standards there is no strategy for equipment maintenance and replacement. Construction of regional level medical equipment maintenance centers has started in three regions. These are expected to be functional by 2003/04. However procurement of furniture, equipment and working tools has not yet started and training and recruitment of professional staff is lagging behind.
347. There are no current statistics on the availability of equipment although there is an ongoing health facility survey being conducted under the PER. This section will be updated accordingly once the survey results are available.
348. The PHRD health facility study (1996) collected data on selected facilities and equipment such as the number of beds, number of x-ray machines, refrigerators, sterilizers, vehicles, the availability of laboratories, operation theatres and/or minor surgery sets from the Regional Health Bureaus and from the sample health facilities. Results are given below in table 5.17.

⁵⁰ For example, St. Paul hospital spends 1.4 million ETB for operational budget, and its SP recorded almost ETB 290,000 surplus annually during normal periods. In the case of Ammanuel Hospital, the average operational budget was ETB 1.03 million while the special pharmacy generated an average of ETB 350,000 surplus in last year's operation. The Tikur Anbesa SP generated an ETB 1.9 million surplus in 1992 EC (1999/00) while the hospital spent 5.7 million ETB as operational cost.

Table 5-26: Distribution of hospitals and selected facilities - 1995

Region	Hospitals	Beds	X-Ray Machines	HIV Screening Centers	Total No. Of Zones (a)	Zones with OP. Theatre (b)	% avail- ability of Operation theater (b/a)
Tigray	12	860	5	6	5	3	60
Afar	2	60	2	1	1	1	20
Amhara	11	1289	12	9	10	7	70
Oromia	25	2293	22	20	12	6	50
Somali	3	255	3	4	9	2	22
Benishangul	2	254	2	2	5	2	22
SNNPR	9	816	12	7	16	7	44
Gambella	1	95	1	1	-	(1)*	100
Harari	5	735	5	2	-	(1)*	100
Dire-Dawa	3	247	2	1	-	(1)*	100
Addis- Ababa	16	3016	22	7	6	3	50
Total	89	9920	88	60	68	34(31)	46

Source: PHRD (Access to Supply of Health Facilities and Services - 1996) *- Denotes regions without zonal subdivisions.

349. Based on the above 1995 survey, the ratio of selected facility equipment to population was one x-ray machine (working) for 591,136 and one HIV screening center for 867,000 persons (current guidelines now provide one HIV screening center for 400,000 persons—*note: any data on whether this ratio is actually being implemented?*) . Out of the 89 hospitals surveyed, only 46% have operation theatres. This is extremely inadequate in view of the number of outpatient attendances and inpatient admissions in hospitals.
350. A separate survey also undertaken in 1995 indicates that a significant percentage of institutions lack some major equipment . The results are shown in Table 5.27 below.

Table 5-27: Percentage of facilities reporting availability of selected equipment and transport facilities by type - 1995

Type of equipment	Hosp. (n=14)	H.Center (n=16)	H.Station (n=33)	Type of equipment	Hospital (n=14)	H.Center (n=16)	H.Station (n=33)
Baby scale	86%	94%	64%	X-ray machine	86%	na	na
Adult scale	86%	94%	64%	Microscope	79%	81%	an
Examination bed	79%	75%	67%	Lab. Incubator	57%	na	na
Delivery bed	86%	81%	45%	Refrigerator	100%	87%	67%
Oto/ophthalmoscope	79%	75%	Na	Washing machine	43%	na	na
Autoclave/sterilizer	86%	69%	67%	Ambulance	21%	na	na
Vacuum extractor	na	62%	Na	Other vehicle	50%	69%	na
Ultra sound	14%	Na	Na	Motor cycle	...	75%	24%
E.C.G. machine	64%	Na	Na	Bicycle	...	50%	21%

Source: PHRD (Survey of medical and health care providers - 1996)

Condition of Health Facility Buildings

351. This section will be updated based on the results of the ongoing health facility survey being undertaken under the PER.
352. In a detailed assessment of a sample of health facilities in 1995, over 50% of the facilities reported leaking roofs, electrical problems, plumbing and sanitary problems on each of these items. Overall assessment of the condition of the buildings showed that 15.1% and 41.1% were respectively in excellent condition or required minor repairs, and 28.8% and 15.1% needed major repair or total replacements respectively. Although the trends were more or less similar, there were some variations among the three types of institutions. (Table 5.27)

Table 5-28: Health Institutions By Type And Building Condition

Condition of health facility	Type of Health Facility			Total
	Hospitals	Health Centers	Health Station	
Excellent	17.7	11.1	15.8	15.1
Minor Repair	35.3	55.6	36.8	41.1
Major Repair	29.4	22.2	31.6	28.8
Replacement	17.6	11.1	15.8	15.1
TOTAL	23.3	24.7	52.1	100.0

Source: PHRD (Survey of medical and health care providers – 1995)

353. Recent data based on the main findings of the HSDPI evaluation (2003) indicate the following issues regarding the condition of facilities and underscore the need to improve the condition of health facilities and improve maintenance :
- Availability of water at facilities is inadequate and scarce in about 30% of PHCUs;

- Minimal power supply and attempts for alternative power supply for the facilities did not yield good results;
- Facilities requiring minor maintenance have degenerated, because of lack of preventive maintenance activities. Moreover management of medical equipment remains a major concern that highly affects the continuity of service delivery;
- Rehabilitation of health facilities is often limited to preventive maintenance, such as replacing the damaged part rather than rehabilitating functional flows, correcting the shortcomings for service delivery and adapting it to the new health care technology or anticipated future expansions; and
- Furniture in many of the facilities seems also disorganized, worn-out and do not fit well in the working space. They are often of poor quality, not intended for a health facility. *Budgets for maintenance are still low under the first year of HSDP II. It is mostly concentrated on vehicle maintenance rather than for medical equipment, buildings, and furniture.* \

Availability of transport to health care personnel

354. The availability of operating vehicles in health facilities is one of the factors that affects the effective delivery of services and is a critically important resource for ensuring adequate support for health facilities and communities.
355. In 1995, out of the reported number of vehicles, 27.9 percent were non-operational. In terms of regional distribution the percentage of non-operational vehicles ranged from 18% for Region 3 to 73% for Dire Dawa. The collected data show only the magnitude of the problem. It has to be interpreted with care since the number of vehicles for regions like Oromia has been underreported.
356. The latest HSDP evaluations indicate that inadequate transport facilities still constrain service delivery and supervision. This is further exacerbated by an inadequate budget for per diem.

Utilization of Health Services

357. *Utilization of services did not match the steady increase of facilities nor the population growth rate over the five year period.* Outpatient visits remains unchanged at about 27 new consultations per 100 persons/year in 2000/01. Data was not provided in the MOH/PPD 2001/02 booklet but based on available data from the HSDP 2003 Annual Review, OPD consultation has fallen 0.23 in 2001/02. Utilisation is only about a fourth of the HSDP goal for 2004/05 of 1.0 visit per person per year.
358. The incidence of consultation has dropped from 49.1% in 1996 to 43.4% in 1998 and 41.1% in 2000/01.
359. In 2000/01, with the average national total visits at .27, both Tigray and Gambella have the highest visits per capita at 0.80 while Somali has the lowest number of visits per capita at 0.04. Gambella's per capita visits declined sharply from .80 in 2000/01 to 0.13 in 2001/02. Tigray's also declined. However the 2001/02 data needs to be viewed with

caution because Tigray, SNNP, Amhara, and Oromia only provide partial information while Somali's data is not available.

Table 5-29 Ethiopia: Total Outpatient Visits and Visits per Capita by Region, 2000/01 and 2001/02

Region	2000/01		2001/02	
	Total Visits	Visits per capita	Total Visits	Visits per capita
Addis	1,404,746	0.55	1,942,279	0.73
Harari	131,720	0.79	139,270	0.81
Dire Dawa	90,940	0.28	112,243	0.33
Gambilla	173,020	0.80	29,802	0.13
Ben-Gumuz	418,756	0.76	366,838	0.65
Tigray	3,021,201	0.80	**2,103,040	0.54
Oromia	6,515,514	0.28	**2,307,925	0.10
SNNPR	2,626,193	0.20	2,095,009	0.16
Amhara	2,539,317	0.15	**2,539,317	0.15
Afar	289,365	0.23	553,481	0.44
Somali	153,553	0.04	NA	NA
Total	17,364,325	0.27	12,189,204	NA***

Source: PPD, MOH 2000/1 and 2001/02.
 **partial data
 ***incomplete data because of partial data provided from Tigray, Oromia, Amhara, and unavailability of updated data from Somali

360. It is difficult to do a trends analysis of outpatient and inpatient flows over time because the readily available data obtained from 1991/92 to 2002/03 are not presented using the same format and categories. Moreover, in most years, only partial information are available because at least one region is missing and the missing regions vary also each year. *Consistency of data collection and presentation formats would be an important point to work on in improving the MIS; consistency and timeliness of reports, would need to be addressed especially within the context of training/institutional capacity building at the woreda level in order to minimize reporting lags and data recovery problems*

Reasons for visits

361. The top 10 leading causes of admission in 2000/01 are malaria (14.8%), pneumonia (8.9%), TB of respiratory system (7.8 %), accidents (5.2%), abortion (3.9%), pregnancy,

childbirth and puerperium (3.8%), cataract (2.4%), dysentery (1.6%), gastroenteritis and colitis (1.5%), and meningitis (0.9%).

Table 5-30: Top ten reasons for outpatient visits (2000/01)*

Outpatient visits			
	Disease	Number of	%
1	All types of malaria	328760	10.4
2	Helminthiasis	213195	6.7
3	Acute upper respiratory infection	205129	6.5
4	Bronchopneumonia	173123	5.5
5	Infections of skin subcutaneous tissue	145680	4.6
6	Gastric and duodenites	137942	4.4
7	Dysentery	111938	3.5
8	Tuberculosis of respiratory system	70526	2.2
9	Sexually transmitted infection	68733	2.2
10	Bronchitis, chronic and unqualified	58594	1.8
	Total of all the above cases	1513620	47.8
	Total of all cases	3167514	100.0

Source: PPD, MOH 200/01
 Note: Data from Oromia, Gambella, and Dire Dawa are not included. Updated data for 2001/02 are not available in the same format in the MOH/PPD health and health related.

QUALITY OF HEALTH SERVICES

Technical quality

Variation in quality of care by wealth, region and residence

362. Poor, rural women receive lower quality health care than rich, urban women. The population-based representative data on technical quality of care is limited. DHS 2000 asked seven type of services (measurement of weight, height measured, blood pressure taken, blood sample taken, urine sample taken, told about pregnancy complications, and told where to go for pregnancy related complications) a pregnant women received during the ante-natal care, which was converted into a quality of care index. The quality of care index could range from 0 to 7 based on the services received. *The aggregate quality of care score varies significantly by wealth of the women—low quality of care index in the poor, while high in the rich.* The quality of care index also varied by region: 5.1 in Addis was the highest, while 2.0 in Afar was the lowest. The quality of care index was 4.5 in urban areas while it was only 2.4 in rural areas (table 5.31).

**Table 5-31: Variation in quality of care of maternal health services*
by wealth, region and urban residence**

WEALTH QUINTILES	Score	SD
Poorest	2.2	1.7
2nd Poorest	2.3	1.8
Middle	2.3	1.9
2nd Richest	2.5	1.8
Richest	4.3	1.9
REGIONAL VARIATION		
Tigray	2.9	2.1
Afar	2.0	1.9
Amhara	2.4	2.1
Oromiya	2.5	1.8
Somali	3.7	2.3
Benishangul-Gumuz	2.6	1.8
SNNP	2.5	1.8
Gambela	3.1	1.8
Harari	4.4	1.9
Addis Ababa	5.1	1.4
Dire Dawa	4.0	2.2
URBAN/ RURAL		
Urban	4.5	1.8
Rural	2.4	1.8

*Note: maximum seven points for seven items: weight, height measured, blood pressure, blood sample, urine sample, told about complications, and told where to go for complications)

Consumer/ Client satisfaction

363. In the MOH/HCF/EHSE study (WTP, 2001) about 52 percent of respondents perceived the quality of care they received as good.

Table 5-32: Evaluation of the level of quality of care in the last visited facility

Rating	Total Sample		Rural		Urban	
	Freq.	%	Freq.	%	Freq.	%
Very poor	103	8.2	74	6.9	29	15.9
Poor	215	17.2	182	17	33	18
Neutral	156	12.4	119	11.1	37	20.2
Good	648	51.7	616	57.5	32	17.5
Very good	132	10.5	80	7.5	52	28.4
Total	1,254	100	1,071	100	183	100

Source: MOH, HCF. Estimating Willingness to pay for health care in Ethiopia.2001

364. *More clients expressed dissatisfaction with the public sector relative to private and NGO facilities.* About 30% of households⁵¹ who visited a government facility considered the quality of care they received to be below average. On the other hand, a smaller percentage of households who obtained care from NGOs (14%) and private facilities (12%) considered the care they received in these facilities to be less than average.

⁵¹ Household survey of 13,932 individuals in 2,473 households. About 10% of individuals surveyed reported an illness/ injury in the two months prior to August 2000 interview. Of those reporting illness, 84% sought formal treatment and 16% sought informal treatment or treated themselves. Of those seeking formal treatment, 76% went to a government facility, 9% went to an NGO facility and 16% visited a private for profit provider. Only 1% had been hospitalized in the past 12 months.

Table 5. 33: Respondents perception of quality for different providers

Rating	Public		NGOs		Private		Total	
	Freq.	%	Freq.	%	Freq.	%	Freq	%
Very poor	94	10	5	4	6	3	103	8
Poor	188	20	11	10	18	9	215	17
Neutral	132	14	19	17	28	14	156	12
Good	432	46	56	51	100	50	648	52
Very good	94	10	23	21	50	25	132	11
Total	940	75	113	9	201	16	1,254	100

Source: MOH, HCF. Estimating Willingness to pay for health care in Ethiopia.2001

365. The main reasons cited for dissatisfaction with the quality of care obtained from public health care facilities are the following: (a) inconsistent availability of drug; (b) inadequate skills/knowledge and courtesy of health personnel; (c) inconvenience of lengthy procedures; (d) inadequate availability of diagnostic facilities; and(e) lengthy waiting time. The average travel time was almost 3 hours; waiting time between arrival and being seen was also quite high averaging 7 hours at government hospital outpatient departments, 6.2 percent at NGO facilities and 2.7 percent in other private facilities. The consistent and sufficient availability of drugs were considered an important indicator of service quality. About 37% of households who visited public health facilities were dissatisfied because drugs were not consistently available (MOH,HCF 2001).
366. Separate focus group discussions⁵² rated private providers superior to public and NGO facilities for their promptness, shortness of waiting times, for being open during off hours and holidays, and that most of them have knowledgeable personnel⁵³ who were good at handling patients. However, private providers were also considered inferior to large government hospitals such as hospitals because they provide limited laboratory and x-ray and surgical services. They were also cited for excessive charges in terms of requiring more tests and expensive drugs. NGO providers were rated favorably with regard to immediate availability of services and for being superior to both private and public providers in terms of cleanliness.
367. Client satisfaction surveys were also conducted through the PHRD grant in 1996. When respondents were asked if they had ever faced difficulties in using health services, 48.3 percent confirmed that they had indeed faced difficulties in seeking health care while 51.7 percent said they had encountered no difficulties. The major difficulties cited are lack of facilities within the institutions (42.7 percent of the individuals) and lack of finance (33.8 percent). The remaining group said they lack the essential drugs (23 percent) and some mentioned that they could not be cured. The priority areas for improvement in the health sector (Table 5.33) availability of curative facilities, better

⁵² Three focus groups in Addis and 3 in Dire Dawa were conducted. 27 focus groups were conducted in the 5 other regions (Amhara, Addis, Oromia, SNNP, and Tigray) with at least 1 focus group for every 3 million population, resulting in a total of 33 focus groups.

⁵³ Knowledgeable caregivers were perceived to include the qualities of being a good listener, being courteous, respectful and tolerant. Caregivers should be willing and able to listen to patient complaints and respond accordingly to their needs.

trained staff, and greater availability of less expensive drugs emerge as the three main recommendations.

Table 5-33 Improvements suggested in the health sector

No	Suggested Improvements	Frequency	Percent of Total
1	Increase number of clinics, health centers and hospitals	51	52.6
2	Provide better trained staff	14	14.4
3	Make drugs available	8	8.2
4	Make drugs cheaper	7	7.2
5	Increase number of beds	6	6.2
6	Increase rooms within existing facilities	6	6.2
7	Provide training on prevention of epidemic diseases	5	5.2
	Total	97	100.0

Source: PHRD (Community Consultation and Participatory Development - 1995)

Community Participation (Social Accountability)

368. The 1996 study on the Role of NGOs and Private sector in Social Service delivery mentions that the involvement of communities in health service activities has been very low. Only 14% of NGO institutions surveyed reported high community involvement while the rest reported low involvement. Those institutions which reported high community involvement were the ones operating village health posts and outreach health programs.
369. While regional awareness is very high about the HSDP, knowledge of the various HSDP components with their respective objectives, strategies and activities envisaged in the regional and federal HSDP plans are found to be often quite limited at Zonal, Woreda, and health facility levels. The HSDPI evaluation notes that although its Program Implementation Manual provides opportunity for community and Woreda health staff participation in the governance of HSDP, this was not realized. Efforts made to improve local participation were insufficient to raise awareness and stakeholders were not provided adequate guidance.

The HSDPI evaluation cites one example of health center with strong community involvement (see box 5.2).

Box 5-2: Box.5.2 Example of local community ownership of a health center

One health centre (HC) in Addis Ababa that is owned by ‘the public’ provides a stark contrast with many government owned health centres and is an example of how important local ownership can be.

The HC, situated in Kebele 18 of Woreda 5 in the Mercato area of Addis Ababa, was founded 22 years ago. The HC is governed by a 7-member management board appointed by the community and lead by a female health officer who has served the center for almost 20 years. With an annual budget of 700-800,000 Birr, the HC is almost entirely self-sufficient. All the staff – consisting of 14 professionals and 12 support staff – are paid from local revenues, but salary levels are 10-20% lower than in similar government institutions. While the HC used to get some cross-subsidy from the proceeds of the lease of a warehouse, a local bakery and an adjacent kindergarten, it is now only the kindergarten that brings in some funds. Inputs from the RHB are limited to free contraceptives, vaccines and occasionally some health learning materials and some incidental training courses or workshops. The staff indicates a strong desire to be kept abreast of new insights and developments in the area of health care on a much more regular basis.

The full range of services of a typical HC is being provided, including a fair number of laboratory services, but excluding DOTS therapy for TB patients. Every day some 50-70 outpatients visit the centre, and there are 2-3 deliveries per day. The HC looks very neat and well organized, and the smiling faces of both patients and staff members indicate a great sense of ownership and pride.

370. Thus aside from the necessary training in planning and budgeting, adequate sensitization of woreda and kebele stakeholders to the importance of achieving health sector development goals would also need to be undertaken in order to ensure these are well-integrated in the woreda development programs and budgets. The new health extension program (HEP) and its corresponding outreach and family/community services which will be discussed further in chapter VII could provide opportunities for sensitizing communities and HEWs can be mobilized to generate the community awareness and interest in utilizing and also possibly managing health services.

6. PUBLIC HEALTH EXPENDITURES

371. This section analyzes public expenditures on health services. The analysis draws extensively from the Public Expenditures Review (PER) conducted in 2003, and the comprehensive work conducted as part of the National Health Account exercises conducted in 1995/96 and 1999/2000. These expenditures are analyzed against private expenditure data that are extracted from the HICES⁵⁴ and WMS⁵⁵. It also benefited from information derived from the Health Sector Development Program (HSDP) reviews as well as other documents from the Ministry of Health and Government of Ethiopia. This section examines:

- trends in amounts allocated to health services including public and private, external and internal sources of funds;
- levels of expenditures on health services in Ethiopia with current international experience
- how public spending is allocated across the different levels of care, regions and between rural and urban settings;
- the actual financing mix with the FDRE's intended mix,
- the extent to which resources are allocated for interventions that respond to the needs of the poor

Public spending on health services is very low but both private and public spending have been on the increase between 1995/67 and 1999/2000

372. Recently released official Government NHA data for 1999/2000 show that Ethiopia's total health expenditure remains dramatically low. Per capita health expenditures have been estimated at around US\$5.6, or PPP of about US\$ 32.7 in 1999/2000 and represents about 5.5 percent of GDP. Public spending, both domestic and from external sources represents the largest share of that spending (49 percent). Public spending amounts to US\$ 2.77, representing 2.74 percent of GDP per capita. However, as is typically observed in most low-income countries, private consumption through out-of-pocket spending also represents a large share of this spending (36 percent), amounting to US\$1.96, about 1.9 percent of GDP per capita. Per capita expenditures on health have increased by *about 25 percent (from US\$ 4 to US\$ 5.6) between 1997 and 2002*, increasing as a proportion of GDP per capita by about 49 percent. The increase occurred for both public and private spending. However, public spending increased more largely as a result of external sources. As compared to the first NHA analysis done in 1995/96, domestic public spending has only slightly increased. (Table 6.1)

⁵⁴ HICES:

⁵⁵ WMS:

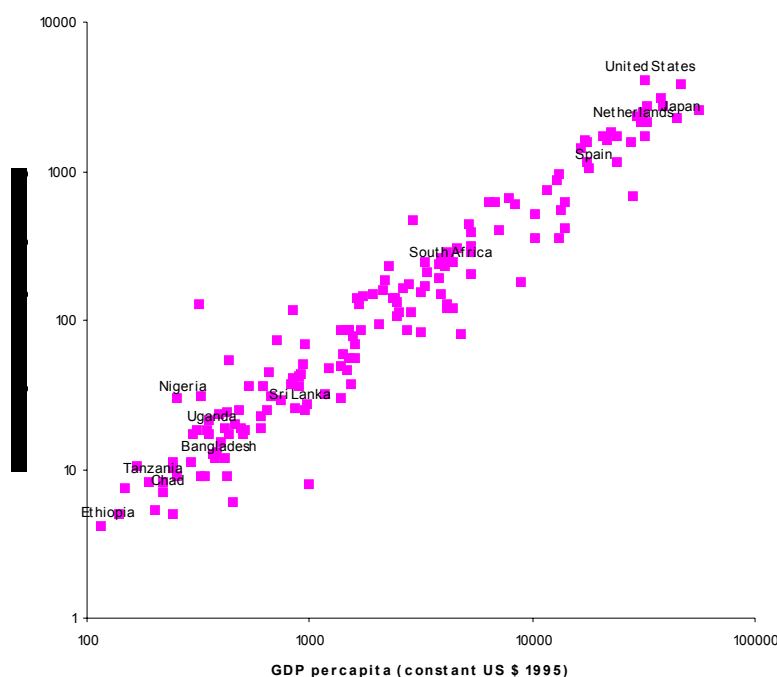
Table 6-1: National Health Accounts--Evolution of total, public and private spending 1996/1997-1999/2000

	NHA 1: 1885-1996	NHA 2: 1999-2000	Variation 1995/96- 1999/2000 (%)
Total spending as a share of GDP	4.1 percent	5.3 percent	+34.1
Total spending US\$	4	5.6	+40
Total spending PPP	25	2.7	+32
Public spending as a share of GDP	1.7 percent	2.74	+61.1
Public spending US\$ per capita	1.65	2.77	67.8
Public spending PPP	10.3	1.2	+57.2
Private spending as a share of GDP	2.4 percent	2.8	+16.6
Private spending US\$ per capita	2.3	2.82	+22.6
Private spending PPP	14.4	16.5	+14.5

Source: FMOH, NHA, 1995-1996; FMOH, NHA, 1999/2000

373. Using comparable data for the period 1990-1998, it appears that the overall per capita level of health spending in Ethiopia is among the lowest in the world (Figure 6.1). Ethiopia's per capita total health spending of US\$ 4 (PPP of US\$25) is also significantly lower than the SSA average of US\$ 42 (PPP of US\$89). Spending on health in Ethiopia has been dramatically lower than in neighboring Uganda (US\$18), Kenya (US\$31), and even Tanzania (US\$ 8). The recent increase over the last few years has only slightly narrowed the gap (see Table 6.2).

Figure 6. 1: Per capita expenditure on health in various countries vis-à-vis GDP



Source: WB, WDI 2002

Table 6-2: Health expenditure for selected countries in SSA (1990-98)

Selected Countries In SSA	Health Expenditure as percent of GDP			Health Expenditure Per Capita		
	Public	Private	Total	Public Share (Including Donors)	PPP \$	Current \$
Benin	1.6	1.6	3.2	50 percent	29	12
Burkina Faso	1.2	2.7	3.9	31 percent	36	10
Cameroon	1.0	4.0	5.0	20 percent	77	31
Cote d'Ivoire	1.2	2.6	3.8	32 percent	62	29
Eritrea	2.9	0.9	3.8	76 percent	14	--
Ethiopia	1.7	2.4	4.1	41 percent	25	4
Ghana	1.8	2.9	4.7	38 percent	8.5	19
Guinea	2.2	1.4	3.6	61 percent	68	19
Kenya	2.4	5.4	7.8	31 percent	79	31
Mali	2.1	2.2	4.2	50 percent	30	11
Mauritania	1.4	3.4	4.8	29 percent	74	19
Nigeria	0.8	2	2.8	29 percent	23	30
Senegal	2.6	1.9	4.5	58 percent	61	23
Sierra Leone	0.9	4.5	5.5	16 percent	27	8
Sudan	0.7	2.7	3.4	21 percent	48	126
Tanzania	1.3	1.8	3.0	43 percent	15	8
Togo	1.3	1.3	2.6	50 percent	36	8
Uganda	1.9	4.1	5.9	32 percent	65	16
Sub-Saharan Africa 1990-98	1.7	2.6	4.3	40 percent	89	42
2000	2.5	3.4	5.9	42 percent		29

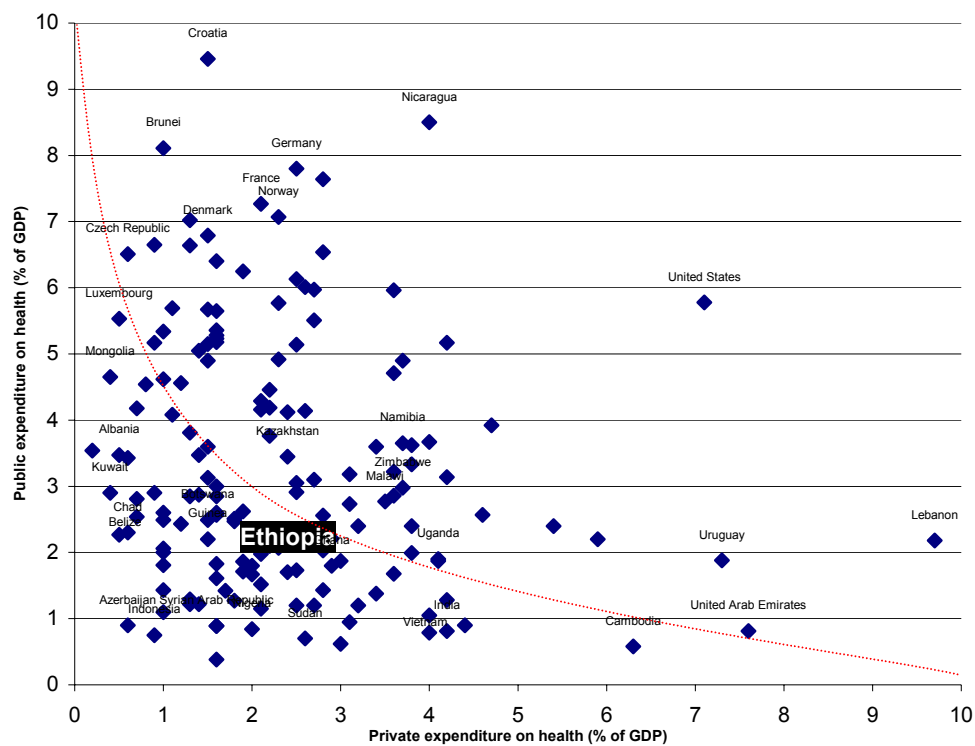
Source: World Development Indicators (WDI), 2002 Eastern and Southern African Network on NHA
Note: Data is for most currently available year between 1990-1998 for all countries

374. This low level of spending mainly reflects a very low resource base or GDP per capita of only about US\$110 (Figure 6.1). Using comparable data from 1990-98, Ethiopia's total health spending as a percentage of GDP (4.1 percent) is comparable to the SSA average of 4.3 percent, and slightly higher than the low-income countries' (LIC) average of 4.1 percent. Using most recent NHA data, the SSA average has been revised at 5.9 percent of GDP in 2000 (WDI 2002). This would still place Ethiopia's total health spending in 1999/2000 under the updated SSA average, both in absolute terms and relative to GDP.
375. On the other hand the private health expenditure share of GDP in Ethiopia is quite on the high side when compared to the LIC average of 1.1 percent. Ethiopia's private health spending share of GDP of 2.4 percent remains close to the average Sub Saharan Africa experience (2.6 %) in 1990-98 although by 2000, the private expenditure share of GDP in Ethiopia increased to about 2.8 percent compared with the higher SSA share of 3.4

percent. Despite this increase, the share of private expenditures on health to GDP in Ethiopia is still much lower than in Kenya (6.4 percent) and in Tanzania (3.4 percent). (Table 6.2 and Figure 6.2)

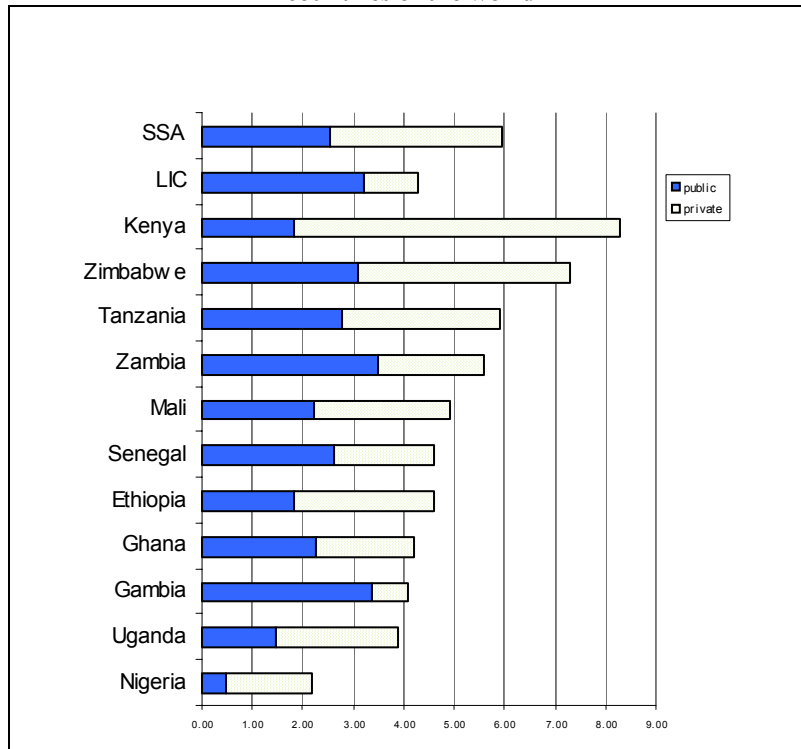
376. When it comes to public health spending, the contrast is more striking: Ethiopia's share of public health spending of 1.8 percent in 2000 is significantly lower than the LIC average of 3.1 percent. According to 1990 's NHA data, Ethiopia would be close to the SSA average of 1.7%. Yet according to revised averages from WDI 2002, Ethiopia's share of GDP would be lower than the SSA average, placing the country as third behind Nigeria and Uganda in terms of low public spending on health. (Table 6.2 and Figure 6.3).

Figure 6. 2: Per capita public and private expenditures (as a percentage of GDP) on health in various countries of the world



Source: World Bank WDI, 2002

Figure 6.3: Per capita public and private expenditures (as a percentage of GDP) on health in various countries of the world



Source: World Development Indicators, World Bank, Washington, D.C., 2002

Funding of the health sector in Ethiopia is shared equally between the public and the private sector

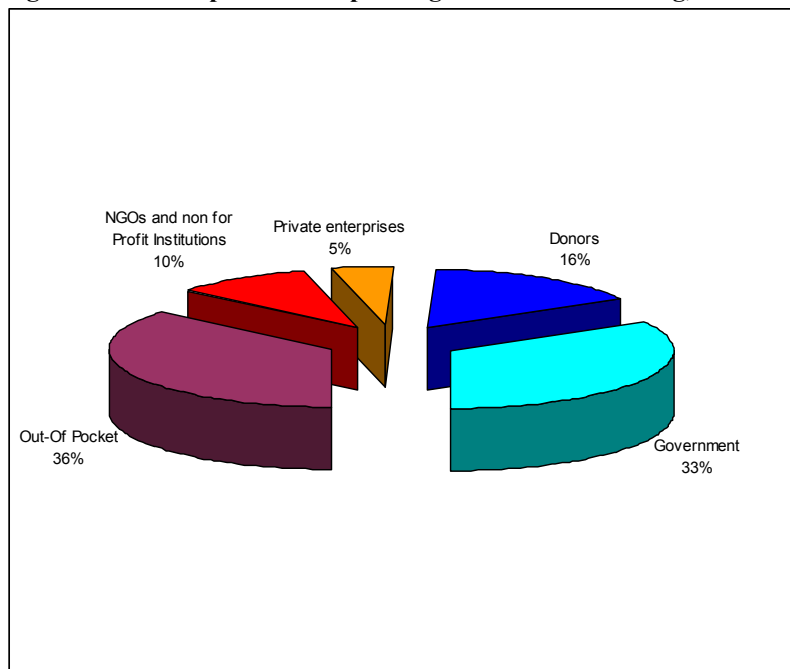
377. Based on NHA estimates, Birr 2.9 billion birr was spent on health services in EY 1992 (1999/2000) representing about Birr 46 birr per capita or US\$ 5.6 (See Table 6.6). Of this, approximately 36 percent was out-of-pocket spending by individuals including direct payments to private practitioners, traditional healers, private pharmacies, and government facilities in the form of user charges. NGOs contribute a lower although not trivial amount, their contribution reaching close to 10% of all health spending. On the other hand private enterprises' contribution remains marginal at 5% of health spending.

Table 6-3: Ethiopia: National Health Accounts Data for 1999/2000

	Millions Birr	Share of Total	Birr per person	US\$ per person (1999/00)
Total expenditure on health	2,931		46.1	5.6
General government expenditure on health	979	33%	15.4	1.87
Central government				
State, regional, provincial authorities	471	16%	7.4	0
Donors	471	16%	7.4	0
Private expenditure on health	1480	50%	21.	2.6
Private enterprises	133	4.5%	2.06	0.25
NGO's and non-profit institutions (local and international)	290	9.8%	4.5	0.55
Net out-of-pocket spending on health	1,057	36%	16.6	2.02

Sources: Authors' estimates based on various sources including NHA 1999/2000, Min. of Health, Min. of Finance, IMF Statistics, PER 2003.

Figure 6. 4: Ethiopia Health Spending: Source of Financing, 1999/2000



Source: author's calculations based on PER 2003 and NHA 1999/2000

378. After out-of pocket spending, public expenditures represent the largest share of health spending (about 33 percent). Government's revenues financed most of the public health expenditures (PER 2003). The share of public health expenditures out of total health expenditures has been declining in recent years largely as a result of higher out-of pocket and donor spending; it decreased from 41% in 1995/96, to 36% in 1996/97⁵⁶, and then to 33% in 1999/00.

379. External assistance and loans are the third major source of financing particularly for capital expenditures. In 1995/96 assistance and loans financed 10% of recurrent expenditures and 28 percent of capital expenditures, or 15.8 percent of total health expenditures.⁵⁷ During the course of HSDP implementation, donor resources in the form of loans and external assistance to the health sector have increased significantly from Birr 63 million in 1997/98 to Birr 437 million in 2000/01 (HSDP evaluation report 2003).

Trends in Overall Public Revenues and Expenditure

380. Table 6.4 shows selected indicators of consolidated public revenues between 1980-81 to 2001-02. The data indicate that: (a) revenues fluctuated in the last two decades and (b) despite increases in revenues from other sources, about 19 percent of revenues still come from external grants. Revenues excluding external grants have been growing, rising from 11.9 percent of GDP in 1992-93 to 19.1 percent in 2001-02. Despite this positive trend, Ethiopia's level of domestic resource mobilization, which averaged about 17 percent of GDP throughout the period, remains slightly lower than the average of 19.0 percent for 33 low-income African countries in 2000 (Bruns et al. 2003 cited in the Education CSR 2004).⁵⁸
381. From the 1980s, public expenditures have consistently exceeded revenues. Total public expenditures as a percentage of GDP has remained high, averaging about 30 percent in recent years. The share of interest paid on external public debt has more than doubled from about 20 percent in 1991/92 to almost 47 percent in 2000/01. The average share of recurrent expenditures from 1980/81-2001/02 is 68 percent, declining to about 66 percent from 1995/96 to 2001/02 (see Table 6.5)

⁵⁷ PHRD health sector synthesis report 1996

⁵⁸ Countries in the cited study are those which have yet to achieve the goal of universal primary school completion as of 2002.

Table 6-4: Trends in Overall Government Revenues, Ethiopia, 1980-81 to 2001-02

Ethiopia Calendar	Gregorian Calendar	Total Government Revenues			% share of external grants in total revenues	Per capita revenues net of external grants	
		In constant 1994-95 Birr	Index (1994- 95=100)	As % of GDP		In constant 1994-95 Birr	Index (1994- 95=100)
1973	1980-81	4837.8	100	18.2	9.8	124.7	100
1974	1981-82	5097.4	105	19.0	12.2	127.8	102
1975	1982-83	5628.7	116	19.4	10.7	137.3	110
1976	1983-84	6091.4	126	21.5	10.0	144.3	116
1977	1984-85	5343.8	110	21.3	21.4	123.1	99
1978	1985-86	6206.1	128	22.5	13.6	138.8	111
1979	1986-86	6608.7	137	21.1	9.9	143.4	115
1980	1987-88	8102.9	167	25.8	15.5	170.2	137
1981	1988-89	8779.0	181	28.0	17.0	178.1	143
1982	1989-90	6404.7	132	19.9	11.3	125.1	100
1983	1990-91	4806.0	99	16.1	14.6	90.7	73
1984	1991-92	3601.3	74	13.2	19.7	65.7	53
1985	1992-93	4231.1	87	13.7	12.7	79.4	64
1986	1993-94	5552.4	115	17.4	20.0	101.1	81
1987	1994-95	7044.6	146	20.8	16.1	124.7	100
1988	1995-96	7987.1	165	21.3	13.6	137.2	110
1989	1996-97	8628.6	178	21.8	16.6	144.3	116
1990	1997-98	8125.1	168	20.9	13.6	132.5	106
1991	1998-99	8808.7	182	21.4	16.9	140.3	112
1992	1999-00	9208.4	190	21.6	15.4	143.2	115
1993	2000-01	11236.8	232	24.2	20.5	170.8	137
1994	2001-02	13101.1	271	23.5	18.6	194.7	156

Note: 1982 E.C. to 1984 E.C. correspond to the transition from the Megistu regime to the new government.
Source: Education CSR 2004

Table 6-5: Trends in Total Government Expenditure, Ethiopia, 1980-81 to 2001-02

Ethiopia Calendar	Gregorian Calendar	Total spending					Recurrent spending		Interest on all public debt		
		In constant 1994-95 Birr	Index (1994- 95=100)	As % of GDP	As ratio of revenues ^a	Per capita spending (1994- 95=100)	As % of total spending	As % of GDP	As % of total spending	As % of GDP	% share of interest paid on external debt
1973	1980-81	5,668.1	100.0	21.3	1.17	100	77.9	16.6	3.7	0.8	22.8
1974	1981-82	6,629.0	117.0	24.7	1.30	114	74.3	18.3	3.0	0.7	21.1
1975	1982-83	8,756.2	154.5	30.2	1.56	146	67.1	20.3	2.4	0.7	22.8
1976	1983-84	8,005.0	141.2	28.3	1.31	130	72.1	20.4	4.4	1.2	18.2
1977	1984-85	7,024.4	123.9	28.0	1.31	111	69.4	19.4	5.8	1.6	12.9
1978	1985-86	7,780.0	137.3	28.3	1.25	119	63.9	18.0	4.8	1.3	20.0
1979	1986-87	8,187.3	144.4	26.1	1.24	122	65.6	17.1	5.5	1.4	31.9
1980	1987-88	9,663.0	170.5	30.8	1.19	139	70.2	21.6	5.2	1.6	38.8
1981	1988-89	10,709.8	188.9	34.2	1.22	149	66.2	22.6	4.3	1.5	33.9
1982	1989-90	9,543.6	168.4	29.7	1.49	128	72.7	21.6	4.3	1.3	20.7
1983	1990-91	7,353.0	129.7	24.6	1.53	95	75.0	18.5	5.4	1.3	19.2
1984	1991-92	5,504.9	97.1	20.2	1.53	69	77.4	15.6	7.3	1.5	19.9
1985	1992-93	6,037.8	106.5	19.6	1.43	78	65.8	12.9	10.2	2.0	22.9
1986	1993-94	7,995.9	141.1	25.0	1.44	100	62.0	15.5	13.5	3.4	15.4
1987	1994-95	8,371.9	147.7	24.7	1.19	101	62.3	15.4	10.0	2.5	28.8
1988	1995-96	9,058.7	159.8	24.1	1.13	107	61.0	14.7	10.1	2.4	33.9
1989	1996-97	9,461.4	166.9	23.9	1.10	108	57.9	13.8	9.3	2.2	30.8
1990	1997-98	9,733.0	171.7	25.0	1.20	109	63.1	15.8	7.4	1.9	37.0
1991	1998-99	12,615.5	222.6	30.6	1.43	138	67.9	20.8	6.4	2.0	38.6
1992	1999-00	14,099.7	248.8	33.0	1.53	150	80.0	26.4	6.5	2.2	35.6
1993	2000-01	13,473.0	237.7	29.1	1.20	140	67.4	19.6	7.0	2.0	46.8
1994	2001-02	16,402.5	289.4	29.4	1.25	167	65.3	19.2			

Note: blanks denote no data
^{a/} Including grants
Source: Education CSR based on GOE data

Public expenditures in Ethiopia have increased significantly over the last years.

382. In general, public expenditures have been increasing steadily in Ethiopia over the last few years with a sharp increase in 1999/2000. Total government expenditures increased by 91 percent in nominal terms and 70 percent in real terms from 1995 to 2002. (Figure 6.5) The average share of public expenditures to revenue has been at about 32 percent of GDP from EY 1988-1994 (1995-2002), placing Ethiopia among the SSA countries with the largest level of public spending. (Table 6.5a)

Figure 6.5: Total public expenditures from 1995-2002 (current and constant terms, 1995=100)

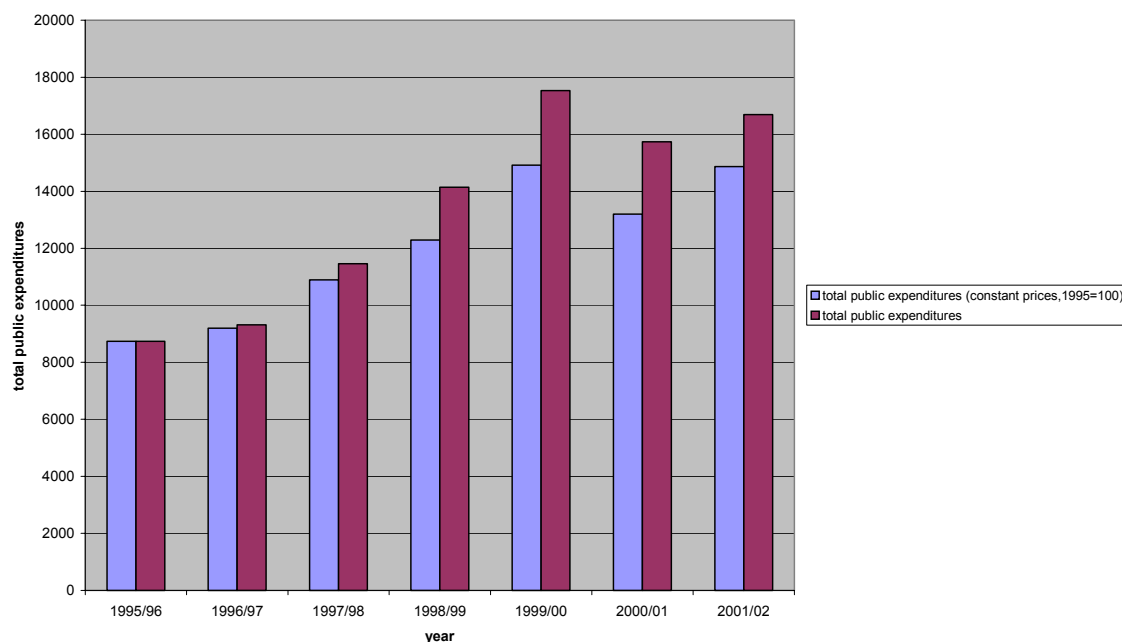


Table 6.5a: Public spending as a share of GDP in selected African countries

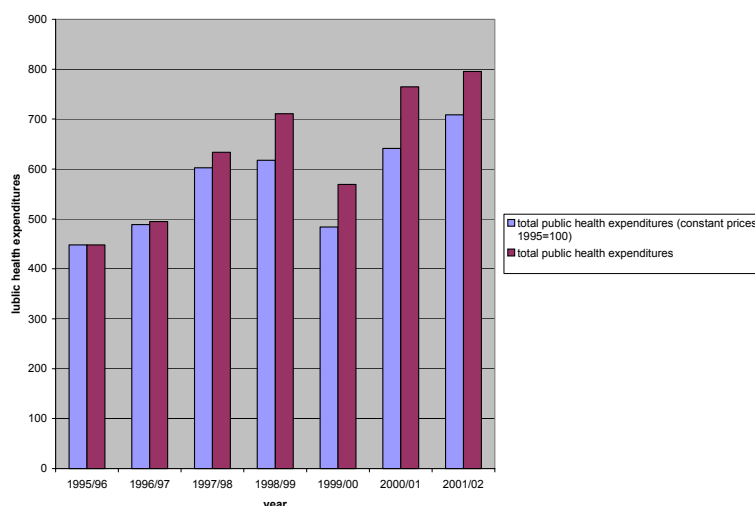
	GDP per capita	Public expenditures as a proportion of GDP
Ethiopia	99	32 percent (average from 1995-2002)
Malawi	165	25 percent
Tanzania	269	25 percent
South Africa	2,900	30 percent
Zambia	321	30 percent
Mauritania	350	23.1 percent (2000)
Cameroon	550	20 percent
Senegal	480	17.3 percent (1999)
Niger	180	
Mali	230	15 percent (2000)
Chad	200	8 percent (2000)
Guinea	410	11 percent (1999)

Source: WDI 2002, AFTHD CSR

Public spending on health has also increased but at a slightly slower pace than total public expenditures in recent years

383. In recent years, public spending on health has also increased albeit at a slower pace relative to total public expenditures. The public expenditures monitoring system captures a somewhat lower proportion of health spending than the NHA⁵⁹. Hence the monitoring system does not capture much of the spending by bilateral donors, which has increased significantly in the past years according to the National Health Account study. Nonetheless the system does show an increase in public health expenditures over time. Nominal public health expenditures increased significantly by almost 368 percent between 1991 and 2002, more than total public expenditures which increased by 228 percent during the same period. Real public health expenditures increased by 146 percent between 1990/91 and 2001/2002 while total public expenditures increased by 73 percent. *However, in recent years, this trend has changed, i.e. public spending on health increased by 80% between 1995 and 2002, lower than the 90 percent increase in total public spending during the same period. Moreover during the same period, real public health expenditures increased by only 58%, compared with the 70% increase in real total public expenditures (Figure 6.6).* Health expenditures per capita also increased by 49% over the period 1995-2002 when measured in Birr, and by 10% when measured in USD. From 1995/96 to 2001/02, public health expenditures increased from about US\$1.25 per capita in 1989 to \$1.38 in 2001/02 although it declined from its 1990/91 value of 1.59 (Table 6.6). In real terms, public health expenditures per capita in USD actually declined by 1.6 percent from 1995/96 to 2001/02; its decline from 1990/91 to 2001/02 was more significant at 54 percent.

Figure 6. 6: Total public health expenditures (current and constant prices)



⁵⁹ This may be due to underestimating some of the extra budgetary support to the public sector by the expenditures monitoring system.

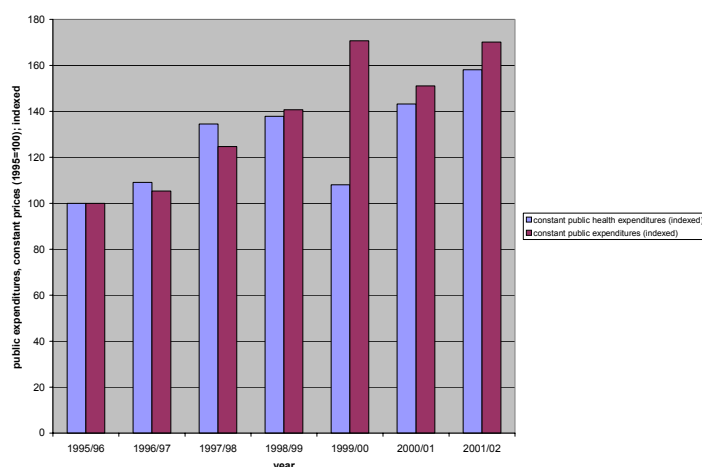
Table 6-6: Ethiopia. Health Expenditures in current and constant prices, per capita expenditures, EFY 1983, 1988-1994(1990/91, 1995-2002)

	EFY83 1990/91	EFY88 1995/96	EFY89 1996/97	EFY90 1997/98	EFY91 1998/99	1992 1999/2000	1993 2000/01	1994 2001/02	Var. 95- 02 (%)	Var. 90-02 (%)
Expenditures in millions of birr (current prices)	170	448	495	634	711	569	765	796	78	367.4
Expenditures in millions of birr (constant 1995 prices)	288	448	489	602	617	484	641	708	58	146
Expenditure in birr per capita (current prices)	3.29	7.95	8.51	10.58	11.52	8.96	11.71	11.85	49	260
Expenditure in USD per capita (current prices)	1.59	1.25	1.26	1.49	1.42	1.09	1.38	1.38	10	-13
Total Health Expenditures in USD per capita (constant 1995 prices)	2.6	1.25	1.24	1.42	1.23	0.93	1.16	1.23	-1.6	-54

Note: actuals for 1990, 1996-1999, pre-actuals for 1999/2000 and 2000/01
Source: PER data 2003 and SIMA 2002; author's calculations

384. As shown in Figure 6.7 which shows health and total public expenditures in constant 1995 prices that are further indexed to health and total public expenditures for 1995, real health expenditures grew more than real total public expenditures in 1995 and 1996. However, *total public expenditures outpaced public health expenditures from 1997 onwards especially in 1999/2000*. In 1999/2000, public health expenditures sharply declined while total public expenditures significantly increased possibly because of non-health related expenditures incurred in response to the Border Conflict between Ethiopia and Eritrea..

Figure 6. 7: Real Public Health and Total Public Expenditures indexed to 1995/96 expenditures



385. Public spending on health increased from about 0.9 percent of GDP in FY 1991 (EY 1983) to an average 1.5 percent of GDP between 1997 and 2002 (EY 1990-1994).⁶⁰ From 1990/91 to 1993/94, the public health expenditure share of total public expenditures increased from 3.1 percent to 5.2 percent. But it then remained fairly constant at around 5 percent from 1994/95 to 2000/01⁶¹. During the period 1995/96-20001/02, only an average of about 4.7 percent of public spending was allocated to health. (Table 6.7).

Table 6-7: Ethiopia—Share of public spending on Health—1990, 1995/2002 (percent GDP and percent of public spending), according to budget monitoring data

Public Health Expenditure	1990/91 EY1983	1995/97 EY1988	1996/97 EY 1989	1997/98 EY1990	1998/99 EY1991	1999/00 EY1992	2000/01 EY 1993	2001/02 EY 1994
Total health share of GDP	.88	1.18	1.22	1.47	1.5	1.09	1.47	1.5
Total public health share of total public expenditures	3.4	5.1	5.31	5.5	5.0	3.2	4.9	4.8

Source: 2000/01 and 2001/02 are pre-actuals. Based on MOFED data collected by PER (2003) team.

386. This places Ethiopia among the countries whose share of total government expenditures that go to health is among the lowest in SSA. The allocations made to health by Malawi, Tanzania, South Africa and Zambia are closer to 10 percent of public spending, a proportion twice as large as is Ethiopia's allocation.⁶²

Both capital and recurrent expenditures on health have increased although the rate of increase of capital expenditures is greater than recurrent expenditures from 1990-2002.

387. The increase in health spending is linked to an increase in both recurrent and capital expenditure. Capital expenditures increased by 553 percent over the period EFY83-94 (1990-2002) in nominal terms, and by 244 percent in real terms. The increase in recent years (1995-2002) has been substantially less at 128 percent in nominal terms and 102 percent in real terms. Average capital spending per capita remains low at about US\$ 0.45 from 1995-2002, peaking at US\$ 0.47 per capita in 2001/02 in nominal terms and US\$ 0.42 in real terms. (Table 6.8)

388. However, data on capital expenditure need to be interpreted with caution. First, all donor-funded operations (and many government-financed initiatives organized in the form of projects) are shown under the capital budget, resulting in the inclusion of some expenditures which may be used for financing recurrent expenditures such as drugs' consumption. Second, the capital budget does not include all project-related expenditure

⁶⁰ The only exception to this trend was during the period of the Ethiopia-Eritrea Border Conflict when public spending on health as a percentage of GDP dropped to 1.1. percent

⁶¹ Similarly to the rest of public health expenditure trends, it dropped to 3.2 percent in 1999/2000 because of the Border Conflict between Ethiopia and Eritrea.

⁶² Based on data presented in the PER 2003.

by donors. Third, aid-funded expenditures are systematically under-reported, even for those projects that are included in the budget documents (PER 2003).

Figure 6-7: Public recurrent and capital health expenditure trends (1990/91-2001/02)- current and constant prices



Source: PER (03) data, authors' calculations

389. Recurrent spending increased significantly by 307 percent and by 114 percent in real terms from EFY83-94 (1990-2002). Over the more recent period of EFY99-04 (1995-2002), it increased by a more modest 59 percent in nominal terms and 42 percent in real terms. Similar to capital expenditures per capita, the average annual recurrent spending per capita remains low at about US\$ 0.88 from 1995-2002, reaching US\$ 0.91 in 2001/02 in nominal terms and US\$ 0.81 in real terms. These figures are substantially lower than the average per capita recurrent expenditures of low income countries (US\$2.50). *The combined increase of both capital and recurrent expenditures is a positive development. However, it is not clear whether this increase has been sufficient to ensure that facility expansion is accompanied by needed material and human resource inputs to provide good quality health services.* Anecdotal evidence provided in the HSDP report of 2003 points out that some newly built facilities are still not functional due to lack of personnel to staff them.

Table 6-8: Ethiopia. Health Expenditures (recurrent and capital), in current and constant prices, per capita expenditures, EFY 1983; 1992-1994(1990/91, 1997-2002)

	EFY1983 1990/91	EFY88 1995/96	EFY89 1996/97	EFY90 1997/98	EFY91 1998/99	EFY92 1999/00	EFY93 2000/01	EFY94 2001/02	Var. 95-02 (%)	Var. 90-02 (%)
Expenditures in millions of Birr (current prices)										
Recurrent	128	328	341	390	459	402	468	522	59	307
<u>Capital</u>	<u>42</u>	<u>120</u>	<u>154</u>	<u>243</u>	<u>252</u>	<u>167</u>	<u>297</u>	<u>273</u>	128	<u>553</u>
Total	170	448	495	634	711	569	765	796	77.5	367
Expenditures in millions of Birr (constant 1995 prices)										
Recurrent	235	328	337	371	399	342	392	465	42	114
<u>Capital</u>	<u>76</u>	<u>120</u>	<u>152</u>	<u>231</u>	<u>218</u>	<u>142</u>	<u>249</u>	<u>243</u>	<u>102</u>	244
Total	311	448	489	602	617	484	641	708	73	146
Expenditures Birr per capita (current prices)										
Recurrent	2.48	5.82	5.87	6.52	7.44	6.33	7.16	7.78	34	214
<u>Capital</u>	<u>0.81</u>	<u>2.13</u>	<u>2.65</u>	<u>4.06</u>	<u>4.08</u>	<u>2.63</u>	<u>4.55</u>	<u>4.07</u>	<u>91</u>	<u>402</u>
Total	3.29	7.95	8.51	10.58	11.52	8.96	11.71	11.85	49	260
Expenditures in USD per capita (current prices)										
Recurrent	1.20	.92	.87	.92	.92	0.77	.85	.91	-1.08	-24
<u>Capital</u>	<u>0.39</u>	<u>.34</u>	<u>.39</u>	<u>.57</u>	<u>.50</u>	<u>0.32</u>	<u>.53</u>	<u>.47</u>	<u>38</u>	<u>20.5</u>
Total	1.59	1.25	1.26	1.49	1.42	1.09	1.38	1.38	10.4	13
Total Health Expenditures in USD per capita (constant 1995 prices)	2.68	1.25	1.24	1.42	1.23	0.93	1.16	1.23	-1.6	-54

Note: actuals for 1990, 1996-1999, pre-actuals for 1999/2000 and 2000/01;
Source: PER Data 2003 and SIMA 2002, author's calculations

390. Table 6.9 indicated that the recurrent spending share of GDP increased by 49 percent from 0.66 percent in EY 1983 (1990/91) to about 1.0 percent in EFY 1994 (2001/02). During most of this period, it fluctuated between either .8 or .9 percent of GDP.⁶³ From 1995/96 to 2001/02, the recurrent spending share of GDP increased by about 16.5 percent
391. Capital expenditures share of GDP increased by about 108 percent from 0.25 percent in EFY 1983 (1990/91) to about 0.52 percent of GDP in EY 1993 (2001/02). From 1995/96 to 2001/02 the capital spending share of GDP increased by 48 percent. It dropped to 0.3 of GDP in EY 1992 (1999/000) as a result of the Border Conflict but rose sharply to 0.57 of GDP in the following year (2000/01).

Table 6-9: Ethiopia—evolution of recurrent and capital expenditures on health –1990/91, 1995/2002 (percent of public spending and GDP)

Public Health Expenditure	EFY1983 1990/91	EFY88 1995/96	EFY89 1996/97	EFY90 1997/98	EFY91 1998/99	EFY92 1999/00	EFY93 2000/01	EFY94 2001/02	Var. 95-02 (%)	Var. 90-02 (%)
Capital share of total public capital expenditures	2.9	3.8	4.3	5.7	7.0	4.3	5.6	4.5	17.4	53.4
Capital of total public expenditures	0.82	1.37	1.65	2.12	1.77	0.95	1.88	1.63	19.3	98.9
Capita share of GDP	0.25	0.35	0.40	0.58	0.56	0.32	0.57	0.52	48.5	116
Recurrent share of total public recurrent expenditures	0.9	0.6	0.58	0.47	0.32	0.24	0.32	0.32	(47.09)	(65.4)
Recurrent share of total public expenditures	2.5	3.7	3.66	3.4	3.24	2.29	2.97	3.13	(16.6)	23.8
Recurrent share of GDP	0.7	0.86	0.82	0.87	0.94	0.77	0.9	1.0	16.5	49

Note: 2000/01 AND 2001/02 are pre-actuals ;

Source: authors' calculations based on MOFED data collected by PER (2003) team and SIMA 2002

Allocation of Public Expenditures across inputs has been stable with a slight increase in the share allocated to wages

392. *The public expenditure review conducted in 2003 shows a relatively stable distribution of public spending over time (table 6.10) Wages and salaries represent the largest item of public spending. Between 1996 and 2001 salaries, on average, wages represented about 53.05 percent of recurrent expenditures and medical supplies and equipment amounted to 19 percent. Between 1996/97 and 2000/01, there has been a progressive shift in spending composition, with an increase in the percentage allotted to salaries and a corresponding decline in materials and supplies, operations and maintenance, grants, contributions and*

⁶³ It also declined to its 1983 level (0.7 percent) during the Border Conflict (1999/2000).

transfers. As a result, in 2000/01, approximately 61 percent of the recurrent budget pays for salaries compared to about 52 percent in 1996/97. About 26 percent goes to medical materials and supplies including medical supplies and equipment (about 16 percent) in 2000/01, lower than their 1996/97 shares of 31 percent and 20 percent, respectively. (See Figures 6.7 and 6.8).

Table 6-10: Ethiopia: Composition of Recurrent Expenditures, EF 1989-1994 (1996/97-2001/02)

	ETB thousands						Share (%) 1993 (2000/01)	Average 1996-2001
	Share (%) EF1989 1996/97	EY1989 (1996/97)	EY1990 (1997/98)	EY1991 (1998/99)	EY1992 (1999/00)	EY1993 (2000/01)		
By Inputs								
Wages and Salaries	51.6	190,023	213,010	235,106	234,658	282,854	60.5	53.05
Operation and Maintenance	8.0	29,439	31,947	80,481	61,972	34,318	7.3	10.6
Materials and Supplies	31.2	114,685	138,767	154,854	101,932	120,739	25.8	29.0
Medical Supplies and Equipment	20.0	73,721	96,043	107,394	61,344	76,847	16.4	19.0
Petrol and Lubricants	1.5	5,374	7,146	8,477	6,789	7,991	1.7	1.6
Other Materials and Supplies	9.7	35,590	35,577	38,983	33,799	35,902	7.7	8.3
Grants, Contributions, Other Transfers	8.0	29,260	17,684	33,036	27,561	23,772	5.1	6.0
Motor Vehicles & Equipment	1.3	4,625	6,213	5,627	3,007	5,705	1.2	1.1
By Function								
Administration	17.9	65,977	90,863	167,547	131,683	95,984	20.5	24.83
Health Centers and Clinics	30.2	111,229	118,022	121,775	106,747	142,186	30.4	27.6
Hospitals	37.7	138,729	157,032	172,561	144,791	177,854	38.1	36.3
Other	14.2	52,099	41,704	47,221	45,909	51,364	11.0	11.07
By Government Level								
Regional	82	301,761	332,626	404,590	351,177	408,672	87.4	82.5
Federal	18	66,273	74,994	104,514	77,953	58,716	12.6	17.5
Federal Share (%)		18.0	18.4	20.5	18.2	12.6		
Total Recurrent Expenditures		368,033	407,621	509,104	429,130	467,387	100.0	

Source: actuals for 1996-1999, pre-actuals for 1999/2000 and 2000/01; PER 2003 based on MOFED data; authors' calculations

393. National level funding has also increased for medicines from Birr 60 million in EY89 (1997/98) to Birr 245 million in EY94 (2001/02) (Table 6.11). Domestic revenue financed a significant percentage of that increase, from 60 million birr in EFY89 (100 percent of drug spending that year to 104 million birr in EFY 1994 (accounting for 40 percent of drug spending that year). The remaining 141 million birr in 1994 were financed through IDA funds and donations to the Pharmaceutical Administration and Supply Services (PASS).⁶⁴ Per capita expenditures on drugs, however, is still significantly lower (US\$ 0.44) than the HSDP target of US\$1.25 .

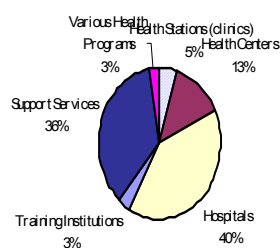
⁶⁴ Based on HSDPI Evaluation Report 2003. As noted in previous sections, the total amount spent on drugs is underestimated because there are donor funds that are not accounted for because they pass through other channels.

Table 6-11: Ethiopia: Data on Budget and Expenditure for Procurement of Drugs and Medical Supplies in the Public Health Sector, EFY 1989-1994 (1997-2002)

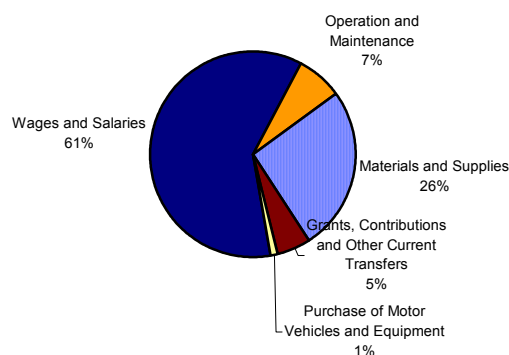
Source	1996/97 EFY1989	1997/98 EFY1990	1998/99 EFY1991	1999/2000 EFY1992	2000/01 EFY1993	2001/02 EFY1994	Share in EFY 1994
GOE drug budget (birr million)	60	65	85	70	82.5	104	40%
GOE drug budget (% of total health budget)	17%	17%	18%	17%	18%	19%	19%
IDA expenditure on pharmaceuticals and medical equipment (birr million)	0	0	0	37.8	45.5	47.7	19%
Donations through PASS (birr million)				N/A	98.5	93.2	36%
Vaccines	20.2	11.2	10.7	20	15.6	13	5%
Public per capita exp on drugs (Birr)	1.4	1.3	1.6	2.0	3.7	3.8	
Public per capita exp on drugs (US\$)					0.44	0.44 *	

Source: HSPD1 evaluation 2003. *Note: This amount is just 35 percent of HSDP target for EFY 1994 (2001/02) of US\$ 1.25

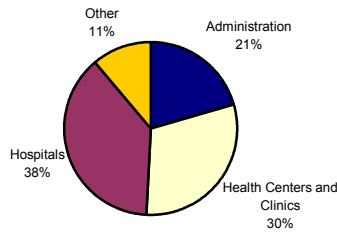
Figure 6-8: Capital Expenditures by Functional/Service Levels, 1999-2000



Recurrent Expenditure across line items, 2000/01



Recurrent Expenditures By Service/Functional Levels, 2000/01



source: PER 2003

Public expenditures have constantly favored hospital programs

394. *A large share of public money has been allocated to hospital care year after year compared to lower levels of care.* In EFY93 (2000/01), the government spent 178 million birr on recurrent expenditure in the country's eighty public hospitals; while it spent only 142 million birr at the primary health care level. Similar to recurrent expenditures, overall capital expenditures are also skewed towards investments in hospitals, with about 61 million birr spent on hospitals in EFY92 (1999/00) compared to only 26 million birr for primary care facilities. (See table 6.12 and Figure 6.7).
395. *On the other hand, funding of basic immunization services appears to have declined over the last five years.* Funds for vaccines was reported to be Birr 20 million or less than 7 percent of government recurrent health expenditures) in EFY89 (1997/98) and except for EY92 has been lower in every year since. In EFY94 (2001/02), expenditures on vaccines was only Birr 13 million, representing less than 3 percent of the government's recurrent health expenditure. It is possible that vaccines financed by external agencies in the capital budget have to some extent substituted for domestic funding, but the available data make it difficult to draw conclusions (PER 2003). The non-availability of funds for fuel and per diems was frequently cited during visits to some health centers and health posts, as the major constraint in reaching more children with vaccines (HSDP 2003). In 2001, for example, several activities (e.g. training, outreach, social mobilization, maintenance) had to be postponed or cancelled. In order to partly address this issue, the central government approved a budget line for EPI in the MOH accounts beginning 2002. This is expected to provide a basis for tracking expenditures, analyzing trends, and advocating for more funds. Three areas that would require special attention would be: reporting against budgets, budget development based on a realistic assessment of available resources, and the financial sustainability of future program strategies (Candries and Stevenson, 2002).

Table 6-12: Ethiopia: Composition of Capital Expenditures, EF 1989-1994 (1996-2001), ETB thousands

	EFY19890 (1996/97)	EFY1990 (1997/98)	EFY1991 (1998/99)	EFY1992 (1999/00)	EFY1993 (2000/01)	Share EFY1992 (1999/00)	Average 1996-2000
By Function							
Health Stations (clinics)	36057	54425	36524	7032	n.a.	4.7%	13.2
Health Centers	80331	65859	36636	19490	n.a.	13.0%	21.1
Hospitals	73478	93079	76763	60672	n.a.	40.6%	38.2
Training Institutions	9601	8051	3211	4811	n.a.	3.2%	3.1
Support Services	21180	19343	14660	53241	n.a.	35.6%	19.2
Various Health Programs	22654	10822	11464	4292	n.a.	2.9%	5.1
By Government Level							
Regional	224101	238851	174242	147410	n.a.		
Federal	19199	12727	5015	2128	n.a.		
Federal Share (%)	8	5	2.8	1.4			
Total Capital Expenditures	243,300	251,158	179,257	149,538			

Source: PER 2003

396. *This pattern of higher spending on tertiary and secondary health care (about 40 percent) than primary care is often found worldwide. The Ethiopian case is not the most extreme; many countries spend sixty percent and more on hospital care.* Given that most of the diseases that impose a heavy disease burden on Ethiopians are those that can be prevented or treated on an outpatient basis through primary health care facilities, it is likely that additional resources channeled to PHC will have a larger impact on health outcomes than at hospital level care. The Government's budgets since EFY1994 (2001/02) have projected a shift in emphasis toward primary level care. It will be useful to monitor whether future actual expenditures reflect the shift in budget emphasis towards primary care and to the recently established Health Extension Program.

Decentralization to the regions has deepened but challenges remain regarding budget execution and in improving health outputs and outcomes

397. The public expenditures review also confirms the trend towards decentralization. The share of public funds spent in the regions has increased overtime relative to the share at central level. Regional recurrent shares have increased from 82% in 1996/97 to 87.4% in 2000/01. Regional capital expenditure shares have also increased from 92.1% to 98.6% by 1999/2000.

398. The MOH/PPD data indicate an almost similar proportion of federal to regional shares in terms of recurrent expenditures, with the Federal level receiving 12 % of the recurrent spending budget and spending 15 percent of total recurrent expenditures. However, it is interesting to note that while the Federal share of capital expenditures is about 5 percent (Birr 55.7 million out of Birr 466 million) of the total capital budget, its actual share in terms of capital expenditures is 69 percent (Birr 210M of Birr 305 M) in 2000/01. It would be important to verify if this is just a typographical error or if not, what is the rationale for the Federal MOH to spend substantially beyond its capital budget allocation.

Spending rates are low in all regions justifying the reluctance of the Government to increase public funding for health

399. *Budget execution* is also very much a problem. Based on table 6.13 none of the regions fully spends its budget. In fact, MOH/PPD data indicate that only about 41 percent of regional budgets (ranging from 26 percent in Somali to slightly over 54 percent in Afar and Tigray) were spent in 2000/01. HSDP data show slightly better execution rates (Table 6.14), with some regions such as Addis, Amhara, and Gambella rates spending at least 92 percent of their respective budgets in EFY 1994 (2001/02). A few regions such as Oromia, Afar, and Tigray have either exceeded their budgets or fully spent them in some years from 1996/97 to 2001/02. However, these are exceptions.
400. The possible causes of underspending have been identified and these include donor requirements which can delay disbursements of funds and the need to improve the capacity for program planning/budgeting and management at the regional, zonal, and woreda levels. There is also the need to adequately orient zonal and woreda stakeholders to health sector development goals. This point is discussed more in chapter 5, as well as in the decentralization section of this chapter.

Table 6-13: Regional Health Budget, Expenditures (in Birr 000) and Budget Execution Rates for 2000/01

Region	Budget	Expenditure	% Expenditure/Budget
Addis	115,660	56,550	48.9
Harari	17,230	7,440	43.2
Dire Dawa	16,090	6,110	37.9
Gambilla	27,070	9,790	36.2
Ben-Gumuz	33,490	12,130	36.2
Tigray	93,320	52,240	55.9
Oromia	298,190	133,870	44.9
SNN	219,560	69,830	31.8
Amhara	193,300	81,900	42.4
Afar	41,830	22,710	54.3
Somali	69,180	17,980	26
Total	1,124,920	470,550	41.8%

Source: PPD/MOH. Health and Health Related Indicators. 2000/01.
 Note: Regions ranked from most developed (Addis) to least developed (Somali) based on GOE development index (explained in Annex 5.1)

Table 6-14: Budget Execution Rates by Region EFY 1989 to 1994 (1996/97-2001/02)

Expenditure/Allocation (%)						
Region	EY1989 1996/97	EY1990 1997/98	EY1991 1998/99	EY1992 1999/00	EY1993 2000/01	ET1994 2001/02
National	87	81	75	65	48	64
Addis Ababa	83	72	75	40	48	92
Afar	57	39	75	111	38	50
Amhara	78	84	62	65	43	95
Benshangul-Gumuz	83	48	91	63	58	84
Dire Dawa	70	69	87	79	43	73
Gambella	77	39	66	95	40	98
Harare	90	67	78	53	52	n.a.
Oromia	100	91	90	57	55	54
SNNPR	84	70	69	61	35	n.a.
Somali	90	60	52	62	46	30
Tigray	76	99	91	133	67	88

Source: HDSP I Evaluation 2003

Regional expenditures vary widely

401. In 2000/01, per capita expenditures across regions range from Birr 4.7 (US\$ 0.55) in Somali to Birr 45.3 (US\$ 5.3) in Gambella. The high spending rates in Benishangul-Gumuz, Gambella and Harari could be because these are small, less populated regions that have high administrative overhead costs.
402. Expenditures per capita in the three urban regions (Addis Ababa, Dire Dawa, Harari) are also relatively high because these regions have a relatively larger number of hospitals and serve as referral points for service seekers from other regions. Per capita expenditures in Addis while high relative to a number of regions, seem relatively lower than expected given its income and level of development. However, this could also be a function of its proximity to central level facilities and therefore the less pressing need to spend on facilities and their operating costs.
403. The most populated regions such as Amhara, SNNPR, and Oromia also have relatively lower per capita health expenditures. Among those highly populated-yet rural- regions however, Tigray stands out as the regions that allocates the most on health on a per capita basis (table 6.14).

Table 6-15: Regional Health Budget, Expenditures (in Birr 000) , and per Capita Expenditures 2000/01

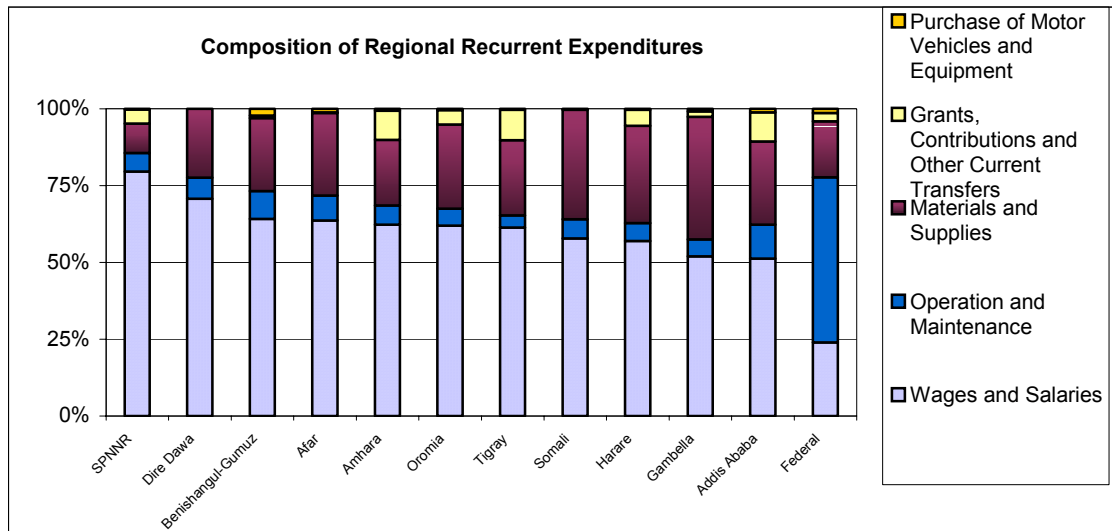
Region	Budget	Expenditure	Per Capita expenditures
Addis	115,660	56,550	18.5
Harari	17,230	7,440	44.8
Dire Dawa	16,090	6,110	18.5
Gambella	27,070	9,790	45.3
Ben-Gumuz	33,490	12,130	22
Tigray	93,320	52,240	13.8
Oromia	298,190	133,870	5.8
SNNP	219,560	69,830	5.4
Amhara	193,300	81,900	4.9
Afar	41,830	22,710	18.3
Somali	69,180	17,980	4.7
Total	1,124,920	470,550	

Source: PPD/MOH. Health and Health Related Indicators. 2000/01.
Note: Regions ranked from most developed (Addis) to least developed (Somali) based on GOE development index (explained in Annex 5.1)

404. Similar expenditure patterns are observed in EFY 1994 (2001/02). Per capita expenditures increased, amounts ranging from Birr 6 and Birr 7 per capita in Amhara, Oromiya and SNNPR, to more than 20 birr in Addis Ababa, Dire Dawa, and Benishangul-Gumuz, and over 50 birr in Gambella and Harari (PER 2003).
405. *Regional differences also exist with regard to their allocation of recurrent expenditures across line items/inputs.* For example, expenditure shares of materials and supplies range from a low 9 percent in SNNP to about 40 percent in Gambella. Expenditure shares for operations maintenance is also low, ranging from 4 percent in Somali to 11 percent in Addis.⁶⁵ However, the percentage of the total expenditures allocated to wages remain high across regions, ranging from 51 percent in Addis and Gambella to 79 percent in SNNP. In the larger regions (Tigray, Amhara, Oromiya, and SNNPR) 21-39% of total spending was devoted to facility construction and/or rehabilitation while less than 3% was spend on HRD and 30-44% was spent on operating expenditures. (Figure 6.8)

⁶⁵ It has been noted that many external agencies finance drugs and supplies via the capital budget. This could explain the regional variations. .

Figure 6-9: Ethiopia: Composition of Regional Recurrent Expenditures (2000/01)



Source: PER 2003

Tigray seems successful in translating public health expenditures into results

406. Table 6.15 provides average per capita spending in the sector by region from 1997-2002 in relation to selected indicators from 1997-2002. Similar to the expenditure patterns observed above for 2000/01 and 2001/02, spending has been highest in Benishangul-Gumuz, Gambella, as well as Harari, Dire Dawa and Addis Ababa. On the other hand, expenditure per capita is relatively low in Somali and the three largest regions (Oromia, Amhara and SNNP). All regions⁶⁶ have improved their Potential Health Service (PHS) coverage, indicating an increase in infrastructure/facilities.
407. *However, in many cases the increase in potential health service coverage did not translate into actual increases in services, i.e., immunization coverage or an increase in attended deliveries. In fact, the national immunization coverage declined by 31 percent while the national average for attended deliveries declined slightly. Comparing immunization and attended delivery indicators to per capita spending, those regions that spent more did not necessarily improve their health performance. For example immunization coverage in Benshangul and Harari declined, while attended births only marginally increased for both regions as well as for Gambella. The three largest regions (except Tigray) display similar low level of performance with only Birr 6-7 per capita of public funds to finance their health services.*
408. Tigray and Afar also both have per capita spending that are greater than the national average and more than double that of the large regions (Amhara, Oromia, SNNPR). But despite higher levels of spending declined Afar's already low EPI coverage declined

⁶⁶ Addis did not have its PHS figure

from 12 to 4 percent while its attended deliveries coverage increased marginally to 2.8 percent which was below the national average of 9.7 percent. (HSDPI evaluation 2003). Tigray appears more successful in translating resources into high impact health interventions. Its immunization coverage increased and is significantly higher than the national average. The coverage of pregnant women with attended deliveries coverage is the third highest among all the regions. Tigray has the highest frontline worker-to-population ratio among all the regions. It also has strong community-based organizations. In Tigray, staffing and equipment are determined based on the location of a facility, e.g. more surgery related staff in remote health centers than urban ones.

Table 6-16: Relation Between Average per Capita Spending (in Birr) by Region, EFY1990-1994 (1997/98 to 2001/02) and some selected Coverage Indicators at Baseline (EFY 1989, 1996/97) and in EFY 1994 (2001/02, end HSDP I)

Regions	Ave. per capita Spending (1997-02)	PHS* coverage		EPI coverage		Attended delivery	
		1996/97	2001/02	1996/97	2001/02	1997/98	2001/02
National average	10.9	52	61	67	46	10	9.7
Emerging Regions							
Afar	15.0	52	74	12	4	1.0	2.8
Somali	7.4	31	37	NA	3	3.2	5.4
Gambela	52.8	191	286	21	29	13.0	13.8
Benishangul-G	34.3	151	197	35	21	8.2	8.6
Large Regions							
Tigray	17.6	59	76	68	77	30.6	26.6
Amhara	6.2	46	53	63	59	6.0	8.0
Oromia	6.5	51	57	40	44	7.1	7.5
SNNPR	6.6	49	60	34	31	8	7.3
City Councils							
Addis Ababa	20.4	NA	NA	73	65	43	33
Dire Dawa	21.7	48	113	47	41	22.3	21.5
Harari	58.9	72	157	63	55	33	38

Source: HSDPI evaluation 2003

*Note: would have been better to have also disaggregated data between per cap spending in EFY1990 (1997/98) and EFY 1994(2001/02) instead of getting averages especially since we are comparing changes in coverage rates and not average coverage rates.

More goes into actual capital spending than government's Health Sector Development Plan had anticipated

409. The Health Sector Development Program (HSDP) review underscores the disparities between the actual composition of expenditures during HSDP implementation and the HSDP plan. *In six regions for which a complete set of data was available for EY1990 to 1993 (1997-2001), actual spending on rehabilitation and expansion of health facilities was significantly higher than planned for in the HSDP.* In three regions: Tigray (41%), Amhara (26%), SNNPR (40%) capital spending was significantly higher than planned HSDP expenditures by about 18%, 17%, and 33% respectively. On the other hand, expenditures on Human Resource Development, Pharmaceuticals, and Health Service Delivery and Quality of Care have been relatively low in all these regions.
410. The need to achieve an adequate balance between expansion and maintaining acceptable delivery standards has been discussed extensively during both the HSDP Mid-term Review and the Overall Review (2003). *Coverage levels in Ethiopia remain low and*

given the needs of the population, the expansion targets are not overly ambitious. Yet it would be important to ensure that the recurrent budget would be adequate to keep up with facility expansion.

411. Discussions with RHB staff during field visits indicate that *two factors have contributed most significantly to the financing of HSDP I outside of the intra-sectoral priorities set out in the Program*: (i) HSDP's inadequate integration with the planning and budgeting processes;⁶⁷ and, (ii) a system of costing of expenditures that is based on historical expenditure trends rather than strategic directions outlined in the HSDP (HSDP evaluation 2003).
412. *Given the limited available resources it may be necessary to think of more efficient ways of delivering health services.* For example further construction of health posts need to be accompanied by parallel training of health workers in order to adequately staff these facilities. In doing this it is necessary to re-examine the nature of services that are offered in order to make them more responsive to the needs and demand of the population. In this regard, the health extension/community outreach program is a welcome complement to the facility-based services that have been traditionally offered by the public health system.

Donor funding has been flowing through extra-budgetary channels and are difficult to capture

413. From 1997-2001 health received a yearly average of US\$ 57 million or 9.5 % of the total aid available to the sectors (table 6.16). Meanwhile agriculture had the highest share of annual aid at 16.2 percent (US\$ 85 million). External assistance reaches the Government system along three channels. Loans are included in the budget and in the accounts. Most budget support non-earmarked grants and some other grant funds are included in the budget. This is usually done on the basis of commitments presented by donors during budget preparation that are often not reflected in the government account. An unknown amount of donor funds are provided in kind. These resources are usually not captured in the budget process. All external technical assistance, direct procurement of pharmaceuticals, transport and equipment for hospitals provided by donors directly are examples of off-budget donor assistance. (HSDP evaluation, 2003).⁶⁸

⁶⁷ The health budget has been developed using four separate processes: recurrent budget, capital budget financed through treasury resources, capital budget financed through loans and external assistance, and off-budget resources. It has been difficult to relate annual HSDP outputs and budgets with these three processes, especially since the budget process has generally been done one based more on incremental increases based on historical requirements rather than having sufficient analysis of resource requirements. The overall FDRE budget process is also usually based on a one-year time frame while HSDP is planned over a five-year period (HSDP Review

2003).

⁶⁸ Note however that this information excludes a number of sector-specific aid operations that are financed off-budget, and/or incompletely reported

Table 6-17: Ethiopia: Sectoral Distribution of Aid – Average 1997-2001 ,and Most Recent Year

	Average 1997-2001 (US\$ millions)		2002 (est.) (US\$ millions)	
	Value	Percentage	Value	Percentage
Agriculture & Natural Resources	85	16.2%	81	8.1%
Transport	80	15.2%	148	14.9%
Multi-sector & Area Development	64	12.2%	114	11.5%
Health	57	10.9%	109	11.0%
'Economic Management' (Primarily Budget Support)	55	10.5%	291	29.2%
Education	51	9.7%	71	7.1%
Energy & Other Infrastructure	50	9.5%	57	5.7%
Social Development	50	9.5%	72	7.2%
Misc. & Unspecified	33	6.2%	52	5.2%
Sub-Total	525		995	
Source: UNDP Development Cooperation Report 2002 cited in PER 2003				

414. Off-budget provides resources that enable donors and recipients to avoid the government's financial procedures –often considered cumbersome—as well as the regional off-set (HSDP evaluation 2003). They are often difficult to track however. For example, the government has only partial information on the actual level of spending as the public spending on medicines is largely done by aid. As a result it affects the GOE's ability to accurately determine whether it is allocating too much, or too little, of its own budget for a specific item or budget category. It also affects the ability of regional and woreda level officials to fully plan and assess how much is actually available and/or being spent. Off-budget donor supported programs have also not been taken into consideration in the planning process for future recurrent cost. Finally, having an incomplete expenditure and budget information also affects the assessment of health sector performance because it affects various indicators for analysis such as expenditure per capita (HSDP evaluation 2003 and PER 2003).

Cost recovery represents a small share of expenditures in the public health system

415. Cost recovery has been part of the Ethiopia's health system since the early 1950s. At both government and non-government facilities, users pay for registration, medical certificates, diagnosis, dental, and ophthalmologic services.⁶⁹ Nominal amounts are charged ranging from small fees (Birr 1 to 5) for outpatient registrations, consultations, laboratory tests, and other routine diagnostic procedures, and inpatient beds, to higher fees (Birr 10 and above) for prescription drugs and inpatient surgical procedures.
416. Patients can be exempted if they obtain a free paper from their *kebele* certifying that they are too poor to pay. Certain services are also free: treatment of Tuberculosis, family planning, and childhood immunization. Criteria for granting free health care services is mainly based on the direct monthly income of the individual and this criterion has changed from time to time. Currently anyone with a monthly income of less than Birr 105 would be eligible (MOH/HCF/2001). As a consequence the majority of patients visiting government facilities pay nothing.

⁶⁹ PHRD Health Sector Synthesis Report 1996

417. No changes were made to this policy until 1998, with the initiation of the new Health Care and Financing Strategy. When originally introduced fees recovered a substantial portion of the total costs of providing the services. But the level of fees remained unchanged for almost 50 years and today it has become almost symbolic. A fee waiver and exemption survey conducted by the FMOH indicates that about 66% of users obtained exemptions (FMOH 2003). As a proportion of GOE health expenditures, fee remittances to the MOF have declined from 16% in 1986 to less than 6% in 1995/97.

Table 6-18: Proportion of Free patients to total Patients and Estimated Foregone Revenue by health facility

Type of Health Facilities	Total Number of patients	Percentage of Waived Patients	Revenue Foregone (000 Birr)
Hospitals at zones	139,648	73	616.9
Hospitals at the regional capital	143,874	73	967.1
Subtotal	283,522	73	1,584.1
Health Centers at zones	163,501	51	176.6
Health centers at regional capital	128,517	71	1,240.8
Sub total	292,018	60	1,417.4
Grand Total	575,540	66	3,001.6

Source: FMOH 2003. Fee Waiver and Exemption Study cited in ESHE/HCF 2003

418. Fees represent small amounts but in addition they are not reinvested to improve services. Those fees are usually not kept at facility level and thus are not reinvested to improve services at the point of delivery. With the exception of special pharmacies and some hospitals in SNNPR, all fees collected are remitted to Regional Finance Bureaus who forward them to the MOF and are accounted for as general government revenues.
419. In terms of insurance mechanisms, there was only one state owned insurance company that covers 11,000 workers and operates in conjunction with workmen's compensation programs in 1996 (PHRD health sector synthesis report 1996). At present, aside from the government-owned insurance company, there are seven additional private insurance companies in Ethiopia (NBE 2000).

(see a more detailed discussion of out-of pocket spending in chapter 4).

The poorest benefit little from public spending although utilization of services are also low across all income quintiles

420. Table 6 shows the use of public health facilities by wealth quintile (DHS, WMS 2000). The richest to poorest ratios in terms of utilization are lowest for health posts and health stations/clinics (0.2 and 0.5), slightly higher for health centers, and highest for hospitals (about 6). On the other hand, the largest shares of public capital and recurrent expenditures are allocated towards hospitals (approximately 40 percent and 38 percent,

respectively) in 2000/01. Based on latest available data⁷⁰, the capital expenditure shares for health stations/clinics was only about 5.0 percent in 1999/2000 and, perhaps, this relatively low figure is a result of the FMOH's decision to phase out health stations as part of the move from the 6-tier system of health service delivery to the 4-tier system. However, health centers also represent a low percentage share of total public capital expenditures at 13 percent for 1999/2000. The combined share of PHCUs (health centers, clinics, and health posts) in terms of public recurrent expenditures is about 30 percent in 2000/01-- lower than public recurrent expenditures allocated to hospitals (38 percent). Various health programs only represented a very small share of total capital expenditures at 2.9 percent in 2000/01 and a fraction of recurrent expenditures.⁷¹

421. There are marked differentials by income quintile across households in the use of basic health services. The poorest households consistently have the lowest utilization rates for immunization, assisted deliveries, and antenatal care by a trained professional. The richest to poorest ratio (27) is highest for the use of assisted deliveries. About 24 percent of women in the richest households have had an assisted delivery compared with less than 1 percent of women in the poorest households. Nonetheless ***it is also important to note that while income differentials with regard to access are high, absolute levels of use are still low even among the richest households.*** There is a clear need for access to basic health services to young children and mothers to be improved in Ethiopia, while some incremental increase could result from allocating a larger proportion of expenditures from hospitals to PHC, over-all public health expenditures would need to be increased to improve the quality and accessibility of health facilities at all levels.

⁷⁰ Recurrent expenditure data were available for 2000/01 but capital expenditure data was only available for 1999/2000. .

⁷¹ The recurrent share of various programs is not as easy to calculate because it has been combined under an "others" category which has a total share of 11 percent of recurrent spending

Table 6-19: Use of health facilities and services: national data, per quintile

	Q1	Q2	Q3	Q4	Q5	Richest to Poorest Ratio
% Use of health posts (WMS)*	4.8	5.1	10.0	5.2	0.9	.2
% Use of health stations (WMS)	49.5	53.3	44.5	45.9	26.2	.5
% Use of health centers (WMS)	26.3	20.3	23.4	28.5	41.9	1.6
Hospitals (WMS)	3.2	5.2	6.7	4.9	18.4	5.7
Use of immunization, all vaccinations received (DHS00)	6.7	5.6	15.4	15.1	33.3	4.9
Use of assisted deliveries (DHS00)	0.9	1.5	1.4	4.8	24.3	27
Use of antenatal care by trained professional (DHS00)	15.3	16.4	20.6	28.7	58.2	3.8
Source: WMS, PER03, DHS2003						

Woreda Decentralization: preliminary experiences and issues

422. Experiences related to decentralization at the woreda level are still relatively limited. Based on the available information, some transitional issues have emerged as a result of the rapid decentralization which commenced in July 2002. These issues are mostly related to rebalancing allocations, lack of clarity on responsibilities and expenditure assignments, and budget formulation and reporting.
423. *The block grants were mainly based on a population-based formula and did not necessarily correspond to existing obligations.* For example, more developed woredas have large numbers of facilities such as schools and health facilities and administrative staff per capita; in these cases the block grant was insufficient to cover their operating costs particularly their wage bill. On the other hand, less developed woredas have fewer facilities, tend to have a number of empty positions due to difficulty in attracting staff, and therefore less existing recurrent costs. According to the PER (2003) these issues are being addressed pragmatically by the regions through “rebalancing as well as certain ad hoc arrangements and contingency funds”. However, in many cases the transfers are only able to cover recurrent expenditures, mainly salaries, therefore increasing the risk of unfunded mandates especially in cases of service coverage expansion. For example, in Oromia, it is indicated that the block grant allocated for woredas is small to handle the resource needs of the various sectors. This shortage of resources if not given serious consideration could hinder the achievement of the MDGs (Okubagzhi HSDP trip report, 2003).
424. *The woredas also face capacity constraints that may increase the gap between budgets and actual spending.* MOFED data indicate that budget execution was only 80% in 2000/01, mainly because of lags in capital spending (PER 2003). HSDP I evaluation data show that half of the regions have budget execution rates below 70% while MOH/PDD statistics for 2000/01 paint a grimmer picture with the average execution rate for all regions at 41 percent. Problems in planning and implementing investment plans, and difficulties in utilizing donor funds are cited as the main reasons for low execution.

Capacity constraints can also exacerbate reporting lags. Prior to woreda decentralization, there were already significant delays in reporting on sectoral allocation of budgets, and on actual expenditures. For example, even by 2003, reporting on actual expenditures by program and sub-item are only available for 1999/2000 – a lag of three years. Thus, efforts would need to be made to improve partial reporting (PER 2003).

425. The costs of the additional staffing and infrastructure in order to strengthen the capacity of woredas to manage their new responsibilities could be substantial. While the need for institutional strengthening is expected and understandable, there is a risk that this might be at the expense of the recurrent costs of essential services such as education or health care (PER 2003).
426. One other issue that would need to be addressed is how to ensure that national goals are achieved within the context of decentralization to the woredas. Adequate sensitization of woreda stakeholders to the importance of achieving these goals would need to be undertaken. This becomes particularly important based on the HSDP I evaluation (2003) which notes that both zonal and woreda level stakeholders were not well informed about HSDP goals. Moreover capacity building activities in terms of planning, budgeting, and monitoring/supervision would need to be provided to woreda administrators. In moving forward it would be important to ensure that sectoral priorities are achieved, particularly in terms of achieving the MDGs. In this regard, some benchmarks can be set in terms of key performance indicators with incentives for achieving them. The SNNP region has moved forward in this aspect by having performance contracts based on a set of core indicators with its woreda councils (CSR February 2004 mission). Future budgets for the woredas as well as pay increases for the woreda council members are linked with how well their woreda performs in terms of these key indicators. It would be important to learn from this experience and identify other actions being taken by other regions.

Box 6-1: Examples of Early Experiences of Block Grants

In **Oromiya**, about 58 percent of the regional budget was transferred as block grants. It is estimated that 38 percent of expenditure at the woreda level was covered by own-revenue, and the balance by the block grant. After applying the formula about 35 large woredas received insufficient resources. A combination of reallocation and contingency funds was used to address the financing gap. The Region maintained considerable control of capital spending.

Tigray, Zones were dissolved. There are currently two types of local government authority: (1) woredas with responsibility for primary and secondary health and education, rural water supply, local roads, and agricultural extension and (2) urban authorities, with the same functions as woredas, plus traditional local government functions such as street lighting, waste removal, etc. The block grant represents about 55 percent of Regional spending. The Region provided budget guidelines to the woredas, suggesting 15 percent capital, and 85 percent recurrent spending; 61 percent for health and education, 26 percent rural development, and 13 percent administration and justice. Additional transfer mechanisms were introduced alongside the block grant to compensate for imbalances, including a rural hardship allowance, contingency fund, and sectoral capital grants (for health and education, to cover on-going projects).

In **SNNPR**, a decision was made to retain zones; partly because of the diversity of nations and nationalities in the region. About 72.5 percent of the budget was transferred to woredas, and 12.5 percent to zones. Zones were used to rebalance where there were mismatches due to application of the formula. Concerns expressed by Regional and woreda officials include the costs of decentralization, how to manage the investment strategy across woredas, the capacity to implement capital budgets at the woreda level, and how to handle any unspent capital funds under the block grant. Woreda officials are concerned about the lack of capacity; most say their first priority is administrative staff and buildings and equipment. The Regional Health Bureau has recently established performance agreements based on 6 indicators with the woreda councils. These indicators are:

- (1) Immunization coverage
- (2) Family planning;
- (3) Sanitation (access to Latrine)
- (4) Outpatient utilization;
- (5) Health post construction

Woredas' budgets and the performance evaluation of the woreda council members are also linked to their performance. Implementation of this performance agreement is still in its preliminary stages but it is worth following up and learning from.

Source: Regional notes on fiscal decentralization (PSCAP); PER mission visits as quoted in the PER (2003), and CSR February 2004 visit

7. SPENDING MORE . SPENDING BETTER. THE COST AND POTENTIAL IMPACT OF ALTERNATIVE SERVICE DELIVERY OPTIONS FOR DELIVERING HIGH IMPACT INTERVENTIONS IN ETHIOPIA

427. This section evaluates the potential cost and impact of the country's efforts to increase health service coverage especially for effective preventive and curative health interventions. Specifically, the questions to be answered in this chapter are:
- How much extra money is needed to increase the health coverage from the current level to its target in HSDPII, and then further to the 2015 MDG horizon?
 - What results, in terms of reduction in child and maternal mortality, can be achieved by spending the extra money?
428. To achieve these objectives, we apply the Marginal Budgeting for Bottlenecks (MBB) tool (refer to annex 2 for a description of the MBB), developed by the World Bank, UNICEF, and WHO. As an analytical costing and budgeting tool helping policy makers to plan and manage health programs, the MBB is the first tool of its kind to not only calculate the cost of achieving health intervention targets, but also simultaneously estimate the impact of health interventions on health outcomes, such as child and maternal mortality. The fact that MBB focuses on marginal cost and impact makes it a particularly helpful tool to estimate the extra efforts and resources needed to reach the MDGs⁷².

Applying the MBB tool in Ethiopia

429. The MBB Ethiopia study builds on the collaboration among teams from the World Bank, UNICEF, USAID, WHO and the Ethiopian Government. The participating departments/teams from the FMOH include the Planning Department (PPD), Family Health, TB control, HIV/AIDS control, Health Extension Package (HEP), health care financing, health service secretariats, etc. The ESHE project plays a coordinating role for the MBB Ethiopia project. Numerous work sessions were held to discuss the achievements and constraints in the health sector, and to collect health intervention coverage baseline and cost data needed for the MBB analysis. The MBB also relies on survey data (DHS and Ethiopia Welfare Monitoring Survey), and government documents (program reports, action plan), especially the documents of the HSDPII.
430. To conduct a MBB analysis, the following steps are necessary:

⁷²Soucat A, Van Lerberghe W, Diop F., Nguyen SN and Knippenberg R., *Marginal budgeting for bottlenecks: a new costing and resource allocation practice to buy health results*. "Using health sector budget expansion to progress towards the Millennium Development Goals in Sub-Saharan Africa". Policy and Sector Analysis Support Team, Africa Region Human Development (AFTHD), The World Bank.

- (a) defining which health interventions are to be integrated into existing and planned services delivery strategies;
- (b) identifying bottlenecks hampering the implementation of these service delivery strategies;
- (c) setting health coverage frontiers or identifying how far service delivery can go; and
- (d) estimating the potential impact and cost of various health service delivery options.

Strengthening the integration of High-Impact interventions in the Ethiopian Health Services Delivery System

431. The recent Lancet ⁷³ series on child survival have re-directed attention to the field of child health. One of the contributions of the Lancet papers is a meta-analysis based identification of health interventions which have been proved by strong scientific evidence as effective on reducing child mortality. A similar effort has been made by the World Bank, WHO and UNICEF in reviewing the literature on the efficacy of interventions to reduce maternal mortality, on the basis of a Cochran analysis. The MBB is based on the two researches, and includes a generic list of health interventions that have a high impact on child mortality or maternal mortality. Based on this generic list of interventions and discussions with FMOH, a list of Ethiopia-specific intervention activities has been recognized in the country's intervention package. The selection criteria for this package include the country's epidemiological profile, health policy, current health programs, and available resources.
432. The MBB tool stratifies health interventions into three main delivery modes: *Population Oriented "outreach" Services*, *Family/Community Oriented Services* and *Clinical Individual Oriented Services*. It is important to notice that the delivery modes in the MBB are service-based and not facility-based. All intervention activities are grouped by how these are delivered and not by the level of facility which delivers the services. For example, Population Oriented Services are conducted by both health posts, health centers and through mobile strategy in some regions (Somalia for example). In the Ethiopian context, the newly developed approach of *Health Extension Package (HEP)* is an outreach vehicle to deliver population oriented services. The *Community Promoters approach* has been tested to in both Tigray and SNPPR to deliver Family/Community-Oriented health services. In the public sector, *health centers, hospitals and sometimes health stations* are usually delivering clinical services that cater to discretionary illnesses. In the private sector, NGO clinics, pharmacists-qualified or not- and traditional healers are also involved in delivering clinical care.
433. The comparisons between the generic list and the Ethiopia-specific list of interventions through the three delivery modes show that most high-impact interventions are already included in Ethiopia's intervention package (Tables 7.1-7.3). One exception is that anti-malaria drugs and antibiotics for the treatment of children's acute respiratory infections

⁷³ Lancet. 2003 Child Survival:361,362

(ARI), although highly effective, are not recommended by FMOH for the family/community-oriented service. Those interventions are to be delivered by clinical services encompassing a professional provider –i.e. at health center and in some regions at health station level- according to current policy. Potential benefits and cost of changing this policy are examined below.

Table 7-1: Health interventions included in the health extension package (HEP) strategy, Population Oriented, “outreach” services)

Ethiopia Health Extension Package	High impact interventions in Lancet and WHO review	Cost items
<p>Preventive care for Adolescent Girls & Women of Childbearing age:</p> <ul style="list-style-type: none"> • <i>Family Planning: Depovera</i> • <i>Treatment for Iron deficiency in pregnancy</i> • <i>Tetanus toxoid vaccination</i> 	<p>Preventive care for Adolescent Girls & Women of Childbearing age:</p> <ul style="list-style-type: none"> • <i>Family Planning</i> • <i>Treatment for Iron deficiency in pregnancy</i> • <i>Tetanus toxoid vaccination</i> 	<p>1. Essential materials, drugs, supplies, vaccines</p> <p>2. Human resource: salary, incentive, housing subsidies</p>
<p>Preventive Care for Pregnant and Newborn</p> <ul style="list-style-type: none"> • <i>Folate supplementation in pregnancy</i> • <i>Tetanus toxoid vaccination</i> • <i>Intermittent Presumptive Treatment against malaria</i> • <i>Postnatal & Newborn care</i> 	<p>Preventive Care for Pregnant and Newborn</p> <ul style="list-style-type: none"> • <i>Folate supplementation in pregnancy</i> • <i>Tetanus toxoid vaccination</i> • <i>Intermittent Presumptive Treatment against malaria</i> • <i>Postnatal & Newborn care</i> 	<p>3. Cost to periodic village session</p> <p>4. Cost to new health post</p> <p>5. Cost to mobile team</p>
<p>Preventive Infant & Child Care</p> <ul style="list-style-type: none"> • <i>Routine Measles/DPT3 immunization</i> • <i>Vitamin A supplementation</i> 	<p>Preventive Infant & Child Care</p> <ul style="list-style-type: none"> • <i>Routine Measles/DPT3 immunization</i> • <i>Vitamin A supplementation</i> 	<p>6. IEC.</p> <p>7. Training, supervision</p>

Table 7-2: Health interventions included in the “community health promoters “ or family/community oriented services

Ethiopia intervention packages	High impact interventions in Lancet and WHO review	Cost items
<p>Preventive Maternal & Neonatal Care:</p> <ul style="list-style-type: none"> • <i>Pregnant women using Insecticide Treated Net</i> • <i>Newborn Temperature Management</i> • <i>Clean home delivery</i> • <i>Condom promotion)</i> 	<p>Preventive Maternal & Neonatal Care:</p> <ul style="list-style-type: none"> • <i>Clean home delivery by TBA</i> • <i>Newborn temperature management and KMC</i> • <i>Pregnant women using Insecticide Treated Material</i> • <i>Condom promotion</i> 	<p>1. Stock of essential commodities: bed nets, safe water system, chlorine, latrine, home delivery kit, etc.</p>
<p>Preventive Infant & Child Care:</p> <ul style="list-style-type: none"> • <i>Exclusive Breastfeeding 0-5 months</i> • <i>Prolonged breastfeeding 6-11 months</i> • <i>Hygiene/ hand-washing Promotion</i> • <i>Under Fives using Insecticide Treated Nets</i> • <i>Complementary Feeding</i> 	<p>Preventive Infant & Child Care:</p> <ul style="list-style-type: none"> • <i>Exclusive Breastfeeding for children 0-5 months</i> • <i>Prolonged Breastfeeding for children 6-11 months</i> • <i>Water/Sanitation/Hygiene Promotion</i> • <i>Under-five using Insecticide Treated Materials</i> • <i>Complementary feeding</i> 	<p>2. Cost of community health session</p> <p>3. Utilization of essential commodities</p>
<p>Management of Maternal, Neonatal & Childhood Illness:</p> <ul style="list-style-type: none"> • <i>Oral Rehydration Therapy (ORT/ORS)</i> • <i>Not included</i> • <i>Not included</i> 	<p>Management of Maternal, Neonatal & Childhood Illness:</p> <ul style="list-style-type: none"> • <i>Oral Rehydration Therapy</i> • <i>Home treatment with antimalarials</i> • <i>Home treatment by cotrimoxazole for ARI</i> 	<p>4. Incentives</p> <p>5. Training, supervision and monitoring</p>

Table 7-3: Health interventions included in the *clinical individual oriented service strategy*

Ethiopia intervention packages	High impact interventions in Lancet and WHO review	Cost items
<p>Preventive Maternal & Neonatal Care:</p> <ul style="list-style-type: none"> • <i>Delivery by skilled attendant</i> • <i>PMTCT (Nevirapine: Prevention of Mother to Child HIV Transmission)</i> • <i>Antenatal steroids</i> • <i>Antibiotics for premature rupture of membranes</i> 	<p>Preventive Maternal & Neonatal Care:</p> <ul style="list-style-type: none"> • <i>Delivery by skilled attendant</i> • <i>Nevirapine and replacement feeding</i> • <i>Antenatal steroids</i> • <i>Antibiotics for Premature Rupture of Membranes</i> 	<p>1. Essential materials, drugs, supplies</p> <p>2. Human resource: salary, incentive, housing subsidies</p>
<p>Clinical Primary Level Care:</p> <ul style="list-style-type: none"> • <i>Oral Antibiotics by skilled health worker for pneumonia and neonatal sepsis</i> • <i>Anti-malarials by skilled health worker resuscitation</i> • <i>Management of RTI/STI</i> • <i>Management of malnutrition including anemia</i> • <i>Management of PHLA (Anti-Retroviral Drugs)</i> • <i>Management of Tuberculosis</i> 	<p>Clinical Primary Level Care:</p> <ul style="list-style-type: none"> • <i>Antibiotics for pneumonia</i> • <i>Anti-malarials by skilled health worker</i> • <i>Resuscitation</i> • <i>Management of RTI/STI</i> • <i>Treatment for Iron deficiency in pregnancy</i> 	<p>3. Construction cost</p> <p>4. Equipments</p> <p>5. Training, supervision and monitoring</p>
<p>Clinical First Referral Level Care:</p> <ul style="list-style-type: none"> • <i>Basic Emergency Obstetric Care</i> • <i>Injectible antibiotics for neonatal sepsis & severe childhood infections</i> • <i>Management of Opportunistic infections</i> 	<p>Clinical First Referral Level Care:</p> <ul style="list-style-type: none"> • <i>Basic Emergency Obstetric Care</i> • <i>Injectible antibiotics for neonatal sepsis & severe childhood infections</i> 	
<p>Clinical Second Referral Level Care:</p> <ul style="list-style-type: none"> • <i>Comprehensive Emergency Obstetric Care</i> • <i>Prevention & Management of complications from abortion</i> 	<p>Clinical second referral level Care:</p> <ul style="list-style-type: none"> • <i>Comprehensive Emergency Obstetric Care</i> • <i>Prevention & Management of complications from abortion</i> 	

Identifying bottlenecks

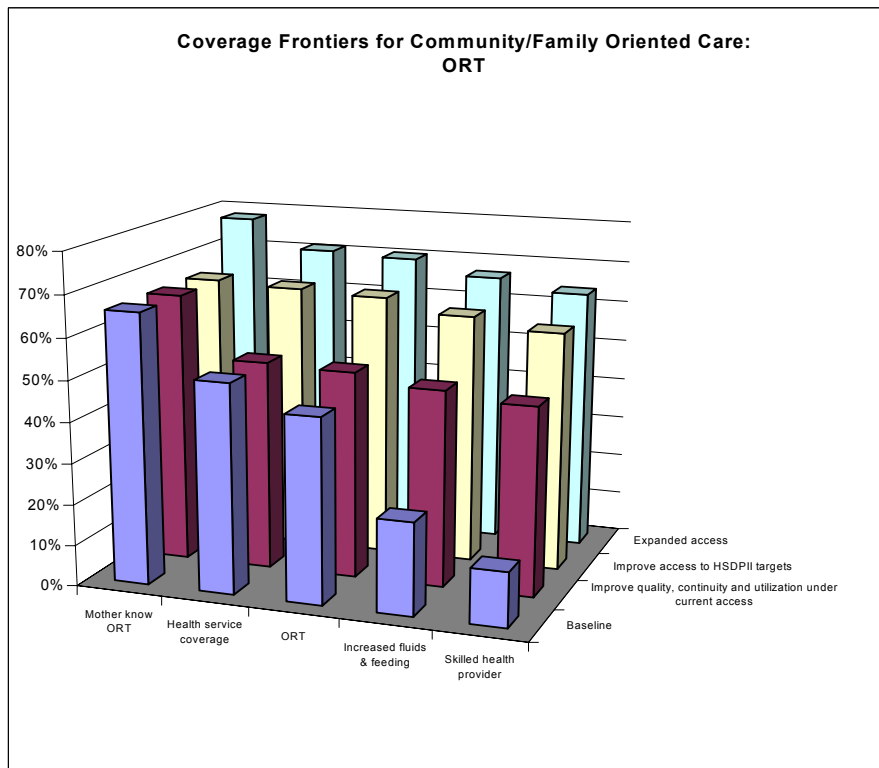
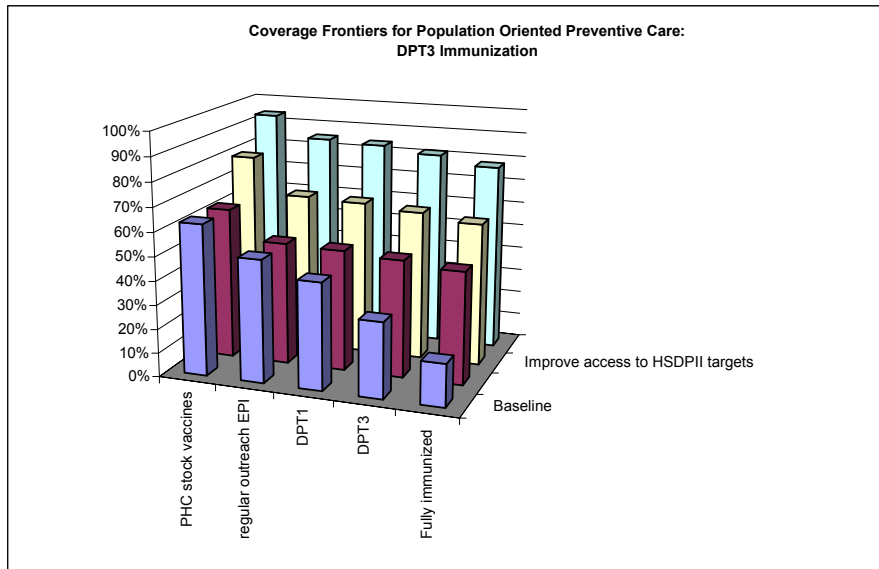
434. For each service delivery mode, the MBB measures five key determinants of coverage with services. These determinants measure the extent to which the system and communities are moving toward the ultimate goal of providing effective coverage with high-impact interventions that will contribute to reducing child and maternal mortality. This step is particularly useful for a country like Ethiopia where the capacity gap is substantial. Bottlenecks are identified on the basis of a set indicators measuring determinants for each service delivery mode. The bottleneck-identifying process can help the country pinpoint whether gaps exist in the supply side (human resources, essential drugs and materials, quality of services) or in the demand side (initial and continuous utilization of the services). The five key determinants are:

- *Availability:* This component includes assessing the availability of critical health system inputs such as drugs, vaccines, supplies, and/or human resources. This information is obtained from stock registers, personnel information systems and facility surveys.
- *Accessibility:* This indicator describes the physical accessibility of health services for the clients. It includes the presence of trained human resources at the community level, the number of villages reached at least once a month by outreach services, and the time taken to reach a facility providing basic and emergency obstetric and neonatal care services.
- *Utilization:* This describes the first use of multi-contact services (e.g., the first antenatal contact or BCG immunization). Household surveys and service statistics reported at facilities are the main sources of information. Service records, however, need to be validated.
- *Continuity:* This indicator describes the extent of achievement compared to optimal contacts and services (e.g., percentage of children receiving DPT3 or measles immunization, and percentage of women receiving three antenatal contacts). Thus, this indicator documents the continuity and compliance of care.
- *Quality:* This explains the quality of care measured by assessing the skills of the health workers. Skills are assessed in terms of the workers' ability to: (a) examine the beneficiary; (b) provide a diagnosis and the requisite interventions; (c) use the equipment properly; (d) and advise appropriately.

SETTING THE FRONTIERS OF HEALTH SERVICE COVERAGE

435. In order to analyze the cost and impact of various strategies to deliver high impact interventions, different typical scenarios for reaching the performance frontier of the Ethiopian health system have been envisioned. The cost and impact of implementing these scenarios has been examined under three options for expanding geographical access, and various options for removing the gaps—or bottlenecks—in demand, continuity and quality .

Figure 7-1: Example of identifying bottlenecks and setting coverage frontiers for immunization, ORT use and assisted deliveries services



436. Options for geographical access include the following :

- *Base Access:* the current access level

- *HSDP II*: increased access (improving access to health services) to meet the targets of HSDP II, including access to outreach services (65 percent of the population), to clinical care (45 percent), as well as some specific targets for different health programs such as malaria prevention, EPI etc.
- *Expanded access*: This is the most ambitious scenario; it will require significant investments in infrastructure, training and remuneration of human resources. This scenario assumes more ambitious targets with the health extension package reaching 85 percent of the population; support for family care/health promoters covering 71 percent of households; and raising to 70 percent the population living within 5km of a facility providing primary clinical care, and 60 percent having access to first- and second-level referral care.

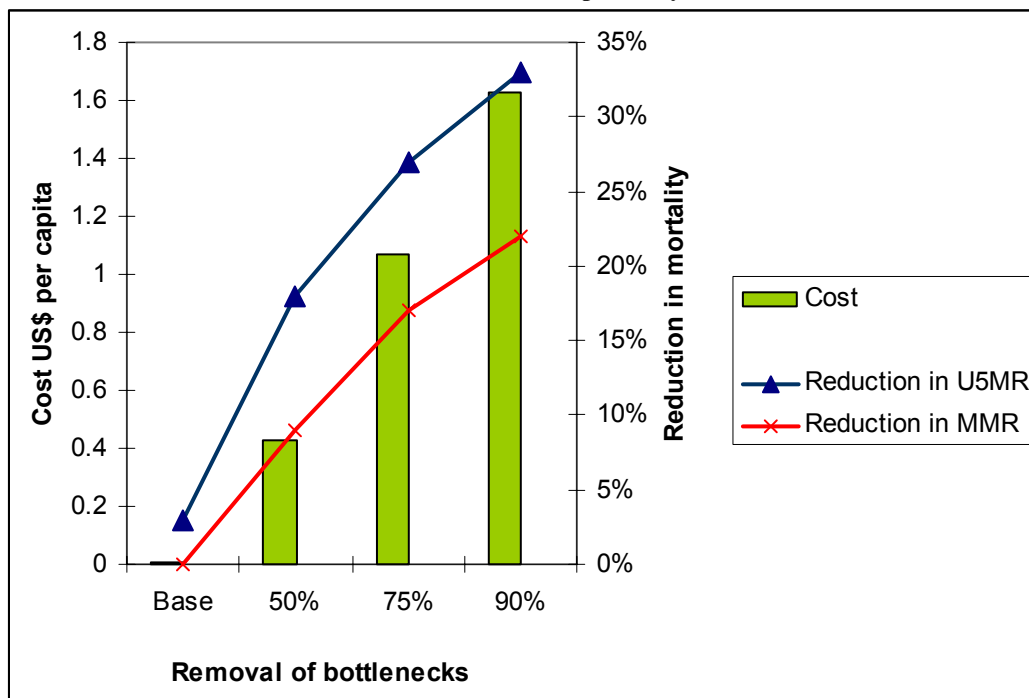
437. In addition to these geographical access options, different options have been examined that simulate the cost and impact of addressing gaps or “removing the bottlenecks” in quality, continuity and utilization of the services without demanding geographical expansion of health services. These bottleneck removal options outline possible progressive improvements in coverage with enhancement of demand, as well as continuity and quality of alternative service delivery arrangements, including the proposed health extension package and health promotion strategy.
438. The baseline health service coverage data for each health intervention are collected from the country and published survey data such as the Demographic and Health Survey. Each of the four options sets up coverage frontiers to measure to what extent health service coverage can be increased. Therefore, the marginal increase for each health intervention coverage can be calculated. The MBB estimates the impact on under-five and maternal mortality ratios, and their corresponding cost in each coverage increase scenarios.

How important is it to reduce the bottlenecks in demand, continuity and quality, and by how much?

439. To respond to this question, four scenarios have been developed. The first scenario (base demand) is the base situation in which gaps in demand, continuity and quality are not addressed. The second scenario (50 percent gap reduction) targets the potential improvement of health services within the current constraints of the health system with a reduction of about 50 percent of the existing bottlenecks in quality, continuity and demand. These scenarios require fewer resources but have smaller margins for improvement.
440. The third scenario (75 percent gap or bottleneck reduction) takes into account capacity building activities, including institutional and human resource capacity, as well as incentives. The fourth scenario displays the maximum level of reduction of bottlenecks (90 percent) and includes significant additional investment in increasing demand and quality by providing performance based bonuses, incentives for supervision and monitoring as well as demand-side subsidies.
441. Each of the bottleneck removal scenarios reflects the extent to which the service bottleneck will be tackled and how many resources are put into the effort.

442. The simulation of the gains and cost of reducing bottlenecks shows that reducing bottlenecks is a worthwhile strategy to pursue even within the present geographical access level. At the current level of access (base access) and keeping the current cost structure, reducing bottlenecks in demand, continuity and quality by 50 percent would contribute to reducing under-five mortality by 12 percent and maternal mortality by 5 percent at a cost of US\$0.34. Reducing bottlenecks by 75 percent further reduces the impact on under-five mortality by 27 percent and on maternal mortality by 17 percent, at a cost of US\$0.95. Finally, reducing bottlenecks by 90 percent reduces under-five mortality by 30 percent and maternal mortality by 20 percent at a cost of US\$1.57 (see Figure 7.2).
443. The simulation suggests it is worthwhile to reduce bottlenecks even if enhancing utilization and continuity means bringing demand-side financing for outreach and clinical services, and extra travel costs for supervision. That cost is largely offset by the additional impact which is gained. Adding incentives from the supply and demand side to reduce bottlenecks by 75 percent to 90 percent is also worthwhile as these significantly increase the impact on under-five mortality.
444. Overall, by reducing bottlenecks by 90 percent it would be possible to obtain—for close to US\$1.50 over what is presently spent—a reduction of under-five mortality by one third, and a reduction of maternal mortality by nearly a quarter.

Figure 7-2: Impact on quality, continuity and demand by reducing bottlenecks by 50%, 75 % and 90% respectively

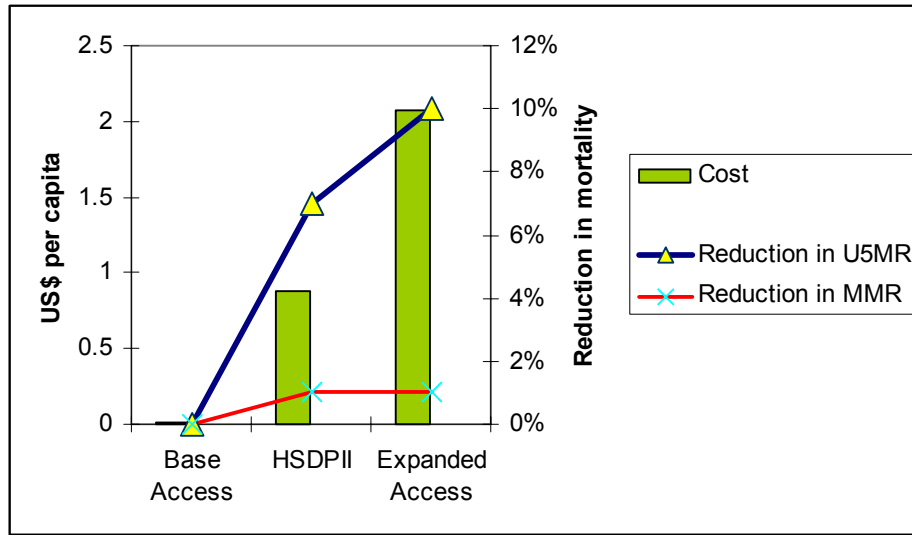


Source: authors' calculations based on DHS, WMS and MOH data

Merely increasing geographical access would buy less for the money than addressing the quality and demand bottlenecks

445. On the other hand, increasing access without reducing bottlenecks or reducing them only by 50 percent, has a much smaller impact at a quite substantial cost. Even expanding the access to the maximum possible within the physical and logistical capacity of the Ethiopian infrastructure basis (70 percent, 85 percent outreach, 60 percent for primary clinical care and 50 percent for referral clinical care) would only result in a reduction of 10 percent of under-five mortality, and 1 percent of maternal mortality at a cost of US\$2.00. This simulation shows that it would not be as effective to increase access alone if bottlenecks are not reduced at the same time. Merely increasing access buys less results than effectively addressing the bottlenecks. (Figure 7.3).

Figure 7-3: Reduction in mortality and cost implications associated with incremental access without addressing bottlenecks in demand, quality and access

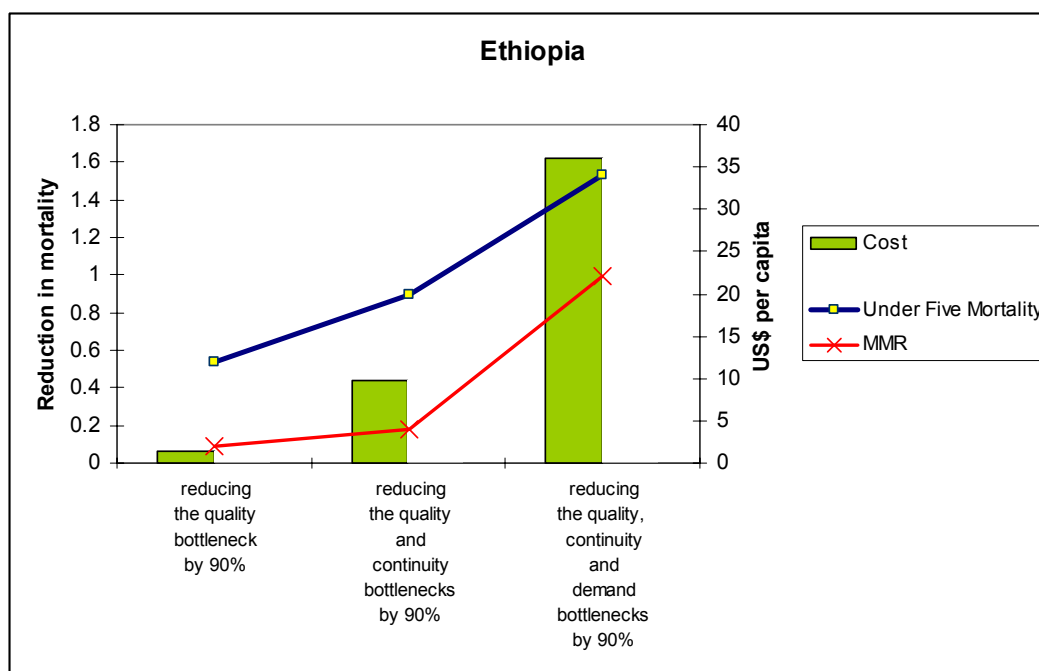


Source: authors' calculations based on DHS 2001, WMS and MOH data

Impact and cost of addressing different bottlenecks can vary significantly

446. Removing the bottlenecks in quality for all service delivery modes would already buy some significant gains in under-five mortality for a modest US\$0.4 per capita. This would be mainly through improving the quality of family-oriented services and associated changes in behaviors and family practices. However, this improvement would translate in little progress in terms of maternal mortality. Addressing bottlenecks in continuity and demand would provide additional gains, but double or even tripling the cost per capita. Overall, about 11 percent of reduction of under-five mortality can be obtained for each incremental US\$0.50 per capita by investing in strengthening incentives for performance, and introducing demand-side transfers compensating for the opportunity cost of using services (Figure 7.4).

Figure 7-4: Cost and potential impact of removing bottlenecks in quality, continuity and demand



Source: Authors' calculations, based on DHS2001, WMS and MOH data

What is the optimum combination of access and reduction in bottlenecks?

447. Bringing up access to HSDP targets and at the same time reducing bottlenecks by 50 percent would help obtain a quarter reduction in under-five mortality and about 13 percent in maternal mortality at a cost of around US\$1.50. This results in less impact for the same amount of money as reducing the bottlenecks by 90 percent at a given access level. Alternatively, for that same cost it would make more sense to work within the present access and decrease the bottlenecks by 90 percent. This would bring under-five mortality down by a third and maternal mortality by 22 percent for the same cost.
448. Aiming for HSDP targets and reducing bottlenecks by 75 percent increases the reduction in under-five mortality by one third and maternal mortality by one quarter. This is about the same level of reduction as decreasing bottlenecks by 90 percent within the present access, but at a much higher cost of nearly US\$2.50. This may be an alternative if a 90% reduction in bottlenecks proves difficult to achieve but appears less efficient also not very efficient.
449. The optimum scenario of increasing access to the HSDP target with a 90 percent reduction in bottlenecks gives an over 40 percent reduction of under-five mortality with a one third reduction of MMR at a cost of only US\$3.00 per person and per year.
450. Further expansion of access can further improve the impact, namely a reduction of half of under-five mortality and 37 percent maternal mortality, but it increases the cost to nearly US\$5.00 per person and per year.

Table 7-4: Trade-offs between reducing gaps in demand, continuity and quality and increasing access

		Base Access		HSDP targets		Expanded Access	
			Incremental cost per capita		Incremental cost per capita		Incremental cost per capita
Bottlenecks in demand, continuity and quality remain unaddressed	Reduction in U5MR	3%	\$0.01	7%	\$0.88	10%	\$2.07
	Reduction in MMR	0%		1%		1%	
Reduction of 50% of bottlenecks in demand, continuity and quality	Reduction in U5MR	18%	\$0.43	24%	\$1.45	30%	\$ 2.80
	Reduction in MMR	9%		13%		16%	
Reduction of 75% of bottlenecks in demand, continuity and quality	Reduction in U5MR	27%	\$1.07	34%	\$2.43	42%	\$4.12
	Reduction in MMR	17%		24%		28%	
Reduction of 90% of bottlenecks in demand, continuity and quality	Reduction in U5MR	33%	\$1.63	41%	\$3.08	49%	\$4.87
	Reduction in MMR	22%		32%		37%	

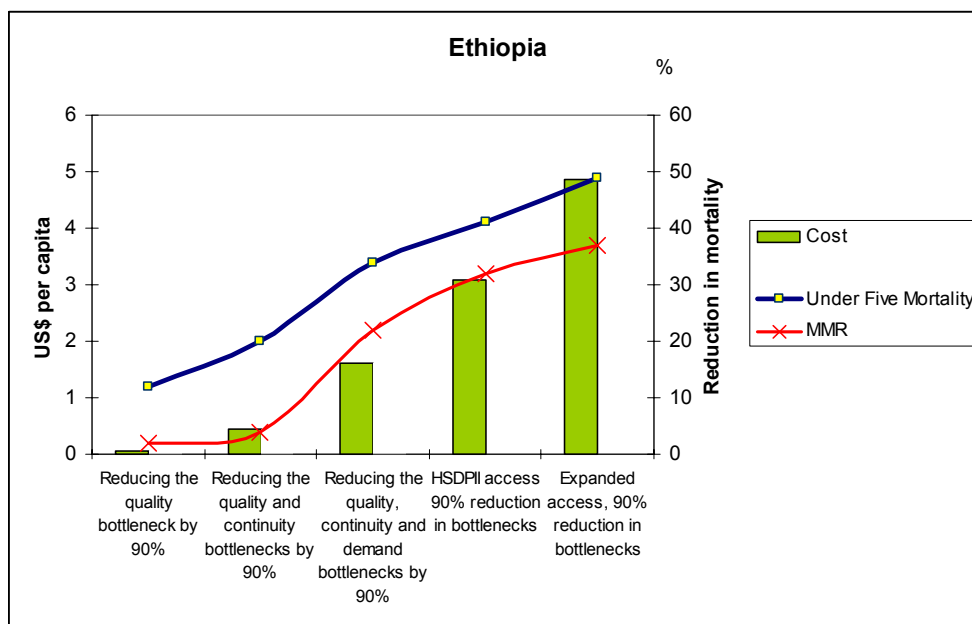
Table 7-5: Marginal increase of health service coverage for each “bottleneck removal option”

Delivery mode	Intervention package	Intervention	Scenario 1	Scenario 2	Scenario 3	Scenario 4
			Baseline, gaps in demand, continuity and quality remain	Present access with 90% removal of gap in demand, continuity and quality	HSDP 90% removal of gap in demand, continuity and quality	Expanded access 90% removal of gaps in demand, continuity and quality
Family/ community based care	Preventive maternal and neonatal care	• Clean delivery	20%	20%	25.7%	61%
		• Temperature management and KMC	0%	17.1%	25.7%	61%
		• Insecticide-treated mosquito nets	1.8%	17.1%	25.7%	60.7%
	Preventive infant and child care	• Breastfeeding for children 0-5 months	38.1%	89.1%	89.1%	89.1%
		• Breastfeeding for children 6-11 months	74.9%	89.1%	89.1%	89.1%
		• Water/sanitation/hygiene	10%	89.1%	89.1%	89.1%
		• Insecticide-treated mosquito nets	0.2%	17.1%	26%	61%
• Complementary feeding		34.3%	89.1%	89.1%	89.1%	
Management of maternal, neonatal & childhood illness	• Oral rehydration therapy	13.3%	45.9%	58.5%	63.9%	
Population oriented outreach services	Preventive care for adolescent girls & women of childbearing age	• Family planning	6.3%	44.7%	57%	74.5%
		• Tetanus toxoid	14.8%	44.7%	57%	75%
	Preventive care for pregnant women and newborns	• Folate supplementation in pregnancy	6.2%	43.8%	55.8%	72.9%
		• Intermittent presumptive treatment	3.7%	43.8%	55.8%	72.9%
• Postnatal and newborn care		10.5%	43.8%	55.8%	72.9%	
Clinical individual oriented care	Preventive infant and child care	• Routine Measles/DPT3 immunization	17.7%	46.7%	59.6%	77.9%
		• Vitamin A – P	55.8%	55.8%	79%	80%
	Preventive maternal & neonatal care	• Delivery by skilled attendant	2.9%	27%	39.1%	52.2%
		• Nevirapine and replacement feeding	2.9%	27%	39.1%	52.2%
		• Antenatal steroids	2.9%	27%	39.1%	52.2%
		• Antibiotics re PRM	2.9%	27%	39.1%	52.2%
	Clinical primary level illness management	• Antibiotics for pneumonia	14%	31%	43.6%	55.7%
		• Simple Malaria treatment	14%	31%	44%	56%
		• Resuscitation	14%	31%	44%	56%
		• Management of RTI/STI	14%	31%	44%	56%
• Treatment for Iron deficiency in pregnancy		14%	31%	44%	56%	
• Gentamycin for neonatal sepsis		0%	31%	44%	56%	
Clinical first referral illness management	• Basic emergency obstetric care	1%	25.4%	36.8%	40.9%	
	• Management of severe prematurity/LBW and neonatal sepsis	0%	25.4%	36.8%	40.9%	
Clinical second referral illness management	• Comprehensive emergency obstetric care	1%	25.4%	36.8%	40.9%	
	• Prevention and management of complications from abortion	1%	25.4%	36.8%	40.9%	

Evaluating the returns from the three delivery modes

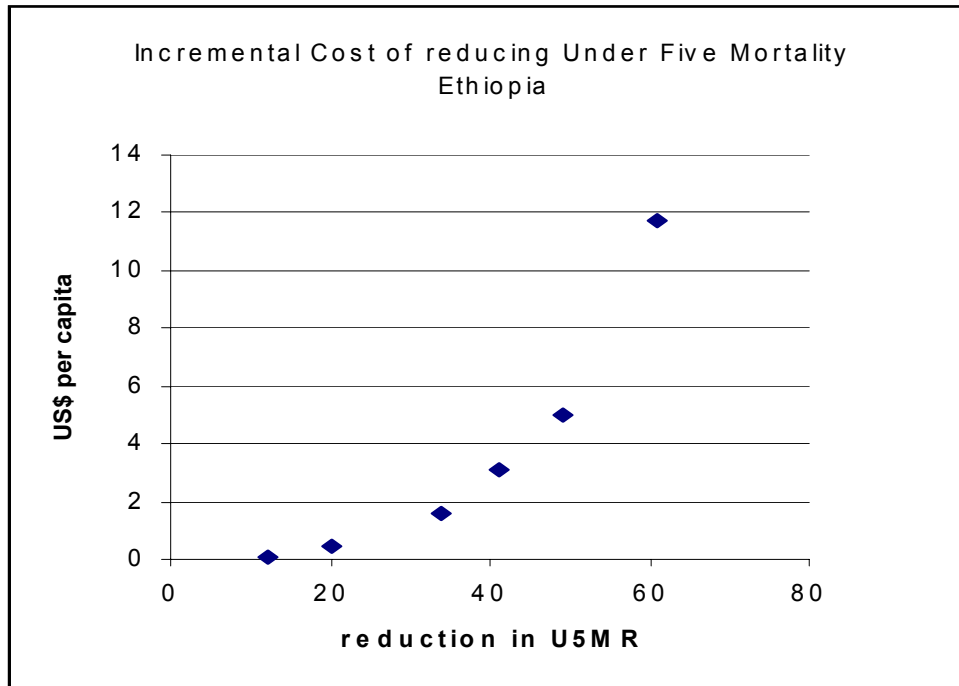
451. The MBB model demonstrates that increasing health service coverage would reduce both child mortality and maternal mortality. However, the relationship is not linear (Figure 7.5) and a pattern of diminishing return is observed for both mortality measures. As the coverage increases, the cost does as well and the cost function has an asymptotic shape. (Figure 7.6) This implies that, with limited resources, setting up feasible targets and prioritizing effective health interventions have important policy implications.

Figure 7-5: Diminishing returns on additional resources for health services



Source: Authors' calculations based on DHS 2001, WMS and MOH data

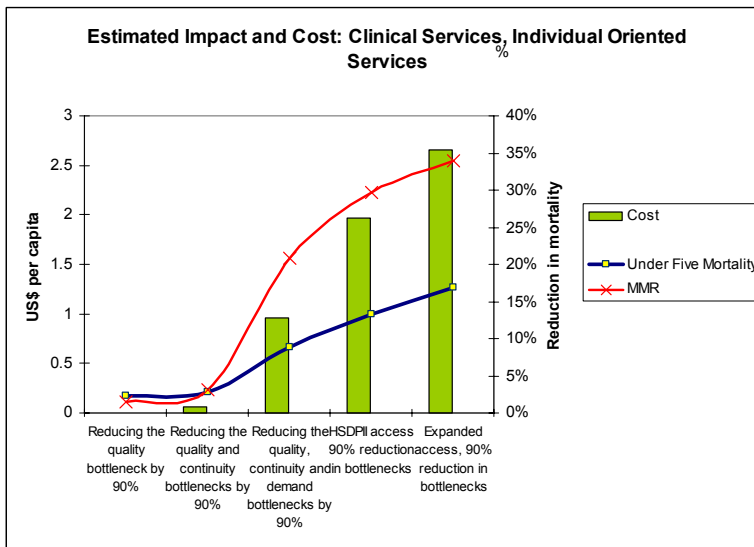
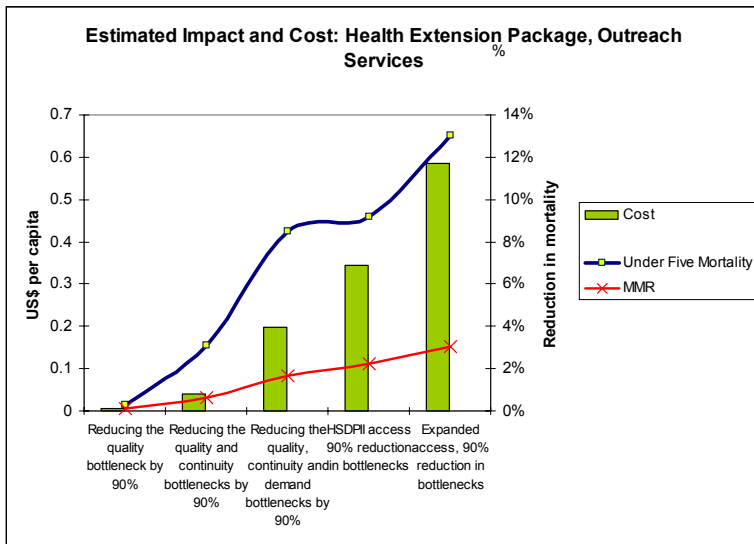
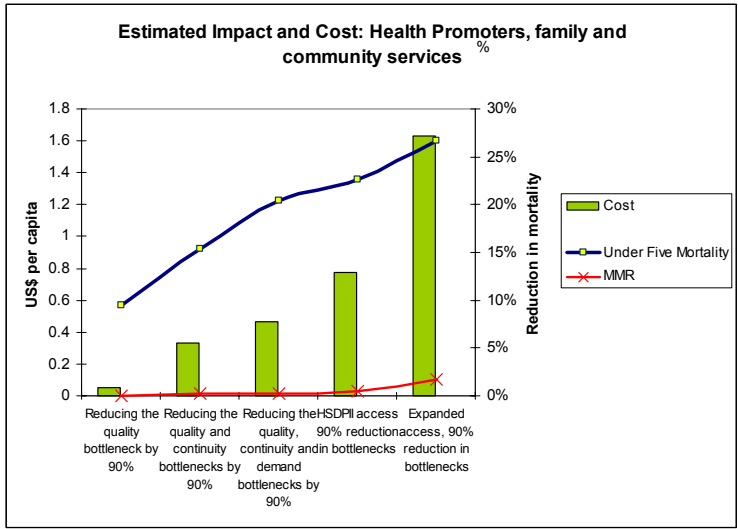
Figure 7-6: Estimate of cost function of health services contribution to reducing child mortality



Source: authors' calculations based on DHS 2001, NHA and MOH data

452. Figure 7.7 shows that the three delivery mode packages respond differently to health coverage increases and therefore show different returns for both child and maternal mortality reductions. Meanwhile, the cost required by each delivery mode also differs substantially. This not only validates the usefulness of the stratification of the three delivery modes but also has a strong policy implication on prioritizing approaches in service delivery.

Figure 7-7: Cost and impact of all three service delivery modes



453. The health extension (HEP) “Population Oriented ” delivery approach⁷⁴ results in a reduction of 9 percent of under-five mortality, at a cost of US\$0.34, which is a very cost-effective approach. However the impact is quite limited on the maternal mortality ratio—only 2 percent—as the antenatal care portion only marginally contributes to maternal mortality. However the use of the maternal mortality ratio (as stated in the MDG goal) obscures the impact of family planning on the lifetime risk of dying of mothers, with outreach contributing a potential reduction of 27 percent.
454. At each level of access, reducing the bottlenecks in family and community oriented services has the biggest potential impact on under-five mortality (20 percent at a cost of US\$0.75), and reducing MMR by a bare 1 percent, not even having an impact on the lifetime risk of dying, due to lack of effective interventions on causes of maternal health at community level.
455. Improving clinical care along HSDP targets on the other hand would reduce maternal mortality by 30 percent, however likely contributing to under-five mortality by a disappointing 13 percent at a incremental cost of nearly US\$2.00 per capita per year.
456. At an availability of US\$1.00 per capita and per year, investments seem therefore to be better made in the Health Extension and Community Promoters delivery modes, which together reduce both under-five mortality and the lifetime risk of dying of mothers by around 30 percent. However, the interventions that are delivered through these delivery modes have very little effect on the maternal mortality ratio. Including clinical care-with assisted deliveries and emergency obstetrical care- would substantially contribute to the reduction of the maternal mortality ratio and the lifetime risk of dying by 30 percent each, and reduce under-five mortality by another 10 percent. As indicated previously, however, it implies an additional US\$1.96 per person and per year, a very substantial additional investment on top of the other approaches.

⁷⁴ For HSDP targets, reducing the bottlenecks by 90% in outreach

Table 7-6: Estimated impact and cost of different service delivery arrangements for all three modes: Health Extension Package, Community Promoters, Clinical Care

Delivery mode	Intervention package	Scenario 1: Reduce demand, quality and continuity bottlenecks by 90%, base access				Scenario 2: Reduce demand, quality and continuity bottlenecks by 90% , HSDP targets				Scenario 3: Increase demand, quality and continuity bottlenecks by 90% , Access maximized			
		U5MR Reduction (1)	MMR Reduction (2)	Lifetime Risk of Dying (3)	Cost (per capita)	U5MR Reduction (1)	MMR Reduction (2)	Lifetime Risk of Dying (3)	Cost (per capita)	U5MR Reduction (1)	MMR Reduction (2)	Lifetime Risk of Dying (3)	Cost (per capita)
1. “Health Promoters strategy” Family/Community Oriented Services		0%	0.2%	0%		1%	1%	1%		4%	2%	2%	
	Preventive Infant & Child Care	16%	0%	0%		16%	0%	0%		17%	0%	0%	
	Management of Maternal, Neonatal & Childhood Illness	6%	0%	0%		8%	0%	0%		9%	0%	0%	
	Total Family /Community Care	20%	0.2%	0%	\$ 0.47	23%	1%	1%	\$ 0.77	27%	2%	2%	\$ 1.63
2. “Health Extension Package” Population Oriented outreach or scheduled clinic sessions	Preventive care for Adolescent Girls & Women of Childbearing age	5%	0%	19%		6%	0%	26%		8%	1%	35%	
	Preventive Care for Pregnant and Newborn	0%	1%	1%		1%	2%	2%		1%	3%	3%	
	Preventive Infant & Child Care	1%	0%	0%		3%	0%	0%		4%	0%	0%	
	Total Outreach	6%	2%	21%	\$ 0.20	9%	2%	27%	\$ 0.34	13%	3%	36%	\$ 0.59
3. Clinical individual oriented Care (needs to be continuously available)	Preventive Maternal & Neonatal Care	3%	4%	4%		5%	7%	7%		6%	9%	9%	
	Clinical Primary Level Illness Management	5%	0%	0%		8%	1%	1%		10%	1%	1%	
	Clinical first referral (PHC/CHC) Illness Management	2%	7%	7%		3%	10%	10%		3%	11%	11%	
	Clinical second referral (FRU/DH) Illness management	0%	11%	11%		0%	16%	16%		0%	18%	18%	
	Total Clinical	9%	21%	21%	\$ 0.96	13%	30%	30%	\$ 1.96	17%	34%	34%	\$ 2.65
Total Three Modes		33%	22%	37%	\$ 1.63	41%	32%	49%	\$ 3.08	49%	37%	58%	\$ 4.87

Source: authors’ calculations

(1) deaths of children less than 5 over one thousand live births (2) pregnancy related deaths of women over hundred thousand live births (3) pregnancy related deaths of women over hundred thousand women 15-49 (4) marginal cost per capita in US\$

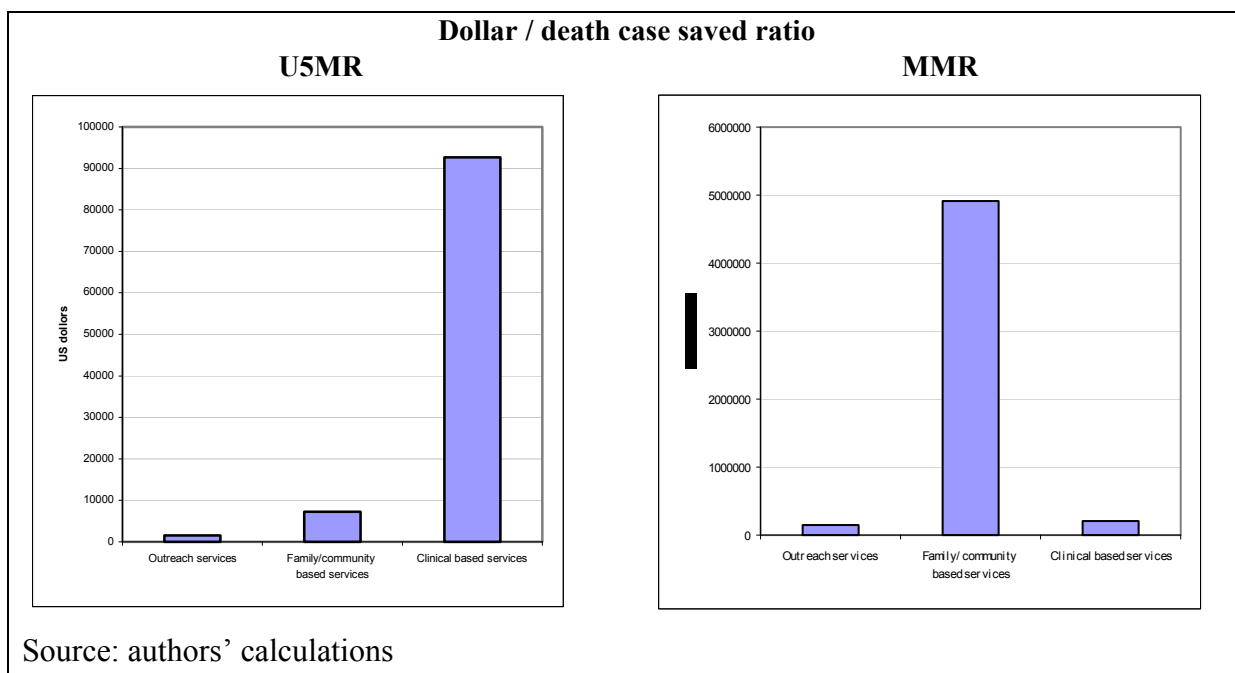
457. For a country with very limited resource like Ethiopia, it is essential to sort out priorities among the three delivery arrangements. One important policy consideration is that the three delivery modes will each take different types of capacity as well as lengths of time to reach their coverage targets. The health extension package strategy (HEP) is an “outreach” strategy which can be delivered most easily by the public sector, given the network externalities provided by the standardized delivery of services to homogeneous populations. Governments have international and internal experiences in delivering services such as immunization, family planning and Vitamin A campaigns. The current primary health care system in Ethiopia seem also quite well adapted to these types of services with relatively good results of the polio immunization campaigns and vitamin A supplementation programs. Therefore, the targets of the Health Extension services may be achieved faster than through the other two delivery modes.
458. Family/community oriented services involve behavior changes and need the active participation of households, which might take a longer time to develop. For these services, the role of the private sector—NGOs, CBOs, retailers, community promoters—is critical. Finally, to improve clinical services, the Government must address the gaps in human resource and infrastructure capacity, meaning that it will take even longer to get the problems fixed.
459. In Ethiopia’s HSDPII, the HEP is set up as a key priority for the health sector. The HSDPII is committed first to improve the service coverage of the HEP at the end of its project cycle (2005). This policy reflects a stepwise approach by the FMOH to first address outreach services as well as family/community oriented services, then move on to resolve problems in the clinical services.
460. Since the targets for the Health Extension package can be quickly reached, it would understandably save more lives among the under-five children and mothers. Taking into consideration the “quickness” factor to reach the targets, we conducted a cost-effectiveness analysis, measured as a (dollar) / (death saved) ratio, to evaluate the three delivery packages (Table 7.7 and Figure 7.8). We assumed a schedule for reaching the targets as those to be achieved in: (1) 2005 for the Health Extension outreach services; (2) 2010 for the Community Promoters services; and (3) 2015 for the clinical services. Outreach services emerge as the most cost-effective for both saving under-five child deaths (US\$1,578 per death saved) and maternal deaths (US\$150,347 per death saved). Family/community oriented services are also good buys for child health (US\$7,269 per death saved).

Table 7-7: Cost-effectiveness analysis of the service delivery packages

Service delivery mode	U5MR (2000)	MBB Predicted reduction	Time Schedule for target reached	Case saved based the schedule	Cost (\$/capital/year)	\$/death avoid ratio
1. Outreach services	166	10.00%	2005	46922	0.22	1578
2. Family/community based services	166	19.00%	2010	24071	0.52	7269
3. Clinical based services	166	12.00%	2015	4504	1.24	92632
Service delivery mode	MMR (2000)	MBB Predicted reduction	Time Schedule for target reached	Case saved based the schedule	Cost (\$/capital/year)	\$/death avoid ratio
1. Outreach services	871	2.00%	2005	492	0.22	150347
2. Family/community based services	871	0.50%	2010	36	0.52	4901600
3. Clinical based services	871	29.00%	2015	2035	1.24	205060

Source: authors' calculations

Figure 7-8: Cost-effectiveness analysis of the three service delivery



461. This analysis reaffirms that Ethiopia's policy of focusing on the Health Extension Package is realistic and promising. The HEP not only includes outreach services such as immunization, family planning, Vitamin A supplementation, etc., but also serves as a foundation for community oriented programs, as health extension workers will be trained to provide support and technical guidance to community promoters. Therefore, the implementation of the HEP would lead to an increase in health extension service coverage in the short term, as well as bring about improvement in the family/community oriented service in the mid term.

Simulating policy options: cost and benefits of expanding the provision of ARI and malaria treatment

462. What would happen if health interventions would be promoted through alternative delivery modes? To address some of the policy concerns, a simulation exercise is conducted to investigate different policy options (Table 7.9)⁷⁵.
463. The international community has been promoting community-based management of both malaria and pneumonia particularly in areas with low access to health services. The first policy simulation therefore investigates the cost and impact of adding basic anti-malarial drugs and antibiotics (Cotrimoxazole) for treatment of

⁷⁵ These policy scenarios are examined in light of the HSDPII targets with an assumed reduction of 90% of quality, continuity and demand bottleneck.

child Acute Respiratory Infections (ARI) to the family/community oriented (health promoter) package.

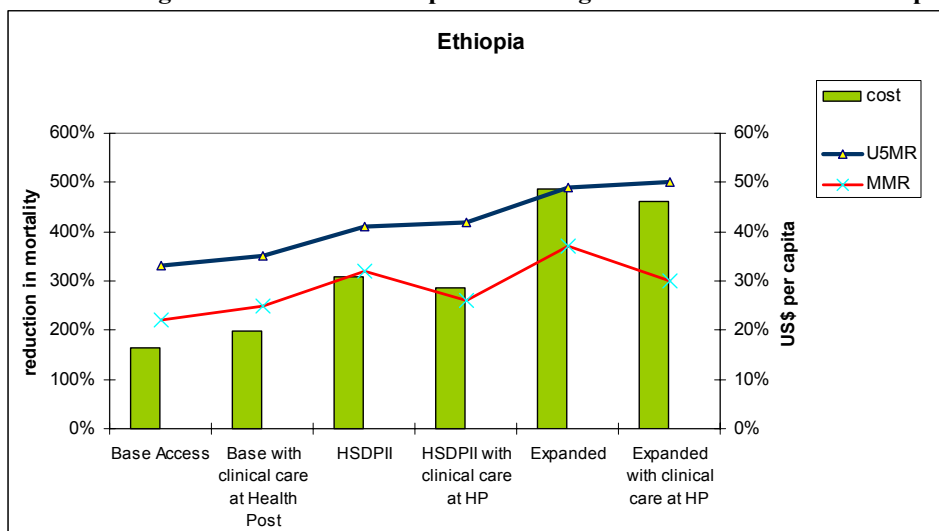
464. The simulations show that adding these interventions to the “Health Promoters Package”, when bottlenecks are reduced by 90 percent and access is aimed at the HSDP objectives, may increase the impact on under-five mortality to 27 percent from 23 percent, for an extra cost of US\$0.32 (\$1.09 as compared to \$0.77 per person per year).
465. The impact due to this change is somewhat limited which may appear surprising. This is largely due to the fact that although pneumonia contributes 28 percent to the under-five mortality rate, the efficacy of antibiotics at this level is only 40 percent. Thus, although pneumonia is responsible for an impressive 28 percent of under-five mortality, an increase in effective coverage by one third merely results in an attributable reduction in under-five mortality of 3 percent⁷⁶. This illustrates how a single intervention with limited efficacy does not by itself make a major dent in mortality, even when addressing a major cause for it.
466. For malaria, on the other hand, efficacy of the home treatment is higher (67 percent) but since the contribution of malaria to child mortality is small (only 6 percent), it does not have a major impact. For a comparable increase in coverage of 30 percent, the expected impact of community-based malaria management in reducing the national under-five mortality rate is only 1 percent. However, in highly malaria endemic areas in which a larger number of deaths are attributable to this illness, the impact is likely to be higher: up to 10 percent. This would mean that community-based treatment of malaria would be worthwhile essentially in areas heavily affected by malaria with very low access to health services.

⁷⁶ $0.28 \times 0.4 \times 0.3$

Table 7-8: Estimated impact and cost for different policy options
Figure 7.9: Figure 7-9 Cost and Impact of adding basic clinical care at health post level

	Impact on Under-5 mortality (percent reduction)			Impact on Maternal Mortality (percent reduction)			Cost in US\$ per capita per year		
	Base, reduction of 90% of BN	HSDPII, reduction of 90% of BN	Expanded Access, reduction of 90% of BN	Base, reduction of 90% of BN	HSDPII, reduction of 90% of BN	Expanded Access, reduction of 90% of BN	Base, reduction of 90% of BN	HSDPII, reduction of 90% of BN	Expanded Access, reduction of 90% of BN
A. Base model: no curative care at the health post and community level	33%	41%	49%	22%	32%	37%	\$1.63	\$3.08	\$4.87
B. Adding anti-malaria and antibiotics (Cotrimoxazole) to the community health promoter package	36%	45%	53%	24%	32%	37%	\$1.85	\$3.39	\$5.23
C. Adding basic curative services at the health post level (2) and emergency obstetric care at the health center level	35%	42%	51%	25%	38%	43%	\$1.97	\$3.28	\$5.26
(1) Including EOC and injectables (2) Assisted delivery, malaria, antibiotics, PMTCT, VCT, STI, no EOC and no injectables Source: authors' calculations									

Figure 7-10: Cost and Impact of adding basic clinical care at health post level



467. One key question for the implementation of the health extension package is whether some basic clinical care should also have been added at the health post level. A simulation was done to examine the impact of decentralizing curative care to the health post level by adding a junior nurse with clinical skills. The cost and impact of moving a limited clinical package to health posts was estimated which included assisted delivery, malaria treatment, antibiotics, PMCT, VCT and STD⁷⁷, without emergency obstetric care and injection services.
468. Following the HSDP targets for health post accessibility—with a reduction of 90 percent in the demand, quality and continuity bottleneck—this strategy would be expected to contribute a reduction of 35 percent of under-five mortality attributable to clinical care, as compared to 33 percent in the scenario where health centers only would provide clinical care. Adding skilled attendance at birth—a person trained in life-savings skills—at that health post level would similarly reduce further maternal mortality from 30 percent to 31 percent. At the expanded access level, adding clinical care to the health post would increase the reduction of under-five mortality to 50% percent and maternal mortality from 37% to 43 percent (Figure 7.9).
469. Finally a third scenario including enhanced Communicable Diseases Control Activities (CDC) has been examined. The current package of communicable diseases control already includes TB/DOTS, simple malaria treatment at the primary level and at the health center level, treatment of complicated malaria at first referral level and DOTS for Tuberculosis (TB) at health center level. According to international recommendations, this package could be enhanced⁷⁸

⁷⁷ PMTCT: prevention of Mother To Child Transmission of HIV; VCT: Voluntary Testing and Counseling; STDs: Sexually Transmitted Diseases.

⁷⁸ A package composed of malaria combination treatment at primary care level, treatment of drug resistant TB, 3X5 ARV for treatment of HIV/AIDS and treatment of complications from AIDS at the referral level.

with incremental resources. These would include additional time/wages, performance incentives, demand-side subsidies and the cost of additional drugs, to establish stocks of the drugs estimated to be used based on the incidence of malaria, TB, and HIV in Ethiopia, and the utilization levels under different scenarios. The cost of this package is US\$9.00 per person per year at the current level; for access at the HSDP level it is US\$13.00; and for expanded access it is nearly US\$16.00⁷⁹. The additional impact of this on maternal and under-five mortality has not been estimated as the literature does not provide a high level of proof of the impact of HAART and treatment of multi drug resistant TB on these indicators. For malaria the literature does provide evidence on the impact. However, as shown above, because of the low proportion of under-five mortality at the national level attributable to malaria, the benefits of providing more efficacious treatment is limited, with a potential exception in highly affected areas, and at time of epidemics.

Human resources implications of the chosen options

470. The various scenarios also have different implications in terms of building the human resource base for health services. Staffing varies according to each possible scenario and evidently as access to infrastructure increase the number of physicians and nurses also increase. Following are the target HR requirements for the year 2015 under several scenarios in the case of Ethiopia (Table 7.10). Any significant increase in access will require major investments in staff training. Training Health Extension workers and community promoters can be frontloaded and access can increase rapidly. However, when it comes to clinical care, significant increase in access calls for an increase in clinical nurses and doctors which require much more time to produce.

Table 7-9: Additional Human resources implications of expanding coverage with health services

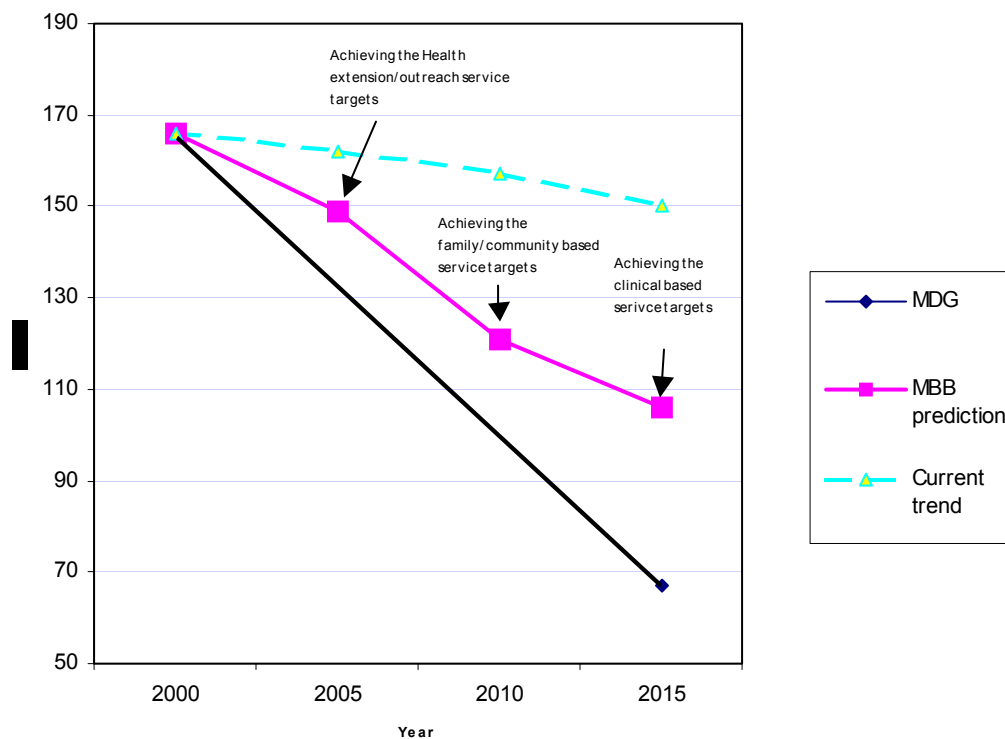
	Current Number of Staff	HSDP access and 90% reduced bottlenecks with existing health services	Maximum access and 90% reduced bottlenecks with existing health services
Community promoters	10,064	31,600	147,356
Health Extension Workers	1,000	10,120	21,454
Nurses	12,838	21,576	30,667
Physicians	1,888	3,032	4,665

⁷⁹ These additional costs are still relatively low because of the low incidence of malaria and relatively low prevalence of HIV. Any increase in the incidence of malaria, HIV and TB and or in the level of drug resistance will very substantially increase this cost.

Reaching the MDGs in Ethiopia?

471. Assuming the Government can reach its HEP targets in 2005, then go on to achieve its goals for the family/community-based service targets in 2010, and finally meet the needs for the clinically-based service in 2015, can this progress help Ethiopia reach the MDGs for child survival? Although the predicted progress in health services would speed up the pace of under-five mortality ratio reduction, it is still not enough to achieve the two-thirds reduction goal of under-five mortality ratio in MDGs (Figure 7.10). Improvements in the health sector alone can not achieve the child neither the maternal mortality MDGs.

Figure 7-11: Predictions in achieving MDGs for child survival



Conclusion

472. Overall this analysis shows that the Health Extension Package (HEP) and associated Health Promoters strategy proposed by the Government of Ethiopia is basically sound if health services are to significantly contribute to reaching the under-five mortality reduction goal. If an incremental US\$1.00 per capita and per year can be mobilized for Ethiopia's health services, investments would be better made in outreach and community services (HEP and Community Promoters package) that could together reduce both the under-five mortality ratio and the lifetime risk of dying of mothers by around 30 percent, on the basis of realistic assumptions regarding increase of access along the set targets of HSDPII.

473. This analysis also points out that the first priority for Ethiopia is to maximize: (a) the reduction of existing bottlenecks in quality, continuity and demand; and (b) the demand for (as well as quality and continuity) of high-impact interventions delivered through innovative service delivery strategies. This can be done at a cost of US\$1.5 per person per year, resulting in a reduction of the under-five mortality ratio of about a third, and of the maternal mortality ratio of nearly a quarter.
474. Investing US\$2.00 per capita in decreasing the bottlenecks in quality and demand would reduce under-five mortality by one third, and maternal mortality by nearly a quarter. Using the same amount of US\$2 to boost geographical access only, without addressing those bottlenecks would be merely resulting in a 10 percent reduction in the under-five mortality ratio, and a one percent reduction in the maternal mortality ratio
475. If resources could be mobilized to reach an increasing US\$3.00 per capita, both increasing access up to the HSDP target and reducing bottlenecks by 90 percent, this could result in a reduction of close to 40 percent in under-five mortality and 50 percent in the lifetime risk of dying of women. An even more ambitious scenario can be envisioned if about US\$5.00 per capita can be mobilized that could lead to a reduction of 49 percent in under-five mortality and 58 percent in the lifetime risk of dying. Adding the provision of additional “second generation” communicable disease control and treatment (include treatment for multi-drug resistant TB, resistant malaria, and HAART⁸⁰ for AIDS patients) would increase the costs significantly—up to an additional US\$16.00 per person per year—resulting in an impact that is difficult to appreciate given the lack of solid evidence on the effect of these interventions on MDG goals and the limited contribution of malaria to mortality in Ethiopia.
476. Adding clinical care services—mainly for malaria, pneumonia and assisted deliveries—either at the community level or at the health post level will provide some benefits but will also incur significant additional costs. However, the marginal benefits of adding these services is quite limited—with the probable exception of the areas heavily affected by malaria. Benefits will also have to be balanced against the enhanced human resource development and managerial challenges implied by the provision of these services. As shown in the above section on human resources⁸¹ it will likely be much more complex for the system to produce and retain personnel with clinical skills than with standard public health profiles, particularly in rural areas. Clinical services are also more challenging to monitor, supervise and regulate given their highly discretionary and transaction intensive nature, and would likely be better provided in a secondary phase after the implementation HEP and Health Promotion package has

⁸⁰ HAART: Highly Active Anti-Retro Viral Therapy

⁸¹ See chapter 5

triggered some capacity and institutional development, and established the backbone of a health system.

8. BUILDING ON EXISTING STRENGTHS AND ADDRESSING POLICY ISSUES FOR IMPROVED HEALTH OUTCOMES

477. This section outlines strengths in the health sector that can be built upon in addressing health sector objectives. It also identifies key policy and strategic issues for further discussion with the Government of Ethiopia.
478. The Government of Ethiopia recognizes health as a vital component in poverty reduction, incorporating it in policy, strategic and operational levels. Despite being one of the poorest countries in the world, Ethiopia has been able to generate improvements in some key health indicators. Infant and child mortality rates have declined and are lower than those in other countries with similar per capita incomes. Malnutrition rates have also decreased over time although these rates are still among the highest in the world. Ethiopia has also been particularly successful in increasing coverage rates for certain standardized interventions such as polio immunizations and vitamin A distribution and in creating awareness for family planning and HIV/AIDS. *While it has made achievements in these areas, it has not been able to make the same inroads in other low-cost interventions such as the use of ORT during diarrhea episodes and use of bed nets.* Ethiopia also has not been able to capitalize on the successful polio immunization campaign in order to deliver other immunizations, nor has it been able to increase awareness of STDs at the same level as HIV/AIDS, despite the existence of successful information campaigns for the latter. While generating awareness for and demand for family planning, it has not been as successful in supplying a sufficient amount of contraceptives needed to address the increase in demand. These deficiencies require *improvements in information exchange and service delivery channels*. It would also be important to think of *ways to maximize existing information and service delivery channels that are working*. In the case of HIV/AIDS, for example, village meetings were the most frequently cited sources of information (80 percent of women and 71 percent of men) in the DHS. How can these meetings and other village forums be used to disseminate other useful information and services? Media can also be used because analyses indicate that mother's exposure to media is positively associated with improved maternal health care and children's nutritional status, as well as improved knowledge and use of family planning. However, media coverage is not extensive in Ethiopia,⁸² suggesting that investments in increasing access to rural radios could contribute to behavior change, likely having an impact on child mortality. The cost and impact simulations show that there is a large potential for decreasing under-five mortality

⁸² only 14 percent of women and 27 percent of men have access to some form of mass media. Radio is the most common media source that men and women are exposed to although only 10% of women and 25 percent of men listen to the radio on a weekly basis (DHS 2000).

- in supporting family-oriented services, providing both information and subsidies to key commodities. How can incremental resources for the sector be oriented to support information and community based services to trigger changes in household practices?
479. How can coordination among different services be improved? In “piggy-backing” additional activities to successful programs, it would also be important to be careful to avoid overloading the system given existing implementation capacity.
480. *Inequities exist in terms of outcomes and utilization rates between rural-urban areas, income levels, and regions.* Urban-rural differences are more marked in terms of outcomes and prevalence rates, with urban areas having lower diarrhea and acute respiratory prevalence rates for young children, as well as infant mortality and stunting rates. Urban areas also have closer access to health facilities with at least 94 percent of households within 5 km of facilities that provide curative services compared with only 30 percent for rural areas. Regional differences in terms of access to facilities and health personnel are also prominent with Afar and Somali generally faring the worst especially in terms of health personnel to population ratios. *Although utilization rates of health services vary based on income levels, absolute utilization rates are still low across all income quintiles.* Income differentials are more striking in terms of service utilization rates, for example, with the richest quintile benefiting from higher rates of immunizations and assisted deliveries relative to the poorest quintile. While wealth-based inequalities exist, these are still relatively low compared to other countries. The use of services even among the richest households is consistently quite low. While the rich-to-poor ratio is 27 in terms of assisted deliveries, the utilization rate of this service by the richest quintile is only 24.3 percent.
481. *The low coverage and utilization rates underscore the need for strategies that would increase access to services while at the same time ensure that quality improvements take place.* Having access to a nearby facility and quality services are the two major reasons cited for use of facilities – the increase in facilities would need to be accompanied by increases in availability and quality of drugs and well trained staff. Supply of family planning services also need to catch up with rapid demand creation. How to ensure that the main supply-side intervention currently proposed by the Government of Ethiopia, i.e. the Health Extension Package can be adequately financed and implemented in the current decentralization context ? Is there need and space for enhancing the reach of the HEP by adding other outreach activities such as more mobile teams, or Child Days or Family Health Days especially during the initial implementation stage of the Health Extension Package and as a way to strengthen it ?
482. *Demand side interventions also need to complement supply side interventions.* Very low utilization of services by the poor in urban areas (e.g., the percentage of assisted deliveries and utilization of available services such as antenatal care has been very low) suggests that supply-side interventions are unlikely to be enough. the budgeting-impact simulations indicate that investing in demand side

interventions may buy more for the money than expanding access and quality only. The Government of Ethiopia plans to address these issues through a combination of expansion of community based approaches –the Health Promoters package- and enhanced use of the media. Health promoters are to support activities that promote behavior and values change using resources from both the public and the private sectors. Creating awareness can help in generating demand for services. For example, in order to address malnutrition, mothers can be informed about practical actions that can be taken regarding appropriate feeding practices, making use of locally available food items to nourish their families and themselves, and other healthy behaviors such as hand-washing. These activities will require partnerships between the public services, communities, NGOs and the private sector-using social marketing for soap and safe water systems, for example- in order to ensure access to commodities such as bed nets, condoms, ORT- as well as to create an enabling environment for behavior change. An important issue is to determine the level of subsidy to be provided to these activities as well as the modes/mechanisms for transfers that can be used. *Which community promotion costs should be financed by the government, e.g. training of promoters, cost of bed nets and ORS, information campaigns? What other demand side interventions could also be potentially promising in Ethiopia?* Can cash transfers or vouchers be undertaken on a trial basis? Can those transfers be linked to the use of other activities e.g. a free bed net for women who attend antenatal care, or packets of ORT given to children who come for immunization? The degree to which this type of intervention could succeed would also depend largely on the ability of implementing agencies to monitor and evaluate household compliance with agreed actions. Improvements in monitoring and evaluation are also needed to determine the impact of these interventions and to learn from them. As part of the development of a national action plan for child survival and to facilitate HEP roll-out, there is ongoing collaboration between the GOE, UNICEF, WFP, USAID, and the WB towards implementation of an enhanced Community Promoters package to strengthen the delivery of a package of integrated prevention and essential nutrition actions. A small pilot OCS program will be initiated in SNNPR in 56 woredas and later expanded to 325 food insecure woredas, nationwide. Female community volunteers will be used to promote vaccination and growth monitoring/nutritional screening. Discussions are also underway with WFP regarding food supplementation for malnourished children. It seems that the recent discussions indicate that the nutrition screening and food supplementation activities will be done separately but it might be worth considering to combine these interventions as an integrated package to be provided to households.

483. *The need for both supply and demand side interventions would need to be balanced with the reality that Ethiopia has a low per capita income and limited skilled human resources. It would thus be important to think about what can be done in the short-to medium term while ensuring that a long-term strategy is put in place for addressing this situation. In terms of human resources, Ethiopia will have to work with a predominantly lower-skill based population in the short-medium term since the educational system can only produce a limited number of*

physicians and nurses within that period of time. The MOH has been particularly resourceful in defining alternative skill mixes that fit well the epidemiological situation and implementation constraints of Ethiopia. The health officer profile helps address the shortage of general practitioners to some extent. The establishment of the Health Extension Program (HEP) is well adapted to delivering low tech standardized services that do not require diagnostic or therapeutic skills. It relies on a cadre of 8th to 10th graders with one year of training to provide outreach services for high impact services such as immunization, family planning or vitamin A supplementation. The profile of health promoters – usually community members with primary education- is well adapted to the Ethiopian context.

484. *However, there is still a gap in the human resource development strategy when it comes to personnel who are able to perform skilled deliveries and other slightly more complex clinical functions.* Reducing the maternal mortality ratio is among the key objectives of the Ethiopia Sustainable Development and Poverty Reduction Program (SDPRP). Although the Health Extension Package (HEP) program when combined with the community extension services is expected to reduce child and infant mortality rates, as well as the number of women dying through a reduction in number of pregnancies, it would only have a limited impact on the maternal mortality ratio, i.e. the proportion of women dying because of pregnancy related causes. Reducing this ratio will require an increase in the availability of skilled health professionals who can perform clinical services, particularly skilled deliveries but also basic emergency obstetrical care. Actions would also need to be taken to improve abortion safety.⁸³ *What actions can be taken by the GOE to ensure that the availability of skilled staff is available? Should the GOE also consider using a phased approach and have some of these HEWs receive additional training to be able to perform clinical services as an option for addressing its human resource constraint in the health sector?*
485. *What can Ethiopia do to attract and retain higher skilled workers?* Available evidence indicate that salary differentials for those who work in rural areas such as the hardship allowance for working in the emerging regions is not sufficient. Career development and training opportunities have been frequently cited as major concerns of health workers. The issue of staff deployment and possibly staff rotations would need to be seriously looked into in order to make rural postings more attractive to health staff. Actions would also need to be taken to make female workers feel safe when working in remote, rural areas. Aside from having appropriate safety guidelines and adequate protective supplies such as gloves, what other actions can be taken to address the difficulty of attracting professionals to work on clinical services because of their concern of contracting HIV/AIDS?

⁸³ Actions would also be needed to prevent unwanted pregnancies through increased awareness and use of family planning methods.

486. *Coordinated actions with other sectors will also be critical to success*, particularly those taken to improve the status and role of women in Ethiopian society. Improving girls' access to education is essential but other enabling factors would also need to be in place so that women can apply and benefit from their increased knowledge.
487. Positive health outcomes as a result of relatively easy access to facilities is expected in more urbanized regions such as Addis Ababa, Dire Dawa, and Harari. The relatively good performance of Tigray in terms of some indicators (immunization coverage, vitamin A coverage, awareness of family planning methods, low rate of female circumcision, etc.) despite its having the highest poverty head count ratio among all the regions is worth noting and learning from. Tigray is known for its strong community based organizations. CBOs can also be used to address its high incidence of acute respiratory infection and malnutrition in young children and mothers. Tigray has the highest number of frontline-workers to population ratio among all the regions. In Tigray, staffing and equipment are determined based on the location of a particular facility, i.e. more surgery related staff in a remote Health Center compared to an urban HC. In contrast, the MOH staffing standard only provides for health officers and general practitioners in district hospitals. Based on this experience and also on what other regions such as Oromia are doing, *could Federal staffing guidelines be more flexible-- and to what extent-- to allow regions to modify their staffing standards to accommodate local conditions? How will quality assurance be undertaken?*
488. *Roles of the private sector and NGOs vis-à-vis public sector.* As can be seen from the available data, the private sector plays an important role in the provision of health care services especially in the form of pharmacies and drug shops although most of the larger private facilities such as hospitals and health clinics tend to be in urban areas. Given the profit motive of the private sector, there is clearly a role for the public sector in preventive services, as well as the provision of health services in the poor and remote areas. In terms of areas of comparative advantage, the public sector could be mainly focusing on the delivery of the HEP, while the private sector could be mobilized to play a more significant role in community health promotion, social marketing type activities that maximize local channels to reach different segments of the population and clinical/curative services. In doing so it would be important to think of ways to ensure that the poor are not marginalized. One possibility is to look into ways to revise the exemption system in order to minimize leakages, and increase user fees for those who can afford to pay.
489. Non-profit NGOs could also be provided with a more enabling environment to encourage them to operate in areas that would not be attractive to for-profit private establishments. The government has expressed its interest and policy commitment to increasingly involve NGOs in the health sector. Legal procedures and guidelines exist for NGO licensing and operation. However, reports indicate that actual progress has been slow and varies across regions. Project formulation, appraisal and final agreement take time because of the way the NGO licensing

- and legal procedures are organized. Lack of coordination between various stakeholders, procedural differences across regions, human resource shortages, and bureaucratic red tape further limit NGO activities.
490. *There is general agreement that Ethiopia's per capita allocations and spending on health are very low.* The Marginal Budgeting for Bottlenecks Model makes a very good case for increasing funding to health services. For example, just an increase in USD 1.6 per capita invested in community-based health promotion activities could reduce under-five mortality by 27 percent while increasing financing by USD 4.87 to finance health extension/outreach, family-based/community based, and clinical services could reduce under five mortality by 49 percent and maternal mortality by 37 percent. These favorable outcomes make a compelling case for additional funds for the health sector, although clearly.
491. *At the same time, it is important to address the reasons for low budget execution rates in order to ensure that additional funds earmarked for the sector are spent as planned to meet sectoral objectives.* While HSDP data show a few regions such as Oromia, Afar, and Tigray either exceeding their budgets or fully spending their budgets in a few cases from 1996/97 to 2001/02 there are very few exceptions to the over-all pattern of underspending. What can be done to improve budget execution rates? It has been argued that one possible reason for underspending are donor procedures that cause delays in spending. The PER (2003) estimates that about 10 to 15 percent of grants and loans are channeled through government budgets. Even if we assume twice that amount or about 30 percent, the average spending rate across all the regions was approximately 44 percent, indicating that even government budgets (i.e. non-donor funds) were not totally spent. One other factor that could be responsible for underspending in health is the weak capacity for program planning/budgeting and management at the regional, zonal, and woreda levels. It would be important for the GOE to invest in strengthening the capacity for planning, budgeting and implementation at all levels, especially at the woreda level where responsibilities are increasingly being devolved.
492. *The need to achieve an adequate balance between expansion and maintaining adequate service delivery standards has been discussed extensively in different HSDP reviews.* Coverage levels in Ethiopia remain low and given the needs of the population, the expansion targets are not overly ambitious. Yet it would be important to ensure that recurrent spending keeps pace with facility expansion. Discussions with Regional Health Bureau staff during field visits indicate that two factors have contributed significantly to the financing of HSDP I outside of the intra-sectoral priorities set out in the Program: (i) HSDP's inadequate integration with the planning and budgeting processes⁸⁴ and (ii) a system of costing that is

⁸⁴The health budget has been developed using four separate processes: recurrent budget, capital budget financed through treasury resources, capital budget financed through loans and external assistance, and off-budget resources. It has been difficult to relate annual HSDP outputs and budgets with these three processes, especially since the budget process has generally been done one based more on incremental increases based on historical requirements rather than having sufficient analysis of resource requirements. The overall FDRE budget process is also usually based on a one-year time frame while HSDP is planned over a five-year period (HSDP Review 2003).

based on historical expenditure trends rather than the strategic directions outlined in HSDP. How does the Government plan to address these issues?

493. *While decentralization is meant to foster local ownership and management of government services, there are practical challenges that are inherent in Ethiopia's implementation of its decentralization policy.* These encompass, but also go beyond, the health sector and it would be important to identify ways to motivate the woredas to focus their attention on health priorities. At present with the system still in transition, woredas still greatly depend on regional and central levels for many health system functions, including the recruitment and allocation of health personnel and the procurement and distribution of supplies. However, woredas are expected to decrease their reliance over time on the higher administrative levels and it would be important to ensure that health sector development objectives are met. What mechanisms can be used to motivate and influence local planning and implementation? Will performance based agreements and matching grants be workable? SNNP, for example, has started piloting performance-based contracts with its woreda officers and it would be important to learn from these experiences.

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Annexes

Annex 1.1

Table 1.1. Poverty, Development, and Per Capita Revenue Indices by Region

Region	Poverty Index ^b	Rank (1=least poverty)	Development level Index ^c	Dev rank (1=most developed)	Per capita revenue (birr) 2000/01 (rank 1=highest)
Tigray	0.133	11	0.0972	6	20.8 (6)
Afar	0.1190	8	0.1501	10	12.7 (8)
Amhara	0.1303	10	0.1344	9	11.3 (10)
Oromia	0.0797	5	0.1202	7	15.2 (7)
Somali	0.0795	4	0.1771	11	8.2 (11)
Benishangul-Gumuz	0.1093	7	0.0897	5	24.2 (5)
SEP	0.1298	9	0.1211	8	11.5 (9)
Gambella	0.0960	6	0.0690	4	35.6 (4)
Harari	0.0669	3	0.0103	2	54 (3)
Dire Dawa	0.0565	2	0.0307	3	71.7 (2)
Addis ^a	-	1	-	1	580 (1)

Source: WB. *Public Expenditure Review*. 2001, annex II, pages 43-45.

^aAddis is not included in the Federal subsidy but is assumed to be the most developed region/administration.

^bThe poverty index reflects variations in food consumption and food insecurity and hence the expenditure requirements for the agricultural sector. Index is derived from 1995/96 HICES and 1996 WMS. These surveys however excluded non-sedentary populations in the predominantly pastoralist Afar and Somali regions, thereby underestimating the poverty level in these areas.

^c the Development index is comprised of 2 sets of variables. First set: sectoral indicators to reflect the level of development and second set: unit expenditure variables reflecting different expenditure needs. It also includes administrative cost, based on area and number of woreda. While this index tries to strike a balance between level of development and expenditure needs, it is also complex and non-transparent. A better alternative would be regional per capita income but this would have to wait for more accurate and statistically robust regional income estimates.

Table 1.2 Distribution of Health Workers and % of Female staff across Regions (2001/02)

Profession	Tig	Afar	Amh	Orom	Som	Ben	SNNP	Gam	Har	A/A	DD	Cent	NGO	OGA	Private (a)	Total
Physicians Females	66 NA	12 0	188 9	320 34	49 0	19 1	163 11	14 0	35 6	235 72	40 3	233 36	32 5	239 NA	246 32	1888 NA
Health Officers Female	62 NA	10 1	90 9	94 8	10 2	12 1	80 10	10 0	3 1	7 2	4 0	9 3	1 0	67 NA	25 2	484 NA
Pharmacists Female	6 NA	1 0	13 1	11 0	3 0	2 0	18 2	2 0	3 0	4 2	2 0	15 4	1 0	32 NA	5 4	118 NA
Nurses Female	1008 NA	195 36	1553 584	2327 892	345 85	212 48	1299 335	156 25	129 33	781 567	130 73	575 349	109 54	3862 NA	157 93	12838 NA
Env. Health W. Female	88 NA	11 0	299 23	276 23	32 2	33 2	0 0	13 1	8 1	61 9	77 37	23 5	1 0	49 NA	0 0	971 NA
Lab Tech. Female	111 NA	22 2	208 18	289 40	40 1	26 2	261 26	10 3	23 8	91 25	8 4	43 4	18 3	385 NA	160 42	1695 NA
Radiographer Female	16 NA	0 0	29 1	53 12	6 0	5 0	8 0	0 0	3 1	27 2	2 1	25 6	3 0	50 NA	20 6	247 NA
Pharm. Tech. Female	77 NA	16 2	70 18	122 21	16 2	10 0	98 13	9 0	12 3	64 20	9 0	19 6	5 0	258 NA	8 5	793 NA
Health Ass. Female	1087 NA	66 14	1617 461	2538 705	185 35	135 14	1126 232	65 8	64 32	412 250	5 1	258 151	225 44	115 NA	251 93	8149 NA
*FLHW Female	3073 NA	113 35	702 332	345 167	205 73	95 37	469 103	39 0	42 15	25 22	9 1	0 0	6 2	4927 NA	0 0	10050 NA

Source: MOH/PDD. Health and Health-related Indicators. 2001/02. Addis Ababa

Table A1.3 Staffing Norms by Different Types of Health Care Institutions

Category (population)	PHCU (25,000)	District Hospital (250,000)	Zonal Hospital (1 million)	Special Hospital (5 million)
Health officer	1	1	-	-
GP		4	14	68
Surgeon		-	1	5
Internist			1	5
Pediatrician			1	5
Gynecologist			1	5
Anaesthesiologist			1	5
Radiologist			1	3
Ophthalmologist				3
Other Specialists				4
<i>Total doctors</i>	<i>1</i>	<i>5</i>	<i>20</i>	<i>100</i>
PHW	5			
CHA	5			
TBA	5			
Primary midwife	1			
Junior env. HW	?			
Senior Env. HW	1	1	1	2
Junior PH nurse	1			
Senior PH nurse	1	2	2	5
Junior Cl. Nurse	1	10	16	90
Senior Cl. Nurse	1	5	30	180
Junior Midwife	1	2	8	20
Senior Midwife		4	12	40
N. Anaesthetist		2	2	5
J. Radiographer		2	2	3
S. Radiographer		1	1	6
J. Lab Tech	1	2	4	2
Sr. Lab Tech		1	2	4
J. Pharm tech	1	2	1	2
S. Pharm Tech		1	2	4
Pharmacist			1	2
<i>Total other HC workers</i>	<i>24</i>	<i>35</i>	<i>77</i>	<i>365</i>

Annex 2: The Marginal Budgeting for Bottlenecks (MBB) Tool

The Marginal Budgeting for Bottlenecks tool (MBB) is an analytical costing and budgeting tool developed by teams from the World Bank –Africa Region, South Asia region and HNP Anchor-, jointly with UNICEF and the World Health Organization. The tool has been developed in the context of HIPC and PRSP to respond to the request of low-income countries to plan, cost and budget marginal allocations to health services and assess their potential impact on health coverage and MDGs related health outcomes of the poor.

The tool helps i) assessing the allocative, technical and input efficiency of various options to use resources in the health sector ii) planning and forecasting the potential cost and impact of scaling up investments to increase the intake, coverage and quality of high impact health interventions iii) preparing results oriented expenditures programs and health budgets.

The tool has been used at country level to prepare Mid Term Expenditures Frameworks in Benin, Mali, Mauritania, and Rwanda. In Ethiopia, it has been used to assess the cost and potential impact of various services delivery options to enhance the contribution of health services to the MDGs. In Madagascar and India it is currently used as a planning tool for reallocating funding within the health sector as well as orienting expenditures of a newly developed national health project supported by a World Bank loan.

The MBB mainly addresses the following five questions:

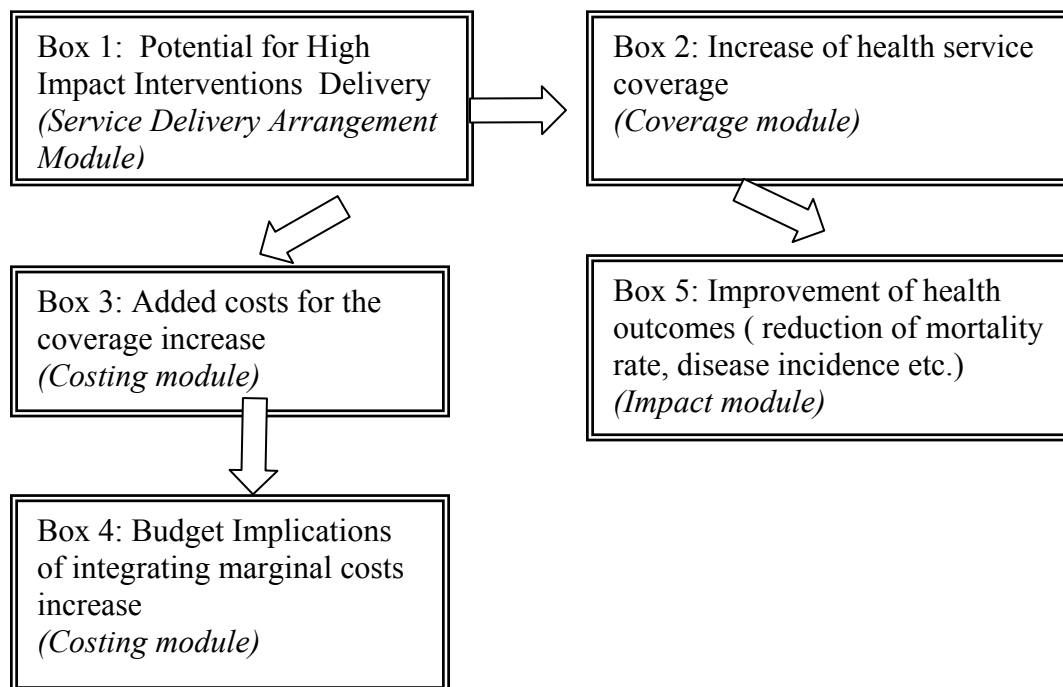
Who does what? Which high impact interventions can be integrated into existing providers/service delivery arrangements to accelerate progress towards the health MDGs? What are the major hurdles or “bottlenecks” hampering the delivery of health services, and what is the potential for their improvement ?

How much money is needed for the expected results?

How much can be achieved in health outcomes such as mortality reduction by removing the bottlenecks?

Which amounts of financing is it possible to mobilize and how should these be allocated and channeled ?

MBB comprises five modules: (1) a *health services delivery arrangements* module, (2) a *health service coverage module* called *coverage module* in short hereafter; (sometimes also called bottleneck identification module), (3) a *costing module*, (4) a *budgeting module* (5) and an *impact module*. Conceptually, the five modules are embedded into the following framework:



Most recent scientific research⁸⁵ provides increasingly solid evidence of how and to what extent specific health interventions can improve health outcomes. These “high impact interventions” can be integrated into various *services delivery arrangements* already in place in a given country (*Box 1*). The design of the MBB tool reflects the scientific findings in a *marginal* way. By acknowledging the current health service coverage, the *coverage module* of the MBB tool (*Box 2*) captures how much coverage with high impact interventions can be increased above the current levels of coverage, reaching the “production frontiers” by identifying and removing key “bottlenecks to implementation. The *costing module* (*Box 3*) calculates the amount of marginal inputs (and marginal cost) that would need to be mobilized to remove the obstacles towards the production frontier. The *budgeting module* (*Box 4*) estimates the additional resources to be mobilized on top of the current budget for removing the obstacles to increasing health service coverage (marginal financing). And the *impact module* (*Box 5*) helps to quantify the extent of improvement for the health outcomes vis a vis the current situation, e.g. the expected contribution to reducing under-five mortality rate that could be obtained through an increase in health service coverage.

The MBB tool is a quite simple computer program (Excel spreadsheet program). Users can use this tool by in-putting the required data in the Input sheets and interpreting the results. The MBB computer tool can execute a variety of policy and budgeting simulations and quantifications; for example i) rating the amounts of inputs needed to achieve a certain level of improvement of coverage in a given context and the contribution of the increased coverage to health impact, ii) or alternatively estimating the additional coverage and potential impact that can be achieved by budgeting additional resources.

85 Becker & Black; The Lancet Child Survival Series.

The MBB becomes increasingly appealing to countries for its unique characteristics that distinguish the MBB from other costing exercises:

Explicitly result driven

Costing of bottlenecks not packages

Focusing on the health service delivery mode rather than specific intervention

Marginal costing and budgeting

Country specific model

The elaboration of the manual is one of the key activities of a larger work-program aiming at i) developing and disseminating knowledge on planning and budgeting for enhanced health services contribution to reaching the MDGs ii) providing technical support to countries for costing the health services component of the Poverty Reduction Strategy iii) building capacity to developing results oriented Mid Term Expenditures Frameworks in the health sector. This program has three main components:

A. Research and Development: this includes further development of the tool, including the development of a nutrition, AIDS and TB impact model, further elaboration on the costing functions of service delivery, as well as further detailing of the budgeting module in line with the ongoing NHA exercises.

B. Support to countries: this includes providing technical support to the preparation of cost and impact simulation models as an input into health projects and PRSC operations, as well as the preparation of results oriented MTEFs, and MDGs plans. (In Ethiopia for example linking the MBB model to the MAMS macro-micro consistency model in collaboration with the chief economist office)

C. Capacity Building: this includes the preparation of the manual, as well as the organization of regional workshops, one francophone and one Anglophone in FY04 and FY05