Ethiopia
Complete

Contents

Articles

Foreword

Ethiopia:Foreword

This analytical profile provides a health situation analysis of the Ethiopia and, coupled with the **Factsheet** [1], it is the most significant output of the African Health Observatory. The profile is structured in such a way to be as comprehensive as possible. It is systematically arranged under eight major headings:

1. Introduction to country context
2. Health status and trends
3. The health system
4. Specific programmes and services
5. Key determinants
6. Progress on the health-related Millennium Development Goals
7. Progress on the Ouagadougou and Algiers Declarations
8. Progress on the Libreville Declarations

This analytical profile does not merely recount tales of misery – it also shows significant advances that have been made in the last decade. The profile shows clearly that health systems are the key to providing a range of essential health care. African governments and their partners need to invest more funds to strengthen their health systems.

Please note that this is a work in progress and some sections are in the process of being completed. It will also be continually updated and enriched to bring you the best available evidence on the health situation in the Ethiopia. We hope it will be useful to you, to countries and partners in their efforts to improve health and health equity in the Region.

The profiles that are shown on these pages are detailed and analytical and consist of a combination of text, graphs, maps and illustrations. If you are interested in getting statistical profiles only, these are available on the **Factsheet** [1].

We gratefully acknowledge the inputs of country and subregional focal points on health information, data and statistics. Without their contribution these profiles would not have been possible. We also thank the African Health Observatory focal points at WHO Country Offices for coordinating the production of the profiles and those who reviewed and gave their input to earlier drafts of the profiles.

References

[1] http://www.aho.afro.who.int/profiles_information/images/d/d5/Ethiopia-Statistical_Factsheet.pdf

Introduction to Country Context

Ethiopia:Introduction to Country Context

Federal Republic of Ethiopia

The Federal Democratic Republic of Ethiopia [1] is located in the north-eastern part of Africa known as the Horn of Africa (see map). The country has a total surface area of approximately 1.1 million square kilometres.[2] Its topography ranges from peaks as high as 4550 m above sea level at Mt Ras Dashen in the north, to land 110 m below sea level in the Afar Depression.

Ethiopia is a land-locked country, sharing a border with six countries: Eritrea and Sudan in the north, Djibouti and Somalia in the east, Kenya in the south and South Sudan in the west.

The country has different climate zones, varying according to longitude and latitude. Climate variations such as rainfall and higher-than-average minimum temperature have created instability in the occurrence of certain diseases, in particular malaria.[3]

Ethiopia is the second most populous sub-Saharan African country, with a population of 84 million and a 2.6% annual growth rate.[2] A total of 83.6% of the population lives in rural areas, making Ethiopia one of the least urbanized countries in the world. The average national household size is 4.7.

The female to male ratio is nearly 50% of each sex.[2] However, the illiteracy rate for adult females is 77%, out of a total adult illiteracy rate of 64%.[2]

The Ethiopian economy is agriculture based, with the agricultural sector accounting for nearly 42% of the gross domestic product and contributing 83.6% to overall employment. Agriculture produces food for domestic consumption, raw material for local industry and primary goods for export.

The industrial sector, mainly based on processing agricultural goods, accounts for 13% of gross domestic product, while the service sector accounts for 45% of gross domestic product.

Gross national income per capita is US$ 971; however, an estimated 39% of the population lives below US$1.25 purchasing power parity per day. Ethiopia's Human Development Index is 0.363, which means that it is one of the least developed countries in the world, with a ranking of 174 out of 187 countries.[2]

The Federal Democratic Republic of Ethiopia was established with the inception of the constitution in 1995. There are two parliament chambers: the Council of Peoples' Representatives, with the highest authority of the Federal Government, and the Council of Federations, representing the common interests of nations, nationalities and people of the state. The responsibility at the federal level includes national defence, foreign relations and a general policy of common interest and benefits.[2]

Ethiopia consists of nine self-governing regional states (Afar, Amhara, Benshangul-Gumaz, Gambella, Harari, Oromia, Somali, Southern Nations Nationalities and People, Tigray) and two city administrations (Addis Ababa and Dire Dawa).

The regional states and the two city administration are divided into districts and kebeles (the smallest administrative unit in Ethiopia). The decentralization of power to regional governments and local communities is the basis for all types of public service delivery. This approach is believed to bring closer community participation at a grass-roots level.[2]

References

[1] http://www.imf.org/external/pubs/ft/scr/2011/cr11305.pdf

[2] Ethiopian Government portal: government overview. (http://www.ethiopia.gov.et/English/Information/Pages/GovernmentOverview.aspx)

[3] Ethiopian Government portal: Geography (http://www.ethiopia.gov.et/English/Information/Pages/Geography.aspx)

Health Status and Trends

Ethiopia:Health Status and Trends

This section of the analytical profile is structured as follows:

2.1 Analytical summary

2.2 Life expectancy

2.3 Mortality

2.4 Burden of disease

Ethiopia:Analytical summary - Health Status and Trends

Ethiopia is characterized by a predominantly rural and impoverished population with limited access to safe water, housing, sanitation, food and health care. Estimated life expectancy at birth [1] is 57 years for males and 60 years for females.[2] The burden of disease measured in terms of premature death is estimated at 350 disability adjusted life years [3] lost per 1000 population, which is the highest in sub-Saharan Africa.

The disease burden, responsible for 74% of deaths and 81% of disability adjusted life years lost per year, is dominated by malaria, prenatal and maternal death, acute respiratory infection, nutrition deficiency, diarrhoea and HIV/AIDS.[4]

In addition to the widespread poverty and low income level of the population, a low literacy rate (mainly among women) and lack of access to health care have contributed to ill health in the country.[5]

Ethiopia has one of the world's highest maternal mortality ratios, with an average 675 maternal deaths per 100 000 live births.[6] The main strategy for maternal mortality rate reduction is community empowerment via the health development army [7] to:

- recognize pregnancy-related risks;
- ensure access to a core package of maternal and neonatal health services that creates a supportive safe environment for safe motherhood and newborns.

The infant mortality rate is 59 deaths per 1000 live births, while the overall under-five mortality rate is 88 per 1000 live births. A total of 67% of all deaths of children aged under 5 years in Ethiopia take place before a child's first birthday.

However, these levels are considerably lower than those reported in the *Ethiopian demographic and health survey, 2005*.[8] The infant mortality rate has decreased by 23%, from 77 to 59 per 1000 live births, while the under-five mortality rate has decreased by 28%, from 123 to 88 per 1000 live births.

Nevertheless, neonatal deaths and deaths in children aged under 5 years are responsible for 30% of all annual deaths and are caused mainly by diarrhoea, malaria and pneumonia.

There is also a high mortality and disease burden from nutrition-related factors among children under the age of 5 years. A total of 34.6% of children are born underweight, while 50.7% are stunted. Stunting (low height-for-age) reflects the cumulative effects of undernutrition and infection since birth and even prior to birth.

The prevalence rate of HIV/AIDS is 2.4%, which is low compared with other sub-Saharan African countries, and there are 1.1 million people living with HIV. The HIV prevalence rate exhibits a marked variation between urban and rural populations at 7.7% and 0.9%, respectively.

The epidemic pattern is heterogeneous, with disparity in different regions. The prevalence has been stabilized as a result of dedicated investment and campaigning against epidemics in terms of education, treatment, and prevention of mother-to-child transmission.[9]

Nearly three quarters of Ethiopia is considered to be malaria prone. A malaria epidemic occurs every 5–8 years with frequent outbreaks within short intervals. Annual average malaria cases reached 3 million during 2000–2005; however, the number of cases fell to 1.7 million in 2009. The lower levels of malaria mortality after 2004 are associated with an expansion of the malaria control programme [10] [11].

Ethiopia ranks third in Africa and eight out of the 22 highest tuberculosis (TB) burdened countries in the world. The prevalence of all forms of TB is estimated at 527 per 100 000 population, leading to a 64 per 100 000 population mortality rate annually. The incidence rate of all forms of TB is estimated at 359 per 100 000 population, while the incidence rate of smear-positive TB is estimated at 163 per 100 000.

References

[1] http://www.who.int/whosis/indicators/2007LEX0/en/index.html

[2] World health statistics 2010 (pdf 4.62Mb). Geneva, World Health Organization, 2010 (http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf)

[3] http://www.who.int/gho/mortality_burden_disease/countries/deaths/en/index.html

[4] Government of Ethiopia, Ministry of Health (http://www.moh.gov.et/English/Pages/Index.aspx)

[5] Situation analysis and needs assessment (SANA) on the Libreville Declaration on health and environment interlinkage country report (pdf 5.72Mb). Addis Ababa, Federal Government of Ethiopia, 2010 (http://www.unep.org/roa/hesa/Portals/66/HESA/Docs/SANA_docs/SANA-Ethiopia.pdf)

[6] Ethiopian demographic and health survey, 2011 (pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro, 2011 (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

[7] http://www.ministerial-leadership.org/blog/armies-and-model-families-ethiopia%E2%80%99s-vision-better-health

[8] Ethiopian demographic and health survey, 2005 (pdf 2.02Mb). Addis Ababa, Central Statistical Agency; Calverton MA, ORC Macro, 2006 (http://www.measuredhs.com/pubs/pdf/FR179/FR179[23June2011].pdf)

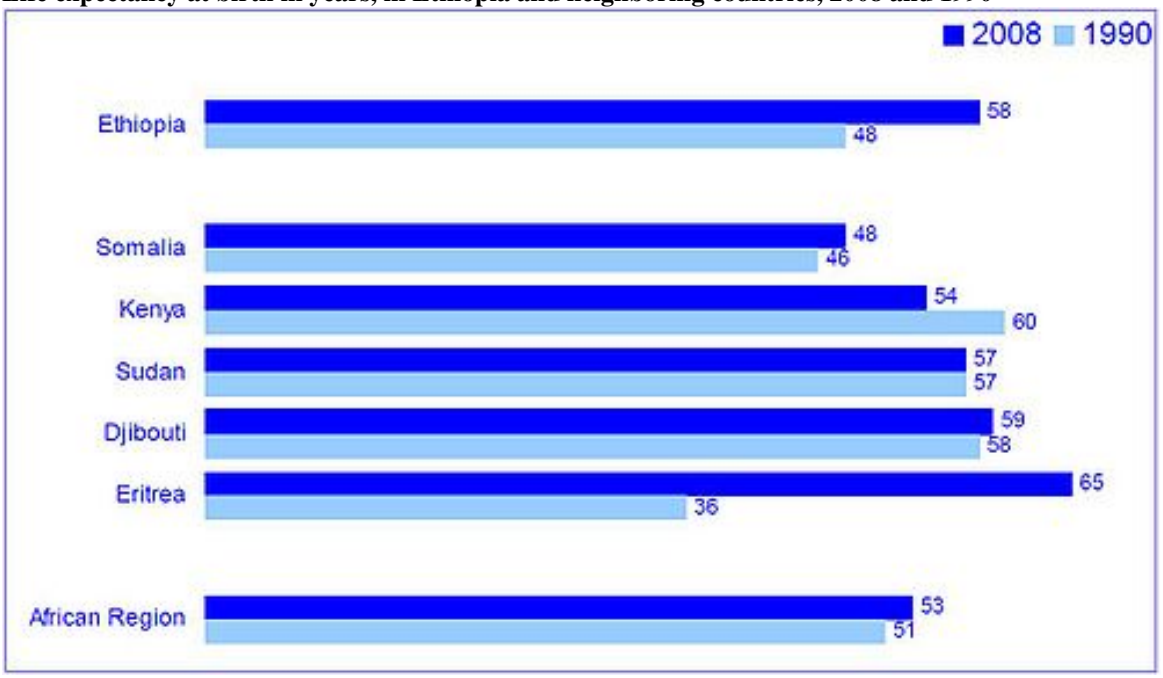
[9] Trends and prospects for meeting Millennium Development Goals by 2012. Millennium Development Goals report. Addis Ababa, Government of Ethiopia, Ministry of Finance and Economic Development, 2010

[10] http://whqlibdoc.who.int/publications/2012/9789241503341_eng.pdf

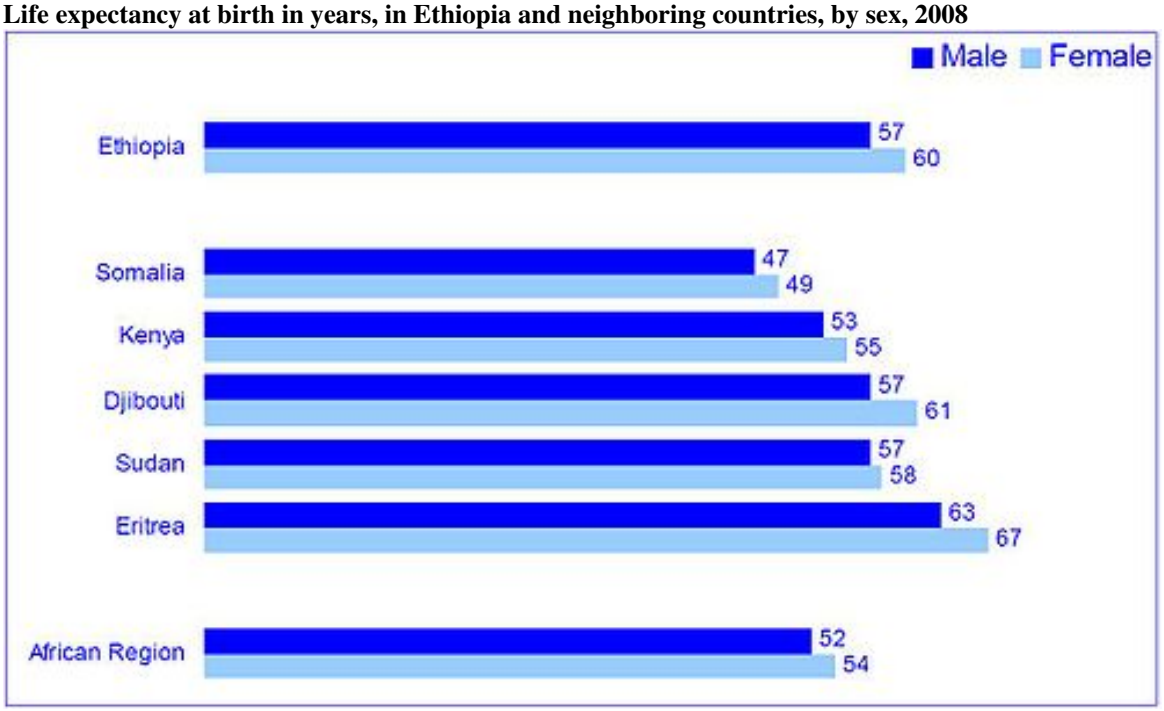
[11] World malaria report, 2010 (pdf 9.85Mb). Geneva, World Health Organization, 2010 (http://www.who.int/malaria/world_malaria_report_2010/en/)

Ethiopia:Life expectancy

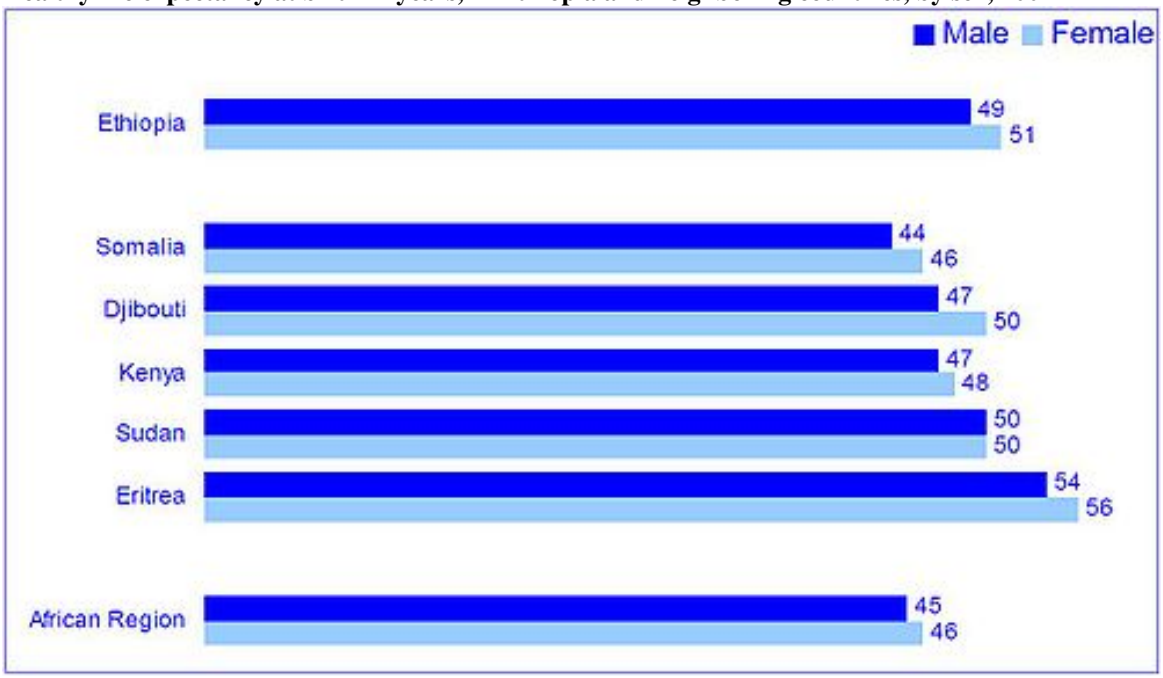
Life expectancy at birth in years, in Ethiopia and neighboring countries, 2008 and 1990



Life expectancy at birth in years, in Ethiopia and neighboring countries, by sex, 2008

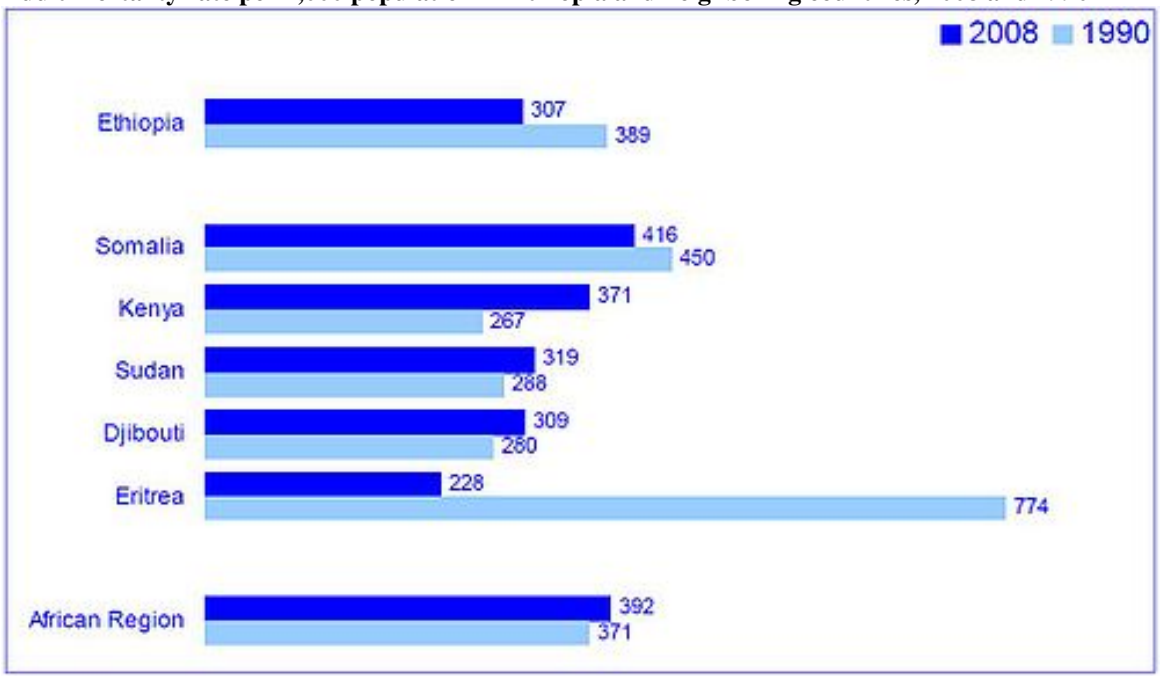


Healthy life expectancy at birth in years, in Ethiopia and neighboring countries, by sex, 2007

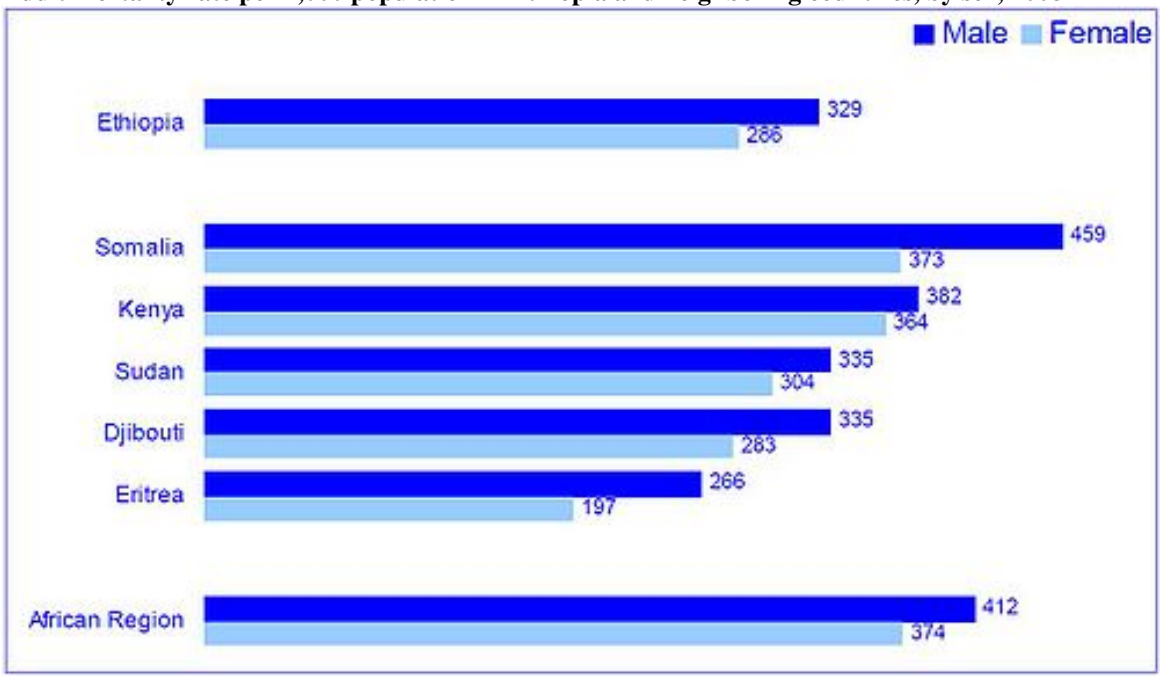


Ethiopia:Mortality

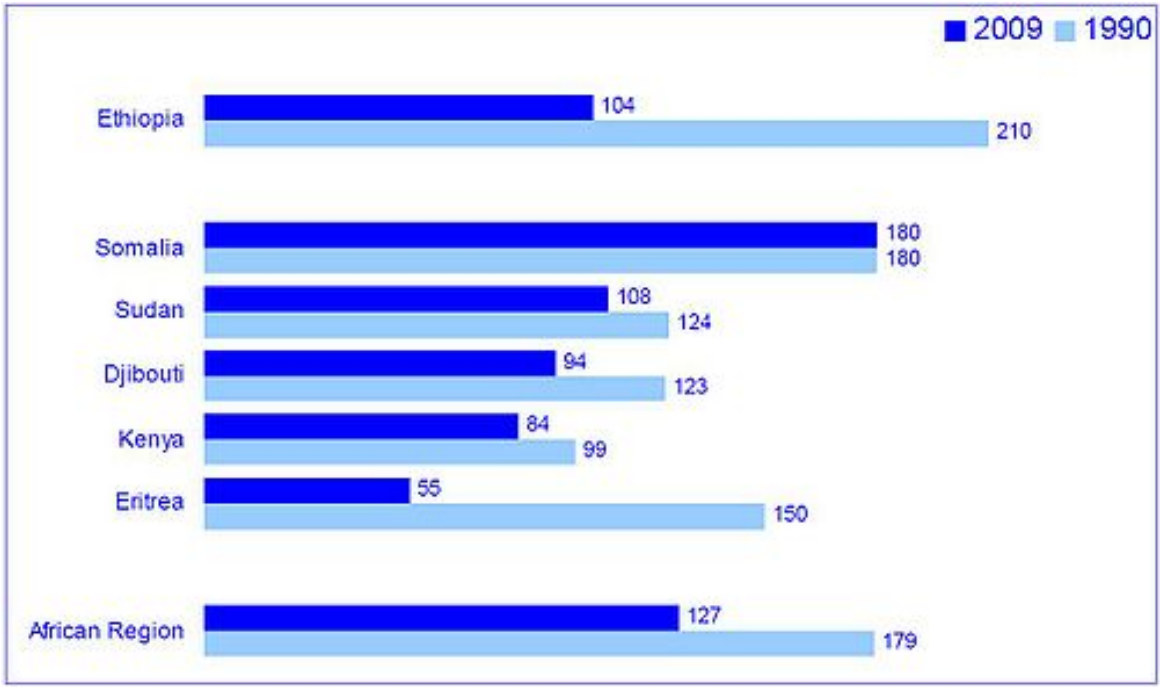
Adult mortality rate per 1,000 population in Ethiopia and neighboring countries, 2008 and 1990



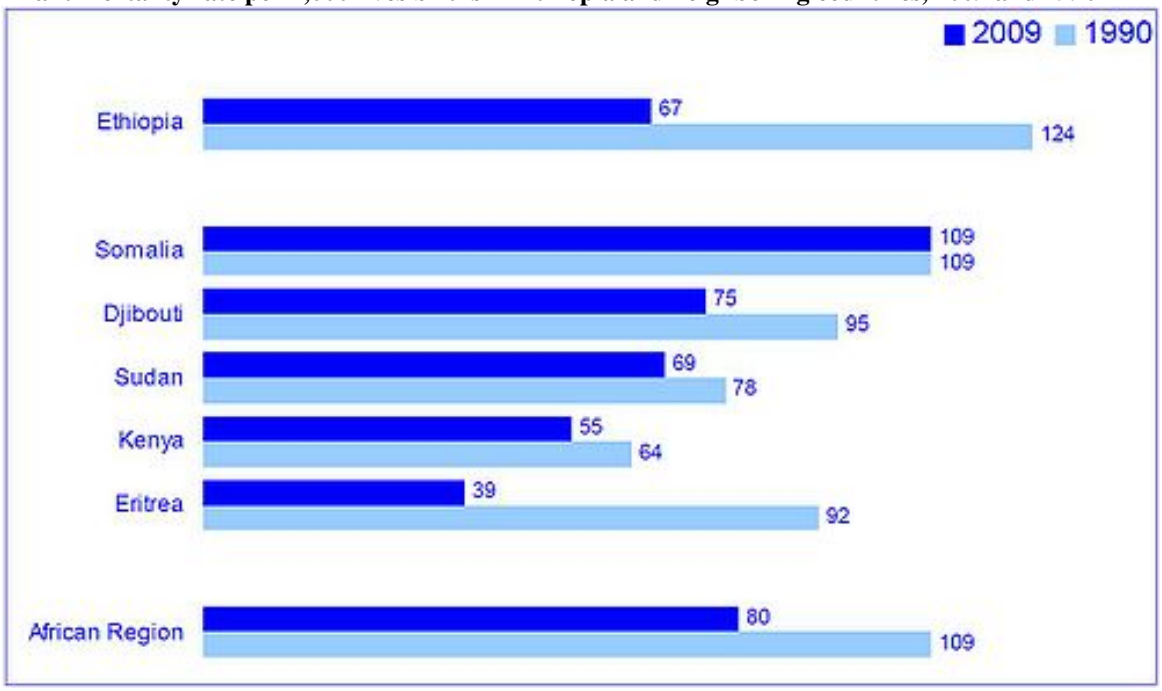
Adult mortality rate per 1,000 population in Ethiopia and neighboring countries, by sex, 2008



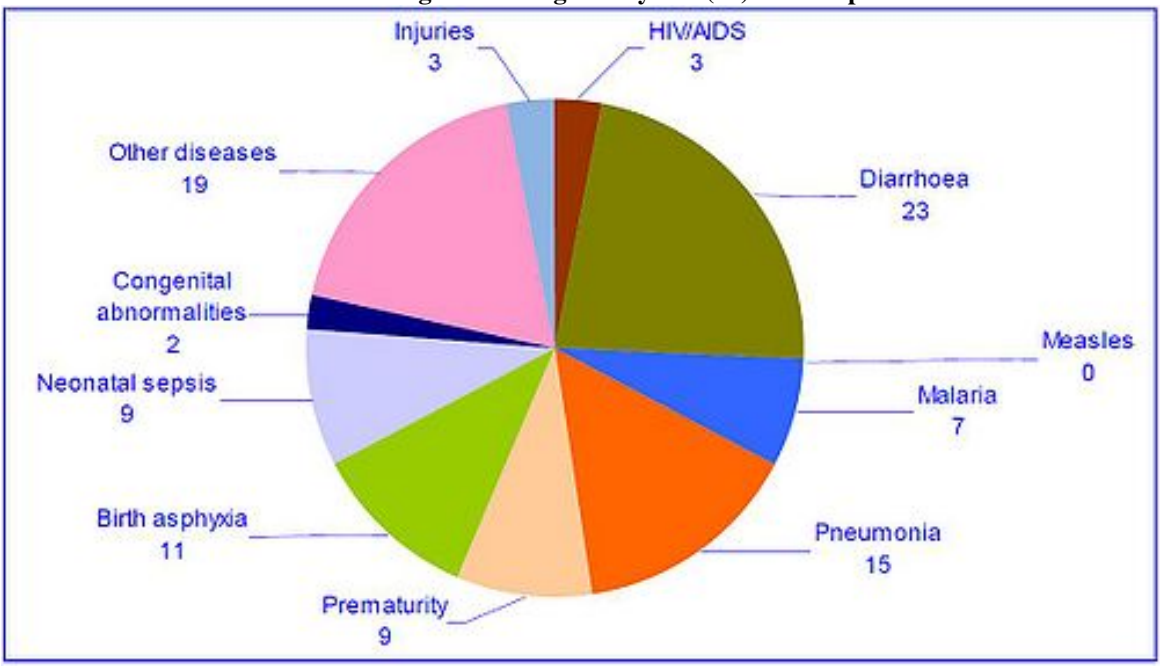
Under-five mortality rate (per 1, 000 live births) in Ethiopia and neighboring countries, both sexes, 2009 and 1990



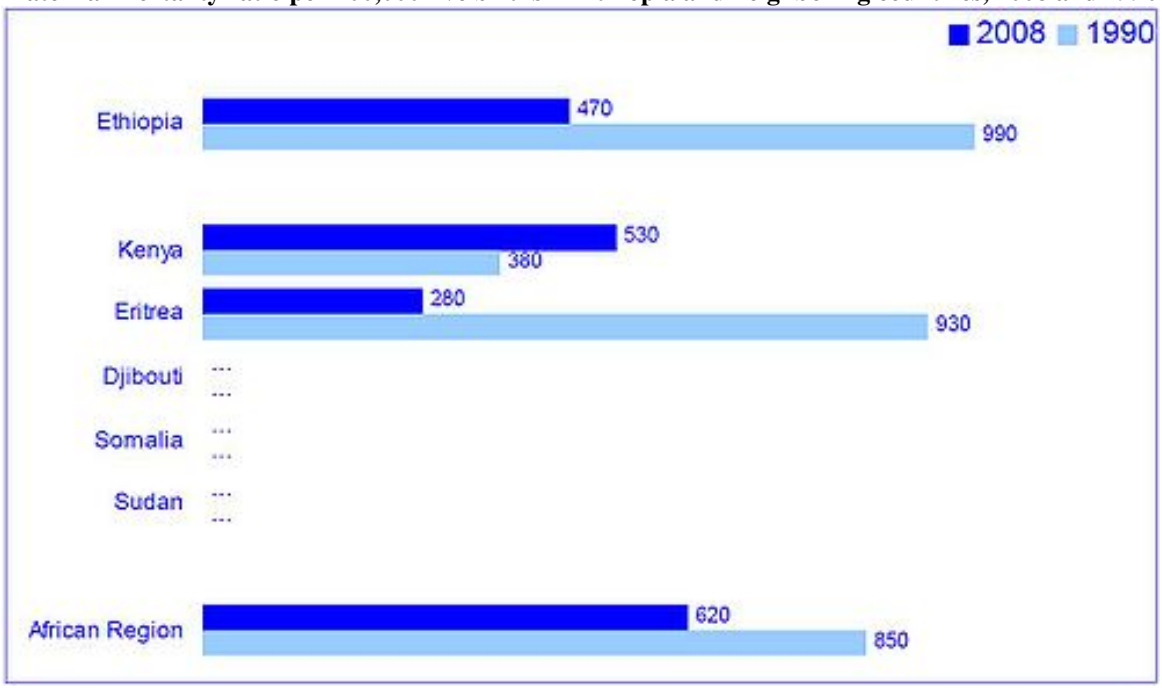
Infant mortality rate per 1,000 lives births in Ethiopia and neighboring countries, 2009 and 1990



Distribution of causes of death among children aged <5 years (%) in Ethiopia



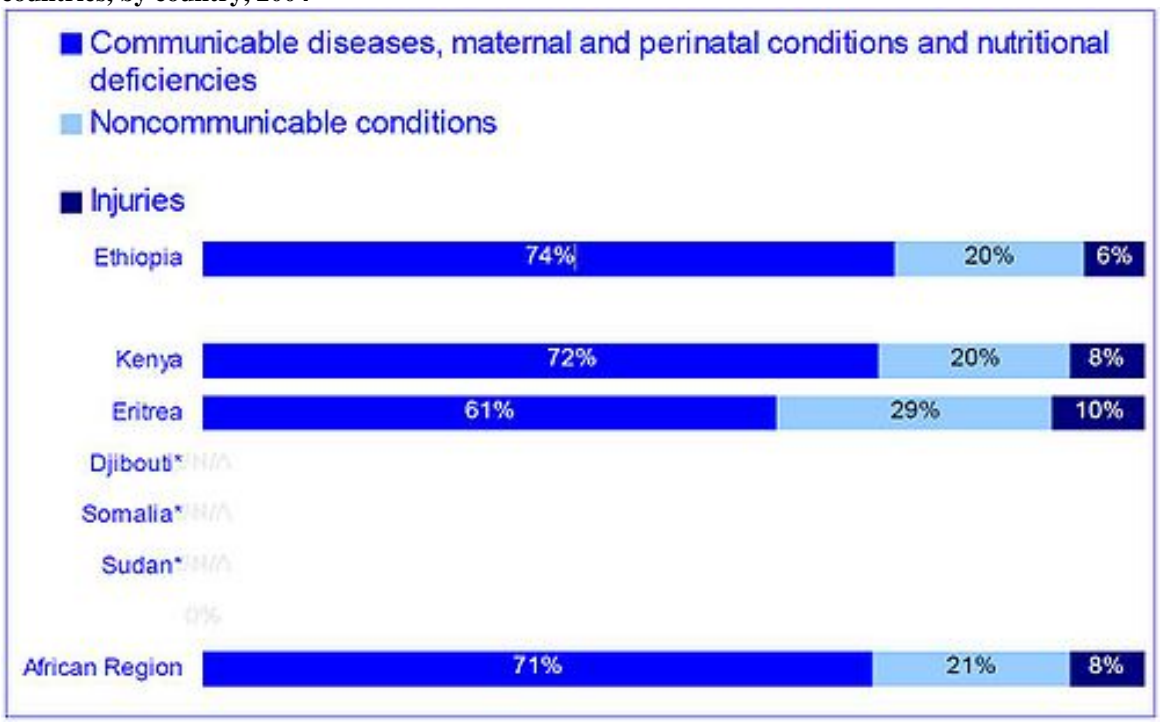
Maternal mortality ratio per 100,000 live births in Ethiopia and neighboring countries, 2008 and 1990



...: No data

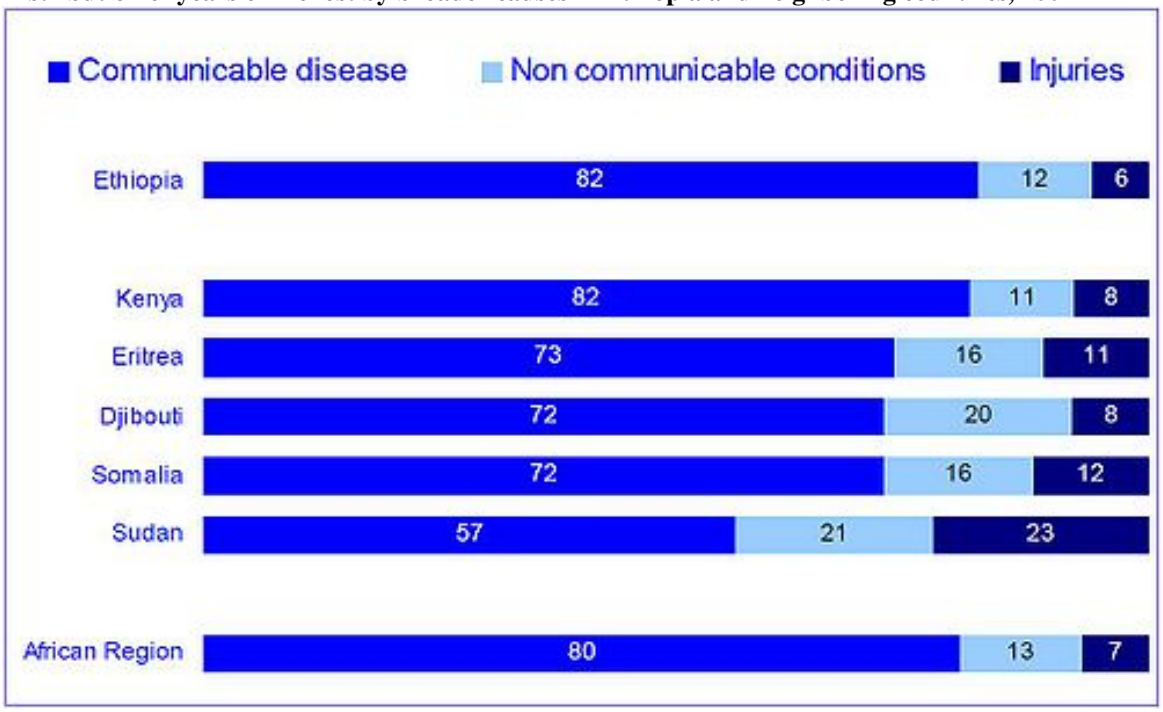
Ethiopia:Burden of disease

Distribution burden of diseases as % of total DALYs by broader causes in Ethiopia and neighboring countries, by country, 2004



...: No data

Distribution of years of life lost by broader causes in Ethiopia and neighboring countries, 2004



The Health System

Ethiopia:The Health System

Health systems are defined as comprising all the organizations, institutions and resources that are devoted to producing health actions. A health action is defined as any effort, whether in personal health care, public health services or through intersectoral initiatives, whose primary purpose is to improve health. But while improving health is clearly the main objective of a health system, it is not the only one. The objective of good health itself is really twofold: the best attainable average level – goodness – and the smallest feasible differences among individuals and groups – fairness. Goodness means a health system responding well to what people expect of it; fairness means it responds equally well to everyone, without discrimination

National health systems have three overall goals:

1. good health,

2. responsiveness to the expectations of the population, and 3. fairness of financial contribution.

WHO describes health systems as having six building blocks: service delivery; health workforce; information; medical products, vaccines and technologies; financing; and leadership and governance (stewardship). The 2008 Ouagadougou Declaration on Primary Health Care and Health Systems in Africa focuses on nine major priority areas, namely Leadership and Governance for Health; Health Services Delivery; Human Resources for Health; Health Financing; Health Information Systems; Health Technologies; Community Ownership and Participation; Partnerships for Health Development; and Research for Health.

This section of the analytical profile is structured along the lines of the WHO Framework and the priorities described by the 2008 Ouagadougou Declaration.

3	The Health System
3.1	Health system outcomes
3.2	Leadership and governance
3.3	Community ownership and participation
3.4	Partnerships for health development
3.5	Health information, evidence and knowledge
3.6	Research
3.7	Health financing system
3.8	Service delivery
3.9	Health workforce
3.10	Medical products, vaccines, infrastructures and equipment
3.11	General country health policies
3.12	Universal coverage

Ethiopia:Health system outcomes

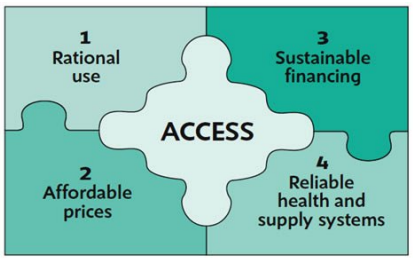
Health systems have multiple goals.[1] *The world health report 2000*[2]defined overall health system outcomes or goals as improving health and health equity in ways that are:

- responsive
- financially fair
- make the best, or most efficient, use of available resources.

There are also important intermediate goals: the route from inputs to health outcomes is through achieving greater access to, and coverage for, effective health interventions without compromising efforts to ensure provider quality and safety.

Countries try to protect the health of their citizens. They may be more or less successful, and more or less committed, but the tendency is one of trying to make progress, in three dimensions:

- First, countries try to broaden the range of benefits (programmes, interventions, goods, services) to which their citizens are entitled.
- Second, they extend access to these health goods and services to wider population groups and ultimately to all citizens: the notion of universal access to these benefits.



The health systems access framework[3]

- Finally, they try to provide citizens with social protection against untoward financial and social consequences of taking up health care. Of particular interest is protection against catastrophic expenditure and poverty.

In health policy and public health literature, the shorthand for these entitlements of universal access to a specified package of health benefits and social protection is universal coverage.

This section of the health systems profile is structured as follows:

Analytical summary

The National Health Policy [4] emphasizes core principles of democratization and decentralization of the Health Care System [5] of Ethiopia. Preventive, promotive and curative components of health services in the country have shown a remarkable improvement, meeting equitable and quality health components of health care for all parts of the population[6] and encouraging private and nongovernmental organization participation in the health sector.

The health sector follows a 5-year rolling plan as part of the national development plan. Since 1997–1998, three consecutive phases have been completed and currently the country is implementing the fourth comprehensive Health Sector Development Programme (HSDP) [5].[7]

In line with the national policy of devolution of power, the Federal Ministry of Health [8] and the regional health bureaus focus mainly on policy, strategy and technical support while woreda health offices manage and coordinate the operation of the woreda health system under their jurisdiction.

The health system has had a huge transformation over the past two decades, with a dramatically improved potential access to care through the accelerated expansion of health facilities. An innovative community-level health service, the Health Extension Programme [9] was introduced by training and deploying female health extension workers and institutionalizing community health care at the health post level. Over the past decade, the Government of Ethiopia [10] has given priority to the expansion of health facilities, especially those of primary health care. In order to expand comprehensive obstetric care services further to the community level, the Government is planning an accelerated expansion of primary hospitals in each woreda.

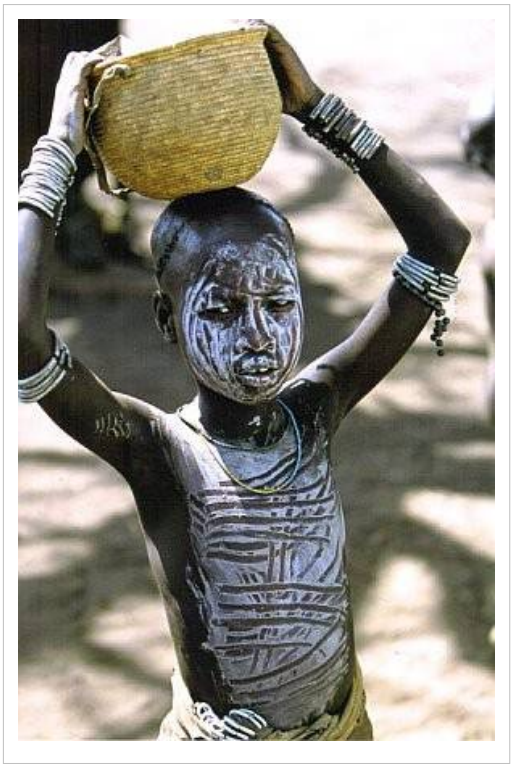
Recently, the Ministry of Health has introduced a three-tier health care delivery system. Level one is a woreda health system comprised of a primary hospital (for 60 000–100 000 people), health centres (for 15 000–25 000 population) and their satellite health posts (for 3000–5000 population), connected to each other by a referral system. The primary hospital, health centres and health posts form a primary health care unit. Level two is a general hospital for 1–1.5 million people and level three is a specialized hospital for 3.5–5 million people. Over the past two decades, the private sector and private-for-profit sector has rapidly expanded.

The current 5-year health sector strategic plan, the HSDP IV (2011/12–2014/15) is a component of the 5-year national development plan known as the Growth and Transformation Plan [11]. Its priorities are improving maternal and newborn care, improving child health, reversing and maintaining the prevalence of HIV/AIDS, tuberculosis (TB) and malaria.

The major health system response focuses on the primary health care approach:

- decentralized management of health service delivery with emphasis on district health systems
- human resource management and health financing
- medicines and health technologies
- information for health planning and management
- strengthening of partnerships for health.

Health care facility expansion has improved physical access to health services with an emphasis on primary health care units, resulting in a potential health service coverage estimated at 92.2%.



In general, service coverage has increased over time, although the performance is not uniform across programmes. Owing to economic, sociocultural and geographical factors, health care utilization is still low, with a 0.36% utilization rate.

Ethiopia is among 57 countries in the world identified by WHO [12] to be facing a critical shortage of health workforce. Overall, there is a global deficit of 2.4 million doctors, nurses and midwives. In Ethiopia, per 10 000 population, there are <0.5 physicians, 2 nursing and midwifery workers, <0.5 dentistry workers, <0.5 pharmaceutical personnel, <0.5 environmental and public health workers, 3 community health workers and 2 hospital beds.[13]

The shortage, uneven distribution, poor skill mix and high attrition of trained health professionals remain the major concerns.

The medicine supply system is unreliable and has long procurement procedures, resulting in low availability of medicines. Availability of essential medicines is 52% in the public sector and 88% in the private sector.

To monitor the performance of its health services, the Government has designed and adapted a new health management information system and implemented it country wide. However, this health management information system is inadequate for data generation and dissemination and for decision-making at different levels of the health system.

Despite the improvements made in expanding access to health services, the disease burden is still high and the service utilization rate remains low, partly due to the burden of high out-of-pocket spending that restricts an already poor society from health care utilization. The Government has initiated and is implementing community-based health insurance and social health insurance schemes to address financial barriers to accessing health services.

To improve the quality of health services, the focus is on the provision of quality health services at standard health facilities at all levels, including speedy delivery and effectiveness of services, patient safety, ethical considerations and professionalism, with adequate numbers of health workers and sufficient finance and pharmaceuticals.

Quality improvement has become an integral part of service delivery in the health system, thus the Federal Ministry of Health has established a quality management committee and designed a reference manual to guide its implementation. The implementation of HSDP I, II and III has achieved notable results, especially in family planning.

The contraceptive prevalence rate [14] reached 29% in 2011, compared with 15% in 2005.[2] However, it is notable that interventions that can be routinely scheduled, such as immunization, had a much higher coverage than services that rely on a functional health system and 24-hour availability of clinical services.

Although the majority of maternal deaths could be prevented through appropriate reproductive health services before, during and after pregnancy, only one fifth of all deliveries are currently attended by a skilled health professional.

Concerning disease burden, notable progress has been achieved in malaria control, with large-scale expansion of prevention programmes and improved access to more effective antimalarial drugs. Encouraging results have been achieved in HIV/AIDS control, sustained prevention efforts and increased antiretroviral therapy coverage leading to stable HIV prevalence.

However, TB control is still far from reaching the international standards for Millennium Development Goal [15] achievement. The TB case detection rate is still below the international target, while the treatment success rate has almost reached targets. Although DOTS [16], the basic package that underpins the Stop TB Strategy, is believed to be one of the most cost-effective interventions in the health sector, TB control is still inadequate to meet HSDP targets.

References

[1] Everybody's business. Strengthening health systems to improve health outcomes. WHO's framework for action (pdf 843.33kb). Geneva, World Health Organization, 2007 (http://www.who.int/healthsystems/strategy/everybodys_business.pdf)

[2] The world health report 2000. Health systems: improving performance (pdf 1.65Mb). Geneva, World Health Organization, 2000 (http://www.who.int/whr/2000/en/whr00_en.pdf)

[3] The world medicines situation (pdf 1.03Mb). Geneva, World Health Organization, 2004 (http://apps.who.int/medicinedocs/pdf/s6160e/s6160e.pdf)

[4] http://www.most.gov.et/Health%20Policy.pdf

[5] http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP%20IV%20Final%20Draft%2011Octoberr%202010.pdf

[6] WHO Country Cooperation Strategy 2008–2011 Ethiopia (pdf 616.72kb). Brazzaville, WHO Regional Office for Africa (http://www.who.int/countryfocus/cooperation_strategy/ccs_eth_en.pdf)

[7] Health Sector Development Program IV, 2010/2011–2014/15. Final draft (pdf 780.81kb). Addis Ababa, Government of Ethiopia, Federal Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

[8] http://www.moh.gov.et/English/Pages/Index.aspx

[9] http://www.moh.gov.et/English/Resources/Documents/HEW%20profile%20Final%2008%2007.pdf

[10] http://www.ethiopia.gov.et/english/Pages/Home.aspx

[11] http://www.ethiopians.com/Ethiopia_GTP_2015.pdf

[12] http://www.who.int/en/

[13] World health statistics, 2010 (pdf 4.62Mb). Geneva, World Health Organization (http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf)

[14] http://www.unicef.org/infobycountry/ethiopia_statistics.html

[15] http://www.undp.org/mdg/basics.shtml

[16] http://www.wpro.who.int/sites/stb/dots_definition.htm

Ethiopia:Analytical summary - Health system outcomes

The National Health Policy [4] emphasizes core principles of democratization and decentralization of the Health Care System [5] of Ethiopia. Preventive, promotive and curative components of health services in the country have shown a remarkable improvement, meeting equitable and quality health components of health care for all parts of the population[1] and encouraging private and nongovernmental organization participation in the health sector.

The health sector follows a 5-year rolling plan as part of the national development plan. Since 1997–1998, three consecutive phases have been completed and currently the country is implementing the fourth comprehensive Health Sector Development Programme (HSDP) [5].[2]

In line with the national policy of devolution of power, the Federal Ministry of Health [8] and the regional health bureaus focus mainly on policy, strategy and technical support while woreda health offices manage and coordinate the operation of the woreda health system under their jurisdiction.

The health system has had a huge transformation over the past two decades, with a dramatically improved potential access to care through the accelerated expansion of health facilities. An innovative community-level health service, the Health Extension Programme [9] was introduced by training and deploying female health extension workers and institutionalizing community health care at the health post level. Over the past decade, the Government of Ethiopia [10] has given priority to the expansion of health facilities, especially those of primary health care. In order to expand comprehensive obstetric care services further to the community level, the Government is planning an accelerated expansion of primary hospitals in each woreda.

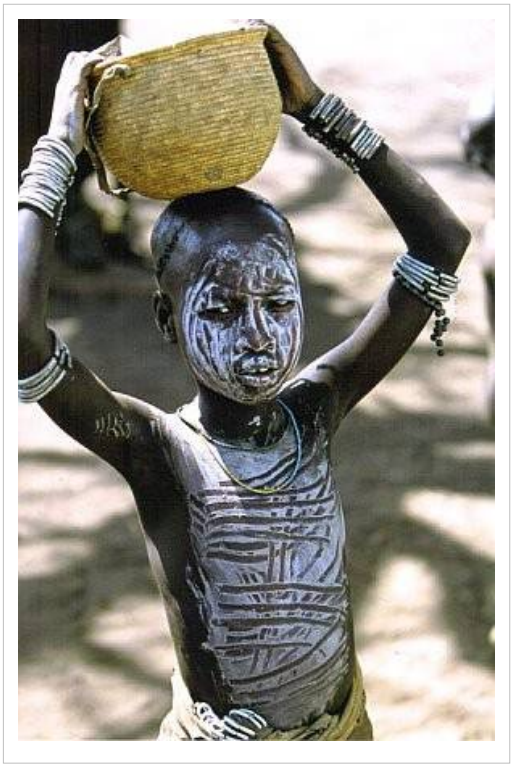
Recently, the Ministry of Health has introduced a three-tier health care delivery system. Level one is a woreda health system comprised of a primary hospital (for 60 000–100 000 people), health centres (for 15 000–25 000 population) and their satellite health posts (for 3000–5000 population), connected to each other by a referral system. The primary hospital, health centres and health posts form a primary health care unit. Level two is a general hospital for 1–1.5 million people and level three is a specialized hospital for 3.5–5 million people. Over the past two decades, the private sector and private-for-profit sector has rapidly expanded.

The current 5-year health sector strategic plan, the HSDP IV (2011/12–2014/15) is a component of the 5-year national development plan known as the Growth and Transformation Plan [11]. Its priorities are improving maternal and newborn care, improving child health, reversing and maintaining the prevalence of HIV/AIDS, tuberculosis (TB) and malaria.

The major health system response focuses on the primary health care approach:

- decentralized management of health service delivery with emphasis on district health systems
- human resource management and health financing
- medicines and health technologies
- information for health planning and management
- strengthening of partnerships for health.

Health care facility expansion has improved physical access to health services with an emphasis on primary health care units, resulting in a potential health service coverage estimated at 92.2%.



In general, service coverage has increased over time, although the performance is not uniform across programmes. Owing to economic, sociocultural and geographical factors, health care utilization is still low, with a 0.36% utilization rate.

Ethiopia is among 57 countries in the world identified by WHO [12] to be facing a critical shortage of health workforce. Overall, there is a global deficit of 2.4 million doctors, nurses and midwives. In Ethiopia, per 10 000 population, there are <0.5 physicians, 2 nursing and midwifery workers, <0.5 dentistry workers, <0.5 pharmaceutical personnel, <0.5 environmental and public health workers, 3 community health workers and 2 hospital beds.[3]

The shortage, uneven distribution, poor skill mix and high attrition of trained health professionals remain the major concerns.

The medicine supply system is unreliable and has long procurement procedures, resulting in low availability of medicines. Availability of essential medicines is 52% in the public sector and 88% in the private sector.

To monitor the performance of its health services, the Government has designed and adapted a new health management information system and implemented it country wide. However, this health management information system is inadequate for data generation and dissemination and for decision-making at different levels of the health system.

Despite the improvements made in expanding access to health services, the disease burden is still high and the service utilization rate remains low, partly due to the burden of high out-of-pocket spending that restricts an already poor society from health care utilization. The Government has initiated and is implementing community-based health insurance and social health insurance schemes to address financial barriers to accessing health services.

To improve the quality of health services, the focus is on the provision of quality health services at standard health facilities at all levels, including speedy delivery and effectiveness of services, patient safety, ethical considerations and professionalism, with adequate numbers of health workers and sufficient finance and pharmaceuticals.

Quality improvement has become an integral part of service delivery in the health system, thus the Federal Ministry of Health has established a quality management committee and designed a reference manual to guide its implementation. The implementation of HSDP I, II and III has achieved notable results, especially in family planning.

The contraceptive prevalence rate [14] reached 29% in 2011, compared with 15% in 2005.[4] However, it is notable that interventions that can be routinely scheduled, such as immunization, had a much higher coverage than services that rely on a functional health system and 24-hour availability of clinical services.

Although the majority of maternal deaths could be prevented through appropriate reproductive health services before, during and after pregnancy, only one fifth of all deliveries are currently attended by a skilled health professional.

Concerning disease burden, notable progress has been achieved in malaria control, with large-scale expansion of prevention programmes and improved access to more effective antimalarial drugs. Encouraging results have been achieved in HIV/AIDS control, sustained prevention efforts and increased antiretroviral therapy coverage leading to stable HIV prevalence.

However, TB control is still far from reaching the international standards for Millennium Development Goal [15] achievement. The TB case detection rate is still below the international target, while the treatment success rate has

almost reached targets. Although DOTS [16], the basic package that underpins the Stop TB Strategy, is believed to be one of the most cost-effective interventions in the health sector, TB control is still inadequate to meet HSDP targets.

References

[1] WHO Country Cooperation Strategy 2008–2011 Ethiopia (pdf 616.72kb). Brazzaville, WHO Regional Office for Africa (http://www.who.int/countryfocus/cooperation_strategy/ccs_eth_en.pdf)

[2] Health Sector Development Program IV, 2010/2011–2014/15. Final draft (pdf 780.81kb). Addis Ababa, Government of Ethiopia, Federal Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

[3] World health statistics, 2010 (pdf 4.62Mb). Geneva, World Health Organization (http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf)

[4] Ethiopian Demographic and Health Survey 2011 (pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton, Maryland, ICF Macro (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

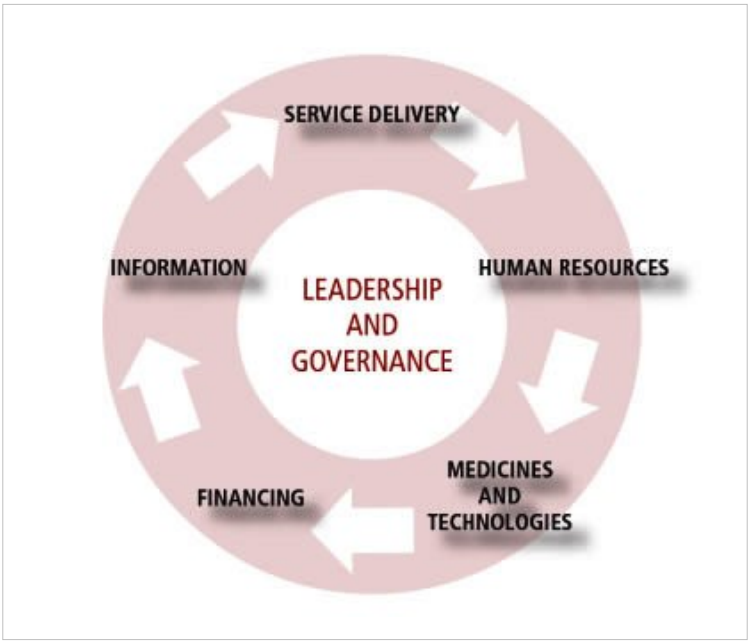
Ethiopia:Leadership and governance - The Health System

The leadership and governance of health systems, also called stewardship, is arguably the most complex but critical building block of any health system.[1] It is about the role of the government in health and its relation to other actors whose activities impact on health. This involves overseeing and guiding the whole health system, private as well as public, in order to protect the public interest.

It requires both political and technical action, because it involves reconciling competing demands for limited resources in changing circumstances, for example with rising expectations, more pluralistic societies, decentralization or a growing private sector. There is increased attention to corruption and calls for a more human rights based approach to health. There is no blueprint for effective health leadership and governance. While ultimately it is the responsibility of government, this does not mean all leadership and governance functions have to be carried out by central ministries of health.

Experience suggests that there are some key functions common to all health systems, irrespective of how these are organized:

- *Policy guidance*: formulating sector strategies and also specific technical policies; defining goals, directions and spending priorities across services; identifying the roles of public, private and voluntary actors and the role of civil society.
- *Intelligence and oversight*: ensuring generation, analysis and use of intelligence on trends and differentials in inputs, service access, coverage, safety; on responsiveness, financial protection and health outcomes, especially for vulnerable groups; on the effects of policies and reforms; on the political environment and opportunities for action; and on policy options.
- *Collaboration and coalition building*: across sectors in government and with actors outside government, including civil society, to influence action on key determinants of health and access to health services; to generate support for public policies and to keep the different parts connected – so called "joined up government".
- *Regulation*: designing regulations and incentives and ensuring they are fairly enforced.
- *System design*: ensuring a fit between strategy and structure and reducing duplication and fragmentation.
- *Accountability*: ensuring all health system actors are held publicly accountable. Transparency is required to achieve real accountability.



An increasing range of instruments and institutions exists to carry out the functions required for effective leadership and governance. Instruments include:

- sector policies and medium-term expenditure frameworks
- standardized benefit packages
- resource allocation formulae
- performance-based contracts
- patients' charters
- explicit government commitments to non-discrimination and public participation
- public fee schedules.

Institutions involved may include:

- other ministries, parliaments and their committees
- other levels of government
- independent statutory bodies such as professional councils, inspectorates and audit commissions
- nongovernment organization "watch dogs" and a free media.

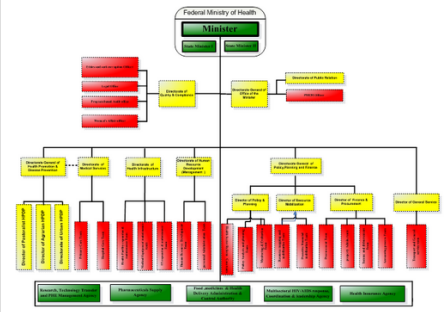
This section of the health system profile is structured as follows:

Analytical summary

In Ethiopia, the Federal Ministry of Health [8] at national level and the regional health bureaus at regional level are responsible for health sector leadership. Functions of the Federal Ministry of Health are to:

- initiate policies and laws, prepare plans, budget and implementation
- ensure the enforcement of laws, regulations and directives of the Federal Government of Ethiopia
- undertake studies and research
- approve contracts and international agreements in accordance with the law
- provide assistance and advice when necessary to regional executive organs.

There are four authorized agencies dealing with the Ministry's technical themes. These autonomous agencies report to both the Federal Ministry of Health and the Ministry of Finance and Economic Development [2].These are:



The Federal Ministry of Health. Source: Ministry of Health, 2009

- The Food, Medicine and Health Service Administration and Control Agency of Ethiopia [3], whose mandate is to inspect and ensure quality control of drugs, facilities, professional personnel and food products (one stop service, 4 “Ps” – Product, Premises, Professional Practice and Food Products).
- The Ethiopian Health and Nutrition Research Institute [4], which conducts research on nutrition, traditional medicines and medical practices on causes and spread of disease, dealing with public health emergencies.[5]
- The Pharmaceutical Fund Supply Agency [6], which ensures the regular adequate supply of effective, safe and affordable essential drugs, medical supplies and equipment in the public and private sector and ensures their rational use.[7]
- The HIV/AIDS Prevention and Control Office [8], established in 2002,which is an executive body of the National AIDS Council at both federal and regional levels through regional offices. This agency leads the multisectoral decision-making process, which consists of the Government, nongovernmental organizations, private organizations, religious leaders, civic society representatives and people living with HIV/AIDS. Among the Government institutions involved in the HIV/AIDS Prevention and Control Office are the Ethiopian Health and Nutrition Research Institute, the Pharmaceutical Fund Supply Agency and the Food, Medicine and Health Care Administration and Control Authority of Ethiopia.

Devolution of power to regional governments has shifted decision-making on public service delivery from the federal level to regional level and further down to woreda (district) level. Thus, offices at different levels, from the Federal Ministry of Health to regional health bureaus and woreda health offices, now share decision-making processes, powers, duties and responsibilities. The Federal Ministry of Health and the regional health bureaus focus more on policy matters and technical support while woreda health offices manage and coordinate the operation of the district health system under their jurisdiction.

Based on the Health Sector Development Programme [5] [] (HSDP) process, health planning is composed of two cycles:

- the 5-year HSDP strategic plan blueprint for all other plans;
- the annual planning cycle that translates the 5-year HSDP into an annual plan of work entailing achievable targets, strategies and interventions under different levels of the health care system.

The planning system has created a platform for joint planning by all stakeholders at all levels of the health system, including health sector development partners. Simultaneously, a monitoring and evaluation system has been designed as part of the policy, planning and monitoring and evaluation core process and has been implemented at all levels of the health system.

To strengthen the implementation of monitoring and evaluation, a balanced scorecard directly linked to the annual plan at all levels has been selected as a planning and management framework.

Based on the alignment and harmonization principle to enhance development assistance effectiveness, Ethiopia is a signatory of the International Health Partnership [9] (IHP+) Global Compact and was the first country to develop and sign a country-based IHP+ Compact.

References

[1] Everybody's business. Strengthening health systems to improve health outcomes. WHO's framework for action (pdf 843.33kb). Geneva, World Health Organization, 2007 (http://www.who.int/healthsystems/strategy/everybodys_business.pdf)

[2] http://www.mofed.gov.et/English/Pages/Home.aspx

[3] http://www.who.int/medicines/areas/quality_safety/regulation_legislation/icdra/WF-3-Dec.pdf

[4] http://ehnri.gov.et/

[5] Government of Ethiopia, Federal Ministry of Health (http://www.moh.gov.et/English/Pages/Index.aspx)

[6] http://apps.who.int/medicinedocs/documents/s17083e/s17083e.pdf

[7] Fourth national health accounts (pdf 1.68Mb). Addis Ababa, Government of Ethiopia, Federal Ministry of Health, 2010 (http://www.who.int/nha/country/eth/ethiopia_nha_4.pdf)

[8] http://www.who.int/hiv/topics/vct/ETH_HCT_guidelinesJune26_clean.pdf

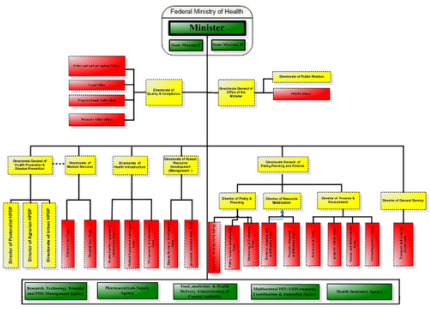
[9] http://www.internationalhealthpartnership.net/en/

Ethiopia:Analytical summary - Leadership and governance

In Ethiopia, the Federal Ministry of Health [8] at national level and the regional health bureaus at regional level are responsible for health sector leadership. Functions of the Federal Ministry of Health are to:

- initiate policies and laws, prepare plans, budget and implementation
- ensure the enforcement of laws, regulations and directives of the Federal Government of Ethiopia
- undertake studies and research
- approve contracts and international agreements in accordance with the law
- provide assistance and advice when necessary to regional executive organs.

There are four authorized agencies dealing with the Ministry's technical themes. These autonomous agencies report to both the Federal Ministry of Health and the Ministry of Finance and Economic Development [2].These are:



The Federal Ministry of Health. Source: Ministry of Health, 2009

- The Food, Medicine and Health Service Administration and Control Agency of Ethiopia [3], whose mandate is to inspect and ensure quality control of drugs, facilities, professional personnel and food products (one stop service, 4 “Ps” – Product, Premises, Professional Practice and Food Products).
- The Ethiopian Health and Nutrition Research Institute [4], which conducts research on nutrition, traditional medicines and medical practices on causes and spread of disease, dealing with public health emergencies.[1]
- The Pharmaceutical Fund Supply Agency [6], which ensures the regular adequate supply of effective, safe and affordable essential drugs, medical supplies and equipment in the public and private sector and ensures their rational use.[2]
- The HIV/AIDS Prevention and Control Office [8], established in 2002,which is an executive body of the National AIDS Council at both federal and regional levels through regional offices. This agency leads the multisectoral decision-making process, which consists of the Government, nongovernmental organizations, private organizations, religious leaders, civic society representatives and people living with HIV/AIDS. Among the Government institutions involved in the HIV/AIDS Prevention and Control Office are the Ethiopian Health and Nutrition Research Institute, the Pharmaceutical Fund Supply Agency and the Food, Medicine and Health Care Administration and Control Authority of Ethiopia.

Devolution of power to regional governments has shifted decision-making on public service delivery from the federal level to regional level and further down to woreda (district) level. Thus, offices at different levels, from the Federal Ministry of Health to regional health bureaus and woreda health offices, now share decision-making processes, powers, duties and responsibilities. The Federal Ministry of Health and the regional health bureaus focus more on policy matters and technical support while woreda health offices manage and coordinate the operation of the district health system under their jurisdiction.

Based on the Health Sector Development Programme [5] [] (HSDP) process, health planning is composed of two cycles:

- the 5-year HSDP strategic plan blueprint for all other plans;
- the annual planning cycle that translates the 5-year HSDP into an annual plan of work entailing achievable targets, strategies and interventions under different levels of the health care system.

The planning system has created a platform for joint planning by all stakeholders at all levels of the health system, including health sector development partners. Simultaneously, a monitoring and evaluation system has been designed as part of the policy, planning and monitoring and evaluation core process and has been implemented at all levels of the health system.

To strengthen the implementation of monitoring and evaluation, a balanced scorecard directly linked to the annual plan at all levels has been selected as a planning and management framework.

Based on the alignment and harmonization principle to enhance development assistance effectiveness, Ethiopia is a signatory of the International Health Partnership [9] (IHP+) Global Compact and was the first country to develop and sign a country-based IHP+ Compact.

References

[1] Government of Ethiopia, Federal Ministry of Health (http://www.moh.gov.et/English/Pages/Index.aspx)

[2] Fourth national health accounts (pdf 1.68Mb). Addis Ababa, Government of Ethiopia, Federal Ministry of Health, 2010 (http://www.who.int/nha/country/eth/ethiopia_nha_4.pdf)

Ethiopia:Community ownership and participation - The Health System

Health systems can be transformed to deliver better health in ways that people value: equitably, people-centred and with the knowledge that health authorities administer public health functions to secure the well-being of all communities. These reforms demand new forms of leadership for health. The public sector needs to have a strong role in leading and steering public health care reforms and this function should be exercised through collaborative models of policy dialogue with multiple stakeholders, because this is what people expect and because it is the most effective.

A more effective public sector stewardship of the health sector is justified on the grounds of greater efficiency and equity. This crucial stewardship role should not be misinterpreted as a mandate for centralized planning and complete administrative control of the health sector. While some types of health challenges, for example public health emergencies or disease eradication, may require authoritative command and control management, effective stewardship increasingly relies on “mediation” to address current and future complex health challenges.

The interests of public authorities, the health sector and the public are closely intertwined. Health systems are too complex: the domains of the modern state and civil society are interconnected, with constantly shifting boundaries. Effective mediation in health must replace overly simplistic management models of the past and embrace new mechanisms for multi-stakeholder policy dialogue to work out the strategic orientations for primary health care reforms.

At the core of policy dialogue is the participation of the key stakeholders. Health authorities and ministries of health, which have a primary role, have to bring together:

- the decision-making power of the political authorities
- the rationality of the scientific community
- the commitment of the professionals
- the values and resources of civil society.

Community ownership and participation[1]

This is a process that requires time and effort. It would be an illusion to expect primary health care policy formation to be wholly consensual, as there are too many conflicting interests.

However, experience shows that the legitimacy of policy choices depends less on total consensus than on procedural fairness and transparency. Without a structured, participatory policy dialogue, policy choices are vulnerable to appropriation by interest groups, changes in political personnel or donor fickleness. Without a social consensus, it is also much more difficult to engage effectively with stakeholders whose interests diverge from the options taken by primary health care reforms, including vested interests such as those of the tobacco or alcohol industries, where effective primary health care reform constitutes a direct threat.

This section of the health system profile is structured as follows:

Analytical summary

Ethiopia's overall national policy and hence its National Health Policy [4] is founded on commitment to democracy for citizens to fully exercise their rights and powers in a pluralistic society. Community ownership and participation aims to empower communities to manage the particular health problems that are specific to their community. In 2003, a Health Extension Programme was introduced and its priorities were to create community ownership and empowerment in the health sector.

This objective is implemented through deployment of two community-selected health extension workers in each health post in nearly all of the estimated 15 000 kebeles. The Programme emphasizes an integrated approach, including health promotion, preventive health and referral health services through health extension workers, with the support of community volunteers and model family households. Similarly, with the same objective of ensuring community engagement, ownership and social mobilization, the Health Development Army [7] has initiated a new strategy to scale-up best practices by organizing and mobilizing families.

The expected outcome of the Health Development Army is community empowerment for continuity and sustainability of health programmes. The Health Development Army will be a network created between five households and one model family to influence one another in practising healthy lifestyles. This network of families will have technical support and training by health extension workers to aid implementation of the packages of the Health Extension Programme. The Health Development Army will help to expand the successful Health Expansion Programme deeper into communities and will thus improve community ownership.

The Health Development Army will be engaged in promotion and prevention activities at household and community level, including the regular coordination of structured community dialogue sessions, with the guidance of health extension workers. The local government councils, health extension workers and the Health Development Army will have extensive responsibility for social mobilization, increasing a community's awareness of their health rights, and for creating an enabling environment.

The mechanics and detailed operation of the Health Development Army are well articulated. Efforts are being made to support this initiative with strong leadership by the civil service and political leaders. However, mechanisms and tools need to be in place if the transformation in health-seeking behaviour and development is to be achieved as envisaged by the Government of Ethiopia.

In addition, communities will be represented on governance boards of all public sector health facilities. To further reinforce community ownership, elected community members participate in health facility governing boards that have power to:

- make decisions on health facility plans
- breakdown the block budget, approve use of retained revenue and oversee health finance reforms
- plan service delivery.

Health extension workers also use community-level structures such as kebele and idir, religious organizations, religious leaders and community leaders to involve and mobilize the community.[]

References

[1] Systems thinking for health systems strengthening (pdf 1.54Mb). Geneva, World Health Organization, 2009 (http://whqlibdoc.who.int/publications/2009/9789241563895_eng.pdf)

Ethiopia:Analytical summary - Community ownership and participation

Ethiopia's overall national policy and hence its National Health Policy [4] is founded on commitment to democracy for citizens to fully exercise their rights and powers in a pluralistic society. Community ownership and participation aims to empower communities to manage the particular health problems that are specific to their community. In 2003, a Health Extension Programme was introduced and its priorities were to create community ownership and empowerment in the health sector.

This objective is implemented through deployment of two community-selected health extension workers in each health post in nearly all of the estimated 15 000 kebeles. The Programme emphasizes an integrated approach, including health promotion, preventive health and referral health services through health extension workers, with the support of community volunteers and model family households. Similarly, with the same objective of ensuring community engagement, ownership and social mobilization, the Health Development Army [7] has initiated a new strategy to scale-up best practices by organizing and mobilizing families.

The expected outcome of the Health Development Army is community empowerment for continuity and sustainability of health programmes. The Health Development Army will be a network created between five households and one model family to influence one another in practising healthy lifestyles. This network of families will have technical support and training by health extension workers to aid implementation of the packages of the Health Extension Programme. The Health Development Army will help to expand the successful Health Expansion Programme deeper into communities and will thus improve community ownership.

The Health Development Army will be engaged in promotion and prevention activities at household and community level, including the regular coordination of structured community dialogue sessions, with the guidance of health extension workers. The local government councils, health extension workers and the Health Development Army will have extensive responsibility for social mobilization, increasing a community's awareness of their health rights, and for creating an enabling environment.

The mechanics and detailed operation of the Health Development Army are well articulated. Efforts are being made to support this initiative with strong leadership by the civil service and political leaders. However, mechanisms and tools need to be in place if the transformation in health-seeking behaviour and development is to be achieved as envisaged by the Government of Ethiopia.

In addition, communities will be represented on governance boards of all public sector health facilities. To further reinforce community ownership, elected community members participate in health facility governing boards that have power to:

- make decisions on health facility plans
- breakdown the block budget, approve use of retained revenue and oversee health finance reforms
- plan service delivery.

Health extension workers also use community-level structures such as kebele and idir, religious organizations, religious leaders and community leaders to involve and mobilize the community.[]

References

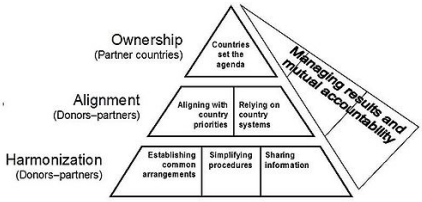
Ethiopia:Partnerships for health development - The Health System

There is a tension between the often short-term goals of donors, who require quick and measurable results on their investments, and the longer-term needs of the health system.[1] That tension has only heightened in recent years, where the surge in international aid for particular diseases has come with ambitious coverage targets and intense scale-up efforts oriented much more to short-term than long-term goals. Though additional funding is particularly welcome in low-income contexts, it can often greatly reduce the negotiating power of national health system leaders in modifying proposed interventions or requesting simultaneous independent evaluations of these interventions as they roll out.

Harmonizing the policies, priorities and perspectives of donors with those of national policy-makers is an immediate and pressing concern – though with apparent solutions. In addition, the selective nature of these funding mechanisms (e.g. targeting only specific diseases and subsequent support strategies) may undermine progress towards the long-term goals of effective, high-quality and inclusive health systems.

Even where this funding has strengthened components of the health system specifically linked to service delivery in disease prevention and control – such as specific on-the-job staff training – the selective nature of these health systems strengthening strategies has sometimes been unsustainable, interruptive and duplicative. This puts great strain on the already limited and overstretched health workforce. In addition, focusing on "rapid-impact" treatment interventions for specific diseases and ignoring investments in prevention may also send sharply negative effects across the system's building blocks, including, paradoxically, deteriorating outcome on the targeted diseases themselves.

Many of these issues have been recognized internationally, and a number of donors have agreed to better harmonize their efforts and align with country-led priorities – as outlined in the 2005 Paris Declaration on Aid Effectiveness [3] (see figure). However, although some progress has been made in applying the Paris Declaration principles, it has been slow and uneven. Change in the process and the nature of the relationship between donors and countries requires time, focused attention at all levels, and a determined political will.



Five mutually reinforcing principles of the Paris Declaration on Aid Effectiveness (2005)[2]

This section of the health system profile is structured as follows:

Analytical summary

The National Health Policy [4] of Ethiopia emphasizes that solving the multifaceted problems of the health sector requires timely collaboration from the Government of Ethiopia [10], the private sector, nongovernmental organizations, multilateral and bilateral development partners, global initiatives, other sectors and the public at large. In cognizance of this fact, the Government has devised several strategies to collaborate with development partners, nongovernmental organizations and various ministries to improve the health status of its citizens. For instance, the governance structure of the fourth Health Sector Development Programme (HSDP IV) [5][4] was revised to better coordinate development partners with the Government and other stakeholders within the health sector.

The Joint Consulting Forum is the highest governing body and serves as a joint forum for dialogue on sector policy and reform issues between the Government, development partners and other stakeholders and to oversee the implementation of the International Health Partnership [9] (IHP+), the Millennium Development Goal [15] (MDG) performance fund, Protection of Basic Services [5] fund, GAVI Alliance [6] and other donor-supported projects. The Joint Core Coordinating Committee serves as the technical arm of the Joint Consulting Forum.

The Consortium of Christian Relief and Development Association is an umbrella nongovernmental organization that coordinates nongovernmental organizations and civil society organizations in Ethiopia. The Government welcomed public–private partnerships for health initiatives in 2009 and developed guidelines to enhance the private sector's role and its contribution in delivering quality health services in the country.

Over the years, the health sector has made major strides in mobilizing the resources coming into the country from different donors. Although this is encouraging, the numerous plans, budget channels and reporting requirements by donors is recognized to have caused serious burden to Ethiopia's already weak health system and capacity.

To combat this problem, the Government has embarked on a journey following the global agenda on harmonization and alignment as set out in the Paris Declaration. This was reflected at country level when Ethiopia became a signatory of the Global IHP+ and was the first country to develop and sign a country-based IHP+ Compact. The Government follows One Plan, One Budget, One Report in line with IHP+ principles whereby the health sector has one countrywide and shared strategic plan, that all stakeholders will finance the plan by making all financial and non-financial resource available and to use specific set of indicators for performance reporting without duplicating channels of reporting. Significant progress has been achieved in all three areas.

As part of the same harmonization efforts, the Federal Ministry of Health and its partners signed an agreement for and endorsed the *HSDP harmonization manual* [7][8] to be used as a practical document on institutionalizing One Plan, One Budget, One Report in the health sector. This manual was developed in recognition by both Government and donors of the fragmented decision-making and its effects and is intended to harmonize and align the way in which Government and donors work together.

According to the *HSDP harmonization manual*, harmonization is the "coordination of activities among all stakeholders to reduce the transaction cost of delivering aid and services" and is intended to avoid the large volume of extra work created when donors set up separate channels for their resources.[8] It is in this spirit that the Health Pooled Fund and the MDG Performance Package Fund were established.

The ultimate goal of harmonization is to have an effective planning system that makes decisions about how all resources are used and that monitors overall implementation in a simple way, using One Plan, One Budget, One Report. As part of its one plan, the health sector developed its fourth 5-year strategic plan (HSDP IV) using a top-down and bottom-up planning approach and balanced scorecard framework, in consultation with a wide range of stakeholders.

Ethiopia has applied the Joint Assessment of National Strategy, a tool developed under IHP+ to help countries move towards one plan. The major success towards one budget was the establishment of the MDG Performance Fund in 2007, which is the Government's preferred mode of funding due to its lower transaction cost. It provides flexible resources for underfunded areas of the HSDP and is managed by the Federal Ministry of Health using Government procedures. However, although there are currently seven signatories of the Joint Financing Arrangement to join the MDG Performance Fund, a significant proportion of resources still flows into other channels such as Channel1b (earmarked), Channel 2 and 3 (off budget) that lack flexibility and have high transaction costs.

Ethiopia has also actively participated in the South–South collaboration, which is a new type of development approach with China as the centrepiece. This approach devises more appropriate strategies by considering the specific vulnerability and structural constraints of least-developed countries to alleviate poverty.

In November 2010, the first China–Africa Poverty Reduction and Development Conference [9] was co-hosted in Addis Ababa by the Government of Ethiopia and the United Nations Development Programme [10]. Two important letters were signed between the United Nations Development Programme and the Government of China, demonstrating China's interest in sharing its poverty alleviation experience by strengthening and promoting trilateral cooperation with African countries on food security and poverty. This is a promising collaboration for the Government of Ethiopia to meet MDGs and for the country to graduate from the group of least-developed countries.

The way forward

- Strengthen coordination mechanisms with partners, intersectoral, private–public mix and South–South cooperation by tracking the quality of partnership over time.
- Track the progress of each partner using IHP+ indicators, in line with One Plan, One Budget, One Report indicators.
- Strengthen the capacity of the Consortium of Christian Relief and Development Association to better coordinate nongovernmental organizations and civil society organizations in the country.

References

[1] Systems thinking for health systems strengthening (pdf 1.54Mb). Geneva, World Health Organization, 2009 (http://whqlibdoc.who.int/publications/2009/9789241563895_eng.pdf)
[2] The Paris Declaration on Aid Effectiveness (2005) (http://www.oecd.org/development/effectiveness/34428351.pdf)
[3] http://www.unrol.org/files/34428351.pdf
[4] Health Sector Development Programme IV, 2010/11–2014/15. Final draft (pdf 780.81kb). Addis Ababa, Government of Ethiopia, Federal Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)
[5] http://www.worldbank.org/projects/P074015/protection-basic-services?lang=en
[6] http://www.gavialliance.org/country/ethiopia/
[7] http://www.dagethiopia.org/index.php?option=com_docman&task=doc_download&gid=56&Itemid=120
[8] HSDP harmonization manual (HHM) (pdf 1.06Mb). Addis Ababa, Government of Ethiopia, Federal Ministry of Health, 2007 (http://www.dagethiopia.org/index.php?option=com_docman&task=doc_download&gid=56&Itemid=120The)
[9] http://web.undp.org/africa/africa-china-poverty-conference.shtml
[10] http://www.undp.org/content/undp/en/home/

Ethiopia:Analytical summary - Partnerships for health development

The National Health Policy [4] of Ethiopia emphasizes that solving the multifaceted problems of the health sector requires timely collaboration from the Government of Ethiopia [10], the private sector, nongovernmental organizations, multilateral and bilateral development partners, global initiatives, other sectors and the public at large. In cognizance of this fact, the Government has devised several strategies to collaborate with development partners, nongovernmental organizations and various ministries to improve the health status of its citizens. For instance, the governance structure of the fourth Health Sector Development Programme (HSDP IV) [5][1] was revised to better coordinate development partners with the Government and other stakeholders within the health sector.

The Joint Consulting Forum is the highest governing body and serves as a joint forum for dialogue on sector policy and reform issues between the Government, development partners and other stakeholders and to oversee the implementation of the International Health Partnership [9] (IHP+), the Millennium Development Goal [15] (MDG) performance fund, Protection of Basic Services [5] fund, GAVI Alliance [6] and other donor-supported projects. The Joint Core Coordinating Committee serves as the technical arm of the Joint Consulting Forum.

The Consortium of Christian Relief and Development Association is an umbrella nongovernmental organization that coordinates nongovernmental organizations and civil society organizations in Ethiopia. The Government welcomed public–private partnerships for health initiatives in 2009 and developed guidelines to enhance the private sector's role and its contribution in delivering quality health services in the country.

Over the years, the health sector has made major strides in mobilizing the resources coming into the country from different donors. Although this is encouraging, the numerous plans, budget channels and reporting requirements by donors is recognized to have caused serious burden to Ethiopia's already weak health system and capacity.

To combat this problem, the Government has embarked on a journey following the global agenda on harmonization and alignment as set out in the Paris Declaration. This was reflected at country level when Ethiopia became a signatory of the Global IHP+ and was the first country to develop and sign a country-based IHP+ Compact. The

Government follows One Plan, One Budget, One Report in line with IHP+ principles whereby the health sector has one countrywide and shared strategic plan, that all stakeholders will finance the plan by making all financial and non-financial resource available and to use specific set of indicators for performance reporting without duplicating channels of reporting. Significant progress has been achieved in all three areas.

As part of the same harmonization efforts, the Federal Ministry of Health and its partners signed an agreement for and endorsed the *HSDP harmonization manual* [7][2] to be used as a practical document on institutionalizing One Plan, One Budget, One Report in the health sector. This manual was developed in recognition by both Government and donors of the fragmented decision-making and its effects and is intended to harmonize and align the way in which Government and donors work together.

According to the *HSDP harmonization manual*, harmonization is the "coordination of activities among all stakeholders to reduce the transaction cost of delivering aid and services" and is intended to avoid the large volume of extra work created when donors set up separate channels for their resources.[2] It is in this spirit that the Health Pooled Fund and the MDG Performance Package Fund were established.

The ultimate goal of harmonization is to have an effective planning system that makes decisions about how all resources are used and that monitors overall implementation in a simple way, using One Plan, One Budget, One Report. As part of its one plan, the health sector developed its fourth 5-year strategic plan (HSDP IV) using a top-down and bottom-up planning approach and balanced scorecard framework, in consultation with a wide range of stakeholders.

Ethiopia has applied the Joint Assessment of National Strategy, a tool developed under IHP+ to help countries move towards one plan. The major success towards one budget was the establishment of the MDG Performance Fund in 2007, which is the Government's preferred mode of funding due to its lower transaction cost. It provides flexible resources for underfunded areas of the HSDP and is managed by the Federal Ministry of Health using Government procedures. However, although there are currently seven signatories of the Joint Financing Arrangement to join the MDG Performance Fund, a significant proportion of resources still flows into other channels such as Channel1b (earmarked), Channel 2 and 3 (off budget) that lack flexibility and have high transaction costs.

Ethiopia has also actively participated in the South–South collaboration, which is a new type of development approach with China as the centrepiece. This approach devises more appropriate strategies by considering the specific vulnerability and structural constraints of least-developed countries to alleviate poverty.

In November 2010, the first China–Africa Poverty Reduction and Development Conference [9] was co-hosted in Addis Ababa by the Government of Ethiopia and the United Nations Development Programme [10]. Two important letters were signed between the United Nations Development Programme and the Government of China, demonstrating China's interest in sharing its poverty alleviation experience by strengthening and promoting trilateral cooperation with African countries on food security and poverty. This is a promising collaboration for the Government of Ethiopia to meet MDGs and for the country to graduate from the group of least-developed countries.

The way forward

- Strengthen coordination mechanisms with partners, intersectoral, private–public mix and South–South cooperation by tracking the quality of partnership over time.
- Track the progress of each partner using IHP+ indicators, in line with One Plan, One Budget, One Report indicators.
- Strengthen the capacity of the Consortium of Christian Relief and Development Association to better coordinate nongovernmental organizations and civil society organizations in the country.

References

[1] Health Sector Development Programme IV, 2010/11–2014/15. Final draft (pdf 780.81kb). Addis Ababa, Government of Ethiopia, Federal Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

[2] HSDP harmonization manual (HHM) (pdf 1.06Mb). Addis Ababa, Government of Ethiopia, Federal Ministry of Health, 2007 (http://www.dagethiopia.org/index.php?option=com_docman&task=doc_download&gid=56&Itemid=120The)

Ethiopia:Health information, research, evidence and knowledge

Data are crucial in improving health.[1] The ultimate objective of collecting data is to inform health programme planning as well as policy-making and, ultimately, global health outcomes and equity. A well-functioning health information system empowers decision-makers to manage and lead more effectively by providing useful evidence at the lowest possible cost.

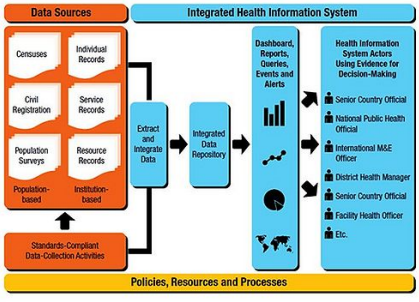
A health information system has been aptly described as "an integrated effort to collect, process, report and use health information and knowledge to influence policy-making, programme action and research". It consists of:

- inputs (resources)
- processes (selection of indicators and data sources; data collection and management)
- outputs (information products and information dissemination and use).

The role of a health information system is to generate, analyse and disseminate sound data for public health decision-making in a timely manner. Data have no value in themselves. The ultimate objective of a health information system is to inform action in the health sector. Performance of such a system should therefore be measured not only on the basis of the quality of the data produced, but also on evidence of the continued use of these data for improving health systems' operations and health status.

The availability and use of information enables:

- improved definition of a population
- recognition of problems
- setting of priorities in the research agenda
- identification of effective and efficient interventions
- determination of potential impact (prediction)
- planning and resource allocation
- monitoring of performance or progress
- evaluation of outcomes after interventions



The health information system[2]

- continuity in medical and health care
- healthy behaviour in individuals and groups.

It also empowers citizens by enabling their participation in health care, policy and decision processes; and empowers countries and international partners by enabling better transparency and accountability through use of objective and verifiable processes.

Health knowledge gaps are where essential answers on how to improve the health of the people in Lesotho are missing. This is an issue related to the acquisition or generation of health information and research evidence. The “know-do gap” is the failure to apply all existing knowledge to improve people’s health. This is related to the issue of sharing and translation of health information, research evidence, or knowledge. Although there are major structural constraints, the key to narrowing the knowledge gap and sustaining health and development gains is a long-term commitment to strengthen national health information systems.

This section of the analytical profile is structured along the following lines:

Analytical summary

The health information system [3] in Ethiopia is run under different authorities. The routine health management information system [4] is run primarily by the health sector, while population-based information comes predominantly from the Central Statistical Agency of Ethiopia [5]. Besides the Central Statistical Agency, the Ethiopian Health and Nutrition Research Institute [6], universities and individual researchers conduct various population and health facility based research activities.

A national health information system assessment was carried out in 2007 using the Health Metrics Network [7] framework and tools and this was updated and validated in 2011 as a step towards developing a national health information system strategic plan.

The results show that indicators and information products are considered adequate but data management is very poor. Health information system resources, dissemination and use, as well as data sources coverage, are also inadequate (see table). The capacity of institutions to generate, analyse, disseminate and use health information differs.

The capacity of the Central Statistical Agency for undertaking censuses and other population-based surveys was considered adequate, but the Ministry of Health [8] still needs more capacity to conduct surveys and to manage effectively the routine health information systems.

Component	Score (%)	Description of result
Score by major HIS components	13	Not functional
Data management		
Resources	42	Present, but not adequate
Data sources	52	Present, but not adequate
Indicator	83	Adequate
Information products	73	Adequate
Dissemination and use	48	Present, but not adequate
HIS resources		
HIS infrastructure	56	Present, but not adequate
HIS institution, human and finance	41	Present, but not adequate
Policy and planning	33	Not adequate
Data sources		
Vital statistics	18	Not functional
Health and disease records	53	Present, but not adequate
Health service records	61	Adequate
Administrative records	52	Present, but not adequate
Census	81	Highly adequate
Population-based surveys	85	Highly adequate
Resource allocation	42	present, but not adequate
Policy and advocacy	33	Not adequate
Quality of information products by type of indicators		
Risk factors	48	Present, but not adequate
Mortality	64	Adequate
Health systems	64	Adequate
Health status	73	Adequate
Morbidity	89	Highly adequate

Summary of health information system assessment scores in Ethiopia, September 2011. HIS, health information system

Based on these results, the Ministry of Health in collaboration with the Central Statistical Agency, Ministry of Justice and key partners, has developed an 8-year national health information system development strategic plan (2012/13–2019/20)[8] aimed at addressing the main gaps identified through the assessment.

Context

In accordance with its mandate, the Central Statistics Agency of Ethiopia [9] has developed a National Plan for Statistical Development [10] to cover the needs of all sectors and to guide national statistical development. During a recent assessment of the national health information system, it was concluded that, in general, the existing regulatory and legislative situation was fragmented and did not provide a health information framework to cover specific components such as notifiable diseases, private sector data, confidentiality, fundamental principles of official statistics, vital statistics, etc.[11] Also there was no comprehensive health information system policy, legislation and procedures for official statistics. It was concluded that a strong national coordination mechanism with clearly defined roles and responsibilities in health information systems was lacking.

With regard to vital event registration, legal ground work was established nearly 50 years ago – the 1960 Code of Ethiopia [12] states that every member of society has to register births and deaths. However, implementation of this Code is minimal and the country has relied on other sources of data, mainly censuses, sample surveys and indirect methods, for estimations of birth and death rates. At present, there is no official published legal procedure for vital and civil registration in the country. However, the Ministry of Justice has begun work on the necessary legal framework to introduce a vital and civil registration system in the country.

The Ministry of Health [8] has put a strong emphasis on strengthening the national health information system to address gaps in information since the introduction of Health Sector Development Programme (HSDP) [5]. One of the strategic objectives of the current HSDP IV (2011/12–2014/15)[13] is to improve evidence-based decision-making by

harmonization and alignment. The Ministry of Health has prioritized monitoring and evaluation and reforming the health management information system over the past few years. An assessment of the health management information system was conducted in 2006. Based on its findings, a number of reforms have been introduced, piloted and implemented since 2007, including:

- standardization of data collection procedures, analysis and reporting
- application of user manuals to standardize data collection analysis and interpretation
- selection of sector-wide and programmatic indicators with the involvement of all stakeholders
- design of simplified formats
- integrated and unified flow of information.

The Ethiopian Information Communication Technology Authority, now the Ministry of Communications and Information Technology [14], was established in 2003 to institutionalize the use of information and communication technology (ICT) and has developed a national ICT policy.

A national eGovernment policy for eHealth was implemented in 2009. Government programmes and projects, such as the Ethiopian Education and Research Network (EthERNet) [15] initiatives to create a favourable platform for eHealth, SchoolNet and WoredaNet, have been implemented following its establishment.

Three main streams form the basis for the implementation of the ICT in Education Implementation Strategy [16]:

- the Ethiopian National SchoolNet Initiative
- the National ICT in Higher Education Initiative
- the National ICT Education and Training and Awareness Initiative .

The ICT in Education Implementation Strategy and its corresponding Action Plan are now components of a wider Ethiopian National e-Education Initiative [17].

Installation of a broadband network at district level marked an important development in building infrastructure. In addition, fibre-optic cable was installed in urban and rural areas in 2004. Access to ICT infrastructure is fully available at federal level but although computers are available, their use for health information system purposes is limited. In general, ICT infrastructure is considered to have the best status of all resources of the health information system.[18][19]

Creating and providing health information in an electronic format for the general public commenced in 2003. A National Multiculturalism Policy was introduced in 2004 and selected projects to promote the use of new electronic health materials in multiple languages were launched in 2005.

Access to a national open archive and national electronic journals is available through the National AIDS Resource Center [20], which disseminates its information through ICT. The Central Statistics Agency of Ethiopia also makes its publications, including censuses and Demographic and Health Surveys [21], available through its web site,[22] while the Ministry of Health also makes some of its publications available online.[23]

Although the country promotes the use of ICT applications in the health sector, there is a shortage of human resources for ICT. The major challenge in promoting access to electronic health content has been the limited awareness of the use of ICT.[24] ICT training for students in health sciences is available at tertiary level and there is regular continuing education in ICT for health professionals. However, teaching capacity is affected by underdeveloped infrastructure, lack of a policy framework and a shortage of skilled course developers. Generally, there is an increasing awareness of the need for training, deployment, remuneration and career development of human resources in ICT at all levels.

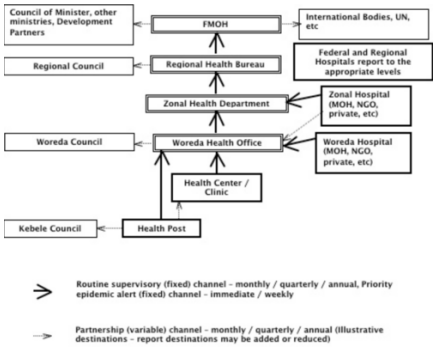
Structural organization of health information

The agencies dealing with the health information system (HIS) in Ethiopia, including the Central Statistics Agency of Ethiopia [5], the Ethiopian Health and Nutrition Research Institute [6], the Ministry of Health [8] and the Ministry of Justice, have formal internal structures dealing with HIS and monitoring and evaluation in line with their mandates. There is a functional central HIS Unit in the Ministry of Health and regional health bureaus, which plays a significant role in coordinating, strengthening and maintaining the national HIS. However, it lacks adequate resources to effectively maintain and upgrade the performance of HIS to a level that meets the HIS requirements of the country.[24][25]

The National Advisory Committee, composed of directorates and agencies of the Ministry of Health and Central Statistics Agency and partners supporting or actively engaged in HIS development, was established in 2005. Its primary function is to oversee the process of health management information system (HMIS) reform initiated by the Ministry of Health. Chaired by the Ministry, the National Advisory Committee is at present dealing with HMIS but recently it was recommended to widen its scope to broader HIS development. The National Advisory Committee needs to be strengthened and formalized.

The Ministry of Health receives service, disease and administrative reports from the regional health bureaus, agencies and federal hospitals (see figure). In addition to the progress report on core plan, the regional health bureaus and hospitals deliver quarterly activity reports. Likewise, the regional health bureaus receive quarterly reports from woreda and regional hospitals, while woreda health offices receive service, disease and administrative reports from primary health care units. The Ministry in turn reports to the Council of Ministers [26] and shares information with partners. The routine flow of information in HMIS is strengthened by the Ministry, following the HMIS reform initiated in 2007.

Regarding the monitoring and evaluation of the sector development programme, the Ministry of Health and its partners developed the Health Sector Development Programme's *HSDP harmonization manual*[24] to guide joint planning, budgeting and reporting mechanisms and to avoid fragmentation. The Health Sector Development Programme [5] is monitored through regular progress reports, annual review meetings, joint review missions, and final evaluations conducted jointly by the Ministry, other government agencies and stakeholders. An annual consolidated report is presented at annual review meetings. The Ministry also conducts regular supportive supervision at all levels and the reports from this feed in to the HMIS, mainly for planning interventions.



The routine HMIS reporting flow in the health sector in Ethiopia. FMOH, Federal Ministry of Health; MOH, Ministry of Health; NGO, nongovernmental organization. Source: Ministry of Health, 2008

Health Sector Development Programme monitoring and evaluation relies on HMIS data, surveys carried out by the Central Statistics Agency and other agencies, findings of joint review missions, and final evaluation and annual consolidated reports. This is also the basis for reporting the health chapter for the Ministry of Finance and Economic Development's [2] national development reports.

Data sources and generation

In Ethiopia, health information system data are generated from two main areas: population-based health information sources and health-service-based sources. Population-based health information includes census and vital events registration (only as piloting and for a limited time), and population-based household surveys and surveillance.

Health-service-based sources generate data on outcome of health-related administrative and operational activities. There is a wide range of health-service-based data, including:

- facility-based data on morbidity and mortality among those using services
- data on use of services delivered, on drugs and commodities
- data on the availability and quality of services
- financial and management information.

Most of the health-service-based data are generated routinely in the course of recording and reporting on services delivered.[24][27] The health management information system captures much of its service and disease surveillance data from patient records that health professionals maintain for care and follow-up.

Following the health management information system reform, the Ministry of Health [8] introduced a community health information system to capture basic health and health-related information through health extension workers [28] at household and individual level. The community health information system collects data on basic demographic statistics, health service delivery and utilization based on the health extension package, using a family folder. This is reported to the woreda health offices and then to the Ministry of Health as part of the health management information system.

One of the specialized autonomous agencies of the Ministry of Health, the Ethiopian Nutrition and Health Research Institute [6], is responsible for public health emergency management and regularly collects data on key epidemic-prone diseases using a standard format developed for Integrated Disease Surveillance and Response [29]. Integrated Disease Surveillance and Response covers 21 epidemic-prone and notifiable diseases. Owing to the nature of epidemics and surveillance, and the need for timely action, Integrated Disease Surveillance and Response is not integrated in to the centralized and integrated health management information system. Integrated Disease Surveillance and Response data are captured in the annual consolidated report and the annual health and related statistics publication.

The Central Statistics Agency of Ethiopia [5] is the major source of population-based statistics. The Agency was established with the objective of collecting, processing, analysing and disseminating socioeconomic and demographic statistical data through censuses, sample surveys, continuous registration and administrative recording systems. The Agency is also required to:

- provide technical guidance and assistance to government agencies and institutions in their endeavour to establish administrative recording, registration and reporting systems;
- build the capacity required for providing directives and consultations in database creation and development of administrative records and registration systems.

To date, the Central Statistics Agency has conducted three national population and housing censuses, and three Demographic and Health Surveys [21]. The reports are accessible to interested individuals at the Agency web site.[30] The primary objective of the Ethiopian Demographic and Health Survey is to provide up-to-date information to policy-makers, planners, researchers and programme managers for guidance in the planning, implementation, monitoring and evaluation of population and health programmes in the country. The first Ethiopian Demographic and Health Survey[31] was conducted in 2000 as part of the worldwide Demographic and Health Survey programme [32]. The second[33] was carried out in 2005 and included several additional topics related to HIV/AIDS, malaria, etc. The third and latest Ethiopian Demographic and Health Survey[34] was conducted in 2011.

The Central Statistics Agency also conducts population-based labour force surveys and household consumption, expenditure and welfare monitoring surveys, and disseminates the results. A number of sample surveys with varying

objectives are also undertaken by the Agency to fill any information gap.

In spite of the absence of a strong legal provision towards the registration of vital events, the Agency initiated a series of sample vital events registration programmes called the Sample Vital Events Registration Systems [35] in 1977, 1982–1983 and 1986–1987. However, these undertakings were limited in scope and coverage. In 2005, the Model Vital Events Registration Programme started in three regional states, with financial support from the United Nations Children's Fund. This project was intended to test methods and procedures of vital event registration in the selected experimental regions before being establishing nationwide. However, besides documentation of lessons, achievements are very low. In general, there is no reliable source of nationwide vital statistics in the country.

Besides generating routine health information for the health management information system, the Ministry of Health also conducts surveys. Some of the most important include the Malaria Indicator Surveys [36], Behavioural Surveillance Surveys [37], the Expanded Programme on Immunization Cluster Surveys [38], drug use surveys, HIV surveillance surveys at antenatal care clinics, and nutrition surveys [39]. The results of the surveys are disseminated.

Building on the experience of the Department of Community Health, Addis Ababa University [40] in demographic surveillance systems, six universities are currently running demographic surveillance systems and lately the universities have set up a network of demographic surveillance system sites to standardize and share results, both with each other and with potential users.

Data management

The Central Statistics Agency (CSA) [5] is the statistical arm of the Government of Ethiopia [41]. Since its establishment in 1960, it has been involved in socioeconomic and demographic data collection, processing, evaluation and dissemination for monitoring the country's socioeconomic development, planning and policy formulation. The CSA conducts a National Integrated Household and Enterprise Survey Programme [42], regular Demographic and Health Surveys [21], censuses and ad hoc surveys. It also compiles secondary data from administrative records.

In the context of availability of centralized data with comprehensive information for all stakeholders, the CSA has initiated standard procedures for data management but there are no standards in place in other institutions. The CSA has a data warehouse, which is reflected in the annual statistical abstracts [43] produced over the past two decades. In addition, the CSA has developed a website[44] that gives access to available data. The CSA has been actively involved in conducting censuses, sample surveys of various types, and registration of small-scale vital events. However, it has limited scope, consistency and validation.

The recently updated health information system assessment of 2011, carried out as a step to develop a health information system strategic plan, found that in general data management could be considered "not functional".[45] The CSA has standard procedures for data management and a data warehouse for each demographic and socioeconomic survey it conducts. However, other institutions have no national data standards. The CSA has a procedure and guidelines to collect, compile, store, and exchange data and information at various levels for its own use but this had not been applied nationwide. The CSA also has data quality assurance mechanisms at various levels, although they are not widely used.

The Ministry of Health [8] and subnational units lack an integrated data warehouse. Although the Ministry of Communications and Information Technology [14] has prepared data management tools, there is no standard definition and data warehouse at national or subnational levels.

Input data for all processes originate from individuals, households, businesses or institutions. A characteristic feature of almost all statistical processes in Ethiopia, whether surveys or administrative collections, is that the input data are collected at local community level. Data are assembled, aggregated and passed on to successively higher levels within the organization responsible for the statistical process, until they reach the national level.[46]

Access to existing global health information, evidence and knowledge

Ethiopia is one of the eligible developing countries to gain access to the Health InterNetwork Access to Research Initiative (HINARI [47]) programme set up by WHO. There are 62 registered universities and professional schools in Ethiopia with access to HINARI.[48]

Universities and researchers can access search engines and open-access journals as per their needs but the overall situation can be considered limited. Six universities have recently established a platform to share Demographic Surveillance Sites [49] and Demographic and Health Surveys [21].

Health professional associations conduct regular, usually annual, scientific conferences at which research findings are shared. Along with some universities, they produce regular publications which they distribute and share among their members. Unpublished academic research reports can also be accessed from universities, while regular reports from the Ministry of Health [8] and regional health bureaus can be accessed on demand, sometimes from websites.[50]

The Ethiopian Intellectual Property Office [51] regulates and enforces intellectual property rights and this extends to the health sector.

Storage and diffusion of information, evidence and knowledge

The Ministry of Health [8] in Ethiopia publishes a quarterly health bulletin, *Policy and practice: information for action* [52], to promote information-sharing, document best practices and support evidence-based decision-making. Universities and the Ethiopian Nutrition and Health Research Institute [6] have health libraries and information centres, but their use is limited to academicians and researchers. Interested individuals can access these, although in practice the use is limited. Common publications are available in English. Most are available as hard copies, while some academic and research publications can also be accessed through websites.

Experience in consolidating and publishing existing evidence for policy-making and decision-making is poor. Although a lot of research, mainly from universities, is published in journals, consolidation of this research, with the aim of using it in policy-making, is limited. The Addis Ababa University School of Public Health [53] and some other universities have published consolidated reports from Demographic and Health Surveys and Demographic Surveillance Site research and student research outputs. Some research reports on priority national themes are published by the Ethiopian Public Health Association [54]. However, although these are made available to policy-makers, their use has been limited.

Research

Health and health-related research in Ethiopia is conducted by the Central Statistics Agency of Ethiopia [5], the Ethiopian Health and Nutrition Research Institute [6], universities and individual researchers. Each institution sets its plans for research projects for the coming years and specified units are delegated to regulate and monitor the implementation. Ethical clearance is an inbuilt process in research undertakings in all institutions. Each researcher publishes their outputs while the institutions usually publish individual reports and annual outputs and share with users. Each institution has defined its mission as part of the business process re-engineering of institutions, which has recently been conducted in all government agencies.

Research projects in both the Central Statistics Agency and Ethiopian Nutrition and Health Research Institute are financed by regular funds from the Government of Ethiopia [41], which may come from treasury or external sources. Both are managed according to government financial regulations. Universities and individuals usually depend on external funding sources, while very limited funds may be allocated by the Government.

The Ministry of Science and Technology [55] also allocates funds to selected priority research projects. Professional associations, particularly the Ethiopian Public Health Association [54] and the Ethiopian Medical Association, also may secure funds, mainly from external sources, and support individual research projects. The majority of the research is applied research.

Stewardship

About half of 30 health research institutions in Ethiopia that were reviewed in 2008 had written policies regarding ethics in health research, and almost the same number had scientific review committees.[56] These institutions also have a clearly stated mission and vision, which was a requirement of the business process re-engineering of their institutions, a reform recently conducted in all government agencies.

The Ethiopian Health and Nutrition Research Institute [6], under the authority of the Ministry of Health [8], conducts research on nutrition, traditional medicines and medical practices, and on the causes and spread of diseases. The primary objective of the Institute is to conduct research on priority areas of health and nutrition problems and contribute to the national effort of diseases prevention and control.

The vision and mission of the Institute have been clearly defined to fulfil its mandate as the newly envisioned "Ethiopian Public Health Institute" that will mainly focus on research of public health and nutritional importance and public health emergency management.[24] The mission of the Institute includes research and technology transfer, public health emergency management and a public health laboratory quality system [57].

The objective of research and technology transfer is to bring high-quality research that addresses community health problems effectively and efficiently in terms of quality, cost and time and customer satisfaction. The core processes of research and technology transfer are research agenda-setting and proposal review; research project execution and technology transfer; dissemination of research finding; as well as cross-cutting issue such as research capacity-building and research partnership. The organizational set up is process based, so that research disciplines are addressed in terms of disease, nutrition, traditional and modern medicine, environmental studies and vaccine production, targeting specific objectives and delivering desired outcomes that are vital for health promotion, disease prevention and control.

Public health emergency management aims to protect the community from health consequences posed by public health emergencies, including epidemic investigation and response. However, the public health infrastructure needs adequate attention and allocation of resources to be sufficiently prepared to enable early detection, and to respond and recover rapidly from the impacts of these challenges. Financial resources are inadequate, reflecting low priority, while human resources are weak, with a high turnover.

The objectives of a public health laboratory quality system are:

- standardization and capacity-building at regional and federal laboratories
- enhancing abilities and quality in performing specialized and referral tests
- implementing a regional external quality assessment scheme.

Different guidelines, manuals and formats are needed to standardize standards to be set in the laboratory system.[24]

The Central Statistics Agency of Ethiopia [5] also conducts health and health-related research activities on priority issues identified by the Ministry of Health, while broader issues covering both health and beyond are prioritized by the Agency itself. Among its objective are the collecting, processing, analysing and dissemination of socioeconomic and demographic statistical data. Its research activities are also cleared by the appropriate clearance processes.

Financing

Securing research funds in general is considered to be very weak. The Government of Ethiopia [41] allocates a regular budget for research conducted by the Central Statistics Agency of Ethiopia [5], the Ethiopian Health and Nutrition Research Institute [6] and for those research institutions identified and supported by the Ministry of Science and Technology [55]. Part of the funding for university research projects may also be provided by the Government; however, most individual and university research is assumed to be funded from external sources.

Allocation of funds from Government sources is included and approved as part of the regular annual budget and released as part of the annual plan. Government-funded research is accounted for in accordance with the financial regulations and process of the Ministry of Finance and Economic Development [2]. Universities and individual

funding agencies also implement accounting procedures in accordance with their institutional principles and guidelines.

Creating and sustaining resources

In Ethiopia, human resources development in research is carried out in higher education. While the majority of health research is conducted by the public sector, including the academic institutions, there is a concern regarding retention of capable and experienced researchers in this sector.

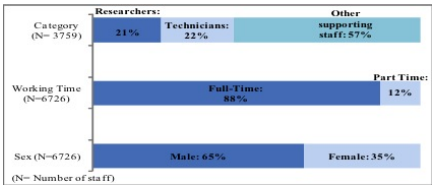


Figure 1. Category, working time and sex of human resources in health research institutions of Ethiopia.[24]

The majority of the human resources engaged in health research were found to be either technicians or supporting staff and only 21% were considered to be researchers (Figure 1). As shown in Figure 1, 88% were full-time researchers, and 65% of the staff were male, compared with 77% in the rest of the WHO African Region [58].

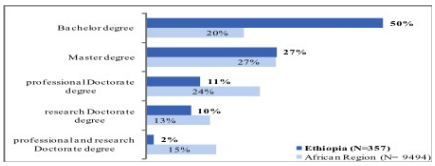


Figure 2. Level of education of health researchers in Ethiopia.

Figure 2 shows that only 2% of researchers were professional and had research doctorate degrees. The majority of these researchers were young: 75% were below 40 years of age.

Regarding availability of physical resources for conducting research, the research institutions have better resources when compared with the rest of the WHO African Region, with the majority reporting having laboratories and libraries (Figure 3).

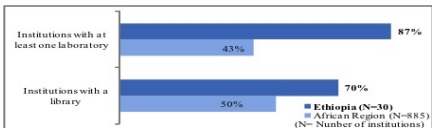


Figure 3.Availability of physical resources in health research institutions in Ethiopia.

Research output

The Ethiopian Health and Nutrition Research Institute [6] is mandated to produce vaccines for major infectious diseases and improve the national public health laboratory system. However, evidence concerning priority public health issues, including data on disease burden, distribution, type and transmission dynamics of various infectious diseases, knowledge about the prevalence of non-infectious diseases and environmental risk factors, as well as occupational hazards is very limited. Only a few reports have been written, describing antimicrobial resistance levels of various drugs used against infectious diseases, as well as on insecticides used to control disease vectors.[24]

The Ministry of Health [8] identifies research topics to be undertaken by the Ethiopian Health and Nutrition Research Institute and these are included in the Institute's strategic and annual plans. In 2010, the Institute conducted the following research on HIV/AIDS, nutrition, and traditional medicine and herbal extracts:

- a national surveillance study on HIV/tuberculosis coinfection and a national tuberculosis prevalence survey;
- a study on the efficacy of Coartem for the treatment of falciparum malaria;
- a study on two herbal extracts for treatment of mites, sheep ked and lice, which cause skin disease in animals;
- scientific and ethical reviews of work to ensure research projects address the country's health problems and comply with ethical standards;
- through the research conducted by the Institute, the efficacy of one herbal extract treatment for hookworms, *Strongyloides stercoralis* and *Hymenolepis nana*, has been approved;

- as a result of the efficacy gained from the herbal extracts treatment for *Plasmodium falciparum* in vitro, a medium-term toxicity study and a study on the preparation of the herbal extract in the form of a drug have been carried out;[11]
- linked to the strengthening of the health management information system reform, surveys are expected to be conducted to capture selected sets of data and to triangulate various sources for improving the accuracy of information about the outcomes and impacts of health interventions.[11]

In addition, over the past 5 years the Central Statistics Agency of Ethiopia [5] has conducted a census [59] and a Demographic and Health Survey [21] covering priority issues identified by the Ministry of Health. These have gone beyond the traditional topics of a Demographic and Health Survey and include HIV/AIDS, malaria and nutrition, which are of high importance both in policy-making and in the planning and monitoring of health programmes. A Welfare Monitoring Survey [60], Labour Force Survey [61] and a Household Income, Consumption and Expenditure Survey [42] have also been conducted, from which relevant information for health planning and policy can be generated.

Use of information, evidence and knowledge

In Ethiopia, agencies mandated to carry out research, particularly the Central Statistics Agency of Ethiopia [5] and the Ethiopian Nutrition and Health Research Institute [6], identify research projects based on assessed priority needs emanating from concerned agencies and directorates. Usually the results are shared and applied for policy-making and action. Research questions are articulated with the involvement of policy-makers and decision-makers and officially approved before implementation, and hence their involvement in research agenda setting is obvious. It can be concluded that policy-makers and decision-makers access and apply the evidence generated from research projects, particularly those identified with their participation.

Academic institutions and individuals select their research projects based on their interest and experience, or when funding agencies take the initiative. In academic institutions, certain criteria for evaluation of research activities and their outputs are established in a way that indicates a need to focus on priority areas of research activities. Research activities supported by the Ministry of Science and Technology [55] are necessarily among the areas defined as national priority issues identified by the Ministry.

Leverage information and communication technologies

In Ethiopia, the health management information system (HMIS) [62] moves data from facilities and administrative offices through the reporting chain to regional and national level. While HMIS reform includes a plan for electronic transmission of data from district level onwards, it was agreed that the first stage of the reform is to develop a clean manual system and then to move to electronic systems based on best practices to be documented over time.[63]

The main feature of the HMIS reform is the integration of all reporting systems and the application of a unified line of transfer of information, as fragmentation, parallel reporting and duplication were a serious challenge to the HMIS before the reform.

Some piloting activities have been introduced to capture health information electronically. There are various efforts in different regions and levels to introduce electronic health information recording and transfer. For example, adaptation of information technology in the health sector using the SmartCare electronic health record system [64] utilizes basic telecommunication infrastructure such as phone – ordinary GSM (Global System for Mobile Communications) or CDMA (Code Division Multiple Access) – and computer to send and receive reports and to update software in selected areas and hospitals. Early benefits of this have been:

- the creation of a central repository of information leading to better coordination between departments, particularly between care provider, laboratory and pharmacy;

- capturing financial information at each service point, thereby reducing the number of times a patient/client has to go to a cashier.

Also in one region manually transferred reports were scanned, after which aggregation was undertaken, but this is still considered inefficient because of the need to transfer manual reports all the way from health facilities to the regional centre.

During the development of the National HIS Strategic Plan, it was agreed to review and harmonize all of these efforts. Also it is planned to review and expand eHMIS, to develop eHealth policy, protocol, guidelines and standards for the health sector, and to enhance and strengthen the development and use of an information communication and technology system for health data management and communication (developing metadata dictionary, data repository, interoperability).[24]

Global Observatory for e-Health

e-Health for women's and children's health 2013 survey

National e-health policy or strategy

An e-health strategy is being formulated. A technical working group has been established and a draft e-health policy document addresses women's and children's health. The cost of implementation of this policy will be met by the Government of Ethiopia [41], together with donor agencies.

e-Health systems

Electronic health management information systems (HMIS) have been used in health facilities to register deaths and births since 2011 and all districts up to federal level have one. The Ministry of Health [8] is responsible for HMIS.

Electronic resource tracking for health is in place from programme up to national level and the Ministry of Health is responsible for this. Electronic tracking of expenditure by finance source per capita is carried out at all levels for reproductive, maternal, newborn and child health.

Women's and children's health policy or strategy

A policy and strategy for women's and children's health is embedded in the National Health Policy [4] but it does not refer to the use of e-health.

Monitoring the status of women's and children's health

Eleven indicators of women's and children's health are monitored, using both paper and electronic means.

National overview of e-health initiatives for women's and children's health

There are e-health initiatives for women's and children's health through public and donor funding.

Health services delivery

- M-health funded by the Government and development partners is in a pilot stage.
- A telemedicine project for teleconsultation with hospitals in India is also in a pilot phase.

Health monitoring and surveillance

- An e-HMIS/public health emergency management system for recording and transfer of data on notifiable diseases.
- An e-HMIS for vital event registration by health extension workers [28] in the communities.

Access to information for health professionals

- The Ministry of Health uploads all policy documents to its website.
- An electronic medical records programme has been established, with smart card technology.

Other e-health programmes

- Nil.

Possible barriers to implementing eHealth services

There are legal, infrastructure, human resources and financial barriers to implementing e-health services. The Ministry of Health is working with the Ministry of Education [65] to train graduates in health informatics.

Knowledge base – e-Health for women's and children's health

It is not clear whether the Ministry of Health and other organizations would be willing to share their e-health information.

Information and communications technology (ICT) training for health sciences students

Tertiary institutions offer ICT training.

Continuing education in ICT for health professionals

There is postgraduate training in health informatics.

Internet health information quality

Only voluntary compliance by content providers and website owners is in place for quality of health content. There is no official government website for women's and children's health, although the Ministry of Health website hosts data on women's and children's health.

Online safety for children

There is no information or education on Internet safety, although there are requirements for security technologies for children.

Privacy of personal and health-related data

There is a draft Health Information System Regulation underway and therein will be a requirement for parental consent to children's electronic medical records.

Social media and women's and children's health

Social media are used for general health issues such as awareness campaigns and information exchange with inbuilt feedback mechanisms.

References

[1] Everybody's business. Strengthening health systems to improve health outcomes. WHO's framework for action (pdf 843.33kb). Geneva, World Health Organization, 2007 (http://www.who.int/healthsystems/strategy/everybodys_business.pdf)

[2] Framework and standards for country health information systems, 2nd ed. (pdf 1.87Mb). Geneva, World Health Organization, 2008 (http://www.afro.who.int/index.php?option=com_docman&task=doc_download&gid=6233)

[3] http://www.moh.gov.et/English/Resources/Documents/Final%20draft%20HIS%20Road%20Map%20%20Ethiopia%20%20October4,2012-Updated%20%20following%20NAC%20meeting.doc

[4] http://phe-ethiopia.org/resadmin/uploads/attachment-58-Health_Managment_Information_System_(HMIS).pdf

[5] http://www.csa.gov.et/

[6] http://www.ehnri.gov.et/

[7] http://www.who.int/healthmetrics/en/

[8] National health information system road map 2005–2012 E.c. (2012/13–2019/20 G.c.) (Word 1.0Mb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2012 (http://www.moh.gov.et/English/Resources/Documents/Final draft HIS Road Map Ethiopia October4,2012-Updated following NAC meeting.doc)

[9] http://www.csa.gov.et

[10] http://unstats.un.org/unsd/dnss/docViewer.aspx?docID=2248

[11] Assessment of the Ethiopian national health information system. Final report. Addis Ababa: Government of Ethiopia, Ministry of Health, Central Statistics Agency, and Geneva: WHO, Health Metrics Network; 2007 (http://www.who.int/healthmetrics/library/countries/hmn_eth_his_2007_en.pdf)
[12] http://www1.umn.edu/humanrts/research/Civil%20Code%20%28English%29.pdfCivil
[13] Health Sector Development Program IV, 2010/11–2014/15. Final draft (pdf 780.81kb). Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)
[14] http://www.mcit.gov.et/
[15] http://www.ubuntunet.net/ethernet
[16] http://ddp-ext.worldbank.org/EdStats/ETHpro07.pdf
[17] http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/unpan040825.pdf
[18] HSDP harmonization manual (HHM) (pdf 1.06Mb). Addis Ababa: Government of Ethiopia, Ministry of Health; 2007 (http://www.dagethiopia.org/index.php?option=com_docman&task=doc_download&gid=56&Itemid=120The)
[19] National HIS Strategic Plan 2012/12–2018/19. Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2012
[20] http://www.etharc.org/
[21] http://measuredhs.com/pubs/pdf/FR255/FR255.pdf
[22] Government of Ethiopia, Central Statistics Agency web portal (http://www.csa.gov.et)
[23] Government of Ethiopia, Federal Ministry of Health web portal (http://www.moh.gov.et/English/Pages/Index.aspx)
[24] Ethiopia eHealth (pdf 220.76kb). Brazzaville: World Health Organization Regional Office for Africa (http://www.who.int/goe/publications/atlas/eth.pdf)
[25] National HIS Strategic Plan 2012/12–2018/19. Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2012
[26] http://www.ethiopia.gov.et/en_GB/officials-contact
[27] National HIS Strategic Plan 2012/12–2018/19. Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2012
[28] http://www.pathfinder.org/publications-tools/pdfs/Ethiopias-Health-Extension-Program-Pathfinder-Internationals-Support-2003-2007.pdf
[29] http://www.afro.who.int/en/ethiopia/country-programmes/integrated-disease-surveillance-and-response.html
[30] Government of Ethiopia, Central Statistics Agency web portal (http://www.csa.gov.et)
[31] Ethiopia Demographic and Health Survey, 2000 (pdf 1.5Mb). Addis Ababa: Central Statistical Agency; and Calverton MA, ORC Macro; 2001 (http://www.measuredhs.com/pubs/pdf/FR118/FR118.pdf)
[32] http://www.measuredhs.com/
[33] Ethiopian Demographic and Health Survey, 2005 (pdf 2.02Mb). Addis Ababa: Central Statistical Agency; and Calverton MA, ORC Macro; 2006 (http://www.measuredhs.com/pubs/pdf/FR179/FR179[23June2011].pdf)
[34] Ethiopian Demographic and Health Survey, 2011 (pdf 683.08kb). Addis Ababa: Central Statistics Agency; and Calverton Maryland, ICF Macro; 2011 (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)
[35] http://unstats.un.org/unsd/demographic/meetings/egm/CRVS2011/EGM%20PowerPoints/Session%201-04%20Ethiopia.ppt
[36] http://www.ehnri.gov.et/MIS%202011/2011%20Ethiopia%20MIS%20Tech%20Summary.pdf
[37] http://www.who.int/hiv/strategic/pubbss/en/index.html
[38] http://www.who.int/immunization_monitoring/data/eth.pdf
[39] http://www.unicef.org/nutritioncluster/files/Nutrition_Surveys_in_Ethiopia_Workshop_Report.pdf
[40] http://www.aau.edu.et/
[41] http://www.ethiopia.gov.et/en_GB/government
[42] http://www.csa.gov.et/index.php/2013-02-20-13-43-35/2013-02-20-13-45-32/household-income-survey/2004-2005-g-c
[43] http://www.csa.gov.et/index.php/2013-02-20-13-43-35/national-statistics-abstract
[44] Government of Ethiopia, Central Statistics Agency web portal (http://www.csa.gov.et/)
[45] National HIS Strategic Plan 2012/12–2018/19. Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2012
[46] Ethiopian Data Quality Assessment Framework. Addis Ababa: Government of Ethiopia, Central Statistics Office; 2011
[47] http://www.who.int/hinari/en/
[48] HINARI - Registered universities and professional schools by countries, areas and territories (http://extranet.who.int/hinari/en/browse_institutions.php?cntry=39)
[49] http://www.indepth-network.org/
[50] Government of Ethiopia, Ministry of Health (http://www.moh.gov.et/English/Resources/Pages/DocumentsByTopic.aspx)
[51] http://www.eipo.gov.et/
[52] http://www.moh.gov.et/English/Resources/Documents/FMOH%20Journal%20Volume%205,%20Number%201,%20May%202013.pdf
[53] http://www.aau.edu.et/index.php/academics/schools/905
[54] http://www.etpha.org/
[55] http://www.most.gov.et/
[56] Profile of the national health research system of Ethiopia: survey of national health research systems. Brazzaville: World Health Organization Regional Office for Africa; 2008
[57] http://www.go2itech.org/where-we-work/ethiopia/downloads-folder/FINAL_ETH_WHO-AFRO_A4.pdf

[58] http://www.afro.who.int/
[59] http://www.csa.gov.et/index.php/2013-02-20-14-51-51/2013-04-01-11-53-00/census-2007
[60] http://www.csa.gov.et/index.php/2013-02-20-13-43-35/2013-02-20-13-45-32/welfare-monitoring-survey/2000-2001-1993-e-c
[61] http://www.csa.gov.et/index.php/2013-02-20-13-43-35/2013-02-20-13-45-32/labour-force-survey/2004-2005-1997-e-c
[62] http://phe-ethiopia.org/resadmin/uploads/attachment-58-Health_Managment_Information_System_%28HMIS%29.pdf
[63] HMIS and Monitoring and Evaluation Strategy. Addis Ababa: Government of Ethiopia, Ministry of Health; 2008
[64] http://www.dimagi.com/smartcare/
[65] http://www.moe.gov.et/English/Pages/index.aspx

Ethiopia:Analytical summary - Health information, research, evidence and knowledge

The health information system [3] in Ethiopia is run under different authorities. The routine health management information system [4] is run primarily by the health sector, while population-based information comes predominantly from the Central Statistical Agency of Ethiopia [5]. Besides the Central Statistical Agency, the Ethiopian Health and Nutrition Research Institute [6], universities and individual researchers conduct various population and health facility based research activities.

A national health information system assessment was carried out in 2007 using the Health Metrics Network [7] framework and tools and this was updated and validated in 2011 as a step towards developing a national health information system strategic plan.

The results show that indicators and information products are considered adequate but data management is very poor. Health information system resources, dissemination and use, as well as data sources coverage, are also inadequate (see table). The capacity of institutions to generate, analyse, disseminate and use health information differs.

The capacity of the Central Statistical Agency for undertaking censuses and other population-based surveys was considered adequate, but the Ministry of Health [8] still needs more capacity to conduct surveys and to manage effectively the routine health information systems.

Component	Score (%)	Description of result
Score by major HIS components	13	Not functional
Data management		
Resources	42	Present, but not adequate
Data sources	52	Present, but not adequate
Indicator	83	Adequate
Information products	73	Adequate
Dissemination and use	48	Present, but not adequate
HIS resources		
HIS infrastructure	56	Present, but not adequate
HIS institution, human and finance	41	Present, but not adequate
Policy and planning	33	Not adequate
Data sources		
Vital statistics	18	Not functional
Health and disease records	53	Present, but not adequate
Health service records	61	Adequate
Administrative records	52	Present, but not adequate
Census	81	Highly adequate
Population-based surveys	85	Highly adequate
Resource allocation	42	present, but not adequate
Policy and advocacy	33	Not adequate
Quality of information products by type of indicators		
Risk factors	48	Present, but not adequate
Mortality	64	Adequate
Health systems	64	Adequate
Health status	73	Adequate
Morbidity	89	Highly adequate

Summary of health information system assessment scores in Ethiopia, September 2011. HIS, health information system

Based on these results, the Ministry of Health in collaboration with the Central Statistical Agency, Ministry of Justice and key partners, has developed an 8-year national health information system development strategic plan (2012/13–2019/20)[1] aimed at addressing the main gaps identified through the assessment.

References

[1] National health information system road map 2005–2012 E.c. (2012/13–2019/20 G.c.) (Word 1.0Mb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2012 (http://www.moh.gov.et/English/Resources/Documents/Final draft HIS Road Map Ethiopia October4,2012-Updated following NAC meeting.doc)

Ethiopia:Context

In accordance with its mandate, the Central Statistics Agency of Ethiopia [9] has developed a National Plan for Statistical Development [10] to cover the needs of all sectors and to guide national statistical development. During a recent assessment of the national health information system, it was concluded that, in general, the existing regulatory and legislative situation was fragmented and did not provide a health information framework to cover specific components such as notifiable diseases, private sector data, confidentiality, fundamental principles of official statistics, vital statistics, etc.[1] Also there was no comprehensive health information system policy, legislation and procedures for official statistics. It was concluded that a strong national coordination mechanism with clearly defined roles and responsibilities in health information systems was lacking.

With regard to vital event registration, legal ground work was established nearly 50 years ago – the 1960 Code of Ethiopia [12] states that every member of society has to register births and deaths. However, implementation of this Code is minimal and the country has relied on other sources of data, mainly censuses, sample surveys and indirect methods, for estimations of birth and death rates. At present, there is no official published legal procedure for vital and civil registration in the country. However, the Ministry of Justice has begun work on the necessary legal framework to introduce a vital and civil registration system in the country.

The Ministry of Health [8] has put a strong emphasis on strengthening the national health information system to address gaps in information since the introduction of Health Sector Development Programme (HSDP) [5]. One of the strategic objectives of the current HSDP IV (2011/12–2014/15)[2] is to improve evidence-based decision-making by harmonization and alignment. The Ministry of Health has prioritized monitoring and evaluation and reforming the health management information system over the past few years. An assessment of the health management information system was conducted in 2006. Based on its findings, a number of reforms have been introduced, piloted and implemented since 2007, including:

- standardization of data collection procedures, analysis and reporting
- application of user manuals to standardize data collection analysis and interpretation
- selection of sector-wide and programmatic indicators with the involvement of all stakeholders
- design of simplified formats
- integrated and unified flow of information.

The Ethiopian Information Communication Technology Authority, now the Ministry of Communications and Information Technology [14], was established in 2003 to institutionalize the use of information and communication technology (ICT) and has developed a national ICT policy.

A national eGovernment policy for eHealth was implemented in 2009. Government programmes and projects, such as the Ethiopian Education and Research Network (EthERNet) [15] initiatives to create a favourable platform for eHealth, SchoolNet and WoredaNet, have been implemented following its establishment.

Three main streams form the basis for the implementation of the ICT in Education Implementation Strategy [16]:

- the Ethiopian National SchoolNet Initiative
- the National ICT in Higher Education Initiative
- the National ICT Education and Training and Awareness Initiative .

The ICT in Education Implementation Strategy and its corresponding Action Plan are now components of a wider Ethiopian National e-Education Initiative [17].

Installation of a broadband network at district level marked an important development in building infrastructure. In addition, fibre-optic cable was installed in urban and rural areas in 2004. Access to ICT infrastructure is fully available at federal level but although computers are available, their use for health information system purposes is limited. In general, ICT infrastructure is considered to have the best status of all resources of the health information system.[3][4]

Creating and providing health information in an electronic format for the general public commenced in 2003. A National Multiculturalism Policy was introduced in 2004 and selected projects to promote the use of new electronic health materials in multiple languages were launched in 2005.

Access to a national open archive and national electronic journals is available through the National AIDS Resource Center [20], which disseminates its information through ICT. The Central Statistics Agency of Ethiopia also makes its publications, including censuses and Demographic and Health Surveys [21], available through its web site,[5] while the Ministry of Health also makes some of its publications available online.[6]

Although the country promotes the use of ICT applications in the health sector, there is a shortage of human resources for ICT. The major challenge in promoting access to electronic health content has been the limited awareness of the use of ICT.[7] ICT training for students in health sciences is available at tertiary level and there is regular continuing education in ICT for health professionals. However, teaching capacity is affected by underdeveloped infrastructure, lack of a policy framework and a shortage of skilled course developers. Generally, there is an increasing awareness of the need for training, deployment, remuneration and career development of human resources in ICT at all levels.

References

[1] Assessment of the Ethiopian national health information system. Final report. Addis Ababa: Government of Ethiopia, Ministry of Health, Central Statistics Agency, and Geneva: WHO, Health Metrics Network; 2007 (http://www.who.int/healthmetrics/library/countries/hmn_eth_his_2007_en.pdf)

[2] Health Sector Development Program IV, 2010/11–2014/15. Final draft (pdf 780.81kb). Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

[3] HSDP harmonization manual (HHM) (pdf 1.06Mb). Addis Ababa: Government of Ethiopia, Ministry of Health; 2007 (http://www.dagethiopia.org/index.php?option=com_docman&task=doc_download&gid=56&Itemid=120The)

[4] National HIS Strategic Plan 2012/12–2018/19. Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2012

[5] Government of Ethiopia, Central Statistics Agency web portal (http://www.csa.gov.et)

[6] Government of Ethiopia, Federal Ministry of Health web portal (http://www.moh.gov.et/English/Pages/Index.aspx)

[7] Ethiopia eHealth (pdf 220.76kb). Brazzaville: World Health Organization Regional Office for Africa (http://www.who.int/goe/publications/atlas/eth.pdf)

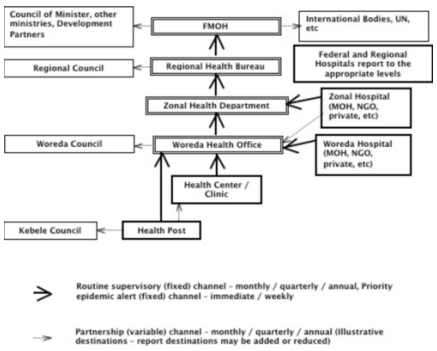
Ethiopia:Structural organization of health information

The agencies dealing with the health information system (HIS) in Ethiopia, including the Central Statistics Agency of Ethiopia [5], the Ethiopian Health and Nutrition Research Institute [6], the Ministry of Health [8] and the Ministry of Justice, have formal internal structures dealing with HIS and monitoring and evaluation in line with their mandates. There is a functional central HIS Unit in the Ministry of Health and regional health bureaus, which plays a significant role in coordinating, strengthening and maintaining the national HIS. However, it lacks adequate resources to effectively maintain and upgrade the performance of HIS to a level that meets the HIS requirements of the country.[1][2]

The National Advisory Committee, composed of directorates and agencies of the Ministry of Health and Central Statistics Agency and partners supporting or actively engaged in HIS development, was established in 2005. Its primary function is to oversee the process of health management information system (HMIS) reform initiated by the Ministry of Health. Chaired by the Ministry, the National Advisory Committee is at present dealing with HMIS but recently it was recommended to widen its scope to broader HIS development. The National Advisory Committee needs to be strengthened and formalized.

The Ministry of Health receives service, disease and administrative reports from the regional health bureaus, agencies and federal hospitals (see figure). In addition to the progress report on core plan, the regional health bureaus and hospitals deliver quarterly activity reports. Likewise, the regional health bureaus receive quarterly reports from woreda and regional hospitals, while woreda health offices receive service, disease and administrative reports from primary health care units. The Ministry in turn reports to the Council of Ministers [26] and shares information with partners. The routine flow of information in HMIS is strengthened by the Ministry, following the HMIS reform initiated in 2007.

Regarding the monitoring and evaluation of the sector development programme, the Ministry of Health and its partners developed the Health Sector Development Programme's *HSDP harmonization manual*[1] to guide joint planning, budgeting and reporting mechanisms and to avoid fragmentation. The Health Sector Development Programme [5] is monitored through regular progress reports, annual review meetings, joint review missions, and final evaluations conducted jointly by the Ministry, other government agencies and stakeholders. An annual consolidated report is presented at annual review meetings. The Ministry also conducts regular supportive supervision at all levels and the reports from this feed in to the HMIS, mainly for planning interventions.



The routine HMIS reporting flow in the health sector in Ethiopia. FMOH, Federal Ministry of Health; MOH, Ministry of Health; NGO, nongovernmental organization. Source: Ministry of Health, 2008

Health Sector Development Programme monitoring and evaluation relies on HMIS data, surveys carried out by the Central Statistics Agency and other agencies, findings of joint review missions, and final evaluation and annual consolidated reports. This is also the basis for reporting the health chapter for the Ministry of Finance and Economic Development's [2] national development reports.

References

[1] HSDP harmonization manual (HHM) (pdf 1.06Mb). Addis Ababa: Government of Ethiopia, Ministry of Health; 2007 (http://www.dagethiopia.org/index.php?option=com_docman&task=doc_download&gid=56&Itemid=120The)

[2] National HIS Strategic Plan 2012/12–2018/19. Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2012

Ethiopia:Data sources and generation

In Ethiopia, health information system data are generated from two main areas: population-based health information sources and health-service-based sources. Population-based health information includes census and vital events registration (only as piloting and for a limited time), and population-based household surveys and surveillance.

Health-service-based sources generate data on outcome of health-related administrative and operational activities. There is a wide range of health-service-based data, including:

- facility-based data on morbidity and mortality among those using services
- data on use of services delivered, on drugs and commodities
- data on the availability and quality of services
- financial and management information.

Most of the health-service-based data are generated routinely in the course of recording and reporting on services delivered.[1][2] The health management information system captures much of its service and disease surveillance data from patient records that health professionals maintain for care and follow-up.

Following the health management information system reform, the Ministry of Health [8] introduced a community health information system to capture basic health and health-related information through health extension workers [28] at household and individual level. The community health information system collects data on basic demographic statistics, health service delivery and utilization based on the health extension package, using a family folder. This is reported to the woreda health offices and then to the Ministry of Health as part of the health management information system.

One of the specialized autonomous agencies of the Ministry of Health, the Ethiopian Nutrition and Health Research Institute [6], is responsible for public health emergency management and regularly collects data on key epidemic-prone diseases using a standard format developed for Integrated Disease Surveillance and Response [29]. Integrated Disease Surveillance and Response covers 21 epidemic-prone and notifiable diseases. Owing to the nature of epidemics and surveillance, and the need for timely action, Integrated Disease Surveillance and Response is not integrated in to the centralized and integrated health management information system. Integrated Disease Surveillance and Response data are captured in the annual consolidated report and the annual health and related statistics publication.

The Central Statistics Agency of Ethiopia [5] is the major source of population-based statistics. The Agency was established with the objective of collecting, processing, analysing and disseminating socioeconomic and demographic statistical data through censuses, sample surveys, continuous registration and administrative recording systems. The Agency is also required to:

- provide technical guidance and assistance to government agencies and institutions in their endeavour to establish administrative recording, registration and reporting systems;
- build the capacity required for providing directives and consultations in database creation and development of administrative records and registration systems.

To date, the Central Statistics Agency has conducted three national population and housing censuses, and three Demographic and Health Surveys [21]. The reports are accessible to interested individuals at the Agency web site.[3] The primary objective of the Ethiopian Demographic and Health Survey is to provide up-to-date information to policy-makers, planners, researchers and programme managers for guidance in the planning, implementation,

monitoring and evaluation of population and health programmes in the country. The first Ethiopian Demographic and Health Survey[4] was conducted in 2000 as part of the worldwide Demographic and Health Survey programme [32]. The second[5] was carried out in 2005 and included several additional topics related to HIV/AIDS, malaria, etc. The third and latest Ethiopian Demographic and Health Survey[6] was conducted in 2011.

The Central Statistics Agency also conducts population-based labour force surveys and household consumption, expenditure and welfare monitoring surveys, and disseminates the results. A number of sample surveys with varying objectives are also undertaken by the Agency to fill any information gap.

In spite of the absence of a strong legal provision towards the registration of vital events, the Agency initiated a series of sample vital events registration programmes called the Sample Vital Events Registration Systems [35] in 1977, 1982–1983 and 1986–1987. However, these undertakings were limited in scope and coverage. In 2005, the Model Vital Events Registration Programme started in three regional states, with financial support from the United Nations Children's Fund. This project was intended to test methods and procedures of vital event registration in the selected experimental regions before being establishing nationwide. However, besides documentation of lessons, achievements are very low. In general, there is no reliable source of nationwide vital statistics in the country.

Besides generating routine health information for the health management information system, the Ministry of Health also conducts surveys. Some of the most important include the Malaria Indicator Surveys [36], Behavioural Surveillance Surveys [37], the Expanded Programme on Immunization Cluster Surveys [38], drug use surveys, HIV surveillance surveys at antenatal care clinics, and nutrition surveys [39]. The results of the surveys are disseminated.

Building on the experience of the Department of Community Health, Addis Ababa University [40] in demographic surveillance systems, six universities are currently running demographic surveillance systems and lately the universities have set up a network of demographic surveillance system sites to standardize and share results, both with each other and with potential users.

References

[1] HSDP harmonization manual (HHM) (pdf 1.06Mb). Addis Ababa: Government of Ethiopia, Ministry of Health; 2007 (http://www.dagethiopia.org/index.php?option=com_docman&task=doc_download&gid=56&Itemid=120The)

[2] National HIS Strategic Plan 2012/12–2018/19. Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2012

[3] Government of Ethiopia, Central Statistics Agency web portal (http://www.csa.gov.et)

[4] Ethiopia Demographic and Health Survey, 2000 (pdf 1.5Mb). Addis Ababa: Central Statistical Agency; and Calverton MA, ORC Macro; 2001 (http://www.measuredhs.com/pubs/pdf/FR118/FR118.pdf)

[5] Ethiopian Demographic and Health Survey, 2005 (pdf 2.02Mb). Addis Ababa: Central Statistical Agency; and Calverton MA, ORC Macro; 2006 (http://www.measuredhs.com/pubs/pdf/FR179/FR179[23June2011].pdf)

[6] Ethiopian Demographic and Health Survey, 2011 (pdf 683.08kb). Addis Ababa: Central Statistics Agency; and Calverton Maryland, ICF Macro; 2011 (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

Ethiopia:Data management

The Central Statistics Agency (CSA) [5] is the statistical arm of the Government of Ethiopia [41]. Since its establishment in 1960, it has been involved in socioeconomic and demographic data collection, processing, evaluation and dissemination for monitoring the country's socioeconomic development, planning and policy formulation. The CSA conducts a National Integrated Household and Enterprise Survey Programme [42], regular Demographic and Health Surveys [21], censuses and ad hoc surveys. It also compiles secondary data from administrative records.

In the context of availability of centralized data with comprehensive information for all stakeholders, the CSA has initiated standard procedures for data management but there are no standards in place in other institutions. The CSA has a data warehouse, which is reflected in the annual statistical abstracts [43] produced over the past two decades. In addition, the CSA has developed a website[1] that gives access to available data. The CSA has been actively involved in conducting censuses, sample surveys of various types, and registration of small-scale vital events. However, it has limited scope, consistency and validation.

The recently updated health information system assessment of 2011, carried out as a step to develop a health information system strategic plan, found that in general data management could be considered "not functional".[2] The CSA has standard procedures for data management and a data warehouse for each demographic and socioeconomic survey it conducts. However, other institutions have no national data standards. The CSA has a procedure and guidelines to collect, compile, store, and exchange data and information at various levels for its own use but this had not been applied nationwide. The CSA also has data quality assurance mechanisms at various levels, although they are not widely used.

The Ministry of Health [8] and subnational units lack an integrated data warehouse. Although the Ministry of Communications and Information Technology [14] has prepared data management tools, there is no standard definition and data warehouse at national or subnational levels.

Input data for all processes originate from individuals, households, businesses or institutions. A characteristic feature of almost all statistical processes in Ethiopia, whether surveys or administrative collections, is that the input data are collected at local community level. Data are assembled, aggregated and passed on to successively higher levels within the organization responsible for the statistical process, until they reach the national level.[3]

References

[1] Government of Ethiopia, Central Statistics Agency web portal (http://www.csa.gov.et/)

[2] National HIS Strategic Plan 2012/12–2018/19. Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2012

[3] Ethiopian Data Quality Assessment Framework. Addis Ababa: Government of Ethiopia, Central Statistics Office; 2011

Ethiopia:Access to existing global health information, evidence and knowledge

Ethiopia is one of the eligible developing countries to gain access to the Health InterNetwork Access to Research Initiative (HINARI [47]) programme set up by WHO. There are 62 registered universities and professional schools in Ethiopia with access to HINARI.[1]

Universities and researchers can access search engines and open-access journals as per their needs but the overall situation can be considered limited. Six universities have recently established a platform to share Demographic Surveillance Sites [49] and Demographic and Health Surveys [21].

Health professional associations conduct regular, usually annual, scientific conferences at which research findings are shared. Along with some universities, they produce regular publications which they distribute and share among their members. Unpublished academic research reports can also be accessed from universities, while regular reports from the Ministry of Health [8] and regional health bureaus can be accessed on demand, sometimes from websites.[2]

The Ethiopian Intellectual Property Office [51] regulates and enforces intellectual property rights and this extends to the health sector.

References

[1] HINARI - Registered universities and professional schools by countries, areas and territories (http://extranet.who.int/hinari/en/browse_institutions.php?cntry=39)

[2] Government of Ethiopia, Ministry of Health (http://www.moh.gov.et/English/Resources/Pages/DocumentsByTopic.aspx)

Ethiopia:Storage and diffusion of information, evidence and knowledge

The Ministry of Health [8] in Ethiopia publishes a quarterly health bulletin, *Policy and practice: information for action* [52], to promote information-sharing, document best practices and support evidence-based decision-making. Universities and the Ethiopian Nutrition and Health Research Institute [6] have health libraries and information centres, but their use is limited to academicians and researchers. Interested individuals can access these, although in practice the use is limited. Common publications are available in English. Most are available as hard copies, while some academic and research publications can also be accessed through websites.

Experience in consolidating and publishing existing evidence for policy-making and decision-making is poor. Although a lot of research, mainly from universities, is published in journals, consolidation of this research, with the aim of using it in policy-making, is limited. The Addis Ababa University School of Public Health [53] and some other universities have published consolidated reports from Demographic and Health Surveys and Demographic Surveillance Site research and student research outputs. Some research reports on priority national themes are published by the Ethiopian Public Health Association [54]. However, although these are made available to policy-makers, their use has been limited.

Ethiopia:Research - Health information, research, evidence and knowledge

Health and health-related research in Ethiopia is conducted by the Central Statistics Agency of Ethiopia [5], the Ethiopian Health and Nutrition Research Institute [6], universities and individual researchers. Each institution sets its plans for research projects for the coming years and specified units are delegated to regulate and monitor the implementation. Ethical clearance is an inbuilt process in research undertakings in all institutions. Each researcher publishes their outputs while the institutions usually publish individual reports and annual outputs and share with users. Each institution has defined its mission as part of the business process re-engineering of institutions, which has recently been conducted in all government agencies.

Research projects in both the Central Statistics Agency and Ethiopian Nutrition and Health Research Institute are financed by regular funds from the Government of Ethiopia [41], which may come from treasury or external sources. Both are managed according to government financial regulations. Universities and individuals usually depend on external funding sources, while very limited funds may be allocated by the Government.

The Ministry of Science and Technology [55] also allocates funds to selected priority research projects. Professional associations, particularly the Ethiopian Public Health Association [54] and the Ethiopian Medical Association, also may secure funds, mainly from external sources, and support individual research projects. The majority of the research is applied research.

Ethiopia:Stewardship

About half of 30 health research institutions in Ethiopia that were reviewed in 2008 had written policies regarding ethics in health research, and almost the same number had scientific review committees.[1] These institutions also have a clearly stated mission and vision, which was a requirement of the business process re-engineering of their institutions, a reform recently conducted in all government agencies.

The Ethiopian Health and Nutrition Research Institute [6], under the authority of the Ministry of Health [8], conducts research on nutrition, traditional medicines and medical practices, and on the causes and spread of diseases. The primary objective of the Institute is to conduct research on priority areas of health and nutrition problems and contribute to the national effort of diseases prevention and control.

The vision and mission of the Institute have been clearly defined to fulfil its mandate as the newly envisioned "Ethiopian Public Health Institute" that will mainly focus on research of public health and nutritional importance and public health emergency management.[2] The mission of the Institute includes research and technology transfer, public health emergency management and a public health laboratory quality system [57].

The objective of research and technology transfer is to bring high-quality research that addresses community health problems effectively and efficiently in terms of quality, cost and time and customer satisfaction. The core processes of research and technology transfer are research agenda-setting and proposal review; research project execution and technology transfer; dissemination of research finding; as well as cross-cutting issue such as research capacity-building and research partnership. The organizational set up is process based, so that research disciplines are addressed in terms of disease, nutrition, traditional and modern medicine, environmental studies and vaccine production, targeting specific objectives and delivering desired outcomes that are vital for health promotion, disease prevention and control.

Public health emergency management aims to protect the community from health consequences posed by public health emergencies, including epidemic investigation and response. However, the public health infrastructure needs adequate attention and allocation of resources to be sufficiently prepared to enable early detection, and to respond

and recover rapidly from the impacts of these challenges. Financial resources are inadequate, reflecting low priority, while human resources are weak, with a high turnover.

The objectives of a public health laboratory quality system are:

- standardization and capacity-building at regional and federal laboratories
- enhancing abilities and quality in performing specialized and referral tests
- implementing a regional external quality assessment scheme.

Different guidelines, manuals and formats are needed to standardize standards to be set in the laboratory system.[2]

The Central Statistics Agency of Ethiopia [5] also conducts health and health-related research activities on priority issues identified by the Ministry of Health, while broader issues covering both health and beyond are prioritized by the Agency itself. Among its objective are the collecting, processing, analysing and dissemination of socioeconomic and demographic statistical data. Its research activities are also cleared by the appropriate clearance processes.

References

[1] Profile of the national health research system of Ethiopia: survey of national health research systems. Brazzaville: World Health Organization Regional Office for Africa; 2008

[2] Ethiopian Health and Nutrition Research Institute: a five year, balanced score card based strategic plan (2010–2015 G.C.) (pdf 1.04Mb). Addis Ababa: Government of Ethiopia; no date (http://www.ianphi.org/documents/pdfs/Ethiopia_Plan_2010-2015.pdf)

Ethiopia:Financing

Securing research funds in general is considered to be very weak. The Government of Ethiopia [41] allocates a regular budget for research conducted by the Central Statistics Agency of Ethiopia [5], the Ethiopian Health and Nutrition Research Institute [6] and for those research institutions identified and supported by the Ministry of Science and Technology [55]. Part of the funding for university research projects may also be provided by the Government; however, most individual and university research is assumed to be funded from external sources.

Allocation of funds from Government sources is included and approved as part of the regular annual budget and released as part of the annual plan. Government-funded research is accounted for in accordance with the financial regulations and process of the Ministry of Finance and Economic Development [2]. Universities and individual funding agencies also implement accounting procedures in accordance with their institutional principles and guidelines.

Ethiopia:Creating and sustaining resources

In Ethiopia, human resources development in research is carried out in higher education. While the majority of health research is conducted by the public sector, including the academic institutions, there is a concern regarding retention of capable and experienced researchers in this sector.

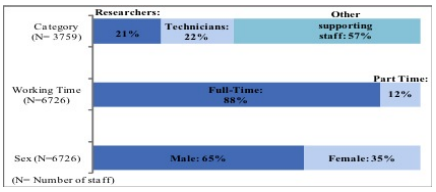


Figure 1. Category, working time and sex of human resources in health research institutions of Ethiopia.[1]

The majority of the human resources engaged in health research were found to be either technicians or supporting staff and only 21% were considered to be researchers (Figure 1). As shown in Figure 1, 88% were full-time researchers, and 65% of the staff were male, compared with 77% in the rest of the WHO African Region [58].

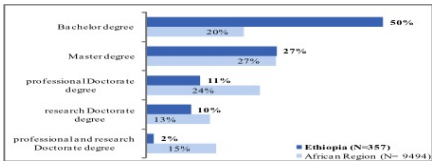


Figure 2. Level of education of health researchers in Ethiopia.

Figure 2 shows that only 2% of researchers were professional and had research doctorate degrees. The majority of these researchers were young: 75% were below 40 years of age.

Regarding availability of physical resources for conducting research, the research institutions have better resources when compared with the rest of the WHO African Region, with the majority reporting having laboratories and libraries (Figure 3).

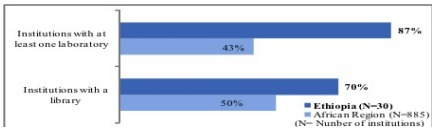


Figure 3.Availability of physical resources in health research institutions in Ethiopia.

References

[1] Profile of the national health research system of Ethiopia. Survey of national health research systems. Brazzaville: World Health Organization Regional Office for Africa; 2008

Ethiopia:Research output

The Ethiopian Health and Nutrition Research Institute [6] is mandated to produce vaccines for major infectious diseases and improve the national public health laboratory system. However, evidence concerning priority public health issues, including data on disease burden, distribution, type and transmission dynamics of various infectious diseases, knowledge about the prevalence of non-infectious diseases and environmental risk factors, as well as occupational hazards is very limited. Only a few reports have been written, describing antimicrobial resistance levels of various drugs used against infectious diseases, as well as on insecticides used to control disease vectors.[1]

The Ministry of Health [8] identifies research topics to be undertaken by the Ethiopian Health and Nutrition Research Institute and these are included in the Institute's strategic and annual plans. In 2010, the Institute conducted the following research on HIV/AIDS, nutrition, and traditional medicine and herbal extracts:

- a national surveillance study on HIV/tuberculosis coinfection and a national tuberculosis prevalence survey;
- a study on the efficacy of Coartem for the treatment of falciparum malaria;
- a study on two herbal extracts for treatment of mites, sheep ked and lice, which cause skin disease in animals;
- scientific and ethical reviews of work to ensure research projects address the country's health problems and comply with ethical standards;
- through the research conducted by the Institute, the efficacy of one herbal extract treatment for hookworms, *Strongyloides stercoralis* and *Hymenolepis nana*, has been approved;
- as a result of the efficacy gained from the herbal extracts treatment for *Plasmodium falciparum* in vitro, a medium-term toxicity study and a study on the preparation of the herbal extract in the form of a drug have been carried out;[2]
- linked to the strengthening of the health management information system reform, surveys are expected to be conducted to capture selected sets of data and to triangulate various sources for improving the accuracy of information about the outcomes and impacts of health interventions.[2]

In addition, over the past 5 years the Central Statistics Agency of Ethiopia [5] has conducted a census [59] and a Demographic and Health Survey [21] covering priority issues identified by the Ministry of Health. These have gone beyond the traditional topics of a Demographic and Health Survey and include HIV/AIDS, malaria and nutrition, which are of high importance both in policy-making and in the planning and monitoring of health programmes. A Welfare Monitoring Survey [60], Labour Force Survey [61] and a Household Income, Consumption and Expenditure Survey [42] have also been conducted, from which relevant information for health planning and policy can be generated.

References

[1] Ethiopian Health and Nutrition Research Institute: a five year, balanced score card based strategic plan (2010–2015 G.C.) (1.04Mb). Addis Ababa: Government of Ethiopia, Ethiopian Health and Nutrition Research Institute; no date (http://www.ianphi.org/documents/pdfs/Ethiopia_Plan_2010-2015.pdf)

[2] National HIS Strategic Plan 2012/12–2018/19. Addis Ababa: Government of Ethiopia, Federal Ministry of Health; 2012

Ethiopia:Use of information, evidence and knowledge

In Ethiopia, agencies mandated to carry out research, particularly the Central Statistics Agency of Ethiopia [5] and the Ethiopian Nutrition and Health Research Institute [6], identify research projects based on assessed priority needs emanating from concerned agencies and directorates. Usually the results are shared and applied for policy-making and action. Research questions are articulated with the involvement of policy-makers and decision-makers and officially approved before implementation, and hence their involvement in research agenda setting is obvious. It can be concluded that policy-makers and decision-makers access and apply the evidence generated from research projects, particularly those identified with their participation.

Academic institutions and individuals select their research projects based on their interest and experience, or when funding agencies take the initiative. In academic institutions, certain criteria for evaluation of research activities and their outputs are established in a way that indicates a need to focus on priority areas of research activities. Research activities supported by the Ministry of Science and Technology [55] are necessarily among the areas defined as national priority issues identified by the Ministry.

Ethiopia:Leverage information and communication technologies

In Ethiopia, the health management information system (HMIS) [62] moves data from facilities and administrative offices through the reporting chain to regional and national level. While HMIS reform includes a plan for electronic transmission of data from district level onwards, it was agreed that the first stage of the reform is to develop a clean manual system and then to move to electronic systems based on best practices to be documented over time.[1]

The main feature of the HMIS reform is the integration of all reporting systems and the application of a unified line of transfer of information, as fragmentation, parallel reporting and duplication were a serious challenge to the HMIS before the reform.

Some piloting activities have been introduced to capture health information electronically. There are various efforts in different regions and levels to introduce electronic health information recording and transfer. For example, adaptation of information technology in the health sector using the SmartCare electronic health record system [64] utilizes basic telecommunication infrastructure such as phone – ordinary GSM (Global System for Mobile Communications) or CDMA (Code Division Multiple Access) – and computer to send and receive reports and to update software in selected areas and hospitals. Early benefits of this have been:

- the creation of a central repository of information leading to better coordination between departments, particularly between care provider, laboratory and pharmacy;
- capturing financial information at each service point, thereby reducing the number of times a patient/client has to go to a cashier.

Also in one region manually transferred reports were scanned, after which aggregation was undertaken, but this is still considered inefficient because of the need to transfer manual reports all the way from health facilities to the regional centre.

During the development of the National HIS Strategic Plan, it was agreed to review and harmonize all of these efforts. Also it is planned to review and expand eHMIS, to develop eHealth policy, protocol, guidelines and standards for the health sector, and to enhance and strengthen the development and use of an information communication and technology system for health data management and communication (developing metadata

dictionary, data repository, interoperability).[1]

References

[1] HMIS and Monitoring and Evaluation Strategy. Addis Ababa: Government of Ethiopia, Ministry of Health; 2008

Ethiopia:Availability of IT solutions

Global Observatory for e-Health

e-Health for women's and children's health 2013 survey

National e-health policy or strategy

An e-health strategy is being formulated. A technical working group has been established and a draft e-health policy document addresses women's and children's health. The cost of implementation of this policy will be met by the Government of Ethiopia [41], together with donor agencies.

e-Health systems

Electronic health management information systems (HMIS) have been used in health facilities to register deaths and births since 2011 and all districts up to federal level have one. The Ministry of Health [8] is responsible for HMIS.

Electronic resource tracking for health is in place from programme up to national level and the Ministry of Health is responsible for this. Electronic tracking of expenditure by finance source per capita is carried out at all levels for reproductive, maternal, newborn and child health.

Women's and children's health policy or strategy

A policy and strategy for women's and children's health is embedded in the National Health Policy [4] but it does not refer to the use of e-health.

Monitoring the status of women's and children's health

Eleven indicators of women's and children's health are monitored, using both paper and electronic means.

National overview of e-health initiatives for women's and children's health

There are e-health initiatives for women's and children's health through public and donor funding.

Health services delivery

- M-health funded by the Government and development partners is in a pilot stage.
- A telemedicine project for teleconsultation with hospitals in India is also in a pilot phase.

Health monitoring and surveillance

- An e-HMIS/public health emergency management system for recording and transfer of data on notifiable diseases.
- An e-HMIS for vital event registration by health extension workers [28] in the communities.

Access to information for health professionals

- The Ministry of Health uploads all policy documents to its website.
- An electronic medical records programme has been established, with smart card technology.

Other e-health programmes

- Nil.

Possible barriers to implementing eHealth services

There are legal, infrastructure, human resources and financial barriers to implementing e-health services. The Ministry of Health is working with the Ministry of Education [65] to train graduates in health informatics.

Knowledge base – e-Health for women's and children's health

It is not clear whether the Ministry of Health and other organizations would be willing to share their e-health information.

Information and communications technology (ICT) training for health sciences students

Tertiary institutions offer ICT training.

Continuing education in ICT for health professionals

There is postgraduate training in health informatics.

Internet health information quality

Only voluntary compliance by content providers and website owners is in place for quality of health content. There is no official government website for women's and children's health, although the Ministry of Health website hosts data on women's and children's health.

Online safety for children

There is no information or education on Internet safety, although there are requirements for security technologies for children.

Privacy of personal and health-related data

There is a draft Health Information System Regulation underway and therein will be a requirement for parental consent to children's electronic medical records.

Social media and women's and children's health

Social media are used for general health issues such as awareness campaigns and information exchange with inbuilt feedback mechanisms.

Ethiopia:Health financing system

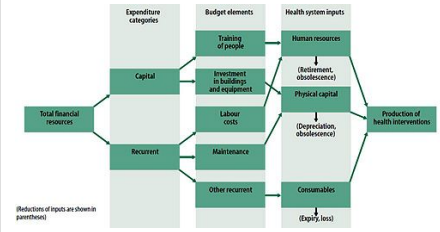
A good health financing system raises adequate funds for health, in ways that ensure people can use needed services and are protected from financial catastrophe or impoverishment associated with having to pay for them.[1] Health financing systems that achieve universal coverage in this way also encourage the provision and use of an effective and efficient mix of personal and non-personal services.

Three interrelated functions are involved in order to achieve this:

- the collection of revenues from households, companies or external agencies;
- the pooling of prepaid revenues in ways that allow risks to be shared – including decisions on benefit coverage and entitlement; and purchasing;
- the process by which interventions are selected and services are paid for or providers are paid.

The interaction between all three functions determines the effectiveness, efficiency and equity of health financing systems.

Like all aspects of health system strengthening, changes in health financing must be tailored to the history, institutions and traditions of each country. Most systems involve a mix of public and private financing and public and private provision, and there is no one template for action. However, important principles to guide any country's approach to financing include:



Health system inputs: from financial resources to health interventions

- raising additional funds where health needs are high, revenues insufficient and where accountability mechanisms can ensure transparent and effective use of resources;
- reducing reliance on out-of-pocket payments where they are high, by moving towards prepayment systems involving pooling of financial risks across population groups (taxation and the various forms of health insurance are all forms of prepayment);
- taking additional steps, where needed, to improve social protection by ensuring the poor and other vulnerable groups have access to needed services, and that paying for care does not result in financial catastrophe;
- improving efficiency of resource use by focusing on the appropriate mix of activities and interventions to fund and inputs to purchase;
- aligning provider payment methods with organizational arrangements for service providers and other incentives for efficient service provision and use, including contracting;
- strengthening financial and other relationships with the private sector and addressing fragmentation of financing arrangements for different types of services;
- promoting transparency and accountability in health financing systems;
- improving generation of information on the health financing system and its policy use.

This section of the health system profile is structured as follows:

Analytical summary

The Ministry of Health [8] in Ethiopia developed and implemented a Health Care Financing Strategy [2] in 2007 to increase funding for health by improving resource mobilization and to ensure equitable resource allocation, efficiency of resource utilization and financial protection of its citizens.

Components of the Strategy include:

- revenue retention and utilization
- facility governance
- a system of fee waiver and exemption for those who cannot afford to pay
- outsourcing of non-clinical services
- establishing a private sector to strengthen the supply and delivery of quality health services.

Performance-based contracting is also used to improve supply, by transferring money from purchasers (the Ministry of Health, regional health bureaus and woreda health offices) to service providers (health facilities) conditional on achieving predetermined performance targets.

Moreover, to address financial barriers to accessing health services and to pool risks of doing so, the Government of Ethiopia [10] recently initiated community-based health insurance for the rural and urban informal sectors and social health insurance for the formal sector.

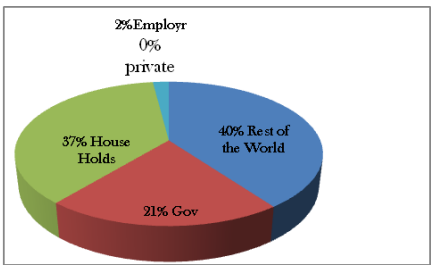


Figure 1. Financing sources for health care, 2007–2008

The National Health Account (NHA) 4 shows that most of the general health care was financed by the rest of the world, followed by households (see Figure 1). There was also a large increase in general health expenditure between NHA 3[2] (2004–2005) and NHA 4[] (2007–2008), the highest increment being due to households (176%) and the rest of the world (143%) (see Figure 2).

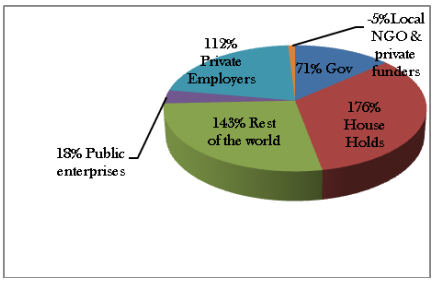


Figure 2. Change in general health expenditure between National Health Account (NHA) 3 and NHA 4

Despite this significant increase, the per capita national health expenditure was only US$ 16.1 in 2007–2008, far below the US$ 34 recommend by the WHO Commission on Macroeconomics and Health [3]. NHA 4 shows that the health sector is mostly financed by donors and that households are substantially burdened by high spending on health.

Regarding financing agents, the private sector (including households, private employers and non-profit institutions) managed 44% of the NHA, while the Government and the rest of the world managed 42% and 14% of the NHA, respectively (see Figure 3). Therefore, the private sector and households, followed by the Government, mainly manage and control health sector spending.

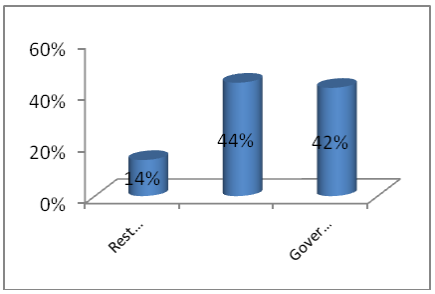


Figure 3. Financing agents (management of health resources)

Although the Government manages 42% of health sector spending, it has little flexibility in decision-making on allocation and utilization of resources, as most resources from donors come already ear-marked.[1]

Curative care consumed most of the national health expenditure (42%) while prevention of communicable diseases and maternal and child health accounted for 25% (see Figure 4). Between NHA 3 and NHA 4, there was a significant shift from curative care to preventive health care, in line with the Government's health-promotion policy.

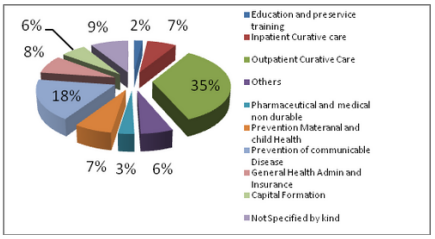


Figure 4. Spending on general health care

NHA 4 shows that key areas of the health sector are heavy financed by donors, raising the question of sustainability. The effectiveness of resource utilization by the various public health programmes implemented by different partners needs to be regularly monitored and corrected.

The way forward

- Strengthen the financial management, procurement and budgeting system to better alignment with the Government system.
- Continue advocating for increased resource allocation from the Government budget and mobilize additional funding from international partners.
- Speed up the implementation of social health insurance and community-based health insurance by identifying those at greatest need.

References

[1] Everybody's business. Strengthening health systems to improve health outcomes. WHO's framework for action (pdf 843.33kb). Geneva, World Health Organization, 2007 (http://www.who.int/healthsystems/strategy/everybodys_business.pdf)
[2] http://www.healthsystems2020.org/content/resource/detail/85865/
[3] http://www.who.int/trade/glossary/story008/en/index.html

Ethiopia:Analytical summary - Health financing system

The Ministry of Health [8] in Ethiopia developed and implemented a Health Care Financing Strategy [2] in 2007 to increase funding for health by improving resource mobilization and to ensure equitable resource allocation, efficiency of resource utilization and financial protection of its citizens.

Components of the Strategy include:

- revenue retention and utilization
- facility governance
- a system of fee waiver and exemption for those who cannot afford to pay
- outsourcing of non-clinical services
- establishing a private sector to strengthen the supply and delivery of quality health services.

Performance-based contracting is also used to improve supply, by transferring money from purchasers (the Ministry of Health, regional health bureaus and woreda health offices) to service providers (health facilities) conditional on achieving predetermined performance targets.

Moreover, to address financial barriers to accessing health services and to pool risks of doing so, the Government of Ethiopia [10] recently initiated community-based health insurance for the rural and urban informal sectors and social health insurance for the formal sector.

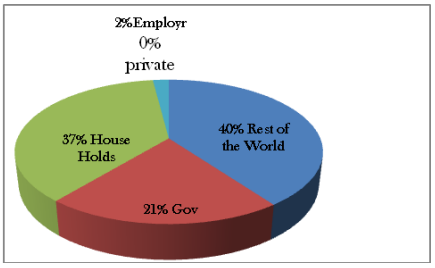


Figure 1. Financing sources for health care, 2007–2008

The National Health Account (NHA) 4 shows that most of the general health care was financed by the rest of the world, followed by households (see Figure 1). There was also a large increase in general health expenditure between NHA 3[2] (2004–2005) and NHA 4[] (2007–2008), the highest increment being due to households (176%) and the rest of the world (143%) (see Figure 2).

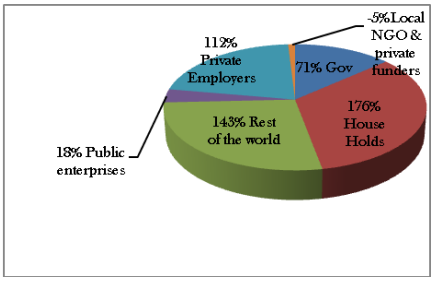


Figure 2. Change in general health expenditure between National Health Account (NHA) 3 and NHA 4

Despite this significant increase, the per capita national health expenditure was only US$ 16.1 in 2007–2008, far below the US$ 34 recommend by the WHO Commission on Macroeconomics and Health [3]. NHA 4 shows that the health sector is mostly financed by donors and that households are substantially burdened by high spending on health.

Regarding financing agents, the private sector (including households, private employers and non-profit institutions) managed 44% of the NHA, while the Government and the rest of the world managed 42% and 14% of the NHA, respectively (see Figure 3). Therefore, the private sector and households, followed by the Government, mainly manage and control health sector spending.

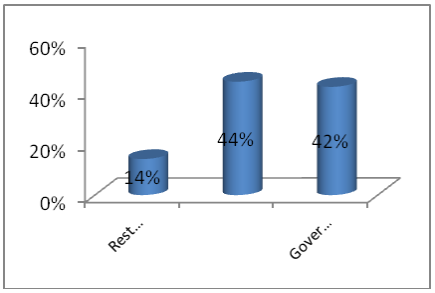


Figure 3. Financing agents (management of health resources)

Although the Government manages 42% of health sector spending, it has little flexibility in decision-making on allocation and utilization of resources, as most resources from donors come already ear-marked.[1]

Curative care consumed most of the national health expenditure (42%) while prevention of communicable diseases and maternal and child health accounted for 25% (see Figure 4). Between NHA 3 and NHA 4, there was a significant shift from curative care to preventive health care, in line with the Government's health-promotion policy.

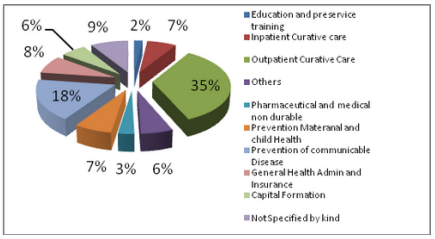


Figure 4. Spending on general health care

NHA 4 shows that key areas of the health sector are heavy financed by donors, raising the question of sustainability. The effectiveness of resource utilization by the various public health programmes implemented by different partners needs to be regularly monitored and corrected.

The way forward

- Strengthen the financial management, procurement and budgeting system to better alignment with the Government system.

- Continue advocating for increased resource allocation from the Government budget and mobilize additional funding from international partners.
- Speed up the implementation of social health insurance and community-based health insurance by identifying those at greatest need.

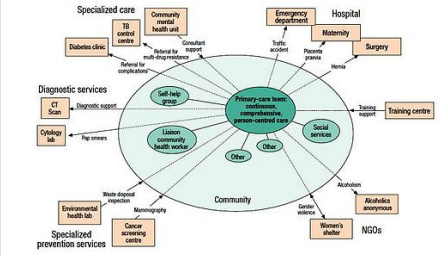
References

Ethiopia:Service delivery - The Health System

In any health system, good health services are those that deliver effective, safe, good-quality personal and non-personal care to those that need it, when needed, with minimum waste. Services – be they prevention, treatment or rehabilitation – may be delivered in the home, the community, the workplace or in health facilities.[1]

Although there are no universal models for good service delivery, there are some well-established requirements. Effective provision requires trained staff working with the right medicines and equipment, and with adequate financing. Success also requires an organizational environment that provides the right incentives to providers and users. The service delivery building block is concerned with how inputs and services are organized and managed, to ensure access, quality, safety and continuity of care across health conditions, across different locations and over time.

Attention should be given to the following:



Primary care as a hub of coordination: networking within the community served and with outside partners[2]

- *Demand for services*. Raising demand, appropriately, requires understanding the user's perspective, raising public knowledge and reducing barriers to care – cultural, social, financial or gender barriers.
- *Package of integrated services*. This should be based on a picture of population health needs; of barriers to the equitable expansion of access to services; and available resources such as money, staff, medicines and supplies.
- *Organization of the provider network*. This means considering the whole network of providers, private as well as public; the package of services (personal, non-personal); whether there is oversupply or undersupply; functioning referral systems; the responsibilities of and linkages between different levels and types of provider, including hospitals.
- *Management*. Whatever the unit of management (programme, facility, district, etc.) any autonomy, which can encourage innovation, must be balanced by policy and programme consistency and accountability. Supervision and other performance incentives are also key.
- *Infrastructure and logistics*. This includes buildings, their plant and equipment; utilities such as power and water supply; waste management; and transport and communication. It also involves investment decisions, with issues of specification, price and procurement and considering the implications of investment in facilities, transport or technologies for recurrent costs, staffing levels, skill needs and maintenance systems.

This section of the health system profile is structured as follows:

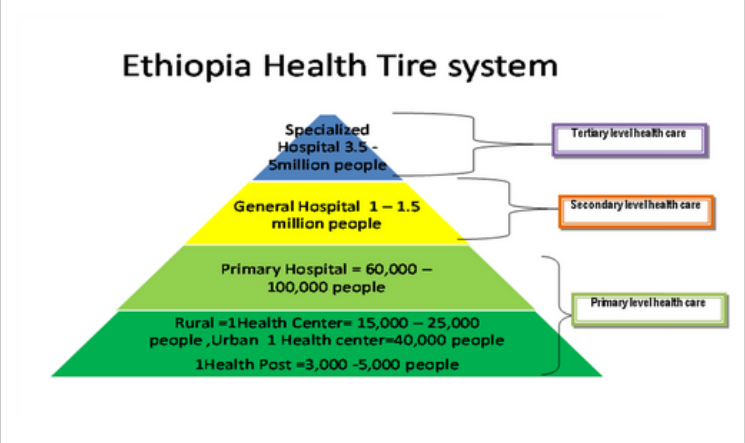
Analytical summary

Ethiopia has a decentralized three-tier system of primary, secondary and tertiary care (see figure). The devolution of power to regional governments has largely resulted in shifting decision-making for public service delivery from the central to regional and district levels. To improve the delivery of quality health care services, the sector has invested in the following improvements:

- the Health Extension Programme[3]
- the Health Development Army [7]
- supply chain management, regulation, harmonization and alignment
- health care financing [2]
- human resources development [4]
- the health information system [5]
- a continuous quality improvement programme and referral system.[6]

The Health Extension Programme is a flagship programme of the Ministry of Health [8]. It serves as the primary vehicle for implementation of community-centred essential health care packages and as an effective referral system from the grass-roots level to broaden access to care at secondary and tertiary levels. A large Health Development Army was also initiated to expand the success of the Health Extension Programme deeper into the community to improve community ownership and scale-up best practices.

The health sector provides key health services and interventions free of charge, including immunization, counselling, testing and treatment of HIV/AIDS and tuberculosis, and prevention of mother-to-child transmission. These services help to improve the health status of vulnerable segments of society, including mothers and children.



The lowest level of referral system in Ethiopia is the primary health care unit, which is composed of five satellite health posts, one health centre and one primary hospital.

Each health post is staffed by two health extension workers who provide preventive, promotive and basic curative services, including early recognition and follow-up during and after treatment for mental health problems. Health posts also provide training on selected parts of the Health Extension Programme during household visits and outreach services.

Health centres are staffed by around 20 professionals and provide preventive, curative, inpatient and ambulatory services, treatment of common psychiatric disorders, and dental services.

Primary hospitals are staffed by around 53 persons and provide preventive, curative, inpatient and ambulatory services, and emergency surgical services, including caesarean section and blood transfusion. They also serve as referral centres for health centres and practical training centres for nurses and paramedical health professionals.

General hospitals are staffed by around 234 persons and provide inpatient and ambulatory services.They are also referral centres for primary hospitals and training centres for health officers, nurses, emergency surgeons and other categories of health workers.

The specialized hospital is staffed by around 440 professionals and serves as a referral centre for the general hospitals and provides inpatient services.

A Medical Service Directorate was established at the Federal Ministry of Health to create a customer-centred organization of services to support the rural, pastoral and urban Health Extension Programmes. Regulation of the health sector, such as setting standards for health facilities, licensing and inspecting health professionals, and carrying out product quality assessment and registration is carried out by the newly redesigned Food, Medicine and Health Care Administration and Control Authority [7].

Ethiopia has achieved a significant improvement in the health status of its citizens. The *Ethiopian demographic health survey, 2011*[8] shows that the infant mortality rate has decreased by 23%, from 77 deaths to 59 deaths per 1000 births, while the under-five mortality rate has decreased by 28%, from 123 deaths to 88 deaths per 1000 births, as compared with the *Ethiopian demographic health survey, 2005*.[9]

The *Ethiopian demographic health survey, 2011* also shows that there has been a 16% increase in last births protected against neonatal tetanus since the *Ethiopian demographic health survey, 2005*. The contraceptive prevalence rate [14] has shown substantial improvement and consequently the total fertility rate has decreased from 6.4 children per woman in 1990 to 4.8 children per woman in 2010. The primary health coverage rate has also increased from 77% in 2004–2005 to 89% in 2009–2010.[10]

While the health sector applauds these achievements, it still faces major challenges in meeting its target for some indicators; for example the tuberculosis detection rate was only 37% in 2010–2011. Also, despite a slight increase in antenatal care, the prevention of mother-to-child transmission [11] coverage rate is low (9.3% in 2010–2011), only 10% of deliveries are attended by skilled birth attendants and the maternal and neonatal mortality rates are unacceptably high and far below target.

The way forward

- Strengthen the formal referral system between health centres and health posts, and make newly established health centres fully functional.
- Improve the institutional capacity of health facilities to provide clean and safe delivery and meet the expected increase in service utilization as a result of the Health Development Army.
- Improve the capacity of the Medical Service Directorate to guide and to provide supportive supervision, and improve the capacity of the Food, Medicine and Health Care Administration and Control Authority to regulate the provision of quality health services.
- Address cultural barriers using health extension workers and the Health Development Army and provide client-friendly health services to increase service utilization at health facilities.

References

[1] Everybody's business. Strengthening health systems to improve health outcomes. WHO's framework for action (pdf 843.33kb). Geneva, World Health Organization, 2007 (http://www.who.int/healthsystems/strategy/everybodys_business.pdf)

[2] Framework and standards for country health information systems, 2nd ed (pdf 1.87Mb). Geneva, World Health Organization and Health Metrics Network, 2008 (http://www.afro.who.int/index.php?option=com_docman&task=doc_download&gid=6233)

[3] Health Extension Programme in Ethiopia. Profile (pdf 2.10Mb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2007 (http://www.moh.gov.et/English/Resources/Documents/HEW profile Final 08 07.pdf)

[4] http://www.unfpa.org/sowmy/resources/docs/library/R045_AHWO_2010_Ethiopia_HRHProfile.pdf

[5] http://www.who.int/healthmetrics/library/countries/hmn_eth_his_2007_en.pdf

[6] Ethiopian Government portal (http://www.ethiopia.gov.et/English/Information/Pages/Geography.aspx)

[7] http://www.fmhaca.gov.et/aboutdacanew.html

[8] Ethiopian demographic and health survey, 2011(pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

[9] Ethiopian demographic and health survey, 2005 (pdf 2.02Mb). Addis Ababa, Central Statistical Agency; Calverton MA, ORC Macro (http://www.measuredhs.com/pubs/pdf/FR179/FR179[23June2011].pdf)

[10] Ethiopia country profile: human development indicators. United Nations Development Programme (http://hdrstats.undp.org/en/countries/profiles/ETH.html)

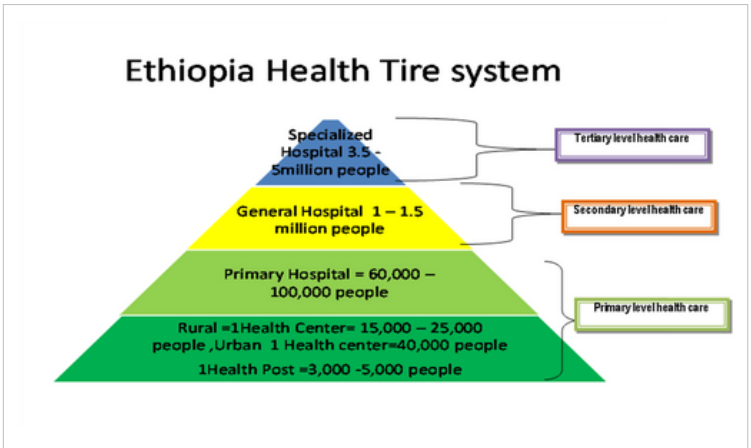
[11] http://www.unicef.org/aids/files/Ethiopia_PMTCTFactsheet_2010.pdf

Ethiopia:Analytical summary - Service delivery

Ethiopia has a decentralized three-tier system of primary, secondary and tertiary care (see figure). The devolution of power to regional governments has largely resulted in shifting decision-making for public service delivery from the central to regional and district levels. To improve the delivery of quality health care services, the sector has invested in the following improvements:

- the Health Extension Programme[1]
- the Health Development Army [7]
- supply chain management, regulation, harmonization and alignment
- health care financing [2]
- human resources development [4]
- the health information system [5]
- a continuous quality improvement programme and referral system.[2]

The Health Extension Programme is a flagship programme of the Ministry of Health [8]. It serves as the primary vehicle for implementation of community-centred essential health care packages and as an effective referral system from the grass-roots level to broaden access to care at secondary and tertiary levels. A large Health Development Army was also initiated to expand the success of the Health Extension Programme deeper into the community to improve community ownership and scale-up best practices.



The health sector provides key health services and interventions free of charge, including immunization, counselling, testing and treatment of HIV/AIDS and tuberculosis, and prevention of mother-to-child transmission. These services help to improve the health status of vulnerable segments of society, including mothers and children.

The lowest level of referral system in Ethiopia is the primary health care unit, which is composed of five satellite health posts, one health centre and one primary hospital.

Each health post is staffed by two health extension workers who provide preventive, promotive and basic curative services, including early recognition and follow-up during and after treatment for mental health problems. Health posts also provide training on selected parts of the Health Extension Programme during household visits and outreach services.

Health centres are staffed by around 20 professionals and provide preventive, curative, inpatient and ambulatory services, treatment of common psychiatric disorders, and dental services.

Primary hospitals are staffed by around 53 persons and provide preventive, curative, inpatient and ambulatory services, and emergency surgical services, including caesarean section and blood transfusion. They also serve as referral centres for health centres and practical training centres for nurses and paramedical health professionals.

General hospitals are staffed by around 234 persons and provide inpatient and ambulatory services.They are also referral centres for primary hospitals and training centres for health officers, nurses, emergency surgeons and other categories of health workers.

The specialized hospital is staffed by around 440 professionals and serves as a referral centre for the general hospitals and provides inpatient services.

A Medical Service Directorate was established at the Federal Ministry of Health to create a customer-centred organization of services to support the rural, pastoral and urban Health Extension Programmes. Regulation of the health sector, such as setting standards for health facilities, licensing and inspecting health professionals, and carrying out product quality assessment and registration is carried out by the newly redesigned Food, Medicine and Health Care Administration and Control Authority [7].

Ethiopia has achieved a significant improvement in the health status of its citizens. The *Ethiopian demographic health survey, 2011*[3] shows that the infant mortality rate has decreased by 23%, from 77 deaths to 59 deaths per 1000 births, while the under-five mortality rate has decreased by 28%, from 123 deaths to 88 deaths per 1000 births, as compared with the *Ethiopian demographic health survey, 2005*.[4]

The *Ethiopian demographic health survey, 2011* also shows that there has been a 16% increase in last births protected against neonatal tetanus since the *Ethiopian demographic health survey, 2005*. The contraceptive prevalence rate [14] has shown substantial improvement and consequently the total fertility rate has decreased from 6.4 children per woman in 1990 to 4.8 children per woman in 2010. The primary health coverage rate has also increased from 77% in 2004–2005 to 89% in 2009–2010.[5]

While the health sector applauds these achievements, it still faces major challenges in meeting its target for some indicators; for example the tuberculosis detection rate was only 37% in 2010–2011. Also, despite a slight increase in antenatal care, the prevention of mother-to-child transmission [11] coverage rate is low (9.3% in 2010–2011), only 10% of deliveries are attended by skilled birth attendants and the maternal and neonatal mortality rates are unacceptably high and far below target.

The way forward

- Strengthen the formal referral system between health centres and health posts, and make newly established health centres fully functional.
- Improve the institutional capacity of health facilities to provide clean and safe delivery and meet the expected increase in service utilization as a result of the Health Development Army.
- Improve the capacity of the Medical Service Directorate to guide and to provide supportive supervision, and improve the capacity of the Food, Medicine and Health Care Administration and Control Authority to regulate the provision of quality health services.
- Address cultural barriers using health extension workers and the Health Development Army and provide client-friendly health services to increase service utilization at health facilities.

References

[1] Health Extension Programme in Ethiopia. Profile (pdf 2.10Mb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2007 (http://www.moh.gov.et/English/Resources/Documents/HEW profile Final 08 07.pdf)

[2] Ethiopian Government portal (http://www.ethiopia.gov.et/English/Information/Pages/Geography.aspx)

[3] Ethiopian demographic and health survey, 2011(pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

[4] Ethiopian demographic and health survey, 2005 (pdf 2.02Mb). Addis Ababa, Central Statistical Agency; Calverton MA, ORC Macro (http://www.measuredhs.com/pubs/pdf/FR179/FR179[23June2011].pdf)

[5] Ethiopia country profile: human development indicators. United Nations Development Programme (http://hdrstats.undp.org/en/countries/profiles/ETH.html)

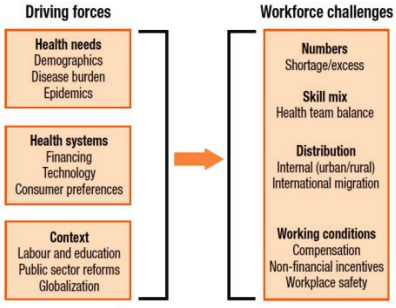
Ethiopia:Health workforce - The Health System

Health workers are all people engaged in actions whose primary intent is to protect and improve health. A country's health workforce consists broadly of health service providers and health management and support workers. This includes:

- private as well as public sector health workers
- unpaid and paid workers
- lay and professional cadres.

Overall, there is a strong positive correlation between health workforce density and service coverage and health outcomes.

A "well-performing" health workforce is one that is available, competent, responsive and productive. To achieve this, actions are needed to manage dynamic labour markets that address entry into and exits from the health workforce, and improve the distribution and performance of existing health workers. These actions address the following:



Forces driving the workforce[1]

- How countries plan and, if needed, scale-up their workforce asking questions that include: What strategic information is required to monitor the availability, distribution and performance of health workers? What are the regulatory mechanisms needed to maintain quality of education/training and practice? In countries with critical shortages of health workers, how can they scale-up numbers and skills of health workers in ways that are relatively rapid and sustainable? Which stakeholders and sectors need to be engaged (e.g. training institutions, professional groups, civil service commissions, finance ministries)?
- How countries design training programmes so that they facilitate integration across service delivery and disease control programmes.
- How countries finance scaling-up of education programmes and of numbers of health workers in a realistic and sustainable manner and in different contexts.
- How countries organize their health workers for effective service delivery, at different levels of the system (primary, secondary, tertiary), and monitor and improve their performance.
- How countries retain an effective workforce, within dynamic local and international labour markets.

This section of the health system profile is structured as follows:

Analytical summary

Most low-income countries suffer from a severe shortage of health professionals and Ethiopia is no exception. Ethiopia has a health workforce of 0.7 per 1000 population, which is low compared with the WHO [12] recommendation of 2.3 health workers per 1000 population.[2]

Health extension workers and general nurses dominate the available supply of health workers and there are critical shortages of physicians, dentists, midwives and anaesthesia professionals. The greatest inadequacy is for physicians, whose numbers show a decreasing trend over past years and are now 1: 42 706 population, which is among the lowest ratio in sub-Saharan Africa.

However, numbers of other health professionals such as health officers, nurses, midwives and health extension workers have shown significant improvement over the past 5 years. The country has also achieved the minimum WHO recommendation of 1 nurse per 5000 population.

In addition to a low workforce density, an imbalance in skills distribution along geographic, gender and sector dimensions poses a serious challenge for the delivery of essential health care services, mainly in rural areas.

In rural and remote areas, 83% of the population is underserved by health workers. There is also an uneven distribution of highly skilled health workers, which is highly skewed towards private and nongovernmental organizations that only serve a small segment of the population. For instance, of the 1806 physicians in 2006–2007, about 56% of the specialists and 38% of the general practitioners worked in health facilities outside the public sector.

The human resources situation is further disrupted by health workers' emigration. For instance, in 2002, 17% of nurses and 30% of doctors left the country. In cognizance of the human resources problems, the Ministry of Health [8] devised several innovative flooding and retention strategies to maximize professional coverage.

In 2005, the Government of Ethiopia [10] launched an innovative Health Extension Programme [9][3] using 34 000 locally recruited female health extension workers to provide community-based health promotion and disease prevention services. The roll out of the Health Extension Programme doubled the country's health workforce in less than 3 years. Other continuing efforts include accelerated health officer training, which was launched in November 2005 in five universities and 20 hospitals and out of which 5431 health officers have now graduated.

In addition, to address a shortage of professionals in emergency surgery, training in basic emergency obstetrics care and comprehensive emergency obstetric and newborn care was implemented at primary health care units. A 3-year Masters programme was launched in five universities in 2007–2008 and a total of 252 professionals enrolled. There has also been an expansion in the enrolment capacity of midwifery schools and efforts are being made to transform selected hospitals into medical training institutions by devising an innovative training curriculum for medical student.[4] Currently, there are 12 public universities that train health professionals.[5]

As part of its efforts to retain qualified professionals, the Government has implemented the balanced scorecard as a strategic planning and management tool. The balanced scorecard helps to lay a foundation for identifying and rewarding high-performing organizations, teams or individuals. Alongside this, the Government is finalizing financial and non-financial incentive packages as a means of retaining highly skilled and qualified professionals.

Several discussions and consultations have been held with stakeholders to ensure that incentives packages are fully financed by the Government in a sustainable way and that they achieve the desired outcome. The predeployment training of physicians has also shown a positive trend in retaining new medical graduates.

Besides launching innovative approaches, the Ministry of Health has also recently developed a comprehensive 12-year human resources for health strategic document, which has undergone a new design to better facilitate human resource development and management. Under the new design, the two major human resources functions fall under two arms of the Ministry:

- the Directorate of Human Resource Management falls under the service provider arm of the Ministry and is responsible for human resources for health management functions;
- the Directorate of Health Facilities and Professionals Licensing falls under the Health and Health Related Services and Products Regulation Agency, which is the regulatory arm of the Ministry responsible for licensing of degree level and above professionals and the development of various supportive staff.

The way forward

- Continue to use predeployment training as a way of retaining new medical graduates.
- Improve motivation and retention of human resources for health through implementation of evidence-based financial and non-financial incentives.
- Introduce a continuing professional development programme for technical and administrative staff linked to health sector needs and a career development plan.
- Develop and institutionalize human resource management systems at all levels of the decentralized health system alongside a human resources information system and provide training on human resources management to human resource officers at all levels.

References

[1] The world health report 2006: working together for health (7.11Mb). Geneva, World Health Organization, 2008 (http://www.who.int/whr/2006/whr06_en.pdf)

[2] Health Sector Development Programme IV, 2010/11–2014/15. Final draft (pdf 780.81kb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

[3] Health Extension Programme in Ethiopia. Profile (pdf 2.10Mb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2007 (http://www.moh.gov.et/English/Resources/Documents/HEW profile Final 08 07.pdf)

[4] Ethiopia country profile: human development indicators. United Nations Development Programme (http://hdrstats.undp.org/en/countries/profiles/ETH.html)

[5] Health Sector Development Programme. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

Ethiopia:Analytical summary - Health workforce

Most low-income countries suffer from a severe shortage of health professionals and Ethiopia is no exception. Ethiopia has a health workforce of 0.7 per 1000 population, which is low compared with the WHO [12] recommendation of 2.3 health workers per 1000 population.[1]

Health extension workers and general nurses dominate the available supply of health workers and there are critical shortages of physicians, dentists, midwives and anaesthesia professionals. The greatest inadequacy is for physicians, whose numbers show a decreasing trend over past years and are now 1: 42 706 population, which is among the lowest ratio in sub-Saharan Africa.

However, numbers of other health professionals such as health officers, nurses, midwives and health extension workers have shown significant improvement over the past 5 years. The country has also achieved the minimum WHO recommendation of 1 nurse per 5000 population.

In addition to a low workforce density, an imbalance in skills distribution along geographic, gender and sector dimensions poses a serious challenge for the delivery of essential health care services, mainly in rural areas.

In rural and remote areas, 83% of the population is underserved by health workers. There is also an uneven distribution of highly skilled health workers, which is highly skewed towards private and nongovernmental organizations that only serve a small segment of the population. For instance, of the 1806 physicians in 2006–2007, about 56% of the specialists and 38% of the general practitioners worked in health facilities outside the public sector.

The human resources situation is further disrupted by health workers' emigration. For instance, in 2002, 17% of nurses and 30% of doctors left the country. In cognizance of the human resources problems, the Ministry of Health [8] devised several innovative flooding and retention strategies to maximize professional coverage.

In 2005, the Government of Ethiopia [10] launched an innovative Health Extension Programme [9][2] using 34 000 locally recruited female health extension workers to provide community-based health promotion and disease prevention services. The roll out of the Health Extension Programme doubled the country's health workforce in less than 3 years. Other continuing efforts include accelerated health officer training, which was launched in November 2005 in five universities and 20 hospitals and out of which 5431 health officers have now graduated.

In addition, to address a shortage of professionals in emergency surgery, training in basic emergency obstetrics care and comprehensive emergency obstetric and newborn care was implemented at primary health care units. A 3-year Masters programme was launched in five universities in 2007–2008 and a total of 252 professionals enrolled. There has also been an expansion in the enrolment capacity of midwifery schools and efforts are being made to transform selected hospitals into medical training institutions by devising an innovative training curriculum for medical student.[3] Currently, there are 12 public universities that train health professionals.[4]

As part of its efforts to retain qualified professionals, the Government has implemented the balanced scorecard as a strategic planning and management tool. The balanced scorecard helps to lay a foundation for identifying and rewarding high-performing organizations, teams or individuals. Alongside this, the Government is finalizing

financial and non-financial incentive packages as a means of retaining highly skilled and qualified professionals.

Several discussions and consultations have been held with stakeholders to ensure that incentives packages are fully financed by the Government in a sustainable way and that they achieve the desired outcome. The predeployment training of physicians has also shown a positive trend in retaining new medical graduates.

Besides launching innovative approaches, the Ministry of Health has also recently developed a comprehensive 12-year human resources for health strategic document, which has undergone a new design to better facilitate human resource development and management. Under the new design, the two major human resources functions fall under two arms of the Ministry:

- the Directorate of Human Resource Management falls under the service provider arm of the Ministry and is responsible for human resources for health management functions;
- the Directorate of Health Facilities and Professionals Licensing falls under the Health and Health Related Services and Products Regulation Agency, which is the regulatory arm of the Ministry responsible for licensing of degree level and above professionals and the development of various supportive staff.

The way forward

- Continue to use predeployment training as a way of retaining new medical graduates.
- Improve motivation and retention of human resources for health through implementation of evidence-based financial and non-financial incentives.
- Introduce a continuing professional development programme for technical and administrative staff linked to health sector needs and a career development plan.
- Develop and institutionalize human resource management systems at all levels of the decentralized health system alongside a human resources information system and provide training on human resources management to human resource officers at all levels.

References

[1] Health Sector Development Programme IV, 2010/11–2014/15. Final draft (pdf 780.81kb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

[2] Health Extension Programme in Ethiopia. Profile (pdf 2.10Mb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2007 (http://www.moh.gov.et/English/Resources/Documents/HEW profile Final 08 07.pdf)

[3] Ethiopia country profile: human development indicators. United Nations Development Programme (http://hdrstats.undp.org/en/countries/profiles/ETH.html)

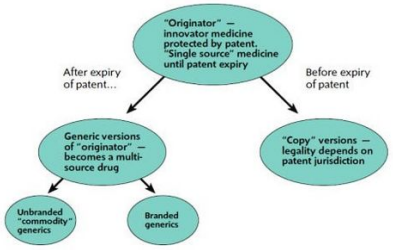
[4] Health Sector Development Programme. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

Ethiopia:Medical products, vaccines, infrastructures and equipment

A well-functioning health system ensures equitable access to essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost effectiveness, and their scientifically sound and cost-effective use.[1]

To achieve these objectives, the following are required:

- national policies, standards, guidelines and regulations that support policy;
- information on prices, international trade agreements and capacity to set and negotiate prices;
- reliable manufacturing practices and quality assessment of priority products;
- procurement, supply, storage and distribution systems that minimize leakage and other waste;
- support for rational use of essential medicines, commodities and equipment, through guidelines, strategies to assure adherence, reduce resistance, maximize patient safety and training.



Major components of the medicines market[2]

Major components of the medicines market are shown in the figure.

This section of the health system profile is structured as follows:

Analytical summary

The pharmaceuticals supply core process started in Ethiopia in 2009 with the transformation of the profit-making Pharmaceutical and Medical Supplies Import and Distribution Agency into the service-providing Pharmaceutical Fund and Supply Agency.

The Pharmaceutical Fund and Supply Agency initiated capacity-building activities in terms of:

- revolving drug funds
- construction of hubs and transportation systems
- deployment of human resources
- designing a logistics management information system.

The Agency's health and health-related services, product regulation and policy documents have been refined, and a new proclamation is being prepared. Drug manufacturing plants and factories have been inspected for good manufacturing practices.[3]

A national list for procurement of essential pharmaceuticals is being developed, in collaboration with regions and development partners. The Pharmaceutical Fund and Supply Agency now handles bulk procurement, storage and distribution of pharmaceuticals. Distribution utilizes a network of 16 hubs and warehouses, their location based on population density and operational feasibility.

Quality and safety control is approved by the Food, Medicine and Health Care Administration and Control Authority [3] of Ethiopia. To improve the supply and rational use of pharmaceuticals, drug and therapeutic committees have been established in health facilities.

To organize health facilities based on the new three-tier health service structure, health facility standards on architectural, structural, electrical, sanitary and other accessories were endorsed in 2010. Installation of solar power in health posts was initiated in 2009, with an agreement between the Rural Energy Development Centre [4] and the Ministry of Health [8].

To achieve universal primary health care coverage by the end of 2010, the Ministry agreed to supply medical equipment for all newly constructed health centres. In addition, an agreement was made between the Ministry and regional health bureaus to construct 75% and 25% of health centres, respectively.

To identify the current status and establish a medical equipment management system, an assessment of existing medical equipment distribution, maintenance and workshops was carried out, along with an assessment of the human resources of newly constructed health facilities.

A national directive of medical equipment on donation has been prepared, with the participation of all stakeholders and development partners.

In 2010, a human resource information system was implemented and upgraded in the Federal Ministry of Health, Ethiopian Health and Nutrition Research Institute [4], regional health bureaus and nine hospitals. Based on the new Civil Service Ministry endorsement, personnel data are held in electronic records and a human resource information system licence has been installed at the Food, Medicine and Health Care Administration and Control Authority of Ethiopia and at seven regional health bureaus.

Training on basic cold chain system maintenance and vaccine management has been given to 148 technicians. Procurement and distribution of spare parts used in the cold chain system, mainly refrigerator parts, has also been carried out in the regions.

Blood transfusion management, previously under the authority of the Ethiopian Red Cross Society [5], has been transferred to the Federal Ministry of Health. However, the Ethiopian Red Cross Society still collaborates with the Ministry to ensure an adequate and safe supply of blood. Following the approval of 59 posts for blood collection by the Ministry of Civil Service, a total of 47 000 units of blood have been collected.

References

[1] Everybody's business. Strengthening health systems to improve health outcomes. WHO's framework for action (pdf 843.33kb). Geneva, World Health Organization, 2007 (http://www.who.int/healthsystems/strategy/everybodys_business.pdf)

[2] The world medicines situation (pdf 1.03Mb). Geneva, World Health Organization, 2004 (http://apps.who.int/medicinedocs/pdf/s6160e/s6160e.pdf)

[3] Health Sector Development Programme. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

[4] http://www.pciaonline.org/node/143

[5] http://www.redcrosseth.org/

Ethiopia:Analytical summary - Medical products, vaccines, infrastructures and equipment

The pharmaceuticals supply core process started in Ethiopia in 2009 with the transformation of the profit-making Pharmaceutical and Medical Supplies Import and Distribution Agency into the service-providing Pharmaceutical Fund and Supply Agency.

The Pharmaceutical Fund and Supply Agency initiated capacity-building activities in terms of:

- revolving drug funds
- construction of hubs and transportation systems
- deployment of human resources
- designing a logistics management information system.

The Agency's health and health-related services, product regulation and policy documents have been refined, and a new proclamation is being prepared. Drug manufacturing plants and factories have been inspected for good manufacturing practices.[1]

A national list for procurement of essential pharmaceuticals is being developed, in collaboration with regions and development partners. The Pharmaceutical Fund and Supply Agency now handles bulk procurement, storage and distribution of pharmaceuticals. Distribution utilizes a network of 16 hubs and warehouses, their location based on population density and operational feasibility.

Quality and safety control is approved by the Food, Medicine and Health Care Administration and Control Authority [3] of Ethiopia. To improve the supply and rational use of pharmaceuticals, drug and therapeutic committees have been established in health facilities.

To organize health facilities based on the new three-tier health service structure, health facility standards on architectural, structural, electrical, sanitary and other accessories were endorsed in 2010. Installation of solar power in health posts was initiated in 2009, with an agreement between the Rural Energy Development Centre [4] and the Ministry of Health [8].

To achieve universal primary health care coverage by the end of 2010, the Ministry agreed to supply medical equipment for all newly constructed health centres. In addition, an agreement was made between the Ministry and regional health bureaus to construct 75% and 25% of health centres, respectively.

To identify the current status and establish a medical equipment management system, an assessment of existing medical equipment distribution, maintenance and workshops was carried out, along with an assessment of the human resources of newly constructed health facilities.

A national directive of medical equipment on donation has been prepared, with the participation of all stakeholders and development partners.

In 2010, a human resource information system was implemented and upgraded in the Federal Ministry of Health, Ethiopian Health and Nutrition Research Institute [4], regional health bureaus and nine hospitals. Based on the new Civil Service Ministry endorsement, personnel data are held in electronic records and a human resource information system licence has been installed at the Food, Medicine and Health Care Administration and Control Authority of Ethiopia and at seven regional health bureaus.

Training on basic cold chain system maintenance and vaccine management has been given to 148 technicians. Procurement and distribution of spare parts used in the cold chain system, mainly refrigerator parts, has also been carried out in the regions.

Blood transfusion management, previously under the authority of the Ethiopian Red Cross Society [5], has been transferred to the Federal Ministry of Health. However, the Ethiopian Red Cross Society still collaborates with the Ministry to ensure an adequate and safe supply of blood. Following the approval of 59 posts for blood collection by

the Ministry of Civil Service, a total of 47 000 units of blood have been collected.

References

[1] Health Sector Development Programme. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

Ethiopia:General country health policies

Public policies in the health sector, together with those in other sectors, have a huge potential to secure the health of communities.[1] They represent an important complement to universal coverage and service delivery reforms. Unfortunately, in most societies, this potential is largely untapped and failure to effectively engage other sectors is widespread. Looking ahead at the diverse range of challenges associated with the growing importance of ageing, urbanization and the social determinants of health, there is, without question, a need for a greater capacity to seize this potential. That is why a drive for better public policies forms a third pillar supporting the move towards primary health care, along with universal coverage and primary care (see figure).

The following policies must be in place:

- *Systems policies* – the arrangements that are needed across health systems' building blocks to support universal coverage and effective service delivery. These are the health systems policies (related to essential drugs, technology, quality control, human resources, accreditation, etc.) on which primary care and universal coverage reforms depend.
- *Public health policies* – the specific actions needed to address priority health problems through cross-cutting prevention and health promotion. Without effective public health policies that address priority health problems, primary care and universal coverage reforms would be hindered. These encompass the technical policies and programmes that provide guidance to primary care teams on how to deal with priority health problems. They also encompass the classical public health interventions from public hygiene and disease prevention to health promotion.
- *Policies in other sectors* – contributions to health that can be made through intersectoral collaboration. These policies, which are of critical concern, are known as "health in all policies", based on the recognition that a population's health can be improved through policies that are mainly controlled by sectors other than health. The health content of school curricula, industry's policy towards gender equality, or the safety of food and consumer goods are all issues that can profoundly influence or even determine the health of entire communities and that can cut across national boundaries. It is not possible to address such issues without intensive intersectoral collaboration that gives due weight to health in all policies.

Primary health care reforms necessary to refocus health systems towards health for all

This section of the health system profile is structured as follows:

Analytical summary

Historically, the health system in Ethiopia was centralized and services were delivered in a fragmented manner with a reliance on vertical programmes. There was little collaboration between the public and private sectors. Administrative arrangements were also centralized until 1991. In 1992, a new health policy was developed following a critical examination of the nature, magnitude and root causes of the prevailing health problems of the country and awareness of newly emerging health problems.

The new policy was founded on commitment to democracy, the rights of the people, and decentralization as the most appropriate system of government for the full exercise of these rights and powers in a pluralistic society. At the core of the health policy is:

- democratization and decentralization of the health care system
- developing preventive, promotive and curative components of health care
- accessibility of health care for all parts of the population
- encouraging private and nongovernmental organization participation in the health sector.[2]

The policy emphasizes the needs of the less-privileged rural population, which constitutes 85% of the total population and is the major productive workforce in the country. It proposes realistic goals and the means for attaining them, based on the fundamental principle that health, constituting physical, mental and social well-being, is a prerequisite for the enjoyment of life and for optimal productivity.

The Government of Ethiopia [10] therefore accords health a prominent place in its priorities and is committed to the attainment of these goals, utilizing all accessible internal and external resources.[3] To implement the national policy, a 20-year Health Sector Development Programme [5] consisting of a series of 5-year rolling programmes was established in 1997–1998.

Priorities of the health policy are:

- health information, education and communication;
- an emphasis on control of communicable diseases, epidemics and diseases related to malnutrition and poor living conditions;
- promotion of occupational health and safety;
- development of environmental health;
- rehabilitation of the health infrastructure;
- development of health service management systems;
- development of curative and rehabilitative components of health, including mental health;
- development of traditional medicines, together with related research;
- health research addressing the major health problems;
- provision of essential medicines, medical supplies and equipment;
- development of human resources;
- responding to health needs of women and children and neglected regions and segments of the population, including the majority of the rural population, pastoralists, the urban poor and national minorities, and victims of man-made and natural disasters.

Based on the national health policy, the following health-related policies are being developed:

- Policy and Strategy for Prevention and Control of HIV/AIDS [4]
- National Drug Policy [5]
- National Population Policy [6]
- National Policy on Women [7]

References

[1] Systems thinking for health systems strengthening (pdf 1.54Mb). Geneva, World Health Organization, 2009 (http://whqlibdoc.who.int/publications/2009/9789241563895_eng.pdf)
[2] Health Sector Development Programme IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010
[3] Government of Ethiopia, Ministry of Health (http://www.moh.gov.et/English/Pages/Index.aspx)
[4] http://www.etharc.org/amhara/Asset/Dowloadables/SPM%20II%20Final%20version%20sept%2026.pdf
[5] http://apps.who.int/medicinedocs/en/m/abstract/Js17823en/
[6] http://ethiopia.unfpa.org/2009/07/16/1012/world_population_day_commemorated/
[7] http://www.ethioembassy.org.uk/fact%20file/a-z/women-1.htm

Ethiopia:Analytical summary - General country health policies

Historically, the health system in Ethiopia was centralized and services were delivered in a fragmented manner with a reliance on vertical programmes. There was little collaboration between the public and private sectors. Administrative arrangements were also centralized until 1991. In 1992, a new health policy was developed following a critical examination of the nature, magnitude and root causes of the prevailing health problems of the country and awareness of newly emerging health problems.

The new policy was founded on commitment to democracy, the rights of the people, and decentralization as the most appropriate system of government for the full exercise of these rights and powers in a pluralistic society. At the core of the health policy is:

- democratization and decentralization of the health care system
- developing preventive, promotive and curative components of health care
- accessibility of health care for all parts of the population
- encouraging private and nongovernmental organization participation in the health sector.[1]

The policy emphasizes the needs of the less-privileged rural population, which constitutes 85% of the total population and is the major productive workforce in the country. It proposes realistic goals and the means for attaining them, based on the fundamental principle that health, constituting physical, mental and social well-being, is a prerequisite for the enjoyment of life and for optimal productivity.

The Government of Ethiopia [10] therefore accords health a prominent place in its priorities and is committed to the attainment of these goals, utilizing all accessible internal and external resources.[2] To implement the national policy, a 20-year Health Sector Development Programme [5] consisting of a series of 5-year rolling programmes was established in 1997–1998.

Priorities of the health policy are:

- health information, education and communication;
- an emphasis on control of communicable diseases, epidemics and diseases related to malnutrition and poor living conditions;
- promotion of occupational health and safety;
- development of environmental health;
- rehabilitation of the health infrastructure;
- development of health service management systems;
- development of curative and rehabilitative components of health, including mental health;
- development of traditional medicines, together with related research;
- health research addressing the major health problems;
- provision of essential medicines, medical supplies and equipment;
- development of human resources;

- responding to health needs of women and children and neglected regions and segments of the population, including the majority of the rural population, pastoralists, the urban poor and national minorities, and victims of man-made and natural disasters.

Based on the national health policy, the following health-related policies are being developed:

- Policy and Strategy for Prevention and Control of HIV/AIDS [4]
- National Drug Policy [5]
- National Population Policy [6]
- National Policy on Women [7]

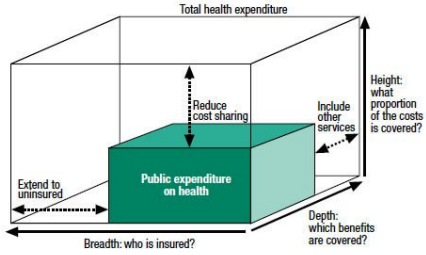
References

[1] Health Sector Development Programme IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010
[2] Government of Ethiopia, Ministry of Health (http://www.moh.gov.et/English/Pages/Index.aspx)

Ethiopia:Universal coverage

People expect their health systems to be equitable. The roots of health inequities lie in social conditions outside the health system's direct control. These root causes have to be tackled through intersectoral and cross-government action. At the same time, the health sector can take significant action to advance health equity internally. The basis for this is the set of reforms that aims at moving towards universal coverage, i.e. towards universal access to health services with social health protection. Health inequities also find their roots in the way health systems exclude people, such as inequities in availability, access, quality and burden of payment, and even in the way clinical practice is conducted.

The fundamental step a country can take to promote health equity is to move towards universal coverage: universal access to the full range of personal and non-personal health services required, with social health protection. The technical challenge of moving towards universal coverage is to expand coverage in three ways (see figure).:



Three ways of moving towards universal coverage

- *The breadth of coverage* – the proportion of the population that enjoys social health protection – must expand progressively to encompass the uninsured, i.e. the population groups that lack access to services and/or social protection against the financial consequences of taking up health care.
- *The depth of coverage* must also grow, expanding the range of essential services that is necessary to address people's health needs effectively, taking into account demand and expectations, and the resources society is willing and able to allocate to health. The determination of the corresponding "essential package" of benefits can play a key role here, provided the process is conducted appropriately.
- *The height of coverage*, i.e. the portion of health care costs covered through pooling and prepayment mechanisms, must also rise, diminishing reliance on out-of-pocket copayment at the point of service delivery. Prepayment and pooling institutionalizes solidarity between the rich and the less well-off, and between the healthy and the sick. It lifts barriers to the uptake of services and reduces the risk that people will incur catastrophic expenses when they are sick. Finally, it provides the means to reinvest in the availability, range and quality of services.

This section of the health system profile is structured as follows:

Analytical summary

The Alma-Ata Declaration [1] signatories noted that health for all would contribute to a better quality of life and also to global peace and security. Although circumstances both within and outside the health sector contribute to the health status of the population, timely access to health services is considered key in promoting and sustaining society's health.

Thus, in 2005 with the goal of universal coverage WHO Member States [2] committed to developing health financing systems so that all people have access to service without out-of-pocket financial burden.[3]

In Ethiopia, the Ministry of Health [8] has initiated and implemented health care financing reform, consisting of:

- facility revenue retention and utilization
- facility governance
- systematization of fee waiver and exempted health services
- user fee revision
- outsourcing non-clinical services
- the establishment of a private sector.

The objective of this strategy is to strengthen the supply side and provide quality health care services to the public.[4]

To address the demand for health care services, the Ministry initiated two types of health insurance to remove financial barriers to access to health care: community-based health insurance for the rural population and urban informal sector, and social health insurance for the formal sector.

References

[1] http://www.who.int/publications/almaata_declaration_en.pdf

[2] http://www.who.int/countries/en/

[3] Health systems financing. The path to universal coverage (pdf 2.82Mb) Geneva, World Health Organization, 2010 (http://www.who.int/whr/2010/whr10_en.pdf)

[4] Health Sector Development Programme IV, Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

Ethiopia:Analytical summary - Universal coverage

The Alma-Ata Declaration [1] signatories noted that health for all would contribute to a better quality of life and also to global peace and security. Although circumstances both within and outside the health sector contribute to the health status of the population, timely access to health services is considered key in promoting and sustaining society's health.

Thus, in 2005 with the goal of universal coverage WHO Member States [2] committed to developing health financing systems so that all people have access to service without out-of-pocket financial burden.[1]

In Ethiopia, the Ministry of Health [8] has initiated and implemented health care financing reform, consisting of:

- facility revenue retention and utilization
- facility governance
- systematization of fee waiver and exempted health services
- user fee revision
- outsourcing non-clinical services
- the establishment of a private sector.

The objective of this strategy is to strengthen the supply side and provide quality health care services to the public.[2]

To address the demand for health care services, the Ministry initiated two types of health insurance to remove financial barriers to access to health care: community-based health insurance for the rural population and urban informal sector, and social health insurance for the formal sector.

References

[1] Health systems financing. The path to universal coverage (pdf 2.82Mb) Geneva, World Health Organization, 2010 (http://www.who.int/whr/2010/whr10_en.pdf)

[2] Health Sector Development Programme IV, Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

Specific Programmes and Services

Ethiopia:Specific Programmes and Services

The specific programmes and services represent principally the major disease and services vertical programmes that are developed to some extent out of the regular system. These programmes and services include HIV/AIDS, malaria, tuberculosis, immunization and vaccines development, child and adolescent health, maternal and newborn health, gender and women's health, epidemic and pandemic-prone diseases, neglected tropical diseases, and noncommunicable diseases and conditions.

This section describes the specific programmes and services in the WHO African Region and is structured as follows:

4.1 HIV/AIDS

4.2 Tuberculosis

4.3 Malaria

4.4 Immunization and vaccines development

4.5 Child and adolescent health

4.6 Maternal and newborn health

4.7 Gender and women's health (including sexual and reproductive health)

4.8 Epidemic and pandemic-prone diseases

4.9 Neglected tropical diseases

4.10 Noncommunicable diseases and conditions

Ethiopia:HIV/AIDS

This analytical profile on HIV/AIDS is structured as follows:

Analytical summary

Based on a single point estimate, there are nearly 1.2 million people living with HIV/AIDS in Ethiopia. The adult prevalence rate is estimated at 2.4% and the incidence rate is 0.29%. The prevalence and incidence rates significantly vary between geographical areas and gender. The urban prevalence rate is estimated at 7.7%, while the rural prevalence rate is 0.9%. The prevalence rate is 1.7% for males and 2.6% for females.

With 90 000 HIV-positive pregnant women, there are an estimated 14 000 HIV-positive births and a total of 28 000 AIDS death and an estimated 800 000 AIDS orphans annually.[1]

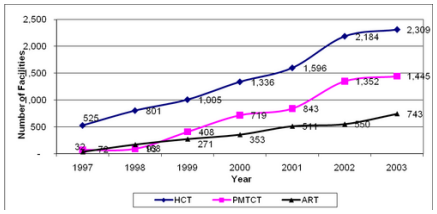
Following the approval of the declaration on HIV/AIDS known as Resolution 60/262 in June 2006 during the United Nations General Assembly [2], Ethiopia accepted the Resolution. A *Multisectoral Plan of Action for Universal Access to HIV Prevention, Treatment, Care and Support in Ethiopia, 2007–2010'* [3],[4] has been developed and implemented. The programme is guided by the principle of the HIV Strategic Plan for Multisectoral Response, universal access commitment, and the ''Three Ones'': one HIV/AIDS action framework, one national AIDS coordinating authority and one monitoring and evaluation system.[5]

The responses to the HIV/AIDS epidemic showed considerable progress and achieved encouraging results. However, the nature of the epidemic and its fuelling factors creates a complex challenge to the ability of health and other sectors to meet the targets for HIV/AIDS control in Ethiopia. Insufficient human resources, weak supply of management and distribution, and weak mid-level managerial capacity at regional and district levels are key challenges in the country's response to HIV/AIDS.[5]

Antiretroviral treatment [6] coverage reached 62.3%, which is above the sub-Saharan African regional average (53%). However, prevention of mother-to-child transmission of HIV coverage was only 9.3%. Out of the 14 000 HIV-positive births in 2010, only 34% received prophylaxis in the same year.

A total of 2309 health facilities provided a HIV/AIDS counselling and testing service in 2003 (see figure). Users of HIV counselling and testing have increased substantially; currently there are 5 853 472 users per year.

In addition, major programmes were implemented for care and support of orphans and vulnerable children. These consisted of educational programmes, food, shelter, and guidance and training on income-generating activities.



Trends in the number of facilities providing antiretroviral treatment (ART), HIV counselling and testing (HCT) and prevention of mother to child transmission (PMTCT) services. Source: Ministry of Health, 2011

HIV/AIDS awareness is universal in Ethiopia with 97% of women and 99% of men being aware of the disease. Awareness does not vary much by background characteristics with the exception of education; those with no education are less likely to know about HIV/AIDS. Overall, women residing in urban areas are more likely to be knowledgeable about HIV prevention methods than women residing in rural areas. The same pattern is true for men. Higher educational attainment is positively associated with an increased awareness of HIV prevention methods for both women and men.

Knowledge of HIV prevention methods has increased since 2005, especially among women. Although the overall prevention awareness is higher among men, HIV/AIDS prevention knowledge among women increased from 35% in 2005 to 43% in 2011, while among men aged 15–49 years the increase in prevention knowledge was from 57% to 64% during the same period.[7]

References

[1] Health Sector Development Programme IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

[2] http://www.un.org/en/ga/

[3] http://www.cnhde.ei.columbia.edu/files/4/3/2008-Jan-Tue-085402.pdf

[4] Multisectoral Plan of Action for Universal Access to HIV Prevention, Treatment, Care and Support in Ethiopia, 2007–2010 (pdf 1.4Mb). Addis Ababa, HIV/AIDS Prevention and Control Office (http://www.cnhde.ei.columbia.edu/files/4/3/2008-Jan-Tue-085402.pdf)

[5] Government of Ethiopia, Ministry of Health (http://www.moh.gov.et/English/Pages/Index.aspx)

[6] http://www.who.int/hiv/topics/treatment/en/index.html

[7] Ethiopian demographic and health survey, 2011 (pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

Ethiopia:Analytical summary - HIV/AIDS

Based on a single point estimate, there are nearly 1.2 million people living with HIV/AIDS in Ethiopia. The adult prevalence rate is estimated at 2.4% and the incidence rate is 0.29%. The prevalence and incidence rates significantly vary between geographical areas and gender. The urban prevalence rate is estimated at 7.7%, while the rural prevalence rate is 0.9%. The prevalence rate is 1.7% for males and 2.6% for females.

With 90 000 HIV-positive pregnant women, there are an estimated 14 000 HIV-positive births and a total of 28 000 AIDS death and an estimated 800 000 AIDS orphans annually.[1]

Following the approval of the declaration on HIV/AIDS known as Resolution 60/262 in June 2006 during the United Nations General Assembly [2], Ethiopia accepted the Resolution. A *Multisectoral Plan of Action for Universal Access to HIV Prevention, Treatment, Care and Support in Ethiopia, 2007–2010'* [3],[2] has been developed and implemented. The programme is guided by the principle of the HIV Strategic Plan for Multisectoral Response, universal access commitment, and the ''Three Ones'': one HIV/AIDS action framework, one national AIDS coordinating authority and one monitoring and evaluation system.[3]

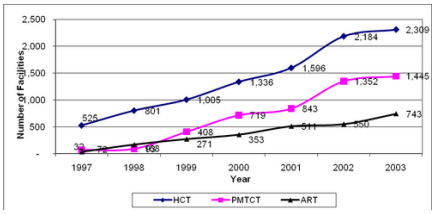
The responses to the HIV/AIDS epidemic showed considerable progress and achieved encouraging results. However, the nature of the epidemic and its fuelling factors creates a complex challenge to the ability of health and other sectors to meet the targets for HIV/AIDS control in Ethiopia. Insufficient human resources, weak supply of management and distribution, and weak mid-level managerial capacity at regional and district levels are key challenges in the country's response to HIV/AIDS.[3]

Antiretroviral treatment [6] coverage reached 62.3%, which is above the sub-Saharan African regional average (53%). However, prevention of mother-to-child transmission of HIV coverage was only 9.3%. Out of the 14 000 HIV-positive births in 2010, only 34% received prophylaxis in the same year.

A total of 2309 health facilities provided a HIV/AIDS counselling and testing service in 2003 (see figure). Users of HIV counselling and testing have increased substantially; currently there are 5 853 472 users per year.

In addition, major programmes were implemented for care and support of orphans and vulnerable children. These consisted of educational programmes, food, shelter, and guidance and training on income-generating activities.

HIV/AIDS awareness is universal in Ethiopia with 97% of women and 99% of men being aware of the disease. Awareness does not vary much by background characteristics with the exception of education; those with no education are less likely to know about HIV/AIDS. Overall, women residing in urban areas are more likely to be



Trends in the number of facilities providing antiretroviral treatment (ART), HIV counselling and testing (HCT) and prevention of mother to child transmission (PMTCT) services. Source: Ministry of Health, 2011

knowledgeable about HIV prevention methods than women residing in rural areas. The same pattern is true for men. Higher educational attainment is positively associated with an increased awareness of HIV prevention methods for both women and men.

Knowledge of HIV prevention methods has increased since 2005, especially among women. Although the overall prevention awareness is higher among men, HIV/AIDS prevention knowledge among women increased from 35% in 2005 to 43% in 2011, while among men aged 15–49 years the increase in prevention knowledge was from 57% to 64% during the same period.[4]

References

[1] Health Sector Development Programme IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

[2] Multisectoral Plan of Action for Universal Access to HIV Prevention, Treatment, Care and Support in Ethiopia, 2007–2010 (pdf 1.4Mb). Addis Ababa, HIV/AIDS Prevention and Control Office (http://www.cnhde.ei.columbia.edu/files/4/3/2008-Jan-Tue-085402.pdf)

[3] Government of Ethiopia, Ministry of Health (http://www.moh.gov.et/English/Pages/Index.aspx)

[4] Ethiopian demographic and health survey, 2011 (pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

Ethiopia:Tuberculosis

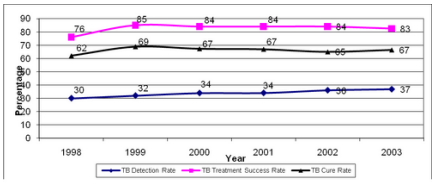
This analytical profile on tuberculosis is structured as follows:

Analytical summary

Ethiopia ranks third in Africa and eighth among the 22 highest tuberculosis (TB) burdened countries in the world. The prevalence of all forms of TB is estimated at 261 per 100 000 population, leading to an annual mortality rate of 64 per 100 000 population. The incidence rate of all forms of TB is estimated at 359 per 100 000 population, while the incidence rate of smear-positive TB is 108 per 100 000 population. The TB case detection rate, treatment success rate and TB cure rate are 74%, 82.5% and 67%, respectively (see figure).[1]

Multidrug-resistant TB [2] (MDR-TB) is a challenge. A countrywide survey between 2003 and 2006 showed that the prevalence of MDR-TB was 1.6% in new TB cases and 11.8% in retreatment cases. In addition, there was a high TB/HIV coinfection rate, with 25% of registered TB cases also testing positive for HIV.[3]

TB and leprosy prevention and control objectives aim to reduce the incidence and prevalence of TB and related morbidity, mortality and psychological suffering to the extent that the disease is no longer a public health threat. To attain TB and leprosy prevention and control targets, there is a focus on expanding DOTS [4], the basic package that underpins the Stop TB Strategy, through:



Trends in TB case detection rate, treatment success rate and cure rate

- maximizing the use of the Health Extension Programme [9][5]
- enhancing case detection and management
- addressing issues related to TB/HIV and MDR-TB
- promoting research by engaging all providers including the private for-profit sector.

Nearly 92% of hospitals and 95% of health centres implemented DOTS-based services in 2011. In addition, TB treatment follow-up under DOTS was given in 2100 health posts across the country. Overall, there are 4577 public DOTS facilities and 317 public–private mix DOTS facilities.

With respect to community-based DOTS, procedure guidelines and health management information system materials have been prepared and distributed to health extension workers. MDR-TB has been identified as a priority public health problem. A total of 218 patients have begun MDR-TB treatment in hospitals in Addis Ababa and in two other regions. So far, 119 professionals have been trained in the treatment regime.

Fully integrated TB control is constrained by a lack of human resources and difficulty in providing outreach services, particularly in rural areas. Expansion of the network of general health care facilities is expected to improve access to health care and ultimately help achieve targets for TB control. TB control is aligned with this expansion of health care through the national health plan.

The Health Extension Programme,[5] employing almost 30 000 health service extension workers, is the backbone of all interventions carried out at community level and is designed to provide preventive services, including detection and referral of TB suspects, in all rural villages.

References

[1] Health Sector Development Programme IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2011

[2] http://www.who.int/tb/challenges/mdr/en/

[3] Global tuberculosis control 2009. Epidemiology strategy financing (pdf 6.95Mb). Geneva, World Health Organization, 2009 (http://reliefweb.int/report/world/global-tuberculosis-control-2009-epidemiology-strategy-financing)

[4] http://www.who.int/tb/dots/en/

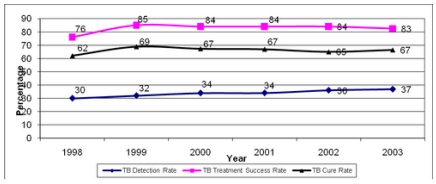
[5] Health Extension Program in Ethiopia. Profile (pdf 2.10Mb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2007 (http://www.moh.gov.et/English/Resources/Documents/HEW profile Final 08 07.pdf)

Ethiopia:Analytical summary - Tuberculosis

Ethiopia ranks third in Africa and eighth among the 22 highest tuberculosis (TB) burdened countries in the world. The prevalence of all forms of TB is estimated at 261 per 100 000 population, leading to an annual mortality rate of 64 per 100 000 population. The incidence rate of all forms of TB is estimated at 359 per 100 000 population, while the incidence rate of smear-positive TB is 108 per 100 000 population. The TB case detection rate, treatment success rate and TB cure rate are 74%, 82.5% and 67%, respectively (see figure).[1]

Multidrug-resistant TB [2] (MDR-TB) is a challenge. A countrywide survey between 2003 and 2006 showed that the prevalence of MDR-TB was 1.6% in new TB cases and 11.8% in retreatment cases. In addition, there was a high TB/HIV coinfection rate, with 25% of registered TB cases also testing positive for HIV.[2]

TB and leprosy prevention and control objectives aim to reduce the incidence and prevalence of TB and related morbidity, mortality and psychological suffering to the extent that the disease is no longer a public health threat. To attain TB and leprosy prevention and control targets, there is a focus on expanding DOTS [4], the basic package that underpins the Stop TB Strategy, through:



Trends in TB case detection rate, treatment success rate and cure rate

- maximizing the use of the Health Extension Programme [9][3]
- enhancing case detection and management
- addressing issues related to TB/HIV and MDR-TB
- promoting research by engaging all providers including the private for-profit sector.

Nearly 92% of hospitals and 95% of health centres implemented DOTS-based services in 2011. In addition, TB treatment follow-up under DOTS was given in 2100 health posts across the country. Overall, there are 4577 public DOTS facilities and 317 public–private mix DOTS facilities.

With respect to community-based DOTS, procedure guidelines and health management information system materials have been prepared and distributed to health extension workers. MDR-TB has been identified as a priority public health problem. A total of 218 patients have begun MDR-TB treatment in hospitals in Addis Ababa and in two other regions. So far, 119 professionals have been trained in the treatment regime.

Fully integrated TB control is constrained by a lack of human resources and difficulty in providing outreach services, particularly in rural areas. Expansion of the network of general health care facilities is expected to improve access to health care and ultimately help achieve targets for TB control. TB control is aligned with this expansion of health care through the national health plan.

The Health Extension Programme,[3] employing almost 30 000 health service extension workers, is the backbone of all interventions carried out at community level and is designed to provide preventive services, including detection and referral of TB suspects, in all rural villages.

References

[1] Health Sector Development Programme IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2011

[2] Global tuberculosis control 2009. Epidemiology strategy financing (pdf 6.95Mb). Geneva, World Health Organization, 2009 (http://reliefweb.int/report/world/global-tuberculosis-control-2009-epidemiology-strategy-financing)

[3] Health Extension Program in Ethiopia. Profile (pdf 2.10Mb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2007 (http://www.moh.gov.et/English/Resources/Documents/HEW profile Final 08 07.pdf)

Ethiopia:Malaria

This analytical profile on malaria is structured as follows:

Analytical summary

Malaria is endemic in Ethiopia, with differing intensities of transmission. The disease is prevalent in areas below 2000 m altitude and is seasonal, with irregular transmission patterns. Areas below 2000 m altitude cover three quarters of the country's land mass, with an estimated population of 52 million.[1] An epidemic occurs every 5–8 years in these areas, with frequent outbreaks within short periods. The last epidemic occurred in 2003 and recent outbreaks have been reported in consecutive years from 2006 until early 2010. With an average of more than 3 million clinical cases per year, malaria remains the biggest health problem in Ethiopia.

Although malaria is a major cause of child mortality, only 33% of children under the age of 5 years sleep under an insecticide-treated bednet [2].[1] The disease burden is broad, going beyond the substantial health concerns it creates. The population may be forced to abandon productive areas and to concentrate in malaria-free areas that are exposed to constant food insecurity. As a result, substantial environmental and ecological degradation and loss of productive land has left a significant proportion of the population threatened by recurrent droughts and famine. In addition, malaria affects the learning capacity of schoolchildren due to constant non-attendance of school in the absence of treatment.

The Malaria Prevention and Control Programme [3] is guided by the national 5-year (2006–2010) strategic plan, developed in line with the objectives of the Health Sector Development Programme [5]. Ethiopia is one of the first countries to embrace the scaling-up for impact [4] concept for malaria control.

The 2006–2010 National Strategic Plan aimed to rapidly scale-up malaria control interventions to achieve a 50% reduction of malaria burden. In August 2008, Ethiopia signed a Compact Agreement with development partners on scaling-up for reaching the health-related Millennium Development Goals through the Health Sector Development Programme as part of the International Health Partnership [9]. A three-pronged approach was implemented, consisting of early diagnosis and effective treatment, selective vector control, and epidemic prevention and control

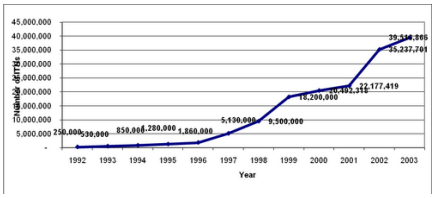
with the integration of malaria control activities into the basic health service delivery system.[5]

The Government of Ethiopia has launched two vector control activities in the country, namely indoor residual spraying [6] and insecticide-treated nets. Indoor residual spraying is applied in malaria epidemic prone areas, whereas insecticide-treated nets are practical in areas with longer periods of transmission. Although areas at altitude 2000 m and below are generally considered to be at malaria risk, transmission has also been detected at altitudes as high as 2500 m. Thus, to support the implementation of malaria prevention and control strategies, the Government has developed two consecutive 5-year plans: 2001–2005 and 2006–2010.

During the first 5-year plan, annual indoor residual spraying coverage was between 20% and 30%.[1] The household-level insecticide-treated net coverage rate in malaria-prone areas increased from 3.5% in 2005 to 100% in 2009–2010. Over 39.5 million bednets were procured and distributed in 2009–2010 and 2010–2011. In addition, artemisinin combination therapy [7] was implemented as a first-line treatment for *Plasmodium falciparum* malaria, to complement the distribution of insecticide-treated nets to households in malaria-prone areas.

To enhance the effective utilization of insecticide-treated nets, educational information has been broadcasted by radio and training has been given to media professionals, who are expected to play a major role in educating the public.[1]

If the epidemic peak of 2003 is excluded, the annual numbers of malaria admissions and deaths in 2007–2009 was lower by 31% and 50% than the rate for 2002 and 2004, respectively. Annual average malaria cases have fallen from 3 million during 2000–2005 to an average of 1.7 million in 2009. The lower levels of malaria admissions and deaths after 2004 are associated with an expansion of the malaria control programme targeting 40 million people at high risk. The malaria prevention and control programme is financed by the Government along with external financing from development partners.



Trend in the cumulative number of insecticide-treated nets distributed by region (Ethiopian Fiscal Year 1998–2003). Source: Federal Ministry of Health

References

[1] Ethiopian national malaria indicator survey, 2007. Technical summary (pdf 173.25kb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2008 (http://www.cartercenter.org/resources/pdfs/news/health_publications/malaria/Ethiopia_MIS-2007_Technical_Summary.pdf)

[2] http://www.who.int/malaria/publications/atoz/itnspospaperfinal.pdf

[3] http://www.moh.gov.et/English/Information/Pages/MalariaPreventionControlProgram.aspx

[4] http://www.rbm.who.int/gmap/2-2a.html

[5] Health Sector Development Program IV, Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

[6] http://www.map.ox.ac.uk/explore/malaria-control/indoor-residual-spraying/

[7] http://www.malariaconsortium.org/page.php?id=112

Ethiopia:Analytical summary - Malaria

Malaria is endemic in Ethiopia, with differing intensities of transmission. The disease is prevalent in areas below 2000 m altitude and is seasonal, with irregular transmission patterns. Areas below 2000 m altitude cover three quarters of the country's land mass, with an estimated population of 52 million.[1] An epidemic occurs every 5–8 years in these areas, with frequent outbreaks within short periods. The last epidemic occurred in 2003 and recent outbreaks have been reported in consecutive years from 2006 until early 2010. With an average of more than 3 million clinical cases per year, malaria remains the biggest health problem in Ethiopia.

Although malaria is a major cause of child mortality, only 33% of children under the age of 5 years sleep under an insecticide-treated bednet [2].[1] The disease burden is broad, going beyond the substantial health concerns it creates. The population may be forced to abandon productive areas and to concentrate in malaria-free areas that are exposed to constant food insecurity. As a result, substantial environmental and ecological degradation and loss of productive land has left a significant proportion of the population threatened by recurrent droughts and famine. In addition, malaria affects the learning capacity of schoolchildren due to constant non-attendance of school in the absence of treatment.

The Malaria Prevention and Control Programme [3] is guided by the national 5-year (2006–2010) strategic plan, developed in line with the objectives of the Health Sector Development Programme [5]. Ethiopia is one of the first countries to embrace the scaling-up for impact [4] concept for malaria control.

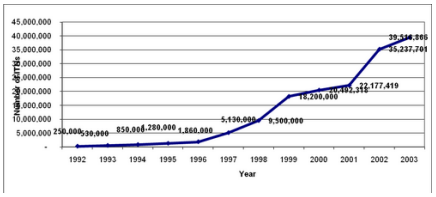
The 2006–2010 National Strategic Plan aimed to rapidly scale-up malaria control interventions to achieve a 50% reduction of malaria burden. In August 2008, Ethiopia signed a Compact Agreement with development partners on scaling-up for reaching the health-related Millennium Development Goals through the Health Sector Development Programme as part of the International Health Partnership [9]. A three-pronged approach was implemented, consisting of early diagnosis and effective treatment, selective vector control, and epidemic prevention and control with the integration of malaria control activities into the basic health service delivery system.[2]

The Government of Ethiopia has launched two vector control activities in the country, namely indoor residual spraying [6] and insecticide-treated nets. Indoor residual spraying is applied in malaria epidemic prone areas, whereas insecticide-treated nets are practical in areas with longer periods of transmission. Although areas at altitude 2000 m and below are generally considered to be at malaria risk, transmission has also been detected at altitudes as high as 2500 m. Thus, to support the implementation of malaria prevention and control strategies, the Government has developed two consecutive 5-year plans: 2001–2005 and 2006–2010.

During the first 5-year plan, annual indoor residual spraying coverage was between 20% and 30%.[1] The household-level insecticide-treated net coverage rate in malaria-prone areas increased from 3.5% in 2005 to 100% in 2009–2010. Over 39.5 million bednets were procured and distributed in 2009–2010 and 2010–2011. In addition, artemisinin combination therapy [7] was implemented as a first-line treatment for *Plasmodium falciparum* malaria, to complement the distribution of insecticide-treated nets to households in malaria-prone areas.

To enhance the effective utilization of insecticide-treated nets, educational information has been broadcasted by radio and training has been given to media professionals, who are expected to play a major role in educating the public.[1]

If the epidemic peak of 2003 is excluded, the annual numbers of malaria admissions and deaths in 2007–2009 was lower by 31% and 50% than the rate for 2002 and 2004, respectively. Annual average malaria cases have fallen from 3 million during 2000–2005 to an average of 1.7 million in 2009. The lower levels of malaria admissions and deaths after 2004 are associated with an expansion of the malaria control programme targeting 40 million people at high risk. The malaria prevention and control programme is financed by the Government along with external financing from development partners.



Trend in the cumulative number of insecticide-treated nets distributed by region (Ethiopian Fiscal Year 1998–2003). Source: Federal Ministry of Health

References

[1] Ethiopian national malaria indicator survey, 2007. Technical summary (pdf 173.25kb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2008 (http://www.cartercenter.org/resources/pdfs/news/health_publications/malaria/Ethiopia_MIS-2007_Technical_Summary.pdf)

[2] Health Sector Development Program IV, Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

Ethiopia:Immunization and vaccines development

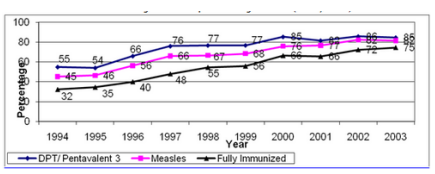
This analytical profile on immunization and vaccine development is structured as follows:

Analytical summary

Neonatal tetanus is a major cause of early infant mortality in many developing countries, often due to failure to observe hygienic procedures during delivery. In Ethiopia, only 48% of births are protected against neonatal tetanus.[1]

Since 2007, three doses of pentavalent vaccine (DTP-HepB-Hib) (diphtheria-tetanus-pertussis/hepatitis B/*Haemophilus influenzae* type B) have been given in place of three doses of DPT vaccine [2]. The Bacille Calmette-Guérin (BCG) vaccine [3] is scheduled to be given at birth, while pentavalent and polio vaccines are given at approximately 3, 4 and 5 months of age. Measles vaccine is given when a child reaches 9 months of age or soon after. It is also recommended that children should receive the complete schedule of vaccinations before their first birthday, and that vaccinations should be recorded on a vaccination card given to the parents or guardians.

Overall, 75% of children aged 12–23 months are fully immunized. Over 66% of children receive BCG vaccine, 82% of children receive the first dose of polio vaccine, and 85% of children receive the first dose of DTP/pentavalent vaccine. Coverage rates for all three (DTP-HepB-Hib) vaccines have reached 85%, and 44% have completed the required polio vaccines. Vaccination coverage against measles is 82%.



Vaccination coverage rates, Ethiopia, 1994–2003

Research and production of vaccines is conducted by the Ethiopian Health and Nutrition Research Institute [4]. Two vaccines to prevent *Streptococcus* pneumonia and diarrhoea caused by rotavirus were introduced in 2010.[2]

References

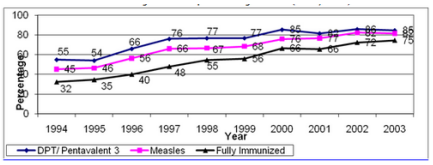
[1] Ethiopian demographic and health survey, 2011 (pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)
[2] http://www.who.int/immunization_safety/aefi/immunization_misconceptions/en/index4.html
[3] http://www.who.int/biologicals/areas/vaccines/bcg/en/

Ethiopia:Analytical summary - Immunization and vaccines development

Neonatal tetanus is a major cause of early infant mortality in many developing countries, often due to failure to observe hygienic procedures during delivery. In Ethiopia, only 48% of births are protected against neonatal tetanus.[1]

Since 2007, three doses of pentavalent vaccine (DTP-HepB-Hib) (diphtheria-tetanus-pertussis/hepatitis B/*Haemophilus influenzae* type B) have been given in place of three doses of DPT vaccine [2]. The Bacille Calmette-Guérin (BCG) vaccine [3] is scheduled to be given at birth, while pentavalent and polio vaccines are given at approximately 3, 4 and 5 months of age. Measles vaccine is given when a child reaches 9 months of age or soon after. It is also recommended that children should receive the complete schedule of vaccinations before their first birthday, and that vaccinations should be recorded on a vaccination card given to the parents or guardians.

Overall, 75% of children aged 12–23 months are fully immunized. Over 66% of children receive BCG vaccine, 82% of children receive the first dose of polio vaccine, and 85% of children receive the first dose of DTP/pentavalent vaccine. Coverage rates for all three (DTP-HepB-Hib) vaccines have reached 85%, and 44% have completed the required polio vaccines. Vaccination coverage against measles is 82%.



Vaccination coverage rates, Ethiopia, 1994–2003

Research and production of vaccines is conducted by the Ethiopian Health and Nutrition Research Institute [4]. Two vaccines to prevent *Streptococcus* pneumonia and diarrhoea caused by rotavirus were introduced in 2010.[2]

References

[1] Ethiopian demographic and health survey, 2011 (pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

Ethiopia:Child and adolescent health

This analytical profile on child and adolescent health is structured as follows:

Analytical summary

Improving child health is one of the priorities of the Health Sector Development Programme IV [5][1] covering the period 2010–2015. The infant mortality rate is 59 deaths per 1000 live births. The estimate of child mortality is 31 deaths per 1000 children surviving to 12 months of age, while the overall under-five mortality rate is 88 deaths per 1000 live births. In addition, 67% of all deaths in children aged under 5 years in Ethiopia take place before the child's first birthday.[2] Malaria, pneumonia, diarrhoea and nutrition deficiencies are among the major causes of child mortality. A high mortality and disease burden from nutrition-related factors is also prominent among children aged under 5 years.[3]

Malnutrition is widespread across the country. Overall, 29% of all children are underweight and 9% of children are severely underweight. Also, 31% of male children are underweight compared with 27% of female children. The percentage of children who are underweight is eight times higher in children with mothers with no education compared with children whose mothers have more than secondary education.

Nutrition is a major risk factor contributing to the mortality and disease burden among children aged under 5 years. A total of 30% of rural children are underweight compared with 16% of urban children. Overall, 34.6% of children are born underweight while 50.7% are stunted. Stunting (low height-for-age) reflects the cumulative effects of undernutrition and infections since birth and prior to birth.

Infant and young child feeding practices [4] in terms of early initiation of breastfeeding, exclusive breastfeeding up to 6 months and appropriate time and practice of complementary feeding are poor, contributing significantly to malnutrition. Vitamin A deficiency also affects over 5 million children aged under 5 years, considerably contributing to visual impairment and increased susceptibility, delayed recovery and increased mortality from infection.

A National Nutrition Strategy was implemented within the Health Sector Development Program III and a new National Nutrition Programme [5] was launched. The focus of the National Nutrition Programme is on reducing malnutrition and improving child feeding as well as implementing vitamin A supplementation and deworming.[6]

Child health inequality is significant between urban and rural areas. For all areas, the national average probability of dying by the age of 5 years is 106 per 1000 live births but this figure reaches 138 per 1000 live births in rural areas. Measles immunization coverage in 1-year-old children is 32% in rural area compared with 65% in urban areas. In addition, 30% of rural children are underweight, compared with 16% of urban children.

To improve the quality of management of childhood illnesses, an Integrated Management of Neonatal and Childhood Illnesses Strategy [7] has been adopted. The Strategy consists of three components:

- improving the health system
- health workers' skill
- family and community practices.

The main activities under the Strategy are prevention and control of acute respiratory infection, diarrhoea, malaria, malnutrition, measles and HIV/AIDS. The Strategy aims to improve the quality of management of childhood illness, linking preventive and curative services so that programmes such as immunization, nutrition and control of malaria and other diseases are implemented in an integrated approach, focusing on the well-being of children and neonates. The Strategy aims to reduce mortality, illness and disability and promote improved growth and development.

To strengthen service implementation, in 2010 Training of Trainers [8] was given to health professionals and a total of 605 health professionals had been trained by the end of 2010[9]

References

[1] Health Sector Development Program IV, 2010/11–2014/15. Final draft (pdf 780.81kb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)
[2] Ethiopian demographic and health survey 2011 (pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro, 2011 (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)
[3] World health statistics. Geneva, World Health Organization, 2010 (http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf)
[4] http://www.unicef.org/nutrition/files/Planning_and_Adaptation_Guide.pdf
[5] http://www.mdgfund.org/program/nationalnutritionprogrammemdgfjointprogramme
[6] Addis Ababa, Government of Ethiopia, Ministry of Health (http://www.moh.gov.et/English/Pages/Index.aspx)
[7] http://www.who.int/pmnch/media/publications/aonsectionIII_5.pdf
[8] http://www.disasterriskreduction.net/fileadmin/user_upload/drought/docs/TOT%20Manual%20for%20CAHWs%20trainers%20in%20Ethiopia.pdf
[9] Health Sector Development Program IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

Ethiopia:Analytical summary - Child and adolescent health

Improving child health is one of the priorities of the Health Sector Development Programme IV [5][1] covering the period 2010–2015. The infant mortality rate is 59 deaths per 1000 live births. The estimate of child mortality is 31 deaths per 1000 children surviving to 12 months of age, while the overall under-five mortality rate is 88 deaths per 1000 live births. In addition, 67% of all deaths in children aged under 5 years in Ethiopia take place before the child's first birthday.[2] Malaria, pneumonia, diarrhoea and nutrition deficiencies are among the major causes of child mortality. A high mortality and disease burden from nutrition-related factors is also prominent among children aged under 5 years.[3]

Malnutrition is widespread across the country. Overall, 29% of all children are underweight and 9% of children are severely underweight. Also, 31% of male children are underweight compared with 27% of female children. The percentage of children who are underweight is eight times higher in children with mothers with no education compared with children whose mothers have more than secondary education.

Nutrition is a major risk factor contributing to the mortality and disease burden among children aged under 5 years. A total of 30% of rural children are underweight compared with 16% of urban children. Overall, 34.6% of children are born underweight while 50.7% are stunted. Stunting (low height-for-age) reflects the cumulative effects of undernutrition and infections since birth and prior to birth.

Infant and young child feeding practices [4] in terms of early initiation of breastfeeding, exclusive breastfeeding up to 6 months and appropriate time and practice of complementary feeding are poor, contributing significantly to malnutrition. Vitamin A deficiency also affects over 5 million children aged under 5 years, considerably contributing to visual impairment and increased susceptibility, delayed recovery and increased mortality from infection.

A National Nutrition Strategy was implemented within the Health Sector Development Program III and a new National Nutrition Programme [5] was launched. The focus of the National Nutrition Programme is on reducing malnutrition and improving child feeding as well as implementing vitamin A supplementation and deworming.[4]

Child health inequality is significant between urban and rural areas. For all areas, the national average probability of dying by the age of 5 years is 106 per 1000 live births but this figure reaches 138 per 1000 live births in rural areas. Measles immunization coverage in 1-year-old children is 32% in rural area compared with 65% in urban areas. In addition, 30% of rural children are underweight, compared with 16% of urban children.

To improve the quality of management of childhood illnesses, an Integrated Management of Neonatal and Childhood Illnesses Strategy [7] has been adopted. The Strategy consists of three components:

- improving the health system

- health workers' skill
- family and community practices.

The main activities under the Strategy are prevention and control of acute respiratory infection, diarrhoea, malaria, malnutrition, measles and HIV/AIDS. The Strategy aims to improve the quality of management of childhood illness, linking preventive and curative services so that programmes such as immunization, nutrition and control of malaria and other diseases are implemented in an integrated approach, focusing on the well-being of children and neonates. The Strategy aims to reduce mortality, illness and disability and promote improved growth and development.

To strengthen service implementation, in 2010 Training of Trainers [8] was given to health professionals and a total of 605 health professionals had been trained by the end of 2010[5]

References

[1] Health Sector Development Program IV, 2010/11–2014/15. Final draft (pdf 780.81kb). Addis Ababa, Government of Ethiopia, Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

[2] Ethiopian demographic and health survey 2011 (pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro, 2011 (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

[3] World health statistics. Geneva, World Health Organization, 2010 (http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf)

[4] Addis Ababa, Government of Ethiopia, Ministry of Health (http://www.moh.gov.et/English/Pages/Index.aspx)

[5] Health Sector Development Program IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

Ethiopia:Maternal and newborn health

This analytical profile on maternal and newborn health is structured as follows:

Analytical summary

The maternal mortality ratio [1] in Ethiopia is 676 per 100 000 live births, which is one of the highest in the world and is mainly a result of lack of access to health care, and socioeconomic and demographic factors. This maternal mortality rate remains a major public health challenge facing the country. Every year, 22 000 women and girls die during childbirth or as a result of complications of childbirth.[2]

The lifetime risk of a woman dying during pregnancy or childbirth is 1 in 27. In addition, more than half a million women suffer from pregnancy-related disabilities. Obstetric fistula, a pregnancy-related disability, affects nearly 9000 women each year. For sociocultural reasons, the magnitude of the disability is significantly higher in rural areas where there is a strong tradition for young women to be married at a very early age [3].

In 2010, the number of HIV-positive pregnant women was estimated at 90 311, with 14 276 HIV-positive births.[2]

Although the overall household level of insecticide-treated net coverage has improved over the years, only 35% of pregnant women sleep under insecticide-treated bednets [2] [4].

With 83.6% of the population living in rural area, correspondingly 90% of total national births occur in rural areas.

There is a 3.1% teenage pregnancy rate in rural areas, while in urban areas the rate is 0.6%. By age, the highest rate of teenage pregnancy was reported at the age of 19 years.

Although there are significant variations among regions and education level of mothers, overall 29% of currently married women use family planning methods. The contraceptive prevalence rate [14] has more than doubled in rural areas within the past 5 years, whereas the increase in urban areas is only 6%.

Antenatal care coverage for at least one visit is 28% but coverage for at least four visits declines to 12%. Postnatal care coverage reached 42.1%. Births by caesarean section are 1%; however, more than 90% of women in need of caesarean section do not have access to health services. Only 6% of birth are attended by skilled health personnel. The proportion of pregnant women counselled and tested for prevention of mother-to-child transmission [11] was

66% and the proportion of deliveries of HIV-positive women who received a full of course of antiretroviral therapy [6] was 24.6% in 2011.[5]

References

[1] http://www.who.int/whosis/whostat/EN_WHS2011_Full.pdf
[2] Health Sector Development Program IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010
[3] http://ethiopia.unfpa.org/
[4] President's Malaria Initiative, 2011
[5] Health Sector Development Program IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2011

Ethiopia:Analytical summary - Maternal and newborn health

The maternal mortality ratio [1] in Ethiopia is 676 per 100 000 live births, which is one of the highest in the world and is mainly a result of lack of access to health care, and socioeconomic and demographic factors. This maternal mortality rate remains a major public health challenge facing the country. Every year, 22 000 women and girls die during childbirth or as a result of complications of childbirth.[1]

The lifetime risk of a woman dying during pregnancy or childbirth is 1 in 27. In addition, more than half a million women suffer from pregnancy-related disabilities. Obstetric fistula, a pregnancy-related disability, affects nearly 9000 women each year. For sociocultural reasons, the magnitude of the disability is significantly higher in rural areas where there is a strong tradition for young women to be married at a very early age [3].

In 2010, the number of HIV-positive pregnant women was estimated at 90 311, with 14 276 HIV-positive births.[1]

Although the overall household level of insecticide-treated net coverage has improved over the years, only 35% of pregnant women sleep under insecticide-treated bednets [2].[2]

With 83.6% of the population living in rural area, correspondingly 90% of total national births occur in rural areas.

There is a 3.1% teenage pregnancy rate in rural areas, while in urban areas the rate is 0.6%. By age, the highest rate of teenage pregnancy was reported at the age of 19 years.

Although there are significant variations among regions and education level of mothers, overall 29% of currently married women use family planning methods. The contraceptive prevalence rate [14] has more than doubled in rural areas within the past 5 years, whereas the increase in urban areas is only 6%.

Antenatal care coverage for at least one visit is 28% but coverage for at least four visits declines to 12%. Postnatal care coverage reached 42.1%. Births by caesarean section are 1%; however, more than 90% of women in need of caesarean section do not have access to health services. Only 6% of birth are attended by skilled health personnel. The proportion of pregnant women counselled and tested for prevention of mother-to-child transmission [11] was 66% and the proportion of deliveries of HIV-positive women who received a full of course of antiretroviral therapy [6] was 24.6% in 2011.[3]

References

[1] Health Sector Development Program IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010
[2] President's Malaria Initiative, 2011
[3] Health Sector Development Program IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2011

Ethiopia:Gender and women's health

This analytical profile on gender and women's health is structured as follows:

Analytical summary

Despite recent improvements, child mortality in Ethiopia is still high. The neonatal and under-five mortality rate, responsible for 30% of annual deaths, is caused mainly by diarrhoea, malaria and pneumonia.[1] In addition, the mortality and disease burden from nutrition-related factors in children aged under 5 years is high. A total of 34.6% of children are born underweight while 50.7% are stunted. Stunting (low height-for-age) reflects the cumulative effects of undernutrition and infections since birth and even prior to birth.

As in other countries, the child mortality rate for females is lower than for males. The average probability of dying by 1 year of age is 60 per 1000 live births for females and 78 per 1000 live births for males. In addition, the under-five mortality rate is 100 per 1000 live births for females, compared with 117 per 1000 live births for males.

Among harmful practices, female genital mutilation [2] is widespread in Ethiopia, with more than half of girls aged between 15 and 19 years being circumcised. Female genital mutilation is strongly associated with negative reproductive health outcomes such as infection, obstructed labour, perineal tears, fistula and infertility. Between 60% and 80% of Ethiopian women have experienced some form of female genital mutilation.

Abduction is a common practice in certain parts of Ethiopia. Young women in rural areas are twice as likely to be abducted compared with their urban counterparts. At a national level, 8% of married women between the ages of 15 and 49 years have reported being abducted. Rape is a common occurrence among young women in both rural and urban areas. A study of adolescents in six periurban areas showed that 9% of sexually active adolescents had been raped.[1]

A study on street violence among girls between the ages of 10 and 24 years in Addis Ababa shows that 15% reported rape and 43% had been coerced into sex during their first sexual encounter. Polygamy is a widely accepted practice in southern part of Ethiopia and 5% of women in their teens and 8% of women between the ages of 20 and 24 years are married to men who have more than one wife. The practice of polygamy exposes young women to an increased risk of contracting sexually transmitted diseases.

Early marriage, limited use of contraceptives, and limited access to reproductive health information and education contribute to the high rate of unwanted adolescent pregnancies. Unwanted pregnancy is one of the major reproductive health challenges faced by adolescents in Ethiopia; 54% of pregnancies to girls under the age of 15 years are unwanted. Girls between the ages of 15 and 19 years are seven times more likely to be HIV positive than boys in the same age range. In addition to biological factors, young women are at a higher risk of HIV transmission as they have an earlier sexual début than their male peers, owing to marriage to much older spouses.

The health status of women is significantly poor, influenced by the higher rate of illiteracy and poverty among women, which limits their access to health services, information and decision-making in health matters. The morbidity rate in women is 76% while the morbidity rate in men is 23%. Women's health is classified into maternal health problems, which are directly related to childbearing complications such as prolonged labour, retained placenta, maternal malnutrition, etc., and nutritional problems, which are prominent in the country. A total of 25% of women between the age of 15 and 49 years with children aged under 3 years have a body mass index below 18.5. Female genital mutilation, rape and abduction are other health problems related to the low socioeconomic and

cultural status of women.[1]

Although, HIV/AIDS awareness is universal, the proportion of women with knowledge of HIV prevention is only 43% compared with 64% in men. In 2010, there were 90 000 HIV-positive pregnant women and 14 000 HIV-positive births every year.[3]

References

[1] World health statistics, 2010. Geneva, World Health Organization, 2010 (http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf)

[2] http://www.who.int/mediacentre/factsheets/fs241/en/

[3] Health Sector Development Program IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

Ethiopia:Analytical summary - Gender and women's health

Despite recent improvements, child mortality in Ethiopia is still high. The neonatal and under-five mortality rate, responsible for 30% of annual deaths, is caused mainly by diarrhoea, malaria and pneumonia.[1] In addition, the mortality and disease burden from nutrition-related factors in children aged under 5 years is high. A total of 34.6% of children are born underweight while 50.7% are stunted. Stunting (low height-for-age) reflects the cumulative effects of undernutrition and infections since birth and even prior to birth.

As in other countries, the child mortality rate for females is lower than for males. The average probability of dying by 1 year of age is 60 per 1000 live births for females and 78 per 1000 live births for males. In addition, the under-five mortality rate is 100 per 1000 live births for females, compared with 117 per 1000 live births for males.

Among harmful practices, female genital mutilation [2] is widespread in Ethiopia, with more than half of girls aged between 15 and 19 years being circumcised. Female genital mutilation is strongly associated with negative reproductive health outcomes such as infection, obstructed labour, perineal tears, fistula and infertility. Between 60% and 80% of Ethiopian women have experienced some form of female genital mutilation.

Abduction is a common practice in certain parts of Ethiopia. Young women in rural areas are twice as likely to be abducted compared with their urban counterparts. At a national level, 8% of married women between the ages of 15 and 49 years have reported being abducted. Rape is a common occurrence among young women in both rural and urban areas. A study of adolescents in six periurban areas showed that 9% of sexually active adolescents had been raped.[1]

A study on street violence among girls between the ages of 10 and 24 years in Addis Ababa shows that 15% reported rape and 43% had been coerced into sex during their first sexual encounter. Polygamy is a widely accepted practice in southern part of Ethiopia and 5% of women in their teens and 8% of women between the ages of 20 and 24 years are married to men who have more than one wife. The practice of polygamy exposes young women to an increased risk of contracting sexually transmitted diseases.

Early marriage, limited use of contraceptives, and limited access to reproductive health information and education contribute to the high rate of unwanted adolescent pregnancies. Unwanted pregnancy is one of the major reproductive health challenges faced by adolescents in Ethiopia; 54% of pregnancies to girls under the age of 15 years are unwanted. Girls between the ages of 15 and 19 years are seven times more likely to be HIV positive than boys in the same age range. In addition to biological factors, young women are at a higher risk of HIV transmission as they have an earlier sexual début than their male peers, owing to marriage to much older spouses.

The health status of women is significantly poor, influenced by the higher rate of illiteracy and poverty among women, which limits their access to health services, information and decision-making in health matters. The morbidity rate in women is 76% while the morbidity rate in men is 23%. Women’s health is classified into maternal

health problems, which are directly related to childbearing complications such as prolonged labour, retained placenta, maternal malnutrition, etc., and nutritional problems, which are prominent in the country. A total of 25% of women between the age of 15 and 49 years with children aged under 3 years have a body mass index below 18.5. Female genital mutilation, rape and abduction are other health problems related to the low socioeconomic and cultural status of women.[1]

Although, HIV/AIDS awareness is universal, the proportion of women with knowledge of HIV prevention is only 43% compared with 64% in men. In 2010, there were 90 000 HIV-positive pregnant women and 14 000 HIV-positive births every year.[2]

References

[1] World health statistics, 2010. Geneva, World Health Organization, 2010 (http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf)

[2] Health Sector Development Program IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

Ethiopia:Epidemic and pandemic-prone diseases

This analytical profile on epidemic and pandemic-prone diseases is structured as follows:

Analytical summary

Epidemic-prone disease and nutritional emergencies due to recurrent drought and pandemics are major health sector priorities. However, Ethiopia is not yet adequately prepared to respond efficiently to such threats.

Public health emergency management preparedness and response is one of the core processes introduced under business process re-engineering within the Ethiopian Health and Nutrition Research Institute [4] and implementation has started. In order to establish public health emergency management teams at the Ministry of Health [8] and rural health boards, 13 epidemic intelligence service officers have been trained.

Twenty diseases have been selected for surveillance and detection and new forecasting, early warning, response and record systems have been designed.[1]

References

[1] Health Sector Development Program IV, 2010/11–2014/15. Final draft. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

Ethiopia:Analytical summary - Epidemic and pandemic-prone diseases

Epidemic-prone disease and nutritional emergencies due to recurrent drought and pandemics are major health sector priorities. However, Ethiopia is not yet adequately prepared to respond efficiently to such threats.

Public health emergency management preparedness and response is one of the core processes introduced under business process re-engineering within the Ethiopian Health and Nutrition Research Institute [4] and implementation has started. In order to establish public health emergency management teams at the Ministry of Health [8] and rural health boards, 13 epidemic intelligence service officers have been trained.

Twenty diseases have been selected for surveillance and detection and new forecasting, early warning, response and record systems have been designed.[1]

References

[1] Health Sector Development Program IV, 2010/11–2014/15. Final draft. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

Ethiopia:Neglected tropical diseases

This analytical profile on neglected tropical diseases is structured as follows:

Analytical summary

Leprosy, dracunculiasis, onchocerciasis, leishmaniasis, schistosomiasis, soil-transmitted helminthiasis, lymphatic filariasis and trachoma are among the neglected tropical diseases prevalent to varying degrees in different parts of Ethiopia. A target intervention for prevention and control of neglected tropical diseases is included in the Health Sector Development Programme IV [5], which covers the period from 2010 to 2014.[1] The eight neglected tropical diseases prioritized are dracunculiasis, onchocerciasis, leishmaniasis, lymphatic filariasis, trachoma, soil transmitted helminthiasis, schistosomiasis and podoconiosis.

Onchocerciasis is endemic in western and south-western parts of the country, where an estimated 17% of the population is exposed to the risk of infection. To prevent onchocerciasis, community directed treatment with ivermectin [2] was launched in 2001, targeting 1.2 million people. However, there are challenges, including the prioritization of control programmes and the high turnover of programme coordinators.[3] There are nine community directed treatment with ivermectin projects running the Onchocerciasis Control Programme, covering a total population of 6 million.

Visceral leishmaniasis is a major cause of high morbidity and mortality in the Central Rift Valley and the north-western and southern parts of Ethiopia. The disease is usually endemic in the remote but fertile parts of the country with poor infrastructure, diagnostic and treatment capacities.[1]

Blindness is one of the major public health problems of the country. With a national prevalence of 1.6%, there are 1.2 million people with all causes of blindness and 2.8 million people with low vision. Cataract and trachoma constitute more than 60% of all blindness cases. Nearly 90% of blindness cases in Ethiopia are either preventable or treatable.[1] A 5-year VISION 2020 plan on eye care with the aim of eliminating avoidable blindness by 2020 has been developed, based on the WHO strategy to address the challenge.[4]

Dracunculiasis is one of the diseases under eradication in Ethiopia. Ethiopia is among the 12 dracunculiasis-epidemic countries and agreed to take concerted actions to interrupt local transmission of the disease

by 2009. Nonetheless, 23 indigenous cases were reported in 2009, making it difficult to make progress towards a dracunculiasis-free country. A total of 14 cases were reported in the prevalence area in 2010.

A total of 36 lymphatic filariasis endemic areas have been identified in Ethiopia.

Ethiopia has a leprosy prevalence rate of less than 0.8 per 10 000 population and thus qualifies as a country that has achieved the goal of leprosy elimination.

References

[1] Health Sector Development Program IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

[2] http://www.who.int/apoc/cdti/en/

[3] WHO Country Cooperation Strategy 2008–2011. Ethiopia (pdf 616.72kb). Brazzaville, World Health Organization Regional Office for Africa, 2009 (http://www.who.int/countryfocus/cooperation_strategy/ccs_eth_en.pdf)

[4] Global initiative for the elimination of avoidable blindness. Action plan 2006–2011. Geneva, World Health Organization, 2007 (http://www.who.int/blindness/Vision2020_report.pdf)

Ethiopia:Analytical summary - Neglected tropical diseases

Leprosy, dracunculiasis, onchocerciasis, leishmaniasis, schistosomiasis, soil-transmitted helminthiasis, lymphatic filariasis and trachoma are among the neglected tropical diseases prevalent to varying degrees in different parts of Ethiopia. A target intervention for prevention and control of neglected tropical diseases is included in the Health Sector Development Programme IV [5], which covers the period from 2010 to 2014.[1] The eight neglected tropical diseases prioritized are dracunculiasis, onchocerciasis, leishmaniasis, lymphatic filariasis, trachoma, soil transmitted helminthiasis, schistosomiasis and podoconiosis.

Onchocerciasis is endemic in western and south-western parts of the country, where an estimated 17% of the population is exposed to the risk of infection. To prevent onchocerciasis, community directed treatment with ivermectin [2] was launched in 2001, targeting 1.2 million people. However, there are challenges, including the prioritization of control programmes and the high turnover of programme coordinators.[2] There are nine community directed treatment with ivermectin projects running the Onchocerciasis Control Programme, covering a total population of 6 million.

Visceral leishmaniasis is a major cause of high morbidity and mortality in the Central Rift Valley and the north-western and southern parts of Ethiopia. The disease is usually endemic in the remote but fertile parts of the country with poor infrastructure, diagnostic and treatment capacities.[1]

Blindness is one of the major public health problems of the country. With a national prevalence of 1.6%, there are 1.2 million people with all causes of blindness and 2.8 million people with low vision. Cataract and trachoma constitute more than 60% of all blindness cases. Nearly 90% of blindness cases in Ethiopia are either preventable or treatable.[1] A 5-year VISION 2020 plan on eye care with the aim of eliminating avoidable blindness by 2020 has been developed, based on the WHO strategy to address the challenge.[3]

Dracunculiasis is one of the diseases under eradication in Ethiopia. Ethiopia is among the 12 dracunculiasis-epidemic countries and agreed to take concerted actions to interrupt local transmission of the disease by 2009. Nonetheless, 23 indigenous cases were reported in 2009, making it difficult to make progress towards a dracunculiasis-free country. A total of 14 cases were reported in the prevalence area in 2010.

A total of 36 lymphatic filariasis endemic areas have been identified in Ethiopia.

Ethiopia has a leprosy prevalence rate of less than 0.8 per 10 000 population and thus qualifies as a country that has achieved the goal of leprosy elimination.

References

[1] Health Sector Development Program IV. Annual performance report. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010

[2] WHO Country Cooperation Strategy 2008–2011. Ethiopia (pdf 616.72kb). Brazzaville, World Health Organization Regional Office for Africa, 2009 (http://www.who.int/countryfocus/cooperation_strategy/ccs_eth_en.pdf)

[3] Global initiative for the elimination of avoidable blindness. Action plan 2006–2011. Geneva, World Health Organization, 2007 (http://www.who.int/blindness/Vision2020_report.pdf)

Ethiopia:Non-communicable diseases and conditions

This analytical profile on noncommunicable diseases and conditions is structured as follows:

Analytical summary

In the context of the epidemiological transition in Ethiopia, a double burden of disease is already emerging with the mix of persistent infectious diseases and increasing noncommunicable diseases [1] and injuries. Noncommunicable diseases and injuries are already major contributors to the high morbidity and mortality burden of the country.

The prevalence of noncommunicable diseases is increasing, owing to lifestyle changes. Among these diseases, hypertension is the seventh leading cause of mortality.[2] Cardiovascular disease, diabetes mellitus and cancer are the leading chronic diseases, with significant contribution to the overall mortality rate.[3] Chronic diseases, along with injuries and cancer, accounted for nearly 30% of all deaths in 2005.[4]

However, the burden of chronic diseases, including cancers and chronic kidney disease, is believed to be underestimated due to the lack of reliable data and the lack of disease registration systems such as a cancer registry or a chronic kidney disease registry.

The prevalence of mental health problems ranges from 3.5% to 17% and is dominated by, and rising in, the female population.

Injuries are becoming a serious threat to the health and well-being of society. Homicide and purposely inflicted injuries are the second leading causes of outpatient visits for females and the fourth leading cause overall in the population. Violence is also a major reason for the high burden of injuries. Nearly 10% of Ethiopia's population has a disability but less than 10% of those in need of rehabilitation have access to appropriate services.[5]

One of the key steps for prevention and control of noncommunicable diseases is to design and develop a national strategy to guide and control activities at all levels. Hence, a draft strategy has been developed and is being supported by all stakeholders. A strategy for expansion of mental health services is also under development and a strategy document on prevention and control of major noncommunicable diseases has been contracted out. A 3-year strategic plan highlighting issues related to accidents and medical emergencies was prepared in 2008 and has now been distributed.

References

[1] http://labspace.open.ac.uk/mod/oucontent/view.php?id=439656
[2] Health and health-related indicators, 2008. Addis Ababa, Government of Ethiopia, Ministry of Health, 2008
[3] Government of Ethiopia, Ministry of Health, web portal (http://www.moh.gov.et/English/Pages/Index.aspx)
[4] WHO Country Cooperation Strategy 2008–2011 Ethiopia (pdf 616.72kb). Brazzaville, World Health Organization Regional Office for Africa, 2008 (http://www.who.int/countryfocus/cooperation_strategy/ccs_eth_en.pdf)
[5] World health statistics, 2010. Geneva, World Health Organization, 2010 (http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf)

Ethiopia:Analytical summary - Non-communicable diseases and conditions

In the context of the epidemiological transition in Ethiopia, a double burden of disease is already emerging with the mix of persistent infectious diseases and increasing noncommunicable diseases [1] and injuries. Noncommunicable diseases and injuries are already major contributors to the high morbidity and mortality burden of the country.

The prevalence of noncommunicable diseases is increasing, owing to lifestyle changes. Among these diseases, hypertension is the seventh leading cause of mortality.[1] Cardiovascular disease, diabetes mellitus and cancer are the leading chronic diseases, with significant contribution to the overall mortality rate.[2] Chronic diseases, along with injuries and cancer, accounted for nearly 30% of all deaths in 2005.[3]

However, the burden of chronic diseases, including cancers and chronic kidney disease, is believed to be underestimated due to the lack of reliable data and the lack of disease registration systems such as a cancer registry or a chronic kidney disease registry.

The prevalence of mental health problems ranges from 3.5% to 17% and is dominated by, and rising in, the female population.

Injuries are becoming a serious threat to the health and well-being of society. Homicide and purposely inflicted injuries are the second leading causes of outpatient visits for females and the fourth leading cause overall in the population. Violence is also a major reason for the high burden of injuries. Nearly 10% of Ethiopia's population has a disability but less than 10% of those in need of rehabilitation have access to appropriate services.[4]

One of the key steps for prevention and control of noncommunicable diseases is to design and develop a national strategy to guide and control activities at all levels. Hence, a draft strategy has been developed and is being supported by all stakeholders. A strategy for expansion of mental health services is also under development and a strategy document on prevention and control of major noncommunicable diseases has been contracted out. A 3-year strategic plan highlighting issues related to accidents and medical emergencies was prepared in 2008 and has now been distributed.

References

[1] Health and health-related indicators, 2008. Addis Ababa, Government of Ethiopia, Ministry of Health, 2008
[2] Government of Ethiopia, Ministry of Health, web portal (http://www.moh.gov.et/English/Pages/Index.aspx)
[3] WHO Country Cooperation Strategy 2008–2011 Ethiopia (pdf 616.72kb). Brazzaville, World Health Organization Regional Office for Africa, 2008 (http://www.who.int/countryfocus/cooperation_strategy/ccs_eth_en.pdf)
[4] World health statistics, 2010. Geneva, World Health Organization, 2010 (http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf)

Key Determinants

Ethiopia:Key Determinants

This analytical profile on key determinants is structured as follows:

Ethiopia:Risk factors for health

This analytical profile on risk factors for health is structured as follows:

Analytical summary

The rapid economic transformation of Ethiopia has increasingly been accompanied by changes in dietary and lifestyle behaviour that are contributing to a rising risk of preventable chronic illness. These chronic diseases risk factors include high blood pressure, inadequate intake of fruit and vegetables, overweight or obesity, high concentrations of cholesterol in the blood, physical inactivity and tobacco use.

The leading causes of the major noncommunicable diseases are unhealthy diet and physical inactivity. In the WHO African Region [58], noncommunicable diseases [1] are projected to account for more than a quarter of all deaths by 2015. It is also estimated that the rate of increase of deaths from chronic diseases in the Region will exceed that from infectious disease, maternal and prenatal conditions, and nutritional deficiencies by more than fourfold in the next 10 years.

The burden on health care due to chronic diseases will therefore be substantial, given the chronic nature of the diseases and the need for long-term and often lifelong treatment. Despite this, there is a lack of a strategy for prevention and control of chronic diseases, for example:

- there is very little research or data on chronic diseases and their risk factors
- poor health management information systems and vital registration systems obscure the disease burden
- there is a lack of comprehensive management of chronic diseases at the health facility or community level
- there is no dedicated unit responsible for chronic diseases at the national or regional level.

In cognizance of these facts, there are currently some promising efforts being undertaken in Ethiopia, such as:

- the development of a national strategy framework
- establishment of a committed and functional national technical working group
- the Health Sector Development Programme IV [5][1] is addressing chronic disease for the first time
- there have been recent revisions of the health management information system.

However, there are limited resources for chronic diseases. Major threats in the prevention and control of chronic diseases in Ethiopia include:

- unregulated transnational (global) trade, leading to imported products and behaviour;
- proliferation of industrial/commercial food processing and brewery;
- adoption of a western lifestyle (e.g. smoking, alcohol, physical inactivity, refined foods with added salt, sugar and saturated fat).

The way forward

- Implement a programme for the prevention and control of chronic diseases as an integral part of primary health care and the health extension programme.
- Strengthen the diagnostic and clinical management capability of health systems in chronic disease care.
- Promote task shifting to expand accessibility of services for chronic disease prevention and control.
- Formulate and enforce legislation promoting healthy dietary choices, physical activity and restriction of tobacco, alcohol and other addictive substances.
- Integrate programmes population wide and target high-risk individuals to reduce their exposure to risk factors and reduce morbidity, mortality and disability.

References

[1] Health Sector Development Program IV, 2010/11–2014/15. Final draft. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

Ethiopia:Analytical summary - Risk factors for health

The rapid economic transformation of Ethiopia has increasingly been accompanied by changes in dietary and lifestyle behaviour that are contributing to a rising risk of preventable chronic illness. These chronic diseases risk factors include high blood pressure, inadequate intake of fruit and vegetables, overweight or obesity, high concentrations of cholesterol in the blood, physical inactivity and tobacco use.

The leading causes of the major noncommunicable diseases are unhealthy diet and physical inactivity. In the WHO African Region [58], noncommunicable diseases [1] are projected to account for more than a quarter of all deaths by 2015. It is also estimated that the rate of increase of deaths from chronic diseases in the Region will exceed that from infectious disease, maternal and prenatal conditions, and nutritional deficiencies by more than fourfold in the next 10 years.

The burden on health care due to chronic diseases will therefore be substantial, given the chronic nature of the diseases and the need for long-term and often lifelong treatment. Despite this, there is a lack of a strategy for prevention and control of chronic diseases, for example:

- there is very little research or data on chronic diseases and their risk factors
- poor health management information systems and vital registration systems obscure the disease burden
- there is a lack of comprehensive management of chronic diseases at the health facility or community level
- there is no dedicated unit responsible for chronic diseases at the national or regional level.

In cognizance of these facts, there are currently some promising efforts being undertaken in Ethiopia, such as:

- the development of a national strategy framework
- establishment of a committed and functional national technical working group
- the Health Sector Development Programme IV [5][1] is addressing chronic disease for the first time
- there have been recent revisions of the health management information system.

However, there are limited resources for chronic diseases. Major threats in the prevention and control of chronic diseases in Ethiopia include:

- unregulated transnational (global) trade, leading to imported products and behaviour;
- proliferation of industrial/commercial food processing and brewery;
- adoption of a western lifestyle (e.g. smoking, alcohol, physical inactivity, refined foods with added salt, sugar and saturated fat).

The way forward

- Implement a programme for the prevention and control of chronic diseases as an integral part of primary health care and the health extension programme.
- Strengthen the diagnostic and clinical management capability of health systems in chronic disease care.
- Promote task shifting to expand accessibility of services for chronic disease prevention and control.
- Formulate and enforce legislation promoting healthy dietary choices, physical activity and restriction of tobacco, alcohol and other addictive substances.
- Integrate programmes population wide and target high-risk individuals to reduce their exposure to risk factors and reduce morbidity, mortality and disability.

References

[1] Health Sector Development Program IV, 2010/11–2014/15. Final draft. Addis Ababa, Government of Ethiopia, Ministry of Health, 2010 (http://phe-ethiopia.org/admin/uploads/attachment-721-HSDP IV Final Draft 11Octoberr 2010.pdf)

Ethiopia:The physical environment

This analytical profile on the physical environment is structured as follows:

Analytical summary

Ethiopia is one of the 52 countries in Africa that signed the Libreville Declaration on Health and Environment [1] on 29 August 2008. Ethiopia has also been part of an international initiative to prevent environmental degradation, both at local and global level. The Ministry of Health [8] and the Ethiopian Environmental Protection Authority [2] are the leading institutions working on health and environmental health.

The most obvious environmental risk factors affecting human health in urban settings are hazardous wastes from industry and transport, and poor chemical and household waste management. Indoor air pollution and poor housing, food contamination and disease vectors are also risk factors. Toxic wastes are most common in Addis Ababa where industries, automobiles and hospitals are concentrated.

According to the Ethiopian Environmental Protection Authority, 1 847 288 m^3 of hazardous liquid waste and 19 150 tonnes of solid hazardous wastes were generated from industrial sectors in 2006. The high risk factors in rural setting are attributed to the use of biomass fuel (indoor pollution), soil degradation, biodiversity loss, deforestation, drought, poor housing and disease vectors. The estimated number of deaths associated with indoor and outdoor air pollution in 2004 was 72 400 and 2 500, respectively.

Poor sanitation and hygiene is also a major problem in Ethiopia. The number of children dying each year from diseases related to sanitation and hygiene accounts for 60% of the total deaths. However, only 1% of the total health budget is allocated to improving sanitation and hygiene.

An increase in global mean temperature has created conducive ecological conditions for vector breeding and the consequent spread of vector-borne diseases, of which malaria is the most prevalent. Three quarters of the country is considered to be either malarious or potentially malarious and two thirds of the population is at risk of malaria infection. Malaria was the top leading cause of outpatient visits in 2007–2008, accounting for 12% of the total outpatient morbidity.[3] Anomalous climatic change, increase in water development schemes, unaffordability and shortage of new antimalarial drugs, and inadequate supply of insecticide-treated bednets [2] contribute to the high prevalence of malaria in Ethiopia.

However, malaria is being controlled with a three-pronged approach, consisting of early diagnosis and effective treatment, selective vector control and epidemic prevention and control. The Government of Ethiopia [10] aims to eliminate malaria from the country by 2020.

In addition to malaria, other vector-borne diseases such as onchocerciasis, dracunculiasis and trachoma are also common.

Some observed gaps in the prevention and control of health and environmental risk factors include:

- lack of adequate and regular environmental surveillance activity;
- lack of a national performance monitoring and evaluation mechanism for priority programmes related to health and the environment;
- absence of reporting or monitoring mechanisms for status and enforcement;
- no research guidelines and agenda on the link between health and environment.

In addition, environmental strategic plans do not address risk factors that have implication on health and vice versa and, as a result, there is no integrated advocacy of health and environment issues. However, the country has environmental impact assessment laws and procedures and as a component of the National Science and Technology Policy [4] there is a research agenda that gives specific consideration to health and the environment.

The way forward

- Build professional capacity in the field of health and the environment by strengthening the capacity of existing training institutions.
- Mobilize substantial financial resources to facilitate collaborative surveillance activities to support and manage research on the link between health and the environment and for advocacy on the link between health and the environment.
- Strengthen the mechanism to enforce compliance of multilateral environmental agreements and allocate specific technical, human and financial resources to support the existing national implementation plan for the three conventions.

References

[1] http://www.unep.org/health-env/pdfs/libreville-declaration-eng.pdf
[2] http://www.epa.gov.et/default.aspx
[3] Health and health-related indicators, 2008. Addis Ababa, Government of Ethiopia, Ministry of Health, 2008
[4] http://www.most.gov.et/National%20S%20And%20T%20Policy.htm

Ethiopia:Analytical summary - The physical environment

Ethiopia is one of the 52 countries in Africa that signed the Libreville Declaration on Health and Environment [1] on 29 August 2008. Ethiopia has also been part of an international initiative to prevent environmental degradation, both at local and global level. The Ministry of Health [8] and the Ethiopian Environmental Protection Authority [2] are the leading institutions working on health and environmental health.

The most obvious environmental risk factors affecting human health in urban settings are hazardous wastes from industry and transport, and poor chemical and household waste management. Indoor air pollution and poor housing, food contamination and disease vectors are also risk factors. Toxic wastes are most common in Addis Ababa where industries, automobiles and hospitals are concentrated.

According to the Ethiopian Environmental Protection Authority, 1 847 288 m^3 of hazardous liquid waste and 19 150 tonnes of solid hazardous wastes were generated from industrial sectors in 2006. The high risk factors in rural setting are attributed to the use of biomass fuel (indoor pollution), soil degradation, biodiversity loss, deforestation, drought, poor housing and disease vectors. The estimated number of deaths associated with indoor and outdoor air pollution in 2004 was 72 400 and 2 500, respectively.

Poor sanitation and hygiene is also a major problem in Ethiopia. The number of children dying each year from diseases related to sanitation and hygiene accounts for 60% of the total deaths. However, only 1% of the total health budget is allocated to improving sanitation and hygiene.

An increase in global mean temperature has created conducive ecological conditions for vector breeding and the consequent spread of vector-borne diseases, of which malaria is the most prevalent. Three quarters of the country is considered to be either malarious or potentially malarious and two thirds of the population is at risk of malaria infection. Malaria was the top leading cause of outpatient visits in 2007–2008, accounting for 12% of the total outpatient morbidity.[1] Anomalous climatic change, increase in water development schemes, unaffordability and shortage of new antimalarial drugs, and inadequate supply of insecticide-treated bednets [2] contribute to the high

prevalence of malaria in Ethiopia.

However, malaria is being controlled with a three-pronged approach, consisting of early diagnosis and effective treatment, selective vector control and epidemic prevention and control. The Government of Ethiopia [10] aims to eliminate malaria from the country by 2020.

In addition to malaria, other vector-borne diseases such as onchocerciasis, dracunculiasis and trachoma are also common.

Some observed gaps in the prevention and control of health and environmental risk factors include:

- lack of adequate and regular environmental surveillance activity;
- lack of a national performance monitoring and evaluation mechanism for priority programmes related to health and the environment;
- absence of reporting or monitoring mechanisms for status and enforcement;
- no research guidelines and agenda on the link between health and environment.

In addition, environmental strategic plans do not address risk factors that have implication on health and vice versa and, as a result, there is no integrated advocacy of health and environment issues. However, the country has environmental impact assessment laws and procedures and as a component of the National Science and Technology Policy [4] there is a research agenda that gives specific consideration to health and the environment.

The way forward

- Build professional capacity in the field of health and the environment by strengthening the capacity of existing training institutions.
- Mobilize substantial financial resources to facilitate collaborative surveillance activities to support and manage research on the link between health and the environment and for advocacy on the link between health and the environment.
- Strengthen the mechanism to enforce compliance of multilateral environmental agreements and allocate specific technical, human and financial resources to support the existing national implementation plan for the three conventions.

References

[1] Health and health-related indicators, 2008. Addis Ababa, Government of Ethiopia, Ministry of Health, 2008

Ethiopia:Food safety and nutrition

This analytical profile on food safety and nutrition is structured as follows:

Analytical summary

In Ethiopia, the Food, Medicine and Health Care Administration and Control Authority of Ethiopia (FMHACA [1]) is responsible for undertaking inspection and quality control of health and health-related products, premises, professionals and health delivery processes in an integrated manner. The FMHACA has regional branch offices to expand its function throughout the country. It also works collaboratively with the Ethiopian Revenues and Customs Authority [2] and other Government institutions to prevent export, import and marketing of unsafe food items and to prevent and control the use of narcotic drugs, including tobacco.

Ethiopia has a National Drug Policy [5] and a proclamation on food, medicine, health care administration and control. The new proclamation No. 661/2009 outlined requirements for registration and licensing food producers, imports and exports, food safety and quality, packaging and labelling, nutrition and food irradiation.

The FMHACA is engaged in developing specific guidelines on food and nutrition. As part of its role in inspection and quality control of food products, 39 food supplements and 489 tonnes of food and foodstuffs destined for export in 2010–2011 were assessed, registered and given registration certificates. However, despite the many efforts made by the FMHACA and its collaborative governmental organizations, there were several incidents where unsafe food items were sold in supermarkets and retail stores, with risks to the health of society.

Food contamination due to environmental pollution, such as soil contamination with pesticides, is also commonly observed in both rural and urban settings in Ethiopia. The severity of food contamination is demonstrated by outpatient visits from 1989 to 1990, which indicated that 9.4% of total outpatient visits were due to foodborne disease.[3] The current capacity of the FMHACA needs to be strengthened to ensure the quality and safety of locally produced, imported and exported food and nutritional items and to minimize food contamination due to environmental degradation. Community involvement in product regulation also plays a critical role in minimizing the risk that comes with product import and export.

Ethiopia remains in a precarious situation with regard to nutritional status, with malnutrition being the underlying cause of over half of child deaths. There is poor infant and young child feeding practice with regard to early initiation of breastfeeding, exclusive breastfeeding up to 6 months, and appropriate timing and practice of complementary feeding, and this contributes heavily to malnutrition. Vitamin A deficiency affects over 5 million children aged under 5 years of age, significantly contributing to impairment of vision and increased susceptibility, delayed recovery and increased mortality from infections.[4]

In addition, iodine deficiency disorders are causing physical and mental growth retardation. Only 4% of households used iodized salt in 2010–2011. In cognizance of the existing problems, the Federal Ministry of Health launched the National Nutrition Programme [5] during the Health Sector Development Programme III. This introduced several innovative approaches, including screening children aged 6–59 months and pregnant and lactating women for malnutrition. Vitamin A supplementation and deworming campaigns were also integrated into regular routine services. These strategies included:

- enhanced outreach strategies
- community health days using health extension workers
- strategies for community-based nutrition, iodization of salt and distribution of iron folates
- increased number of outpatient therapeutic programmes provided by health posts
- increased number of hospitals and health centres managing severely malnourished cases as inpatients.

These strategies helped to improve the nutritional status of mothers and children and increased deworming coverage. In 2010–2011, live births weighing <2500 g, moderate malnutrition in children aged under 3 years and severe

malnutrition in children aged under 3 years were 11 086, 350 017 and 52 970, respectively..

There is an increasing trend in vitamin A supplementation coverage, with first-dose coverage reaching 98% and second-dose coverage reaching 83% in 2009–2010.

The percentage of underweight children aged under 2 years in 238 community-based nutrition woredas has showed an overall downward trend over the past 3 years, reaching 16.5% in 2010–2011.

Deworming coverage reached 98% in 2008–2009.

With regard to addressing iodine deficiency disorders, a regulation was recently ratified prohibiting the import, storage, transport, distribution or sale of non-iodized salt for human consumption. Preparation is now underway for the full enforcement of this regulation by the FMHACA. Other efforts to address iodine-deficiency disorders include installation of salt iodization machines with a capacity of 30 tonnes per day, along with 10 smaller mobile iodization machines, in 2011. In addition, in 2010–2011, 750 000 boxes of 1000 iron folate tablets were distributed to pregnant and lactating women in all regions along with information, education and communication, and behavioural change materials.

The way forward

- Address knowledge gap in malnutrition through advocacy activities.
- Enhance motivation and a sense of programme ownership in salt producers and their associates.

References

[1] http://www.fmhaca.gov.et/

[2] http://www.erca.gov.et/

[3] Ethiopian demographic and health survey, 2005 (pdf 2.02Mb). Addis Ababa, Central Statistical Agency; Calverton MA, ORC Macro, 2006 (http://www.measuredhs.com/pubs/pdf/FR179/FR179[23June2011].pdf)

[4] Ethiopian demographic and health survey, 2011 (pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro, 2011 (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

Ethiopia:Analytical summary - Food safety and nutrition

In Ethiopia, the Food, Medicine and Health Care Administration and Control Authority of Ethiopia (FMHACA [1]) is responsible for undertaking inspection and quality control of health and health-related products, premises, professionals and health delivery processes in an integrated manner. The FMHACA has regional branch offices to expand its function throughout the country. It also works collaboratively with the Ethiopian Revenues and Customs Authority [2] and other Government institutions to prevent export, import and marketing of unsafe food items and to prevent and control the use of narcotic drugs, including tobacco.

Ethiopia has a National Drug Policy [5] and a proclamation on food, medicine, health care administration and control. The new proclamation No. 661/2009 outlined requirements for registration and licensing food producers, imports and exports, food safety and quality, packaging and labelling, nutrition and food irradiation.

The FMHACA is engaged in developing specific guidelines on food and nutrition. As part of its role in inspection and quality control of food products, 39 food supplements and 489 tonnes of food and foodstuffs destined for export in 2010–2011 were assessed, registered and given registration certificates. However, despite the many efforts made by the FMHACA and its collaborative governmental organizations, there were several incidents where unsafe food items were sold in supermarkets and retail stores, with risks to the health of society.

Food contamination due to environmental pollution, such as soil contamination with pesticides, is also commonly observed in both rural and urban settings in Ethiopia. The severity of food contamination is demonstrated by outpatient visits from 1989 to 1990, which indicated that 9.4% of total outpatient visits were due to foodborne disease.[1] The current capacity of the FMHACA needs to be strengthened to ensure the quality and safety of locally produced, imported and exported food and nutritional items and to minimize food contamination due to environmental degradation. Community involvement in product regulation also plays a critical role in minimizing the risk that comes with product import and export.

Ethiopia remains in a precarious situation with regard to nutritional status, with malnutrition being the underlying cause of over half of child deaths. There is poor infant and young child feeding practice with regard to early initiation of breastfeeding, exclusive breastfeeding up to 6 months, and appropriate timing and practice of complementary feeding, and this contributes heavily to malnutrition. Vitamin A deficiency affects over 5 million children aged under 5 years of age, significantly contributing to impairment of vision and increased susceptibility, delayed recovery and increased mortality from infections.[2]

In addition, iodine deficiency disorders are causing physical and mental growth retardation. Only 4% of households used iodized salt in 2010–2011. In cognizance of the existing problems, the Federal Ministry of Health launched the National Nutrition Programme [5] during the Health Sector Development Programme III. This introduced several innovative approaches, including screening children aged 6–59 months and pregnant and lactating women for malnutrition. Vitamin A supplementation and deworming campaigns were also integrated into regular routine services. These strategies included:

- enhanced outreach strategies
- community health days using health extension workers
- strategies for community-based nutrition, iodization of salt and distribution of iron folates
- increased number of outpatient therapeutic programmes provided by health posts
- increased number of hospitals and health centres managing severely malnourished cases as inpatients.

These strategies helped to improve the nutritional status of mothers and children and increased deworming coverage. In 2010–2011, live births weighing <2500 g, moderate malnutrition in children aged under 3 years and severe malnutrition in children aged under 3 years were 11 086, 350 017 and 52 970, respectively..

There is an increasing trend in vitamin A supplementation coverage, with first-dose coverage reaching 98% and second-dose coverage reaching 83% in 2009–2010.

The percentage of underweight children aged under 2 years in 238 community-based nutrition woredas has showed an overall downward trend over the past 3 years, reaching 16.5% in 2010–2011.

Deworming coverage reached 98% in 2008–2009.

With regard to addressing iodine deficiency disorders, a regulation was recently ratified prohibiting the import, storage, transport, distribution or sale of non-iodized salt for human consumption. Preparation is now underway for the full enforcement of this regulation by the FMHACA. Other efforts to address iodine-deficiency disorders include installation of salt iodization machines with a capacity of 30 tonnes per day, along with 10 smaller mobile iodization machines, in 2011. In addition, in 2010–2011, 750 000 boxes of 1000 iron folate tablets were distributed to pregnant and lactating women in all regions along with information, education and communication, and behavioural change materials.

The way forward

- Address knowledge gap in malnutrition through advocacy activities.
- Enhance motivation and a sense of programme ownership in salt producers and their associates.

References

[1] Ethiopian demographic and health survey, 2005 (pdf 2.02Mb). Addis Ababa, Central Statistical Agency; Calverton MA, ORC Macro, 2006 (http://www.measuredhs.com/pubs/pdf/FR179/FR179[23June2011].pdf)

[2] Ethiopian demographic and health survey, 2011 (pdf 683.08kb). Addis Ababa, Central Statistics Agency; Calverton Maryland, ICF Macro, 2011 (http://www.csa.gov.et/docs/EDHS 2011 Preliminary Report Sep 16 2011.pdf)

Ethiopia:Social determinants

This analytical profile on social determinants is structured as follows:

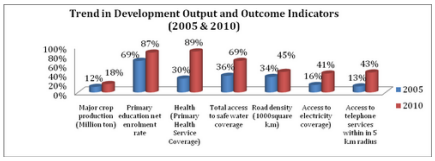
Analytical summary

Ethiopia is the second most populous country in Africa, with a population of 84 million and an annual growth rate of 2.6%.[1] The country is committed to open, transparent and democratic governance that respects the rights of all of its citizens, as enshrined in the constitution. The Ethiopian economy largely depends on its agricultural sector, which employs 83.6% of the labour force and is responsible for 42% of gross domestic product and 83.1% of exports.[2]

Exports of agricultural commodities are predominantly coffee and oil seed. The year 2010 marked the end of the Plan for Accelerated and Sustainable Development to End Poverty (PASDEP),[2] which gave attention to poverty-related health programme targets.

Ethiopia has achieved strong economic development in all sectors in the last 5 years of PASDEP (see figure). It registered an average annual gross domestic product growth of 11%, which is unparalleled by other countries of a similar level of development. The registered economic development was not only fast and sustainable but was also broad based and benefited all sectors of the community. This resulted in the percentage of the population below the poverty line significantly decreasing from 39% to 29.2% between 2005 and 2010 and improved records in various aspects of development outputs and outcomes (see figure).

Building on the success and lessons learnt from PASDEP, Ethiopia has recently developed a 5-year six-pillar Growth and Transformation Plan (2011–2015)[2] to meet the country's vision of realizing a participatory democratic system, institutionalizing good governance and ensuring social and economic justice for all, eradicating poverty and reaching middle-income status by 2025.



Trend in development output and outcome indicators, 2005 and 2010

The country follows an agricultural development-led industrialization strategy with the goal of bringing about transformation of its economy by emphasizing that growth in agriculture leads to growth in other sectors of the economy.

Despite major progress, Ethiopia has continued to experience emergencies and disasters. Drought has been the major impediment to the country's desired progress in development. The magnitude, frequency and effects of drought have increased since the mid-1970s. For instance, between 1990 and 2005, on average 6.3 million people required food assistance each year, amounting to over 654 000 tonnes annually.

In conclusion, with:

- an aggressive domestic resource mobilization strategy to finance the Growth and Transformation Plan
- good governance
- innovative strategies to address development bottlenecks
- the enhanced role of the private sector in the implementation of the Plan

Ethiopia has great potential to meet its Millennium Development Goals [15] by 2015 and become a middle-income country by 2025.

References

[1] Central Statistics Agency, 2011

[2] Government of Ethiopia, Ministry of Finance and Economic Development, 2008–2009

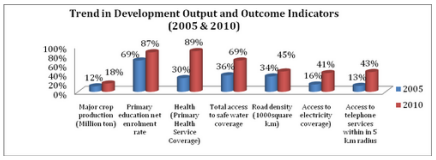
Ethiopia:Analytical summary - Social determinants

Ethiopia is the second most populous country in Africa, with a population of 84 million and an annual growth rate of 2.6%.[1] The country is committed to open, transparent and democratic governance that respects the rights of all of its citizens, as enshrined in the constitution. The Ethiopian economy largely depends on its agricultural sector, which employs 83.6% of the labour force and is responsible for 42% of gross domestic product and 83.1% of exports.[2]

Exports of agricultural commodities are predominantly coffee and oil seed. The year 2010 marked the end of the Plan for Accelerated and Sustainable Development to End Poverty (PASDEP),[2] which gave attention to poverty-related health programme targets.

Ethiopia has achieved strong economic development in all sectors in the last 5 years of PASDEP (see figure). It registered an average annual gross domestic product growth of 11%, which is unparalleled by other countries of a similar level of development. The registered economic development was not only fast and sustainable but was also broad based and benefited all sectors of the community. This resulted in the percentage of the population below the poverty line significantly decreasing from 39% to 29.2% between 2005 and 2010 and improved records in various aspects of development outputs and outcomes (see figure).

Building on the success and lessons learnt from PASDEP, Ethiopia has recently developed a 5-year six-pillar Growth and Transformation Plan (2011–2015)[2] to meet the country's vision of realizing a participatory democratic system, institutionalizing good governance and ensuring social and economic justice for all, eradicating poverty and reaching middle-income status by 2025.



Trend in development output and outcome indicators, 2005 and 2010

The country follows an agricultural development-led industrialization strategy with the goal of bringing about transformation of its economy by emphasizing that growth in agriculture leads to growth in other sectors of the economy.

Despite major progress, Ethiopia has continued to experience emergencies and disasters. Drought has been the major impediment to the country's desired progress in development. The magnitude, frequency and effects of drought have increased since the mid-1970s. For instance, between 1990 and 2005, on average 6.3 million people required food assistance each year, amounting to over 654 000 tonnes annually.

In conclusion, with:

- an aggressive domestic resource mobilization strategy to finance the Growth and Transformation Plan
- good governance
- innovative strategies to address development bottlenecks
- the enhanced role of the private sector in the implementation of the Plan

Ethiopia has great potential to meet its Millennium Development Goals [15] by 2015 and become a middle-income country by 2025.

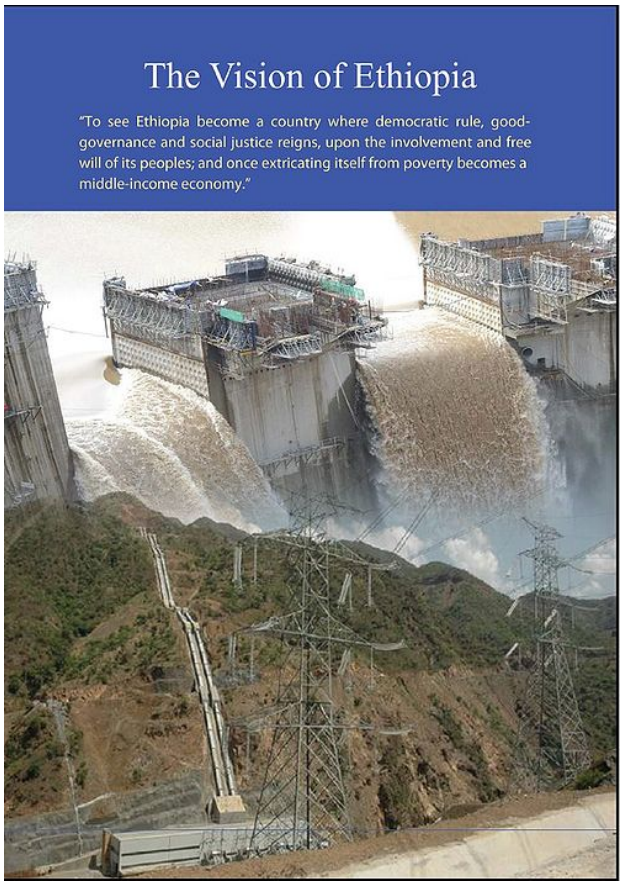
References

[1] Central Statistics Agency, 2011

[2] Government of Ethiopia, Ministry of Finance and Economic Development, 2008–2009

Progress on the Health-Related MDGs

Ethiopia:Progress on the Health-Related MDGs



This report is the result of extensive collaboration and consultation across the UN Country Teams, Development Assistance Groups and Civil Society Organizations. The Government of Ethiopia would like to acknowledge the technical and financial support of the United Nations Development Programme Ethiopia country office and the United Nations Country Team.

The Government of Ethiopia would like to specially thank UNDP for supporting and coordinating the preparation of the report from the very beginning, and facilitating the consultation and providing technical support across all stages. Particular thanks go to Girma Hailu, MDG Support Country Advisor, UNDP Ethiopia and Abdoulie Sireh-Jallow, Senior Economist, UNDP Ethiopia for their continued technical support, supervision and coordination.

This report has also benefited from the inputs of a number of people, and the Government of Ethiopia is also thankful to staff members of Development Planning and Research Directorate of the Ministry of Finance and Economic Development (MoFED); Yemesrach Assefa, National Economist, Fekadu Terefe, CSO/Gender/MDG Advisor, Selamawit Alebachew, Junior Economist, UNDP Ethiopia. Finally, the Government of Ethiopia would like to recognize the editorial assistance of Christopher John Ozga, UN Coordination Specialist, Mimi Sheriff, UNDP Intern; and Soria Sewasew, Admin Assistant, UNDP Ethiopia for administrative support and Genet Awlachew, Knowledge Management Associate, UNDP Ethiopia for graphic design assistance and follow up.

Ethiopia:Analytical summary - Progress on the Health-Related MDGs

Ethiopia has shown an extraordinary level of commitment to eradicate poverty and has gained significant development gains. The economic growth in the last decade and the progress towards the MDGs has been remarkable. The economy grew at an average growth rate of 11% which is well above the 7% growth rate estimate required to achieve the goal of poverty reduction by the year 2015. The government has also made an enormous progress in the provision of social services such as education, health and infrastructure by spending a large share of its budget in the pro-poor sector. This could be taken as the best practice from which other countries may learn. This effort has also resulted in the excellent stride made to meet the MDGs. Furthermore, with adequate support from the international community to address the challenges noted in this document, the country will be on a positive and promising track to meeting all the MDGs.

As seen above, prospects for achieving the MDGs are promising and it requires policy makers and development partners to combine efforts to address the potential challenges noted in various sections of the report. As evidences on the recent crisis have shown, poor global economic governance threat-ens progress towards the MDGs. And thus, the global economic governance needs to be strengthened to address and respond to the external shocks. As indicated in the coming Five Year Draft Growth and Transformation Plan (2010/11 – 2014/15), the Government of Ethiopia has shown its commitment to continue to implement an aggressive program to deepen and accelerate growth. This includes an emphasis on basic social services to create the required human capacity, expanding basic infrastructures for economic competitiveness, increasing productivity and promoting agricultural growth into more commercial activities, creating a more competitive industrial sector, building institutions for improved public service delivery; strengthening a federal system of government, ensuring democratic and human rights and building the basis for the devolution of power to regional states which is the foundation for participatory development and empowerment. These initiatives have been accompanied by a massive re-orientation of public spending to growth and pro-poor investments nationwide sector development programs to improve health services and expanding education and building the capacity of public institutions for improved public service delivery.

In conclusion, as mentioned, Ethiopia is well on track to meet all the MDGs. The government is confident that, with its firm commitment and continued community mobilization and private sector and international community participation, all of the goals will be achieved by 2015.

Table 11.1: MDGs and their Likely Coursev

MDG Goals	On Track*	Likely to be on Track**	Off Track***
Goal 1: Eradicate extreme poverty and hunger	YES		
Goal 2: Achieve universal primary education	YES		
Goal 3: Promote gender equality and empower women		YES	
Goal 4: Reduce child mortality	YES		
Goal 5: Improve maternal health		YES	
Goal 6: Combat HIV/AIDS, malaria and other diseases	YES		
Goal 7: Ensure environmental sustainability		YES	
Goal 8: Develop a global partnership for development	YES		

* *Likely to be achieved if the current effort continues in the coming five years*
** *Likely to be achieved only if additional challenges noted in the document are addressed.*
*** *Unlikely to be achieved in the coming five years, given the scale of current progress and envisaged challenges*

Ethiopia:Introduction and methods

During the last seven years, Ethiopia has made substantive economic progress. Since 2003/04 growth has been sustained, recording more than 11% average growth. This growth is complemented by a strong performance in the Agriculture, Industry (construction and manufacturing) and service sectors with an average growth rate of 10%, 10% and 13.2%, respectively. The construction sector has been stimulated by public sector investment in infrastructure. During this period, across the country, health service coverage and school enrollment at all levels improved remarkably as human capital development also received significant consideration from the government. With reference to infrastructural expansion, high quality asphalt roads and rural community roads have been constructed all over the country and access to potable water has improved. The hydroelectric power generation capacity of the country has increased the coverage to 41% in 2009/10 from 16% in 2004/05, telecommunication service coverage has reached 50% within a 5 km radius. The expansion of road network has increased the road density from 29km/1000 km2 in 2000/01 to 44.5km/1000km2 in 2009/10. The average time taken to reach all weather roads has also been reduced to 3.7 hours in 2009/10 from about 7 hours in early 2000. The population living below the poverty line has declined to 29% as of 2009/10.

By spending more than 60 percent of its total expenditure on poverty oriented sectors, such as agriculture, education, health, water and road development during the last seven years, the government has maximized its efforts and shown the highest level of dedication to bring about pro-poor economic growth.

Despite the impressive growth record in recent years, low levels of income and savings and productivity in the agricultural sector, limited implementation capacity, unemployment and a narrow modern industrial sector base are the major challenges faced during this period. Besides the aforementioned challenges, the growth efforts have also been threatened by the twin challenges of inflation and the pressure on the balance of payments (BOP). Development finance had also been a critical constraint on the implementation of programs articulated in the country's development plan. As the result of monitoring and physical policies and administrative measures, the macroeconomic situation has been stabilizing. However, sustaining the macroeconomic stability requires close monitoring and prudent management.

Ethiopia has also been exposed to weather induced challenges. Climate change is a key emerging factor with adverse effects on the ecological, social and economic fabric of society. Therefore, addressing climate change has important, poverty reduction, equality and human rights dimensions. The various impacts of climate change will have a

dampening effect on Ethiopia's economic growth rates and adversely affect the prospects for achieving the national development plan and MDG targets.

The global financial and economic slowdown and climate change are seen as threats that may hinder progress and reverse the development gains registered. The current status of the MDGs and their prospect until the year 2015, discussed at length in this document, need therefore to be understood in this broader context. The rest of the document will examine the trends in the last decade and their likely trajectory until 2015 based on research and information conducted by the government, developmental institutions and academia.

Since the 1990s, reducing pervasive poverty and ensuring human development in Ethiopia have been the objectives of the Ethiopian government. This vision is explicitly incorporated in various government development policy documents. It is easy to see the central role of MDGs in informing such government policy documents, and several national and sectoral policy documents are very much aligned with the MDGs.

The country's medium term development plans such as the Plan for Accelerated and Sustained Development to End Poverty (PASDEP - 2005/06-2009/10) and its successor Growth and Transformation Plan (2010/11-2014/15) are MDG based development plans that were conceived to be implemented in the medium term. The integration of the MDGs in the national development policy context reached its height following the 'MDGs Needs Assessment' exercise conducted by the government, UNCT and other development partners in 2005. This allowed the explicit incorporation of the MDGs and their explicit cost in important policy documents for the country.

MDGs are therefore well placed in the national development context of the country. In line with the objective of poverty eradication and bringing about social development, the Government of Ethiopia has invested in both physical and human capital formation which could be considered as best practice to address the challenges of achieving the MDGs.

Ethiopia:MDG Goal 2: Achieve universal primary education

4.1 Trends and Prospects of Goal 2

Ethiopia is well on track to achieve universal primary education, given the trend from the 1990s and the recent excellent performances as seen below in Figure 2. The achievements of the Government of Ethiopia in terms of higher gross enrolment ratios, as well as increases in the total number of primary and secondary schools in the country are noted by both the PASDEP progress report and UNESCO's Education for All Global Monitoring Report (2009). These impressive results have been achieved` through a massive nationwide effort of providing education. The Government of Ethiopia has made achieving universal primary education a central aspect of public policy and public spending on education has increased over the decades. Successive five year nationwide Education sector Development Programs (ESDP I, ESDP II and ESDP III) have already been implemented. Ethiopia realizes that increasing the coverage of education is only part of the battle and the push to increase coverage has been accompanied, in recent years, by a national program to improve the quality of education delivered, to keep children in school and reduce drop out rates.

During 2009/10 the Gross Enrolment Rate (GER) for primary school (grades 1-8) reached 95.9 per cent (93.per cent for female and 98.7 per cent for male). During the same year (2009/10) the Net Enrolment Rate (NER) stood at 89.3 per cent (87.9 for male and 86.5 percent for female).

Progress on the Ouagadougou and Algiers Declarations

Ethiopia:Progress on the Ouagadougou and Algiers Declarations

The Ouagadougou Declaration on Primary Health Care and Health Systems in Africa: Achieving Better Health for Africa in the New Millennium was adopted during the International Conference on Primary Health Care and Health Systems in Africa, held in Ouagadougou, Burkina Faso, from 28 to 30 April 2008. The objective of the Conference was to review past experiences on Primary Health Care (PHC) and redefine strategic directions for scaling up essential health interventions to achieve health-related MDGs using the PHC approach for strengthening health systems through renewed commitment of all countries in the African Region.

The conference adopted the "Ouagadougou Declaration [1] on Primary Health Care and Health Systems in Africa: Achieving Better Health for Africa in the New Millennium," which has been signed by all the African Region Member States. During its fifty-eighth session, held in Yaounde, Cameroon in September 2008, the Regional Committee endorsed the Ouagadougou Declaration through its Resolution AFR/RC58/R3.

The Algiers Declaration [2] to Strengthen Research for Health was also adopted during the Ministerial Conference on Research for Health in the African Region, held in Algiers, Algeria from 23 to 26 June 2008. The Conference, which brought together Ministers from the African Region together with researchers, nongovernmental organizations, donors, and the private sector renewed commitments to narrow the knowledge gap in order to improve health development and health equity in the Region.

Assessment of progress on the 2008 Ouagadougou and 2008 Algiers Declarations will be conducted at the end of 2013 – five years after they came into effect. Please visit this page then for the results of the assessment.

Since the Alma-Ata Conference on Primary Health Care, progress has been made by countries in the African Region with regard to the eradication of smallpox, control of measles, eradication of poliomyelitis and guineaworm disease, and elimination of leprosy and river blindness. However, accelerated progress in strengthening health systems using the PHC approach is needed in a number of countries in the African Region in order to achieve nationally and internationally agreed health goals, including the MDGs. In this context, countries are encouraged to focus on the following priority areas, as outlined in the Ouagadougou Declaration:

7.1 Leadership and governance

7.2 Community ownership and participation

7.3 Partnerships for health development

7.4 Health financing

7.5 Health workforce

7.6 Medical products, equipment and infrastructure

7.7 Service delivery

7.8 Health information, evidence, and knowledge

7.9 Research

References

[1] http://www.afro.who.int/en/downloads/doc_download/601-ouagadougou-declaration.html

[2] http://www.afro.who.int/en/downloads/doc_download/546-algiers-declaration.html

Progress on the Libreville Declaration

Ethiopia:Progress on the Libreville Declaration

The environment is one of the primary determinants of individual and community health, and exposure to physical, chemical and biological risk factors in the environment can harm human health in various ways. Africa continues to face the "traditional" challenges of poor access to safe drinking water, hygiene and sanitation; absent or poorly designed irrigation and water management systems; and inadequate and poorly constructed road infrastructure, housing and waste management systems. Yet the continent must now also deal with new and emerging challenges, including the effects on health of climate change, accelerated urbanization and indoor and outdoor air pollution.

Increasingly, African governments are becoming motivated to improve environmental conditions in order to protect the health and well-being of their populations. However, in order to tackle the interlinked health and environmental challenges, there was a need for creation of an enhanced awareness among ministries of health and environment of the mutual relevance and benefits of each others' policies, strategies and programmes.

In an effort to catalyse these linkages, the World Health Organization (WHO) and the United Nations Environment Programme (UNEP) in partnership with the Government of Gabon, organized the first-ever Interministerial Conference for Health and Environment in Africa in Libreville, Gabon, from 26–29 August 2008.

The general objective of the conference was to secure political commitment for catalysing the policy, institutional and investment changes required to reduce environmental threats to health, in support of sustainable development. The specific objectives of the conference were:

a). To demonstrate the importance of recognizing the interlinkages between the environment and health to achieving sustainable development;

b). To promote an integrated approach to policy-making in the health and environment sectors that values the services that ecosystems provide to human health;

c). To agree on specific actions required to leverage the needed changes in institutional arrangements and investment frameworks for mitigating environmental threats to human health.

A two-and-a-half-day scientific and technical meeting took place at la Cité de la Démocratie from 26 to 28 August 2008 to discuss the scientific evidence and programmatic issues. This meeting was followed by the one-and-a-half-day ministerial summit.

The ministers of health and ministers and environment of 52 African countries adopted the Libreville Declaration on Health and Environment in Africa. They declared the following: "We African countries commit ourselves to: 1. Establishing a health and environment strategic alliance, as the basis for plans of joint action;

2. Developing or updating our national, subregional and regional frameworks in order to address more effectively the issue of environmental impacts on health, through integration of these links in policies, strategies, regulations and national development plans;

3. Ensuring integration of agreed objectives in the areas of health and environment in national poverty-reduction strategies by implementing priority intersectoral programmes at all levels, aimed at accelerating achievement of the Millennium Development Goals;

4. Building national, subregional and regional capacities to better prevent environment-related health problems, through the establishment or strengthening of health and environment institutions;

5. Supporting knowledge acquisition and management on health and environment, particularly through applied research at local, subregional and regional levels, while ensuring coordination of scientific and technical publications

so as to identify knowledge gaps and research priorities and to support education and training at all levels;

6. Establishing or strengthening systems for health and environment surveillance to allow measurement of interlinked health and environment impacts and to identify emerging risks, in order to manage them better;

7. Implementing effectively national, subregional and regional mechanisms for enforcing compliance with international conventions and national regulations to protect populations from health threats related to the environment, including accession to and implementation of the Bamako Convention by those countries that have not done so;

8. Setting up national monitoring and evaluation mechanisms to assess performance in implementing priority programmes and peer review mechanisms to learn from each other's experience;

9. Instituting the practice of systematic assessment of health and environment risks, in particular through the development of procedures to assess impacts on health, and to produce national environment outlook reports;

10. Developing partnerships for targeted and specific advocacy on health and environment issues towards institutions and communities including the youth, parliamentarians, local government, education ministries, civil society and the private sector;

11. Achieving a balance in the allocation of national budgetary resources for intersectoral health and environment programmes."

They called upon WHO and UNEP to:

- support, along with other partners and donors, including the African development banks and African subregional economic communities, the implementation of this Declaration, and to increase their efforts in advocacy, in resource mobilization and in obtaining new and additional investments in order to strengthen the strategic alliance between health and environment;
- help African countries in sharing experiences, developing capacity and establishing a mechanism to monitor progress towards the fulfillment of the commitments made at this conference, through peer review, and to organize a second Interministerial Conference on Health and Environment in Africa before the end of 2010, and;
- support the implementation of health and environment conventions and agreements and the establishment of an African network for surveillance of communicable and noncommunicable diseases, in particular those with environment determinants.

Assessment of progress on the 2008 Libreville Declaration will be conducted in 2013 – five years after it came into effect. Please visit this page then for the result of the assessment.

For your information, the full text of the frameworks for the implementation of the Declaration is reproduced in this section.

This section of the profile on the progress on the Libreville Declaration is structured as follows:

Article Sources and Contributors

Ethiopia:Foreword *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=107971 *Contributors*: Saboug

Ethiopia:Introduction to Country Context *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=85441 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Health Status and Trends *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=115661 *Contributors*: Dunbara, Mandimbaj, Saboug

Ethiopia:Analytical summary - Health Status and Trends *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=87286 *Contributors*: Beveridgem, Dunbara, Lopest

Ethiopia:Life expectancy *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=156371 *Contributors*: Saboug

Ethiopia:Mortality *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=156556 *Contributors*: Saboug

Ethiopia:Burden of disease *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=156741 *Contributors*: Saboug

Ethiopia:The Health System *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=118326 *Contributors*: Beveridgem, Dunbara, Mandimbaj, Saboug

Ethiopia:Health system outcomes *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=183896 *Contributors*: Saboug

Ethiopia:Analytical summary - Health system outcomes *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92306 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Leadership and governance - The Health System *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=183911 *Contributors*: Saboug

Ethiopia:Analytical summary - Leadership and governance *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=87561 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Community ownership and participation - The Health System *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=183936 *Contributors*: Saboug

Ethiopia:Analytical summary - Community ownership and participation *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=85501 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Partnerships for health development - The Health System *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=183941 *Contributors*: Saboug

Ethiopia:Analytical summary - Partnerships for health development *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=87626 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Health information, research, evidence and knowledge *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184216 *Contributors*: Beveridgem, Dunbara, Mandimbaj, Saboug

Ethiopia:Analytical summary - Health information, research, evidence and knowledge *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=91226 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Context *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92881 *Contributors*: Beveridgem, Dunbara

Ethiopia:Structural organization of health information *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92891 *Contributors*: Beveridgem, Dunbara

Ethiopia:Data sources and generation *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92901 *Contributors*: Beveridgem, Dunbara

Ethiopia:Data management *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92906 *Contributors*: Beveridgem, Dunbara

Ethiopia:Access to existing global health information, evidence and knowledge *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92911 *Contributors*: Beveridgem, Dunbara

Ethiopia:Storage and diffusion of information, evidence and knowledge *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92916 *Contributors*: Beveridgem, Dunbara

Ethiopia:Research - Health information, research, evidence and knowledge *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92921 *Contributors*: Beveridgem, Dunbara

Ethiopia:Stewardship *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92931 *Contributors*: Beveridgem, Dunbara

Ethiopia:Financing *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92936 *Contributors*: Beveridgem, Dunbara

Ethiopia:Creating and sustaining resources *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92941 *Contributors*: Beveridgem, Dunbara

Ethiopia:Research output *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92946 *Contributors*: Beveridgem, Dunbara

Ethiopia:Use of information, evidence and knowledge *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92951 *Contributors*: Beveridgem, Dunbara

Ethiopia:Leverage information and communication technologies *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92956 *Contributors*: Beveridgem, Dunbara

Ethiopia:Availability of IT solutions *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=94251 *Contributors*: Beveridgem, Byanyimar, Mandimbaj

Ethiopia:Health financing system *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184321 *Contributors*: Saboug

Ethiopia:Analytical summary - Health financing system *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88356 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Service delivery - The Health System *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184341 *Contributors*: Saboug

Ethiopia:Analytical summary - Service delivery *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88366 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Health workforce - The Health System *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184371 *Contributors*: Saboug

Ethiopia:Analytical summary - Health workforce *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88371 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Medical products, vaccines, infrastructures and equipment *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184376 *Contributors*: Saboug

Ethiopia:Analytical summary - Medical products, vaccines, infrastructures and equipment *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88376 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:General country health policies *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184421 *Contributors*: Saboug

Ethiopia:Analytical summary - General country health policies *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88381 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Universal coverage *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184426 *Contributors*: Saboug

Ethiopia:Analytical summary - Universal coverage *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88386 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Specific Programmes and Services *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=122526 *Contributors*: Saboug

Ethiopia:HIV/AIDS *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184441 *Contributors*: Saboug

Ethiopia:Analytical summary - HIV/AIDS *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92786 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Tuberculosis *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184456 *Contributors*: Saboug

Ethiopia:Analytical summary - Tuberculosis *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88396 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Malaria *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184471 *Contributors*: Saboug

Ethiopia:Analytical summary - Malaria *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=94256 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Immunization and vaccines development *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184486 *Contributors*: Saboug

Ethiopia:Analytical summary - Immunization and vaccines development *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88406 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Child and adolescent health *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184506 *Contributors*: Saboug

Ethiopia:Analytical summary - Child and adolescent health *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88416 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Maternal and newborn health *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184521 *Contributors*: Saboug

Ethiopia:Analytical summary - Maternal and newborn health *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88421 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Gender and women's health *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184536 *Contributors*: Saboug

Ethiopia:Analytical summary - Gender and women's health *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88426 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Epidemic and pandemic-prone diseases *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184561 *Contributors*: Saboug

Ethiopia:Analytical summary - Epidemic and pandemic-prone diseases *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88431 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Neglected tropical diseases *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184566 *Contributors*: Saboug

Ethiopia:Analytical summary - Neglected tropical diseases *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=92311 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Non-communicable diseases and conditions *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184581 *Contributors*: Saboug

Ethiopia:Analytical summary - Non-communicable diseases and conditions *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88441 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Key Determinants *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=126886 *Contributors*: Saboug

Ethiopia:Risk factors for health *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184596 *Contributors*: Saboug

Ethiopia:Analytical summary - Risk factors for health *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88446 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:The physical environment *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184611 *Contributors*: Saboug

Ethiopia:Analytical summary - The physical environment *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=88451 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Food safety and nutrition *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184626 *Contributors*: Saboug

Ethiopia:Analytical summary - Food safety and nutrition *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=85781 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Social determinants *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=184646 *Contributors*: Saboug

Ethiopia:Analytical summary - Social determinants *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=91076 *Contributors*: Beveridgem, Dunbara, Lopest, Mandimbaj

Ethiopia:Progress on the Health-Related MDGs *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=189036 *Contributors*: Ouayab, Saboug

Ethiopia:Analytical summary - Progress on the Health-Related MDGs *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=200056 *Contributors*: Mandimbaj, Ouayab, Saboug

Ethiopia:Introduction and methods *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=189056 *Contributors*: Ouayab

Ethiopia:MDG Goal 2: Achieve universal primary education *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=207586 *Contributors*: Mambimongom

Ethiopia:Progress on the Ouagadougou and Algiers Declarations *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=115496 *Contributors*: Saboug

Ethiopia:Progress on the Libreville Declaration *Source*: http://www.aho.afro.who.int/profiles_information/index.php?oldid=115146 *Contributors*: Saboug

Image Sources, Licenses and Contributors

File: Mapa.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Mapa.jpg *License*: unknown *Contributors*: Mandimbaj

File: Hararladyred.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Hararladyred.jpg *License*: unknown *Contributors*: Mandimbaj

File:Life expectancy at birth in years, in Ethiopia and neighboring countries, 2008 and 1990.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Life_expectancy_at_birth_in_years,_in_Ethiopia_and_neighboring_countries,_2008_and_1990.JPG *License*: unknown *Contributors*: Saboug

File:Life expectancy at birth in years, in Ethiopia and neighboring countries, by sex, 2008.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Life_expectancy_at_birth_in_years,_in_Ethiopia_and_neighboring_countries,_by_sex,_2008.JPG *License*: unknown *Contributors*: Saboug

File:Healthy life expectancy at birth in years, in Ethiopia and neighboring countries, by sex, 2007.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Healthy_life_expectancy_at_birth_in_years,_in_Ethiopia_and_neighboring_countries,_by_sex,_2007.JPG *License*: unknown *Contributors*: Saboug

File:Adult mortality rate per 1,000 population in Ethiopia and neighboring countries, 2008 and 1990.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Adult_mortality_rate_per_1,000_population_in_Ethiopia_and_neighboring_countries,_2008_and_1990.JPG *License*: unknown *Contributors*: Saboug

File:Adult mortality rate per 1,000 population in Ethiopia and neighboring countries, by sex, 2008.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Adult_mortality_rate_per_1,000_population_in_Ethiopia_and_neighboring_countries,_by_sex,_2008.JPG *License*: unknown *Contributors*: Saboug

File:Under-five mortality rate per 1,000 live births in Ethiopia and neighboring countries, both sexes, 2009 and 1990.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Under-five_mortality_rate_per_1,000_live_births_in_Ethiopia_and_neighboring_countries,_both_sexes,_2009_and_1990.JPG *License*: unknown *Contributors*: Saboug

File:Infant mortality rate per 1,000 lives births in Ethiopia and neighboring countries, 2009 and 1990.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Infant_mortality_rate_per_1,000_lives_births_in_Ethiopia_and_neighboring_countries,_2009_and_1990.JPG *License*: unknown *Contributors*: Saboug

File:Distribution of causes of death among children aged under 5 years percent in Ethiopia.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Distribution_of_causes_of_death_among_children_aged_under_5_years_percent_in_Ethiopia.JPG *License*: unknown *Contributors*: Saboug

File:Maternal mortality ratio per 100,000 live births in Ethiopia and neighboring countries, 2008 and 1990.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Maternal_mortality_ratio_per_100,000_live_births_in_Ethiopia_and_neighboring_countries,_2008_and_1990.JPG *License*: unknown *Contributors*: Saboug

File:Distribution burden of diseases as percent of total DALYs by broader causes in Ethiopia and neighboring countries, by country, 2004.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Distribution_burden_of_diseases_as_percent_of_total_DALYs_by_broader_causes_in_Ethiopia_and_neighboring_countries,_by_country,_2004.JPG *License*: unknown *Contributors*: Saboug

File:Distribution of years of life lost by broader causes in Ethiopia and neighboring countries, 2004.JPG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Distribution_of_years_of_life_lost_by_broader_causes_in_Ethiopia_and_neighboring_countries,_2004.JPG *License*: unknown *Contributors*: Saboug

File:The health systems access framework.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:The_health_systems_access_framework.jpg *License*: unknown *Contributors*: Mandimbaj

File: Omoyouthbowl.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Omoyouthbowl.jpg *License*: unknown *Contributors*: Mandimbaj

File:Leadership and governance.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Leadership_and_governance.jpg *License*: unknown *Contributors*: Mandimbaj

File: FMoH2.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:FMoH2.png *License*: unknown *Contributors*: Dunbara

File:Community ownership and participation.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Community_ownership_and_participation.jpg *License*: unknown *Contributors*: Mandimbaj

File:Five mutually reinforcing principles of the Paris Declaration on AIDS Effectiveness 2005.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Five_mutually_reinforcing_principles_of_the_Paris_Declaration_on_AIDS_Effectiveness_2005.jpg *License*: unknown *Contributors*: Mandimbaj

File:The health information system.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:The_health_information_system.jpg *License*: unknown *Contributors*: Mandimbaj

File: HIS_table.PNG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:HIS_table.PNG *License*: unknown *Contributors*: Beveridgem

File: Capture_Section_3.5.PNG *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Capture_Section_3.5.PNG *License*: unknown *Contributors*: Beveridgem

File:Category.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Category.jpg *License*: unknown *Contributors*: Dunbara

File:Level.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Level.jpg *License*: unknown *Contributors*: Dunbara

File:Availability.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Availability.jpg *License*: unknown *Contributors*: Dunbara

File:Health system inputs-from financial resources to health interventions.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Health_system_inputs-from_financial_resources_to_health_interventions.jpg *License*: unknown *Contributors*: Mandimbaj

File: Financing_sources_of_General_Heal_Care.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Financing_sources_of_General_Heal_Care.png *License*: unknown *Contributors*: Dunbara

File: Percentage_change_in_General_Health_Expenditure.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Percentage_change_in_General_Health_Expenditure.png *License*: unknown *Contributors*: Dunbara

File: Financing_Agents.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Financing_Agents.png *License*: unknown *Contributors*: Dunbara

File: Spending_on_Functions_of_General_Health_care.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Spending_on_Functions_of_General_Health_care.png *License*: unknown *Contributors*: Dunbara

File:Primary care as a hub of coordination-networking within the community served and with outside partners.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Primary_care_as_a_hub_of_coordination-networking_within_the_community_served_and_with_outside_partners.jpg *License*: unknown *Contributors*: Mandimbaj

File: EthiopiaHealthTireSystem.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:EthiopiaHealthTireSystem.png *License*: unknown *Contributors*: Dunbara

File:Forces driving the workforce.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Forces_driving_the_workforce.jpg *License*: unknown *Contributors*: Mandimbaj

File:Major components of the medicines market.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Major_components_of_the_medicines_market.jpg *License*: unknown *Contributors*: Mandimbaj

File:The PHC reforms necessary to refocus health systems towards health for all.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:The_PHC_reforms_necessary_to_refocus_health_systems_towards_health_for_all.jpg *License*: unknown *Contributors*: Mandimbaj

File:Three ways of moving towards universal coverage.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Three_ways_of_moving_towards_universal_coverage.jpg *License*: unknown *Contributors*: Mandimbaj

File:ART_HCT_and_PMTCT_services.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:ART_HCT_and_PMTCT_services.png *License*: unknown *Contributors*: Dunbara

File:TB_case_detection_TB_Treatment_Success_and_TB_cure_rates.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:TB_case_detection_TB_Treatment_Success_and_TB_cure_rates.png *License*: unknown *Contributors*: Dunbara

File: Trend_in_the_Cumulative_number_of_Insctiside_Treated_Nets.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Trend_in_the_Cumulative_number_of_Insctiside_Treated_Nets.png *License*: unknown *Contributors*: Dunbara

FIle: DPTPentavalent.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:DPTPentavalent.png *License*: unknown *Contributors*: Dunbara

File: Trend_in_Development_Output_2005_2010.png *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Trend_in_Development_Output_2005_2010.png *License*: unknown *Contributors*: Dunbara

File:Progress0Et.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Progress0Et.jpg *License*: unknown *Contributors*: Ouayab

File:Progress1Et.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Progress1Et.jpg *License*: unknown *Contributors*: Ouayab

File:Progress2Et.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Progress2Et.jpg *License*: unknown *Contributors*: Ouayab

File:Ouagadougou and algier declarations.jpg *Source*: http://www.aho.afro.who.int/profiles_information/index.php?title=File:Ouagadougou_and_algier_declarations.jpg *License*: unknown *Contributors*: Mandimbaj