



Countdown to 2030
Women's, Children's & Adolescent's Health



ETHIOPIA

**HEALTH SECTOR
TRANSFORMATION PLAN-I
(HSTP-I): 2015/16-2019/20**

ENDLINE REVIEW STUDY
DECEMBER 2022



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MINISTRY OF HEALTH-ETHIOPIA



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This report presents findings of the Health Sector Transformation Plan-I (HSTP-I): Endline Review which was implemented by the Ethiopian Public Health Institute in collaboration with the Ethiopian Ministry of Health and Countdown to 2030 maternal, new-born and child survival.

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Executive Summary

- » Stretching the target is not enough: More targeted efforts are needed to reduce maternal and childhood mortality, with special emphasis on neonatal mortality.

There has been a remarkable reduction of maternal and childhood mortality in Ethiopia during 2016-2019/20. Maternal, under-five, infant and childhood mortality reduced during the Health Sector Transformation Plan-I (HSTP-I) period by 2.7%, 12.0%, 2.0%, and 35.0%, respectively. However, neonatal mortality increased by 14.0%. Most of the childhood mortality reduction is driven by the reduction of mortality in rural areas although neonatal mortality increased in rural areas. Childhood mortality reduced in most regions during the HSTP-I period, but neonatal mortality increased in Somali, Oromia, Benishangul-Gumuz, and Harari regions. Infant mortality also increased in Somali, Oromia, and Benishangul-Gumuz. The childhood mortality reductions did not differ between non-pastoralist and pastoralist regions and between urban and rural areas. If Ethiopia is to meet the Sustainable Development Goal (SDG) targets of reducing maternal mortality ratio (MMR) to 70 or less deaths per 100,000 live births, having 100% of deliveries attended to by skilled health personnel, under-five mortality rates of 25 deaths per 1,000 live births and a neonatal mortality rate (NMR) of 11 deaths per 1,000 live births, then progress in the next 10 years has to be much more rapid than it has been during the HSTP-I period. More specifically, unless substantial and radical actions are taken, Ethiopia may not achieve the SDG targets for NMR and MMR. With accelerated efforts, the SDG target of reducing under-five mortality to below 25 deaths per 1,000 live births could be achieved at the national level in Ethiopia by 2030.

- » Coverage of reproductive, maternal, newborn and child health and nutrition (RMNCH-N) interventions improved during the HSTP-I period. This progress needs to be accelerated if HSTP-II targets are to be attained by 2025.

There has been a notable improvement in the national and sub-national RMNCH coverage for these indicators: four or more antenatal care visits (ANC4+); skilled birth attendance (SBA); caesarean section (CS) deliveries; contraceptive prevalence rates (CPR); immunization rates; and postnatal care (PNC) coverage during the HSTP-I period. The drivers of this progress were from the increased coverage among difficult-to-reach populations (such as people in rural areas, uneducated mothers, the poorest segments of the population, and pastoralist communities) which contributed to reductions in maternal and childhood mortality.

In terms of maternal health, the ANC4+ coverage at national level was 43.0% while skilled birth attendance regardless of the provider was 50.0%. Newborn postnatal checkups were recorded at 34.5% and early initiation of breast-feeding rose to 72.0%. The percentage of women who delivered in a health facility also increased from 5.0% to 47.5% between 2000 and 2019. Notably, the percentage of women who gave birth in a health facility was significantly higher in urban areas (70.4%) than rural areas (40.0%). Between 2000 and 2019, the greatest progress in health facility deliveries was observed in the Tigray region (rising from 3.7% to 72.4%) while the least progress was seen in the Somali region (rising from 5.6% to 23.3%).

Coverage of all eight basic vaccinations among children aged 12-23 months was 44.1% while Bacille Calmette-Guerin (BCG) coverage was recorded at 73.0%. Penta-3 vaccine coverage was 61.1%, and measles vaccine coverage was 58.5% in 2019. Vaccine coverage increased more rapidly in rural areas (for example, all eight basic vaccinations increased from 11.0% in 2000 to 36.1% in 2019) compared to urban areas (from 42.0% in 2000 to 62.2% in 2019). Vaccine coverage also increased as the mother's level of education rose.

The sub-national analysis showed that there has been impressive progress in the coverage of RMNCH services. However, coverage of ANC4+ and immunization services such as BCG, DPT-3 and all eight basic vaccinations coverage declined in Somali, the Southern Nations, Nationalities and People's Region (SNNPR), Dire Dawa and Addis Ababa regions. Gambela and Afar regions also saw declining vaccination coverage for measles during the HSTP-I period.

» Health facility readiness and the availability of services has been improved. However, greater focus is needed on providing lifesaving services within the health facilities.

Ethiopia has made significant progress in the expansion of basic emergency and essential obstetric and neonatal care (BEm/EONC) services throughout the country's health facilities. The Service Availability and Readiness Assessment (SARA) report showed that BEm/EONC service availability declined from 55.0% in 2016 to 53.0% in 2018. However, parenteral administration of antibiotics, anticonvulsants, and assisted vaginal delivery increased to 49.0%, 36.0%, and 52.0%, respectively. The BEm/EONC service levels were low in health facilities in the Gambela, Harari and Dire Dawa regions as well as in Addis Ababa where the service level was below the national level.

The availability of tracer items for antenatal care (ANC) visits increased from 41.0% in 2016 to 32.0% in 2018, but it remained below the national level in Oromia, Somali, Benishangul-Gumuz, SNNPR, and Gambela regions. In 2018, family planning services were available in 95.0% of health facilities, however the mean availability of tracer items for family planning was 63.0% in the same period. In Somali, Afar, Gambela and Benishangul-Gumuz, mean availability was below the national level. The availability of curative and preventive care services declined from 91.0% in 2016 to 79.0% in 2018, while the mean availability of tracer items for child health curative and preventive care services was only 49.0%. Service availability for adolescents declined from 60.0% in 2016 to 51.0% in 2018.

» The reduction of childhood malnutrition showed progress, however, further efforts are required to free children from nutrition challenges.

Levels of stunting and wasting declined in the HSTP-I period with an average annual rate of reduction (AARR) of 1.0% and 12.0%, respectively. In 2019, 36.8% of children nationally were stunted with the prevalence of stunting varying substantially by place of residence (rural or urban), region, wealth quintile, and mother's educational level. However, stunting increased in the Tigray, Afar, Somali and Harari regions while wasting increased in SNNPR and underweight levels increased in Tigray and Somali regions. The targets for stunting and wasting at the end of HSTP-II period are 25.0% and 5.0%, respectively. Achieving these targets would require an AARR of 10% and 7%, respectively, which calls for greater efforts than that seen in the previous HSTP-I period.

» There is fair progress in the coverage of improved water supply, improved sanitation and reduction of open defecation.

The coverage of improved water was 68.7% in 2019. Rural areas drove this increase even as coverage declined in regions such as Gambela, Afar, Dire Dawa and Addis Ababa, as well as within other urban areas.

Coverage of improved sanitation rose from 14.8% in 2016 to 19.5% in 2019, but it decreased in urban areas and pastoralist regions such as Afar, Somali, and Gambela.

Open defecation rates decreased from 32.3% in 2016 to 27.1% in 2019, however open defecation increased in urban areas and in the regions of Afar, Somali, Benishangul-Gumuz, and Addis Ababa city.

» Impressive progress has been made in the reduction of HIV infections and incidence of Tuberculosis and Malaria. This level of effort needs to be maintained into the future to achieve the HSTP-II targets.

The average annual rate of reduction in HIV incidence was 8.0% while mortality due to HIV was also recorded at 8.0%. Higher average annual rates of reduction in HIV incidence were seen in Amhara (9.7%), Benishangul-Gumuz (9.7%) and Somali (9.2%) regions while the lowest AARR in HIV incidence was recorded in Harari (4.9%). All regions experienced a drop in HIV mortality.

Mortality due to malaria declined in all regions except Amhara and Oromia which experienced increased mortality levels. The highest reductions in mortality levels were recorded in Afar (70.0%), Somali (62.0%), and SNNPR (43.0%). The tuberculosis detection rate and treatment success rate were 16.0% and 3.2%, respectively, while the rate of those cured dropped by 1.2%. The percentage of tuberculosis cases detected increased in all regions except in Afar, where it decreased by 12.0%, while no change was recorded in Benishangul-Gumuz, Addis Ababa, and Dire Dawa.

» Resource mobilization and allocation is critical for improved functioning of the health system.

The Ethiopian health sector is characterized by high external health funding per capita within total health expenditures and faces challenges in terms of raising sufficient funds internally. The main sources of healthcare expenditure were the government, private sector, external partners and out-of-pocket payments. In 2019/20, the government's contribution to healthcare expenditure was 32.0%, donors and external sources contributed 34.0% and out-of-pocket expenditure was 30.6%. The 2019 Ethiopian mini demographic and health surveyEMDHS results show that 28% of households are enrolled in the community-based health insurance (CBHI) scheme and more than 800 woredas (districts) had implemented CBHI as of 2020. Ethiopia needs to mobilize adequate resources for the health system in line with the healthcare needs of the population and international agreements to raise sufficient funds to provide healthcare services.

» The issue of equity remains a major challenge if the health sector is to achieve the HSTP-II targets and the Sustainable Development Goals (SDGs) by 2030.

Analysis of disparities in coverage of interventions and mortality levels across various dimensions (i.e., region, wealth quintiles, education level and residence) confirmed that inequities continue to persist in almost all the major lifesaving health interventions. The results for measures of equity during the HSTP-I period indicate that inequality in coverage of key RMNCH services is more pronounced across wealth quintiles, the urban-rural divide, education levels and among administrative regions in the country. Healthcare service inequalities did not decline during the HSTP-I period as uptake of healthcare services among difficult-to-reach populations remains low.

1. Coverage of RMNCH services varied between urban and rural areas. Rural areas are more populous than urban areas and coverage there increased rapidly in comparison to urban areas during the HSTP-I period.
2. Significant regional disparities were observed in health facility deliveries, ranging from 23.0% of women in the Somali region to 94.8% of women in the Addis Ababa region. Health facility deliveries were also much lower among those in the lowest wealth quintile and among uneducated mothers in comparison to women in the highest wealth quintile and those with higher levels of education.

3. Progress has been uneven in the reduction of childhood mortality. Large differences in childhood mortality were observed by region, mother's educational level, wealth quintiles and place of residence. Higher neonatal mortality levels occurred in rural areas, among those in the lowest wealth quintile and in pastoralist regions. Under-five mortality remains high in rural areas, and among those in the lowest wealth quintile as well as in pastoralist regions. Low rates of reduction of infant mortality were recorded in rural areas, among the uneducated and those in lower wealth quintiles. Infant mortality increased in Somali, Gambela and Oromia regions.
4. There are disparities in the coverage of improved water supply in regions, with declines seen in Gambela, Afar, Dire Dawa and Addis Ababa, as well as in urban areas. Coverage of improved sanitation decreased in urban areas and in pastoralist regions such as Afar, Somali, and Gambela. Levels of open defecation increased in urban areas and in Afar, Somali, Benishangul-Gumuz, and Addis Ababa city area.
5. In 2019, 36.8% of children nationally were stunted and the prevalence of stunting varied substantially by place of residence (rural and urban), region, wealth quintile, and mother's educational level. There are disparities in the reduction of stunting and wasting between urban and rural areas, the poor and the wealthy, as well as in pastoralist and non-pastoralist regions. The prevalence of stunting increased in rural areas, and among those in the lowest wealth quintile in 2019.
6. Among regions, the health facilities found in Addis Ababa, Dire Dawa and Harari had higher water availability while Afar, Somali, Benishangul-Gumuz and SNNPR had lower water availability than the national average. The availabilities of water decreased in Tigray and Somali regions while in other regions it increased from 2016 to 2018 except in Oromia where levels remained constant. Ratio analysis showed that there are inequalities in the coverage of electricity, improved water and sanitation between urban and rural areas. There was no improvement in electricity coverage between 2016 and 2019, while improved water and sanitation coverage increased in rural areas from 2016 to 2019.

» Policy implications

1. Further progress in advancing health outcomes in Ethiopia will require a sharper focus on those who have been left behind. Accelerating, or even maintaining the previous rate of progress will likely require reducing the gaps between the rich and the poor, the educated and uneducated, those in urban and rural areas, and pastoralist and non-pastoralist communities to achieve the HSTP-II targets and the SDGs.
2. Greater efforts such as the promotion of strategies and interventions that increase the utilization of ANC, health facility delivery, births assisted by skilled providers, postnatal care and childhood immunization services are necessary. Additional measures such as intensive community-based awareness campaigns and health education, provision of facilities with essential resources including human resources, medical equipment and supplies, and emergency patient transport services are also required.
3. Political leaders in the health sector should maintain the momentum on their commitment and support for even greater future accomplishments. The strong commitment of concerned local and federal-level government officials laid the groundwork for the smooth and effective formulation, implementation and evaluation of key RMNCH programs, strategies and interventions. Their continued support is necessary to keep this momentum going forward.

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4. Focus on improving nutritional interventions and early neonatal care practices. These interventions include: exclusive breastfeeding, early initiation of breastfeeding, and complementary feeding. Further investigations should be conducted to analyze how nutritional status improved despite low coverage of some key practices.
 5. Address high levels of neonatal mortality. The neonatal mortality rate contributes about half of the overall under-five mortality rate. Addressing the causes of neonatal mortality will enable Ethiopia to reduce the under-five mortality rate even further.
 6. Alleviate health inequalities. The disparities in utilization of healthcare services seen across regions, rural and urban areas, as well as across educational and wealth levels need to be addressed in the HSTP-II period.
 7. Strengthen and expand community based newborn care and advanced obstetric care (CEmONC and BEm/EONC) services. The readiness of health facilities to provide basic essential RMNCH health interventions such as antenatal care, institutional deliveries, postnatal care and obstetric signal functions should also be enhanced.
 8. Design and implement innovative strategies to market the community-based health insurance (CBHI) scheme and expand coverage of people enrolled in the CBHI so that all Ethiopians have access to the health services they need, when and where they need them, without financial hardships.
 9. Allocate adequate resources to basic services to meet the SDG targets of universal coverage of safe drinking water, improved sanitation facilities and access to electricity in both rural and urban areas. Reduce health inequalities within the health system by strengthening multisectoral, collaborative approaches.

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LIST OF ABBREVIATIONS AND ACRONYMS

AARC	Average Annual Rate of Change
AARR	Average Annual Rate of Reduction
ANC	Antenatal care
APHRC	African Population and Health Research Center
ARRI	Average Annual Rate of Increase
BCG	Bacille Calmette-Guerin (vaccine)
BEem/EONC	Basic Emergency and Essential Obstetric and Newborn Care
CCI	Composite Coverage Index
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CBHI	Community-based Health Insurance
CHEW	Community Health Extension Worker
CPR	Contraceptive Prevalence Rate
CS	Caesarean Section
DPT	Diphtheria, Pertussis, Tetanus (vaccine)
EDHS	Ethiopian Demographic Health Survey
EPHI	Ethiopian Public Health Institute
FMOH	Federal Ministry of Health
FP	Family Planning
GFF	Global Financing Facility
HEP	Health Extension Program
HMIS	Health Management Information System
HSDP	Health Sector Development Programme
HSTP	Health Sector Transformation Plan
IMR	Infant Mortality Rate
KMC	Kangaroo Mother Care
LLIN	Long-lasting Insecticide-treated Net
LSHTM	London School of Hygiene and Tropical Medicine
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
NCD	Non-communicable Diseases
NMR	Neonatal Mortality Rate
OOP	Out-of-Pocket
OPD	Outpatient Department
PNC	Postnatal Care
Penta-3	Pentavalent-3 (vaccine)
RMNCAH-N	Reproductive, Maternal, Neonatal, Child and Adolescent Health and Nutrition
SARA	Service Availability and Readiness Assessment
SBA	Skilled Birth Attendant
SBD	Skilled Birth Delivery
SC	Steering Committee
SDG	Sustainable Development Goal
SPA+	Service Provision Assessment plus
TWG	Technical Working Group



1.1 BACKGROUND

Since 1997/98, Ethiopia has developed and implemented four phased Health Sector Development Plan (HSDP I-IV) over 20 years. This followed the publication of its national health policy in 1993. The country recently embarked on the first Health Sector Transformation Plan (HSTP-I), which is the first phase of a 20-year health sector strategy called “Envisioning Ethiopia’s Path to Universal Healthcare through Strengthening of Primary Healthcare”. The program under HSTP-I covered the five year period from 2015/16 to 2019/20. The overarching goals of HSTP-I were to: (1) improve quality and equity of healthcare, coverage and utilization of essential health services; and (2) enhance the implementation capacity of the health sector at all levels of the health system. The HSTP-I also identified four transformation agendas: (1) Quality and equity, (2) Information revolution, (3) Woreda transformation, and (4) A caring, respectful and compassionate (CRC) health workforce.

The Government of Ethiopia has been keen in actively engaging its development partners in planning, implementing and evaluating its health sector efforts. Ethiopia is one of the 36 countries that received investments from the Global Financing Facility (GFF) in support of the country’s momentum to achieve the health-related Sustainable Development Goals (SDGs).¹ Ethiopia has developed an investment case for the Reproductive, Maternal, Neonatal, Child and Adolescent Health and Nutrition (RMNCAH-N) domain, and the proposed initiative aims to contribute to monitoring progress and performance through an in-depth review of national health plans and strengthening analytical capacity at the country level. The Countdown to 2030 for Women’s, Children’s and Adolescents’ Health (hereafter referred to as Countdown) implemented in collaboration with the Government of Ethiopia aims to strengthen the country’s analytical capacity, focused on generating RMNCAH-N related evidence and to better inform country level annual, midterm and endline reviews of health progress and performance.

This endline review of the HSTP-I was conducted to track the country’s progress towards achieving the targets described in HSTP-I. The review involves in-depth thematic studies on the progress and performance in RMNCAH-N and priority areas to inform health reviews of national plans and programs. The Countdown-Ethiopia Country Collaboration was established to conduct analytical reviews i.e., quantitative analysis synthesized into concise reports on the progress and performance of the health sector during the HSTP-I period. The focus of the review was to generate evidence in supporting the Ministry of Health (MoH) and its partners in monitoring, learning from and evaluating HSTP-I for the period between 2015/16 and 2019/20.

This analytical review was led by the Ethiopian Public Health Institute (EPHI), in collaboration with Countdown to 2030 and MoH. The review was conducted by establishing a Steering Committee (SC) consisting of individuals in leadership positions at the MoH and EPHI. A Technical Working Group (TWG) was established consisting of individuals from the MoH, EPHI, Countdown to 2030, African Population and Health Research Center (APHRC), University of Manitoba (UofM), and the London School of Hygiene and Tropical Medicine (LSHTM). The endline review was guided by a team of experts at MoH in selecting the key health system performance monitoring indicators that are related to RMNCAH-N. This review of the health sector plan was financially supported by the Global Financing Facility (GFF).

1.2 COUNTRY PROFILE

» Government and administration

Ethiopia is administratively sub-divided into four levels: regions, zones, woredas (districts) and kebeles (sub-districts). The Ethiopian Constitution, introduced in 1995, created a federal government structure composed of eleven regional states: Afar, Amhara, Benishangul-Gumuz, Gambela, Harari, Oromia, Somali, Southern Nations, Nationalities’ and People’s Region (SNNPR), Tigray, and two City Administration Councils in Addis Ababa and Dire Dawa. Some of the regions are predominantly agrarian such as Tigray, Amhara, Oromia and SNNPR. Others are largely pastoralist such as Afar, Somali, Benishangul-Gumuz and Gambela regions, while the rest are urban including Addis Ababa,

¹ <https://www.globalfinancingfacility.org/ethiopia>

Dire Dawa and Harari regions. Since 2020, two more regional states were also formed in the SNNPR, namely Sidama and South West Ethiopia regional states. The regional states and city administrations are divided into zones, woredas (districts) and kebeles (sub-districts). A woreda is the basic decentralized administrative unit with an administrative council composed of elected members.

» Geography

Ethiopia is a land-locked country, located in the Horn of Africa. It is bordered by Sudan and South Sudan to the west, Eritrea and Djibouti to the northeast, Somalia to the east and southeast, and Kenya to the south. Ethiopia lies between the 30°N and 150°E longitude and 33°E and 48°E longitude. The country occupies an area of 1.1 million km² with water bodies occupying 7,444 km². Ethiopia is a country with rich geographical diversity that includes rugged mountains, flat-topped plateaus, deep gorges and river valleys. More than half of the geographic area of the country lies 1,500m above sea level. The highest point in the country is at Ras Dashen (4,620m above sea level) while the lowest point is at Danakil (Dallol) Depression (148m below sea level).

» Demography

With a population of about 102 million in 2020,¹ Ethiopia is the second-most populous country in Africa and ranks 12th globally. Ethiopia is home to various ethnic groups, with more than 80 different spoken languages. The country is characterized by rapid population growth, a young age structure, and a high rural-urban differential. In 2016, Ethiopia had a high total fertility rate of 4.6 births per woman (2.3 in urban areas and 5.2 in rural areas) and a corresponding crude birth rate amounting to 32 live births per 1,000 inhabitants. The average household size is 4.6 people. By 2024, the population is projected to reach 109.5 million¹ and will reach 122.3 million by 2030. Children under 15 years and individuals 15-65 years old account for 47% and 49% of the population, respectively. Only 4% of the population is above the age of 65 years. The sex ratio between males and females is almost equal, and women of reproductive age constitute about 23% of the total population. Nearly 80% of the population lives in rural areas, and they mainly depend on subsistence agriculture.¹ The average life expectancy of the population is 65.5 years.

» Socio-economic situation

The government has introduced initiatives to ensure the country's successful transformation from an agrarian to industrial economy. The country registered commendable achievements on the Millennium Development Goals (MDGs), mainly in poverty reduction, achieving universal primary education, narrowing gender disparities in primary education, reducing child and maternal mortality, and combating HIV, tuberculosis and malaria. Ethiopia is a low-income country with a gross domestic product (GDP) per capita (current US\$) of \$936 in 2020, up from about \$254 in 1990. Data suggests that the main contributors to the country's economic growth are the agriculture, industry and service sectors.

According to the 2020 World Bank report, Ethiopia's Human Capital Index is 0.38, placing Ethiopia at 135 of 157 countries.² At the end of FY 2017/18, Ethiopia had 126,773 kilometers (78,773 miles) of all-weather roads - about 37% of the required road network in the country. Under the Universal Rural Road Access Program, about 10,765 rural kebeles are now connected,³ creating better access to healthcare services for millions of mothers and children.

» Ethiopia's health system tier levels

The Ethiopian health system has primary, secondary and tertiary levels of care. The primary level includes health posts, health centers and primary hospitals. A health center and five satellite health posts make up a Primary Healthcare Unit. These provide both preventive and curative services to approximately 25,000 people. A primary hospital provides in-patient and ambulatory services to a population of 60,000-100,000 and provides emergency surgical services such as caesarean section

² <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=ET>

³ <https://www.privacyshield.gov/article?id=Ethiopia-Road-and-Railways>

(CS) deliveries and blood transfusion services. At the secondary level of care, a general hospital provides in-patient and ambulatory services to 1.0-1.5 million people. The general hospital serves as a referral center for primary hospitals. At the tertiary level of care, a specialized hospital provides services to 3.5-5.0 million people, and serves as a referral for general hospitals.³

1.3 STUDY OBJECTIVES

» General objectives

The general objective of the collaboration is to inform the country's health policies, strategies and plans by preparing an in-depth analysis and synthesis of all relevant data on progress and performance related to the national health sector transformation plan's targets. It also expects to shed light on gaps and challenges in the health system for better strategic planning, especially for prioritization and resource allocation.

» Specific objectives

1. To measure the levels and trends of RMNCAH-N indicators during the HSTP-I period and provide evidence-based information to the MOH and relevant stakeholders supporting the country's health plans.
2. To conduct disaggregated analyses of coverage and impact indicators for different sub-national regions and determine level of inequalities using various equity measures.
3. To improve country-led progress monitoring, analysis and use of health data for transparency and accountability.
4. To strengthen the country's evidence base and analytical capacities to inform national health plan reviews of progress and performance, with a focus on RMNCAH-N and priority areas.

1.4 APPROACH

- Collaboration with EPHI, MoH, APHRC, University of Manitoba, and Countdown global/regional institution
- Focus on analytical reports (endline for HSTP-I and annual for HSTP-II) to inform country reviews of national plans, investment cases and for the development of scientific papers
- Full integration with national health plans, i.e., overall health sector plans (Ethiopia's integrated HSTP) or RMNCAH-N specific plans

1.5 STRUCTURE OF THE REPORT

The report chapters present the results of analyses of the HSTP-I endline review. This is to reflect the iterative approach to the analyses, working from observed trends in mortality outcomes, to improvements in intervention coverage, health facility readiness for providing selected RMNCH services, water, sanitation and hygiene (WASH) services, nutrition, coverage of HIV/AIDS, tuberculosis, and malaria. The chapters also focus on healthcare financing and equity in Ethiopia during the HSTP-I period. The methods utilized for this report are presented in the Annex.

HEALTH SECTOR TRANSFORMATION PLAN-I (HSTP-I) END-LINE REVIEW STUDY

CHAPTER 2

Maternal, Under-five, Infant and Neonatal Mortality reductions during the HSTP-I period

Summary

- » There were reductions in maternal (2.7%), under-five (12.0%), infant (2.0%) and childhood (35.0%) mortality during the HSTP-I period while neonatal mortality increased by 14.0%.
- » The reduction in childhood mortality was driven by the reductions in rural areas by an average annual rate of reduction (AARR) of 14.2%. However, neonatal mortality increased in rural areas by an AARC of 1.0% while under-five mortality reduced in urban areas by an AARR of 15.1%.
- » Childhood mortality reduced in most regions during the HSTP-I period. Neonatal mortality increased in Benishangul-Gumuz which recorded an average annual rate of increase (AARI) of 9.0%. The Somali (1.9%), Harari (1.7%), and Oromia (1.0%) regions also saw increases in neonatal mortality. Infant mortality increased in Somali (1.9%), Oromia (1.0%), and Benishangul-Gumuz (5.9%). Childhood mortality increased in Somali (3.3%) and Gambela (4.7%) regions. Under-five mortality was high in rural areas, among those in the lowest wealth quintile and it increased in the Somali region (2.4%).
- » There are disparities in the reduction of childhood mortality. More neonatal mortality occurred in rural areas, the lowest wealth quintile and in pastoralist regions.
- » Inequalities persisted in the reduction of infant and childhood mortality between 2016 and 2019. Childhood mortality reductions did not differ between non-pastoralist and pastoralist regions as well as between urban and rural areas in 2019.
- » Low infant mortality reductions were recorded in rural areas, among the uneducated and those in low wealth quintiles.
- » There were disparities in the reduction of neonatal mortality. It remained high in rural areas, among those in the lowest wealth quintile and in pastoralist regions.

2.1 MATERNAL MORTALITY

Figure 1 presents estimates of the maternal mortality ratio (MMR). It showed a substantial decline from 871 in 2000 to 401 deaths per 100,000 live births in 2019 representing a 54.0% reduction over the past 20 years. In the last HSTP-I period, maternal mortality decreased by 2.7%. Achieving the HSTP-II target of 279 deaths per 100,000 live births will require a 30.0% reduction by 2024/25. This shows that extra efforts are required to achieve the target set for 2025. If MMR continues to perform at a more or less similar rate to that seen in the past 20 years, Ethiopia is unlikely that to achieve the target set for maternal mortality reduction as a nation by 2025.

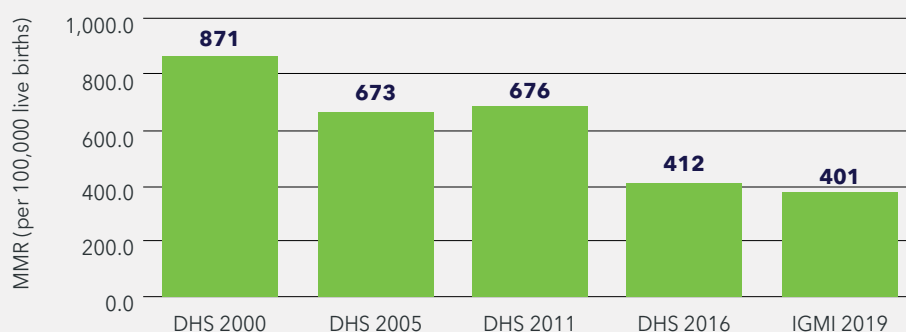


Figure 1: Trends in maternal mortality ratio (MMR) in Ethiopia, 2000-2019

2.2 UNDER-FIVE CHILDHOOD MORTALITY

The Ethiopia Demographic and Health Survey (EDHS) which measures changes in the five years preceding the survey, showed that under-five childhood mortality declined from 166 deaths per 1,000 live births in 2000 to 59 deaths per 1,000 live births in 2019, representing a 64.5% reduction over 20 years. In the HSTP-I period, childhood mortality decreased from 67.0 in 2016 to 59.0 deaths per 1,000 live births in 2019, representing a 12.0% reduction. Achieving the HSTP-II target of 43 deaths per 1,000 live births by 2024/25 will require a 27.0% reduction which is double the reduction seen in the HSTP-I period.

2.3 NEONATAL MORTALITY RATE

Neonatal mortality rate (NMR) is the probability of dying within the first month of life in the five years preceding the DHS, measured per 1,000 live births in a given year. Neonatal mortality declined from 49 deaths per 1,000 live births in 2000 to 33 deaths per 1,000 live births in 2019, a reduction of 32.6% over the past 20 years. In the HSTP-I period, neonatal mortality increased by 14.0%. NMR is supposed to decline to 21 deaths per 1,000 live births during the HSTP-II (2020-2025) period. Attaining this target will require a 36.4% reduction from the HSTP-I period suggesting that more efforts and investments are required.

2.4 INFANT MORTALITY RATE

The infant mortality rate (IMR) refers to the number of infants dying before reaching one year of age in the five years preceding the DHS, measured per 1,000 live births in a given year. The IMR declined from 48 deaths per 1,000 live births in 2016 to 47 deaths per 1,000 live births in 2019, a reduction of 2.1%. To reach the HSTP-II target of 43 deaths per 1,000 live births, an 8.5% reduction is required by 2024/25.

2.5 POST-NEONATAL MORTALITY RATE

The post-neonatal mortality rate is the probability of dying after the first month of life and before the first birthday per 1,000 children surviving the first month of life. This is computed as the difference between the infant and neonatal mortality rates for the five years preceding the survey. During the HSTP-I period the post-neonatal mortality rate declined from 19.0 deaths to 14.0 deaths per 1,000 live births representing a reduction of 29.3%.

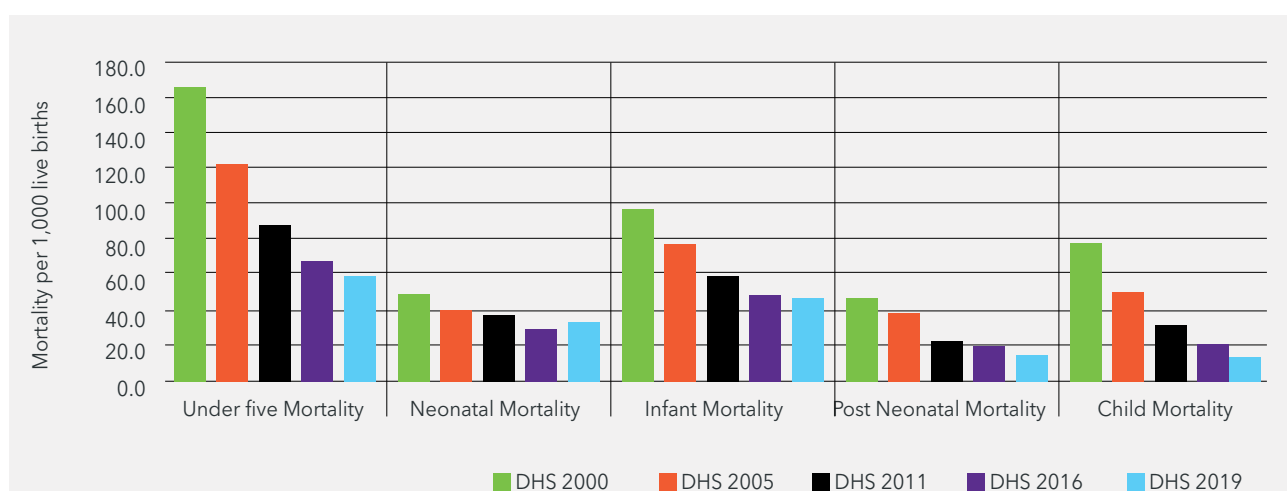


Figure 2: Trends in under-five, neonatal, infant, post-neonatal and childhood mortality rates in Ethiopia, 2000-2019.

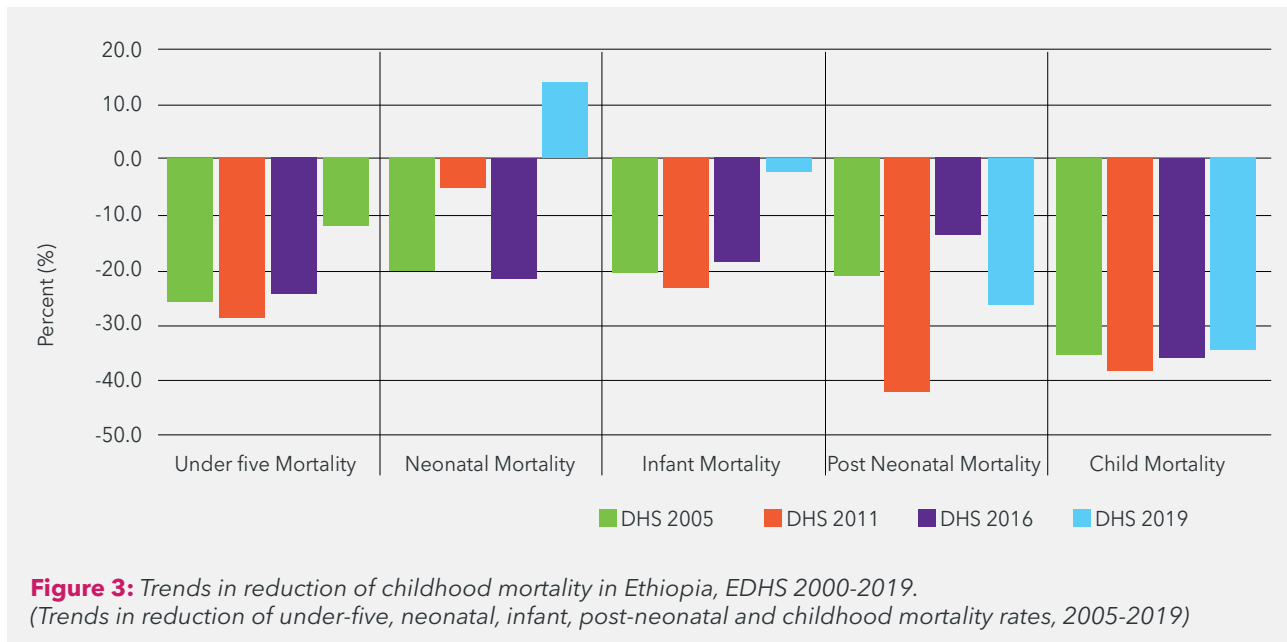


Figure 3: Trends in reduction of childhood mortality in Ethiopia, EDHS 2000-2019. (Trends in reduction of under-five, neonatal, infant, post-neonatal and childhood mortality rates, 2005-2019)

2.6 CHILDHOOD MORTALITY REDUCTION

Table 1 shows the average annual rate of change of childhood mortality during the HSTP-I period (2016-2019), by region, residence, wealth quintile and mother’s level of education. The data is taken from the EDHS, ten years preceding the survey.

The neonatal mortality rate in Ethiopia decreased over time, except during the recent years, 2019. It decreased in urban areas, among mothers with no education, and those in the highest wealth quintile by 12.5%, 2.7%, and 10.2% respectively. However, neonatal mortality increased in rural areas and among mothers with secondary education by 1.0% and 1.2%, respectively. Neonatal mortality increased in Oromia, Somali, Benishangul-Gumuz and Harari regions which had an average annual rate of increase of 1.1%, 1.9%, 9.0%, and 1.7%, respectively during the HSTP-I period. The highest reduction in neonatal mortality was recorded in Afar region (10.9%) followed by SNNPR (9.3%).

The under-five mortality decreased at greater rates in rural areas, among uneducated mothers and those in the lowest wealth quintile, in comparison to their counterparts. It decreased in all regions except Somali where the average annual rate of increase recorded was 2.0%. The highest average annual rate of reduction was recorded in Afar region (26.0%) and the lowest was in Gambela (1.0%) followed by Oromia (3.0%) and Harari region (4.0%).

At national level, the average annual rate of reduction for IMR was 4.0%. Higher IMR reductions were recorded in urban areas, among educated women and those in high wealth quintiles, in comparison to their counterparts. Afar and SNNPR regions showed higher reductions, followed by Addis Ababa. Infant mortality also increased in Somali, Oromia, and Benishangul-Gumuz regions.

The AARR of childhood mortality was 15.0%. Higher Childhood mortality rate reductions were recorded in rural areas, among mothers with secondary education and those in high wealth quintiles. Afar, Tigray, Benishangul-Gumuz, Addis Ababa, and Oromia regions showed higher reductions in childhood mortality, however, Somali and Gambela recorded increases of 3.3% and 4.7%, respectively, while no change was observed in Harari region.

Table 1: Average annual rate of change of childhood mortality during HSTP-I period, by region, residence, wealth quintile and mother's educational level, 2016-2019

	Characteristic	Neonatal mortality rate	Under-five mortality rate	Post-neonatal mortality rate	Infant mortality rate	Childhood mortality rate
National	National	-1.1	-6.2	-8.2	-4.1	-15.1
Residence	Urban	-12.5	-15.1	0.0	-14.5	0.0
	Rural	1.0	-3.8	-6.1	-1.1	-14.2
Education	No Education	-2.7	-6.9	-4.3	-4.5	-14.2
	Primary	2.7	-2.8	-16.0	-2.4	-7.9
	Secondary	1.8	-1.9	9.6	5.0	-79.9
	Higher		-26.4		-24.1	-69.3
Wealth quintile	Lowest	-1.1	-5.2	-1.4	-2.2	-13.5
	Second	3.7	-1.3	0.0	4.0	-21.7
	Middle	2.7	-3.5	-12.9	-1.7	-10.6
	Fourth	-5.3	-12.8	-28.2	-14.2	-8.4
	Highest	-10.2	-12.5	2.3	-10.8	-20.6
Region	Tigray	-3.9	-10.5	7.4	-4.1	-34.7
	Afar	-10.9	-25.6	-18.7	-18.9	-43.5
	Amhara	-0.4	-7.0	-17.0	-4.8	-18.2
	Oromia	1.1	-3.1	0.0	1.1	-19.9
	Somali	1.9	2.4	1.3	1.9	3.3
	Benishangul-Gumuz	9.0	-2.8	-10.5	5.9	-26.8
	SNNPR	-9.3	-15.1	-23.1	-18.8	-7.4
	Gambela	-1.7	-0.8	-7.0	-3.8	4.7
	Harari	1.7	-3.9	-19.0	-5.0	0.0
	Addis Ababa	-1.1	-13.5	-30.5	-9.6	-26.3
	Dire Dawa	-3.0	-5.4	-1.1	-3.1	-11.2

Literature reviews showed that the common causes of maternal mortality are hemorrhage, pregnancy-induced hypertension, anemia, abortion complications, maternal sepsis and other maternal infections such as influenza, malaria, tuberculosis, and hepatitis. Most of the maternal mortality happened during the postpartum period and majority of the deaths occurred in the 20-29 years age group.⁴⁻⁷ The health system requires comprehensive efforts from stakeholders through multisectoral collaborations to reduce maternal mortality in Ethiopia. Policies would do well to concentrate on the postpartum period to focus on the cause of death.

Analysis showed that under-five childhood mortality varied by region, residence, educational level and wealth quintile. Various studies have shown that factors influencing reductions in under-five childhood mortality are mainly socioeconomic and demographic. Factors like place of residence, mother's educational level, breastfeeding status, type of birth, sex of child, birth order, and family size were found to be significant predictors of under-five childhood mortality.⁸⁻¹¹ Government policymakers, non-governmental organizations (NGOs), and all concerned bodies should focus on the major determinants of under-five childhood mortality and institute multisectoral collaborative efforts to reduce under-five childhood mortality to maintain the progress achieved so far.

Ethiopia has shown considerable progress in infant and childhood mortality reduction. However, different studies show the various challenges for continued reductions in infant mortality such as educational level of mothers, preceding birth intervals, size of child at birth,¹² socioeconomic, nutritional and environmental factors, lack of antenatal care, home deliveries, pre-term deliveries, low birth weight, multiple births, sex of the child, place of residence, sources of drinking water, lack of access to an improved toilet facility and short birth intervals.¹²⁻¹⁵ Health sector stakeholders should focus on the factors that challenge continued reductions in infant mortality to achieve the HSTP-II targets.



HEALTH SECTOR TRANSFORMATION PLAN-I (HSTP-I) END-LINE REVIEW STUDY

CHAPTER 3

Coverage of RMNCH-N interventions during the HSTP-I period

Summary

- » There was remarkable progress in improving national and sub-national reproductive, maternal, newborn and child health (RMNCH) coverage among hard-to-reach populations (such as people in rural areas, uneducated mothers, poorest households and pastoralist regions) during the HSTP-I period.
- » Attendance of four or more antenatal care (ANC4+) visits increased nationally with an average annual rate of increase of 8.2%. The driver for this growth is the large increase seen in rural areas (10.3%), and the increase in the most populous regions such as Amhara (15.0%).
- » Institutional delivery also increased dramatically during the HSTP-I period. Delivery in public sector facilities increased by 82.7% and in private sector facilities by 57.1%. This is supported by the increases seen in rural areas and in the most populous regions such as Oromia (123%) and Amhara (102.0%). However, institutional deliveries decreased in urban areas and urban regions such as Addis Ababa, i.e., institutional deliveries declined while home deliveries increased.
- » Deliveries assisted by skilled providers increased nationally with an average annual rate of change of 19.6%. Deliveries by skilled providers varied across different strata such as place of residence, wealth quintile, educational level, and regions during the HSTP-I period. Doctor-provided ANC4+ visits increased to 8.0% while doctor-provided deliveries also increased by 84.0% from 2016. Deliveries assisted by nurses and midwives increased to 32.0% in 2019.
- » Postnatal checkups during the HSTP-I period increased by 105.0% with an average annual rate of change of 24.0%.
- » Contraceptive prevalence rate (CPR) nationally increased by 13.8%. In rural areas and in the poorest wealth quintile, the CPR increased by 13.8% and 28.6%, respectively.
- » Child immunization coverage also increased. The average annual rate of increase (AARI) for penta-3, eight basic vaccinations, measles, and BCG vaccines was 4.6%, 4.5%, 2.5%, and 1.8%, respectively. In urban areas, both penta-3 and the eight basic vaccination rates increased, while measles and BCG vaccination rates reduced in rural areas.
- » Ethiopia has made great progress in the expansion of basic healthcare services within health facilities. However, health facility readiness is low. This is seen in the low mean availability of obstetrics signal functions (38%), newborn signal functions (38%), tracer items for family planning (63%), ANC (32%), child health services (49%), adolescent health services (32.0%), and essential medicines (26.0%).

3.1 FOUR OR MORE ANTENATAL CARE (ANC4+) VISITS

The DHS collects data on ANC4+ visits, that is the percentage of pregnant women who had a live birth in the five years preceding the survey who had four or more antenatal care visits. This number increased from 10.4% in 2000 to 31.8% in 2016 reflecting an average annual rate of increase of 7.5%. In the HSTP-I period, the percentage of pregnant women with ANC4+ visits was projected to reach 95.0%, however, this number increased from 31.8% in 2016 to 43.0% in 2019, reflecting an 8.2% average annual rate of increase (Figure 1). In HSTP-II, the plan for ANC4+ is to reach 81.0% by 2024/25. To achieve this, coverage has to increase at an average annual rate of 12.8% per year, suggesting greater efforts may be needed than those seen in the HSTP-I period.

The ANC4+ visits varied significantly by residence, education, wealth quintile, and region. There was significant variation in ANC visits by area of residence. The increase in ANC4+ coverage was due to its increase in rural areas, where it increased by 37.0% (27.3% in 2016 to 37.4% in 2019) over the HSTP-I period, while it decreased in urban areas by 6.4% (62.7% in 2016 to 58.7% in 2019).

At national level, the average annual rate of change of ANC4+ visits increased by 8.2%. The main driver of the growth was the increase in rural areas (10.3% versus 1.5% in urban areas). Among women with no education and those in the poorest wealth quintile, ANC4+ increased annually at an average rate of 9.5% and 10.8%, respectively (Figure 1).

There were also disparities in the AARC of ANC4+ by region. The highest AARC was recorded in Amhara region (15.0%) and the lowest in Gambela region (0.6%). The increase in urban regions such as Addis Ababa, Dire Dawa, and Harari was below the national average. This indicates that the rise in ANC4+ coverage was derived from the increase among disadvantaged sub-populations such as people in rural areas, women with little education and the poor.

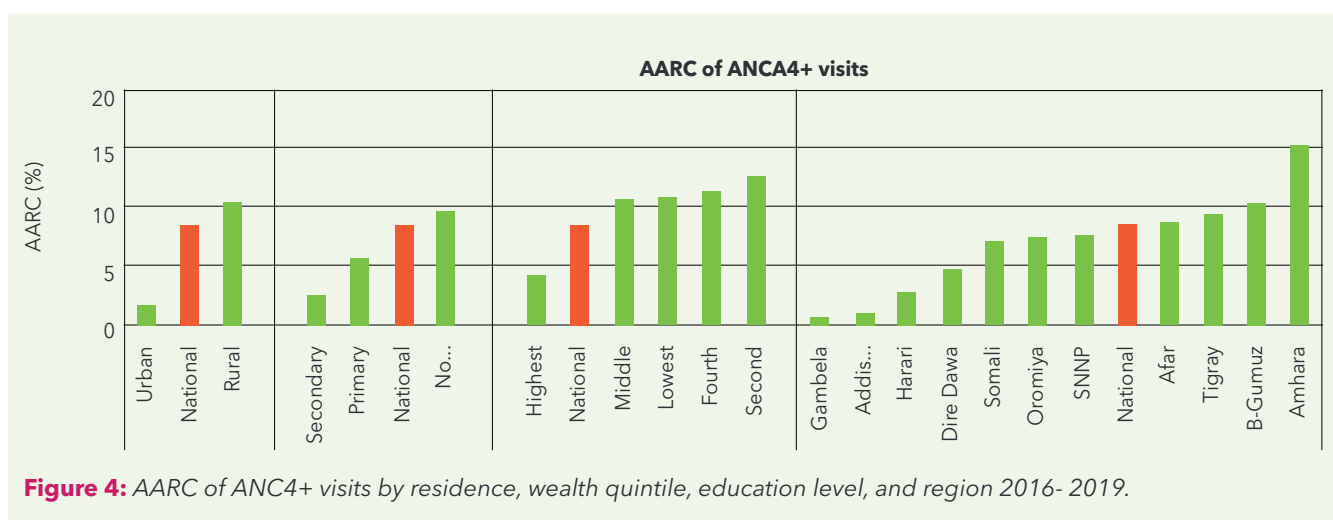


Figure 4: AARC of ANCA4+ visits by residence, wealth quintile, education level, and region 2016-2019.

» Antenatal care (ANC) provision

The ANC services provided by skilled personnel such as doctors, nurses and midwives increased over time. Services provided by doctors increased from 5.7% in 2016 to 7.9% in 2019, and services provided by nurses and midwives increased from 42.04% in 2016 to 46.7% in 2019. The rise in services provided by nurses and midwives is driven by the increase in rural areas, which saw an increase by 17.5% (38.8% in 2016 to 45.6% in 2019), while it decreased in urban areas by 22.2% (64.0% in 2016 to 49.8% in 2019).

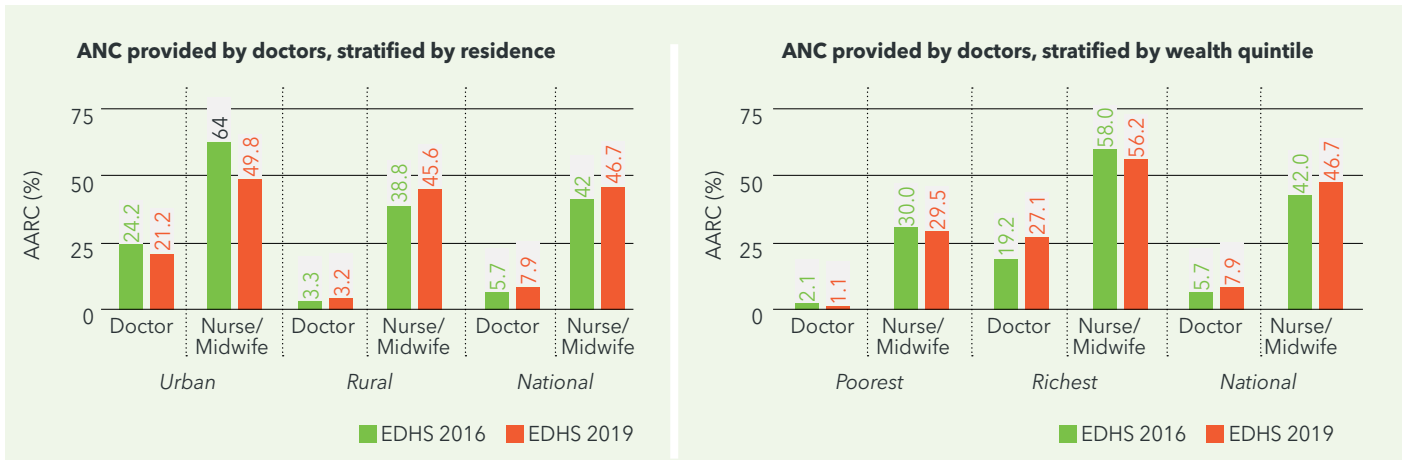


Figure 5: ANC services provided by skilled personnel, EDHS 2016 & 2019.

Antenatal care is an entry point for maternal and childcare service utilization, and as such, has the ability to reduce both maternal and neonatal mortality by detecting at-risk pregnancies and managing their associated risks. ANC provides an opportunity to adequately prepare mothers for birth and for appropriate care of children by providing relevant information and education concerning health promotion and disease prevention. The steadily increasing coverage of ANC4+ recorded at national level and in most regions is due to the expansion of new health facilities, the active engagement of health extension workers, an increased emphasis on maternal care, improved educational levels and wealth status as well as women’s ability to make healthcare decisions during pregnancy.¹⁶⁻¹⁸

While ANC4+ coverage has improved, reducing inequalities remains a challenge, especially by wealth quintile and education level. The absolute difference between rural and urban areas has reduced over time as recorded in the two most recent surveys conducted during the HSTP-I period. However, the absolute difference between the wealthiest and the poorest has continued to increase over the past two decades. The substantial increase in ANC4+ coverage among rural women played a significant role in the continued reduction of the absolute urban-rural difference over time. Other studies have suggested that expansion in ANC4+ coverage is influenced by women’s lack of awareness, educational level, household wealth status, area of residence, distance to health facility, access to transport, unintended pregnancy, and erroneous perceived timing of ANC.¹⁶⁻²¹

3.2 PLACE OF DELIVERY

The percentage of live births delivered in a public sector facility increased from 5.0% in 2000 to 48.0% in the five years preceding the 2019 survey. During the HSTP-I period, deliveries in public sector and private sector health facilities increased by 82.7% and 57.1%, respectively, while deliveries at home decreased by 29.2%. In rural areas, deliveries in public sector and private sector health facilities declined by 11.0% and 13.3%, respectively, while deliveries in public sector facilities in rural areas increased by 106.8%.

During the HSTP-I period, institutional delivery (public and private health facilities) in rural areas increased by 103.0% (19.7% in 2016 to 40.0% in 2019) even as it decreased in urban areas, by 11.1% (79.2% in 2016 to 70.4% in 2019). The percentage of women with no education who delivered at health facilities increased by 105.7% (15.9% in 2016 to 32.7% in 2019), while in urban areas it increased only by 1.7% (91.5% in 2016 to 93.1% in 2019). In terms of wealth quintile, the percentage of women from the lowest wealth quintile who delivered at health facilities increased from 10.6% in 2016 to 19.7% in 2019, while for women in the highest wealth quintile, the percentage increased from 68.6% in 2016 to 85.9% in 2019.

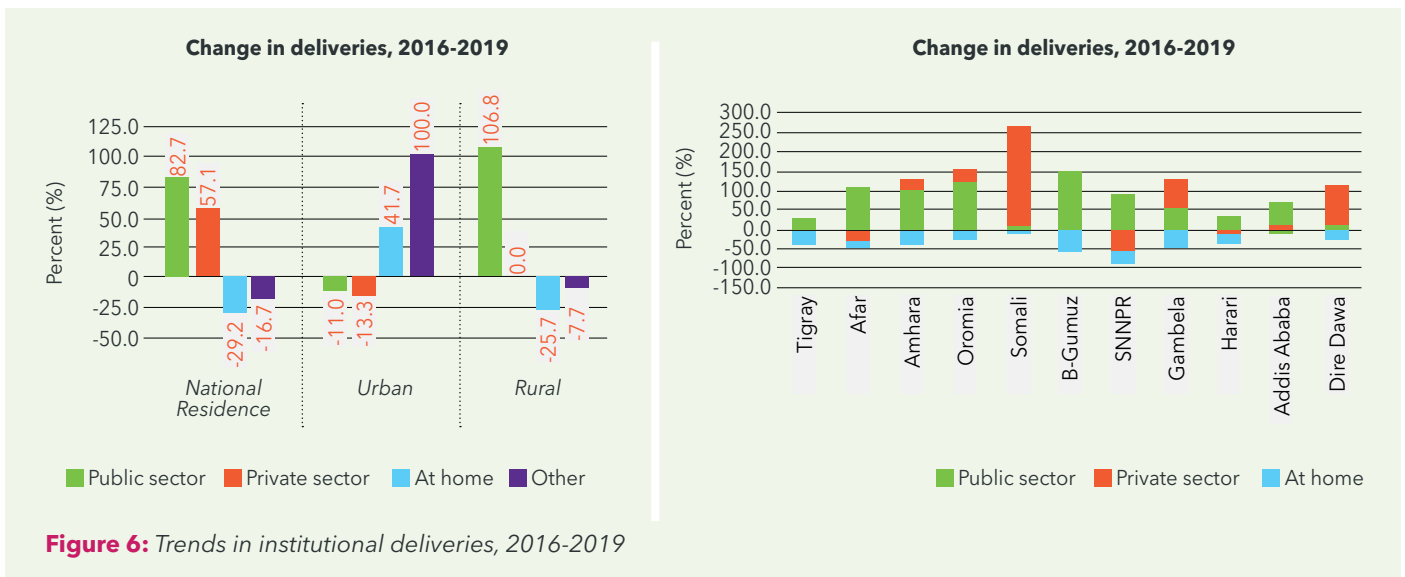


Figure 6: Trends in institutional deliveries, 2016-2019

In terms of regional variation, public sector deliveries increased by 149.6% in Gambela region followed by Oromia (123.0%), Afar (110.1%) and Amhara (101.9%). In Addis Ababa, delivery in public facilities reduced by 6.4% while delivery at home increased by 60.0% during the HSTP-I period. Private sector deliveries increased all the regions except in Afar, SNNPR, and Harari regions which saw decreases of 33.3%, 60.0%, and 9.3%, respectively.

3.3 DELIVERIES ASSISTED BY SKILLED PERSONNEL

Skilled birth attendance (SBA) refers to the percentage of live births assisted by a skilled provider in the five years preceding the survey. Skilled providers include doctors, nurses, midwives and auxiliary nurses or midwives. The national SBA trend increased from 10.8% in EDHS 2011 to 49.8% in EDHS 2019, with an AARI of 19.1%. During the HSTP-I period, the increase recorded was 80.0% (27.7% in EDHS 2016 and 49.8% in EDHS 2019). For HSTP-II (2020/1-2024/5), the SBA is expected to reach 76.0%, which requires a 53.0% increase (lower than that in the HSTP-I period). This suggests that maintaining similar levels of effort as those seen in the past few years will lead to achievement of the HSTP-II target.

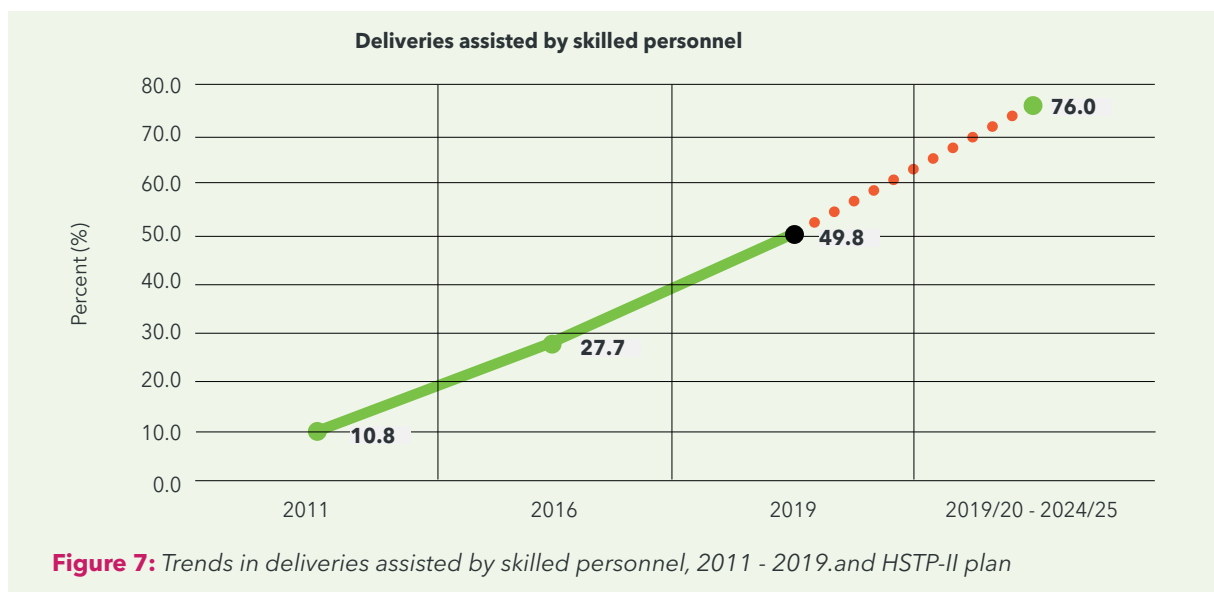


Figure 7: Trends in deliveries assisted by skilled personnel, 2011 - 2019, and HSTP-II plan

Figure 8 shows the average annual rate of change in SBA during the HSTP-I period by background characteristics. At the national level, the AARI during HSTP-I period was 19.6%. In rural areas, the AARI was 23.2% while in urban areas there was a decrease in SBA, for an AARR of 3.5%. The AARI for mothers with no education was 26.5% while among those with secondary education, it was 2.1%. In terms of wealth quintiles, the AARI for pregnant women from the richest households was 7.0% while from the poorest households, it was 23.3% and 26.5% among those in the fourth wealth quintile. Among regions, the highest AARIs for SBA was seen in Benishangul-Gumuz (27.4%), Oromia (26.6%), Amhara (23.3%) and Afar (20.8%), while SBA decreased in Addis Ababa by an AARR of 0.4%.

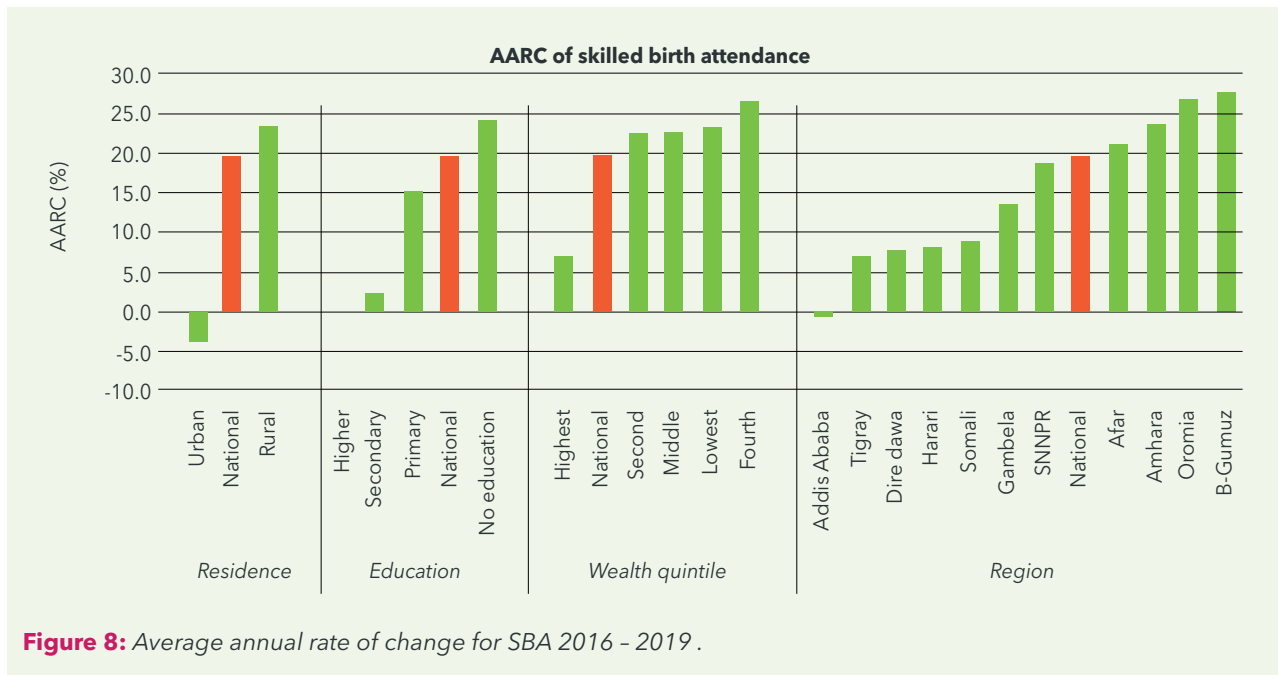


Figure 8: Average annual rate of change for SBA 2016 - 2019 .

» Assistance during delivery by doctor, nurse or midwife

Doctor-assisted deliveries increased from 5.5% in 2016 to 8.4% in 2019. This increase can largely be attributed to rural areas, which saw a 71.0% rise in doctor-assisted deliveries. Assistance during delivery by nurse or midwife also rose from 16.4% in 2016 to 31.9% in 2019, a 95.0% increase.

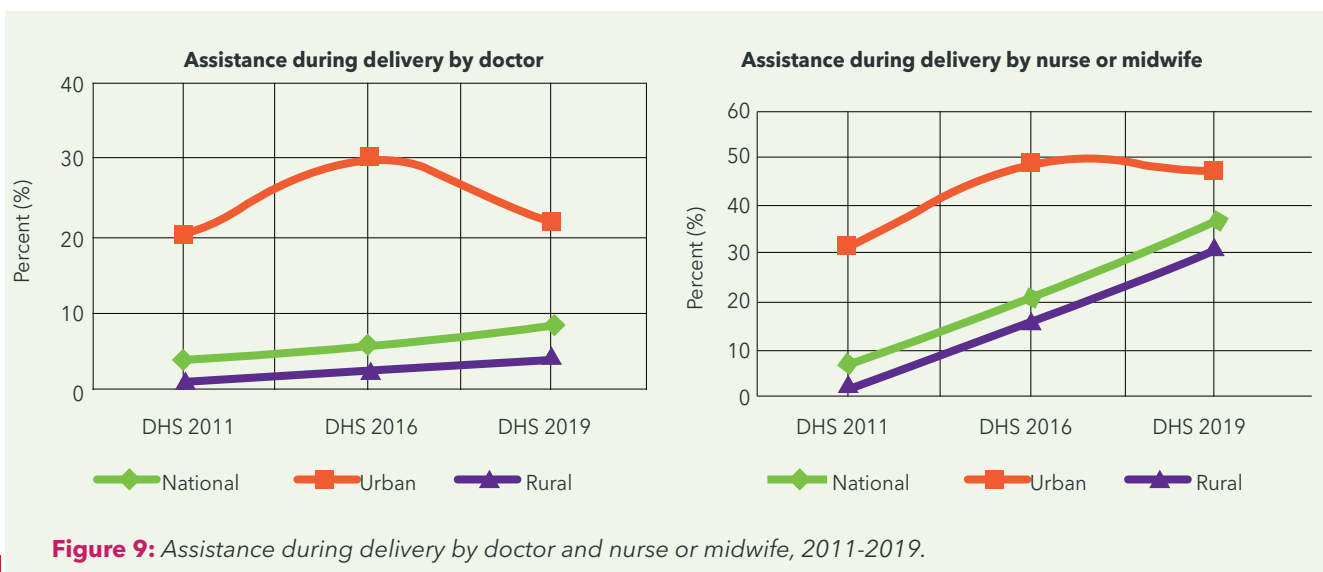


Figure 9: Assistance during delivery by doctor and nurse or midwife, 2011-2019.

The improvements in SBA coverage are due to the expansion of health services, active engagement by health extension workers (HEW) and the health development army (HDA), and an increased emphasis on maternal and newborn care in recent years. Several studies conducted in Ethiopia identified a multitude of bottlenecks and challenges to skilled delivery service use such as low maternal education, rural residence, multiparity, low awareness of ANC services, remoteness or lack of transport to health institutions, inexperience with obstetric complications and care in previous deliveries, low decision making power by women and low awareness of obstetric care.²²⁻²⁵ Other deterrents to skilled delivery service use include socio-cultural factors, fear of delivery in a health facility, the nature of labor, lack of ANC visits during pregnancy, lack of local health facilities, little knowledge and poor healthcare-seeking behavior.²⁶

3.4 CAESAREAN SECTION (CS) DELIVERIES

Delivery by caesarean section (CS) refers to the percentage of live births delivered by caesarean section in the five years preceding the DHS. At the end of HSTP-I, CS delivery levels were targeted to reach 8.0%. However, they only increased from 1.9% in 2016 to 4.0% in 2019, an increase of 111.0%. The HSTP-II target is 8.0%, requiring an increase of 100.0% from the HSTP-I period. It will be necessary to maintain efforts at the level seen in the past few years to achieve the HSTP-II target.

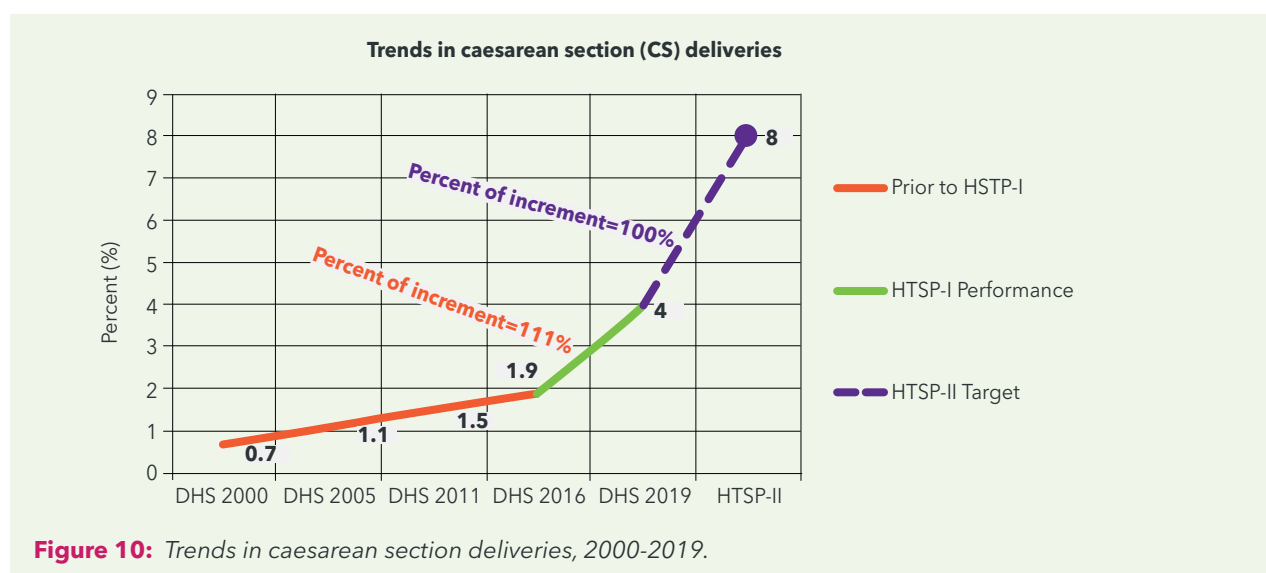


Figure 11 shows the trends in CS deliveries by background characteristics. The increase in CS deliveries during the HSTP-I period is attributed to the almost four-fold increase seen in rural areas during the HSTP-I period (0.9% in 2016 to 3.9% in 2019), even as CS deliveries decreased in urban areas, by 4.7%. Among women in the lowest wealth quintile, CS deliveries increased from 0.6% to 1.6%, representing an increase of 166.0%, while among those with no education, it increased from 0.7% to 2.9%, a rise of more than 314.0%.

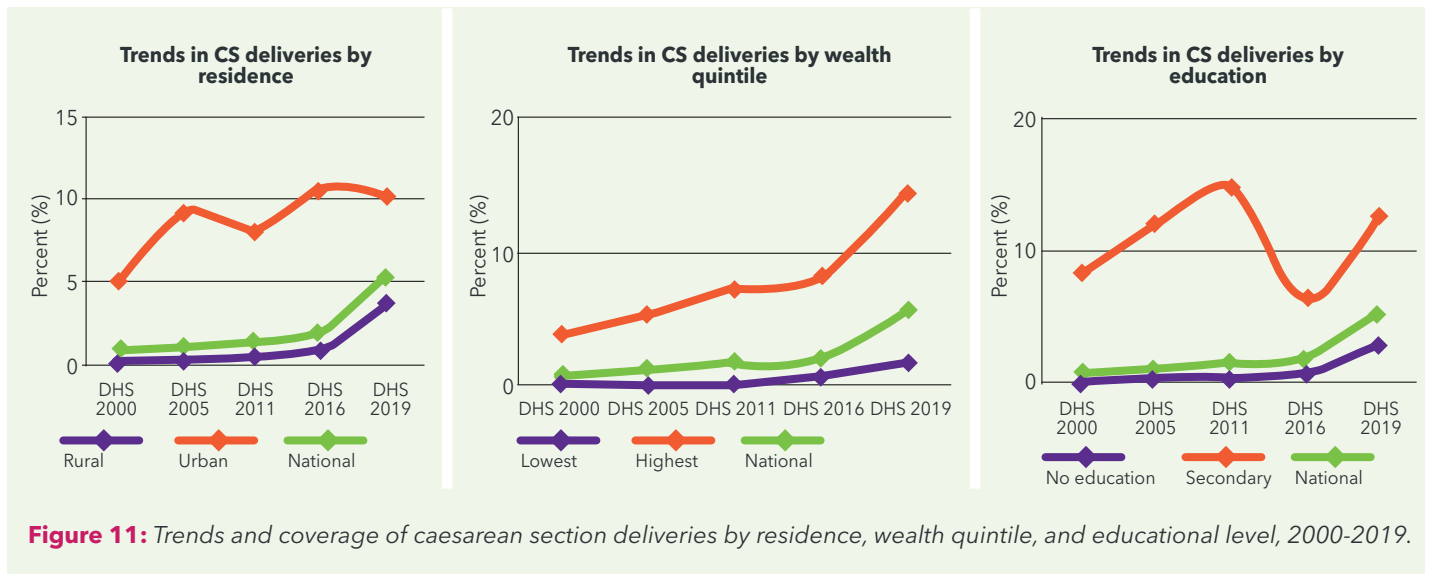


Figure 11: Trends and coverage of caesarean section deliveries by residence, wealth quintile, and educational level, 2000-2019.

Figure 12 shows the trends in CS deliveries by region. In all regions, the level of CS deliveries increased during the HSTP-I period with small changes recorded in Somali, Afar and Gambela, due to the pastoralist nature of the communities there.

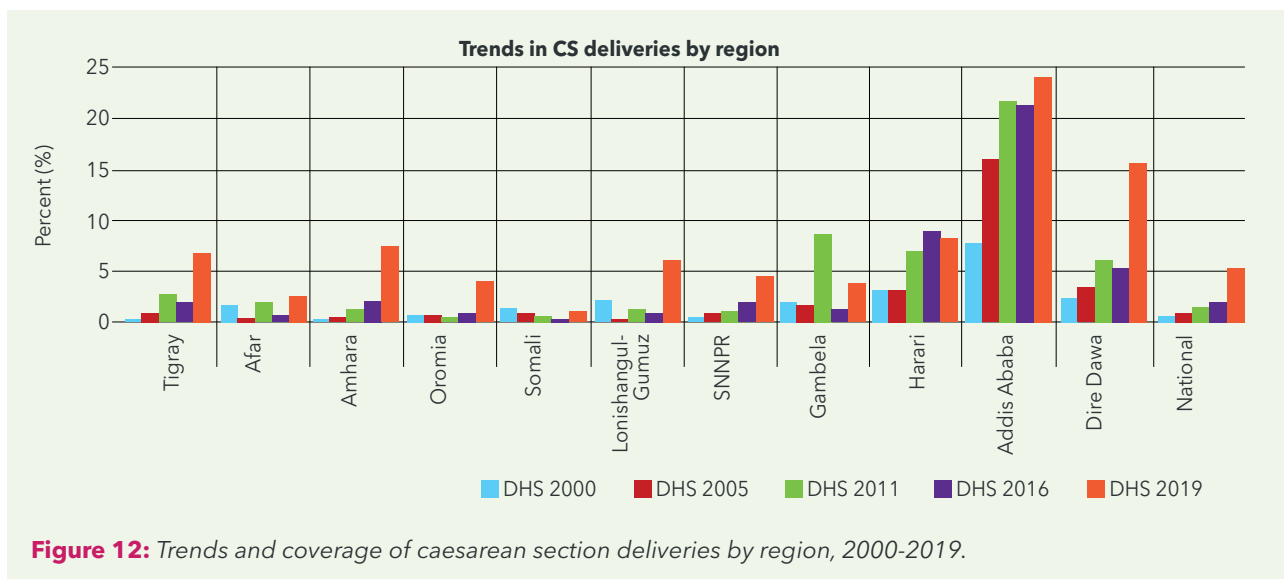


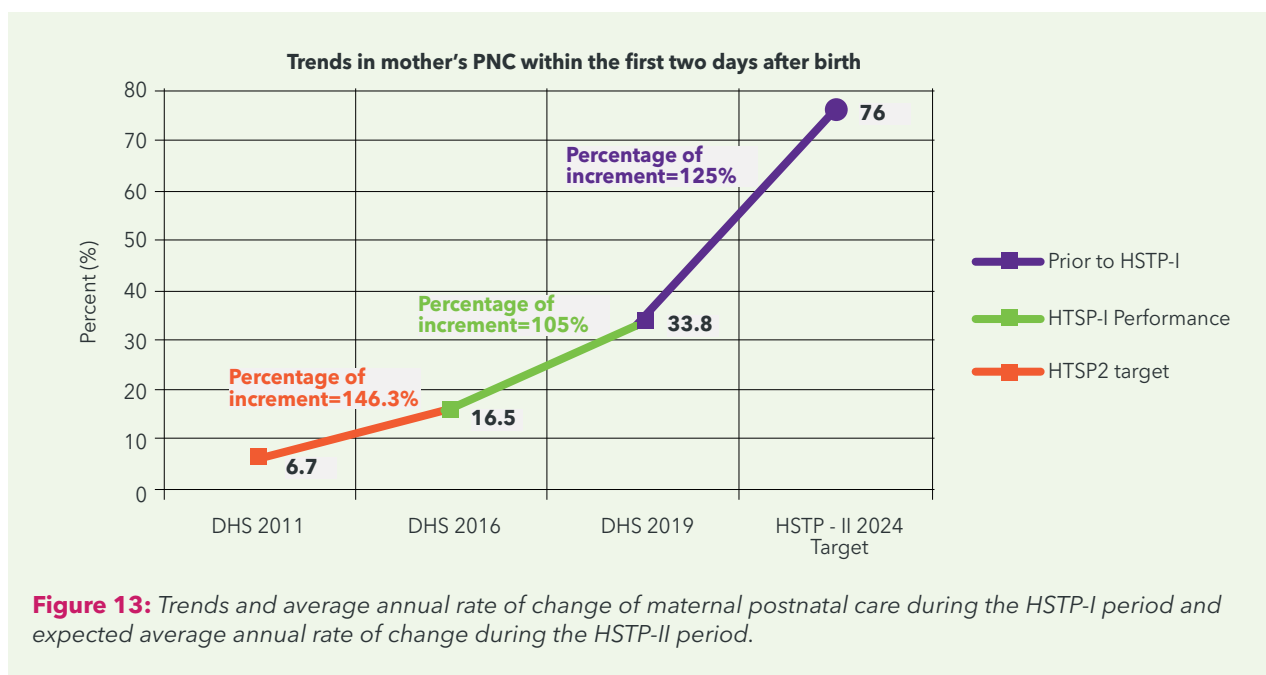
Figure 12: Trends and coverage of caesarean section deliveries by region, 2000-2019.

Although evidence indicates that CS deliveries increased in Ethiopia, the current magnitude of this service is very low which might point to missed opportunities that could cost the lives of mothers and newborns. In this study, there are inequalities based on mother's residence, education levels, geography, and wealth quintile. Other literature has shown that women's age, religion, educational status, gender parity, wealth index, ANC visits, region and place of residence, partograph monitoring, oxytocin administration, place of delivery, antepartum hemorrhage, and experience with previous CS delivery were factors affecting CS service utilization countrywide.²⁷⁻³¹

3.5 POSTNATAL CARE (PNC) CHECKUP

» Mother's first postnatal checkup

Figure 13 shows the percentage of women who delivered two years before the DHS survey and had their first postnatal care (PNC) checkup within the first two days after birth. During the HSTP-I period, it increased from 16.5% in 2016 to 33.8% in 2019, showing an increase of 105.0%. The HSTP-II period targets a goal of 76.0%, which requires an increase by 125%. More efforts are therefore required to achieve the national target by 2024.



Mothers who received PNC within two hours after delivery in rural areas increased by 129.0% (12.6% in DHS 2016 to 28.9% in DHS 2019). In the lowest wealth quintile, the proportion increased from 7.3% to 12.8%, and among women with no education, there was an increase from 10.6% to 21.8%, representing a 105.0% increase.

The AARC analysis showed that, nationally the proportion of mothers receiving PNC two hours after delivery increased by 23.9%. The increase was derived from the increased coverage in rural areas which saw an AARC of 27.7%. Uneducated women and those in the poorest sub-populations utilized PNC services more than their counterparts. Among regions, the drivers of the increase came from the two most populous regions, Oromia (35.5%) and Amhara (25.7%) as well as the Gambela and Benishangul-Gumuz regions. In urban regions such as Addis Ababa, Dire Dawa and Harari, service coverage was lower than the national average and in the Somali region, the share of mothers accessing PNC services declined from 2016.

Mothers who received postnatal care within two hours after delivery in rural areas increased during the HSTP-I period. While coverage increased among the hard-to-reach sub-populations, there are still inequalities in the PNC utilization rates among the different members of society stratified based on place of residence, mother's education level, and wealth quintile. The literature review supported this as rural areas, physical distance, low maternal education level, lack of mothers' awareness, and cultural practices are listed as barriers to PNC utilization in Ethiopia.^{32,33} Mothers living in urban areas still have higher PNC coverage than those living in rural areas. This may be due to the distance to health facilities in rural areas and may also be related to traditional and cultural practices around childbirth that favor confinement at home for up to 40 days after delivery. Significant factors determining use of postnatal care include place of residence; obstetric factors such as knowledge of obstetric danger signs, cesarean section delivery, mode of delivery and institutional delivery; and health service-related factors such as family conversations during pregnancy, birth notification, home visits by community health workers and recognition as a model family.³⁴⁻³⁶ Coordinated, community-based interventions that involve health extension workers are therefore critical to improving coverage.

» First postnatal care checkups for newborns

In this case, postnatal care (PNC) refers to the percentage of newborns delivered in the two years preceding the DHS survey who had their first postnatal checkup within the first two days after birth. The proportion of newborns receiving PNC rose from 13.1% in DHS 2016 to 34.5% in DHS 2019, representing an increase of 163.0%. While national PNC coverage is low, rural areas experienced an increase of more than 200% (9.8% to 29.6%), while in urban areas the increase seen was only 29.0%. In addition, the increase was largest among the uneducated (203.0%) and those in the lowest wealth quintile (224.0%).

Neonates receiving PNC increased by an AARI of 32.2% at the national level. This increase was largely derived from changes in rural areas. Among the regions, the drivers of the increase come from the two most populous regions, Amhara (43.2%) and Oromia (40.3%), as well as Afar. The Somali region saw the lowest increase in terms of neonatal PNC.

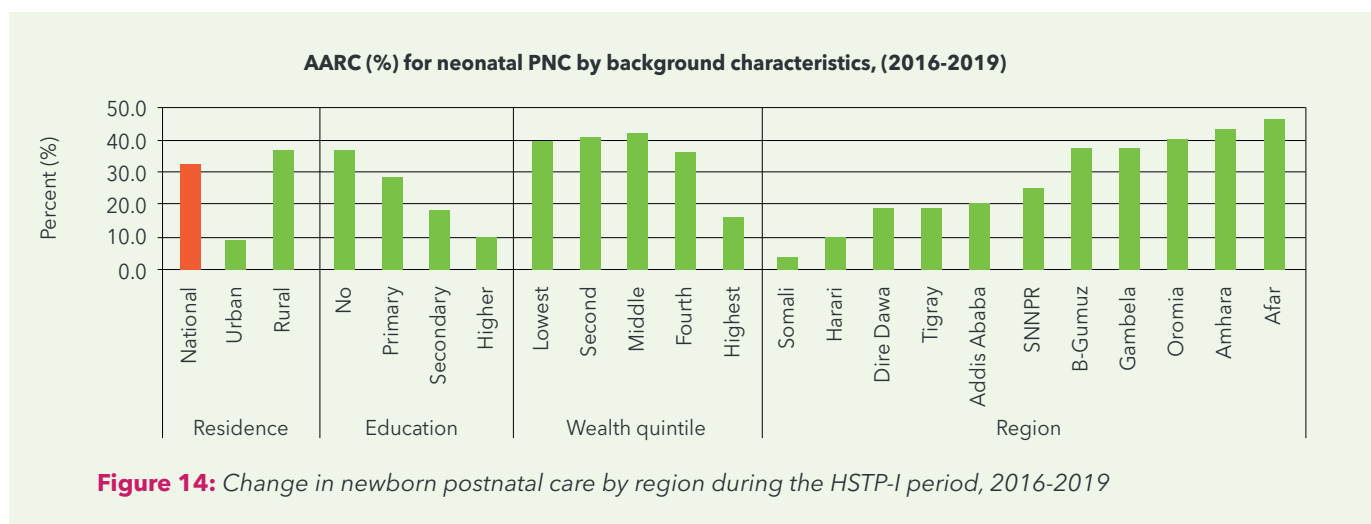


Figure 14: Change in newborn postnatal care by region during the HSTP-I period, 2016-2019

» Provider of first PNC checkup for mothers and newborns: Doctors, nurses and midwives

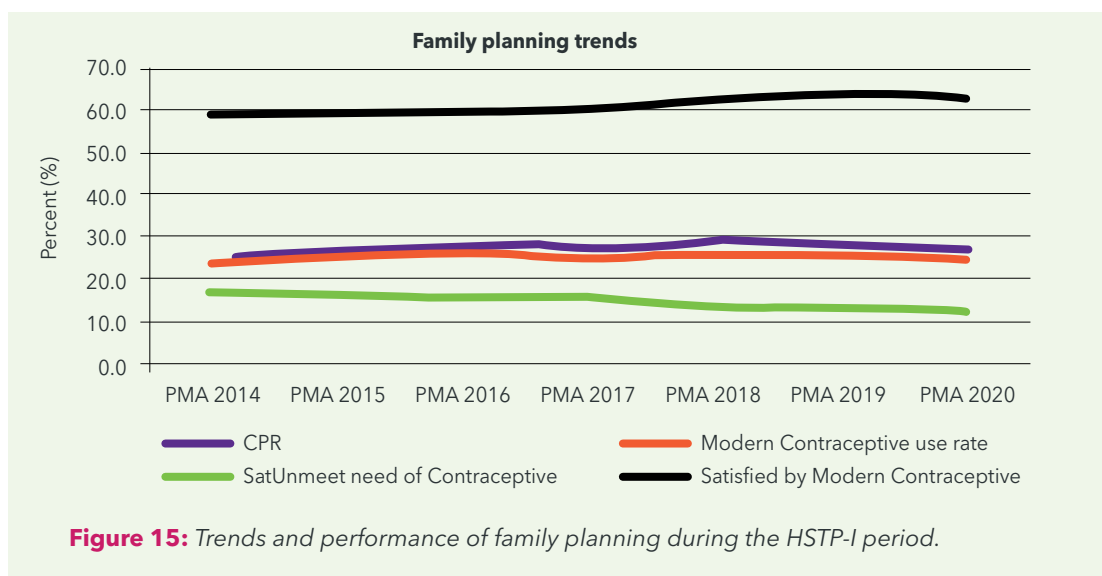
During the HSTP-I period, mothers' who received their first PNC checkup from skilled professionals such as doctors, nurses or midwives increased by 91.6% (15.4% in 2016 to 29.5% in 2019) at national level. The driver of this increase was the change in rural areas by 109.5% (11.5% in 2016 to 24.1% in 2019). This increase was seen in all regions except the Somali region, which saw a reduction by 19.7% (11.7% in 2016 to 9.4% in 2019).

The first PNC checkup for newborns by doctors, nurses or midwives at national level also increased, by 158.1% (11.7% in 2016 to 30.2% in 2019). A major contributor to this change was the 190.5% increase seen in rural areas (8.4% in 2016 to 24.4% in 2019).

The first month of the postpartum period is a life-threatening time in the lives of mothers and newborns. It is also the most overlooked time for the provision of qualified healthcare services for mothers and newborns. Delivering appropriate postnatal care is necessary to safeguard maternal and newborn health. While PNC coverage increased, factors associated with its low coverage such as low levels of antenatal care visits during pregnancy, place and mode of delivery, socioeconomic factors such as marital status, wealth quintile, mother's education, residence, media access, distance to health facility, desire for pregnancy, gravidity, parity, and region were significant predictors of postnatal care for newborn babies.^{37,38}

3.6 FAMILY PLANNING

Figure 15 shows family planning utilization trends based on performance monitoring for action (PMA) data sources. The contraceptive prevalence rate (CPR) increased from 24.0% in 2014 to 27.0% in 2020, the modern family planning utilization rate increased from 24.0% to 25.0%, unmet need for family planning decreased from 16.0% in 2014 to 13.0% in 2020, and family planning demand satisfied by modern methods increased from 59.0% in 2014 to 63.0% in 2020.



» Contraceptive prevalence rate (CPR)

According to the EDHS survey, the national contraceptive prevalence rate (CPR), increased from 8.1% in 2000 to 36% in 2016. During the HSTP-I period, CPR increased from 35.9% in 2016 to 41.0% in 2019, for an AARI of 4.4%. The HSTP-II target is to attain CPR of 50.0%, which requires an AARI of 4.0%.

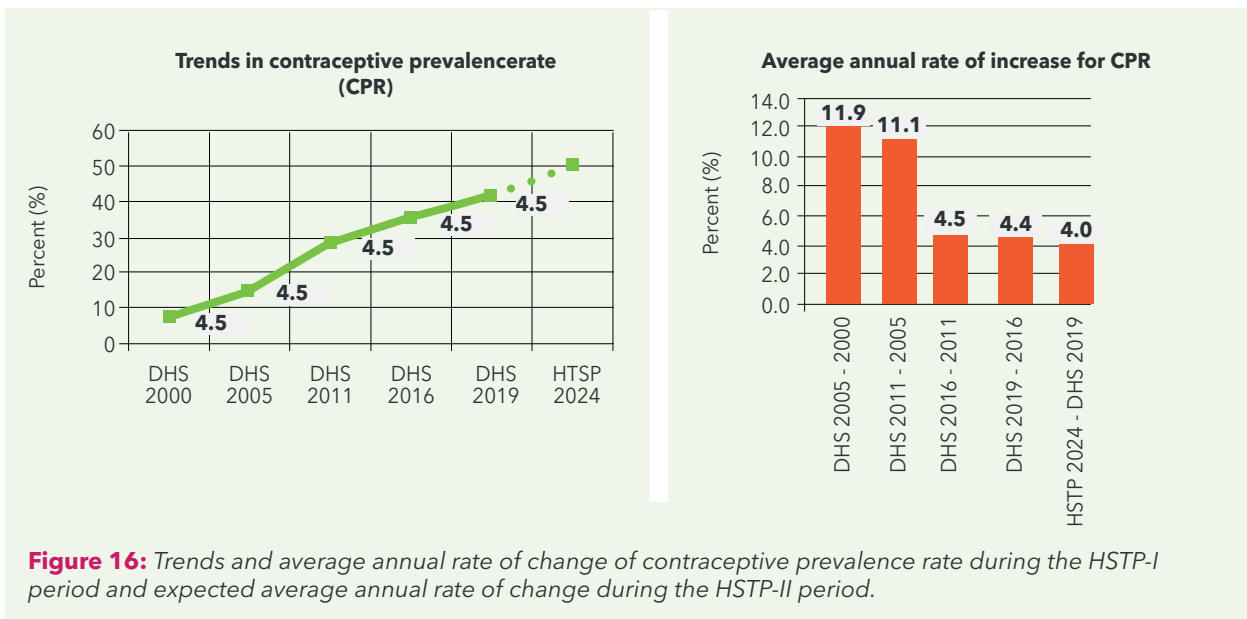


Figure 16: Trends and average annual rate of change of contraceptive prevalence rate during the HSTP-I period and expected average annual rate of change during the HSTP-II period.

During the HSTP-I period, trends in contraceptive utilization increased more among married women resident in rural areas, those in the lowest wealth quintile and uneducated women. Nationally it increased by 15.3% (35.9% in 2016 to 41.0% in 2019). In rural areas, the increase was by 16.4% (32.8% in 2016 to 38.2% in 2019) while in urban areas contraceptive utilization decreased by 4.4% (52.0% in 2016 to 49.7% in 2019). Among the poorest households, contraceptive utilization increased by 37.8% (19.6% in 2016 to 27.0% in 2019) while among the wealthiest households, it increased by 7.3% (49.4% in 2016 to 53.0% in 2019). This indicates that during the HSTP-I period, more emphasis was placed on increasing contraceptive coverage among the disadvantaged sub-populations.

The AARC of contraceptive prevalence rate increased across the regions, except in Addis Ababa and Dire Dawa, which saw decreases of 3.8% and 1.1%, respectively. The highest improvement was observed in three regions: Somali (AARC of 27.3%), Oromia (AARC of 11.8%), and Benishangul-Gumuz (AARC of 10.0%). However, the CPR remained low in the Somali region, where it increased from 1.5% in 2016 to 3.4% in 2019.

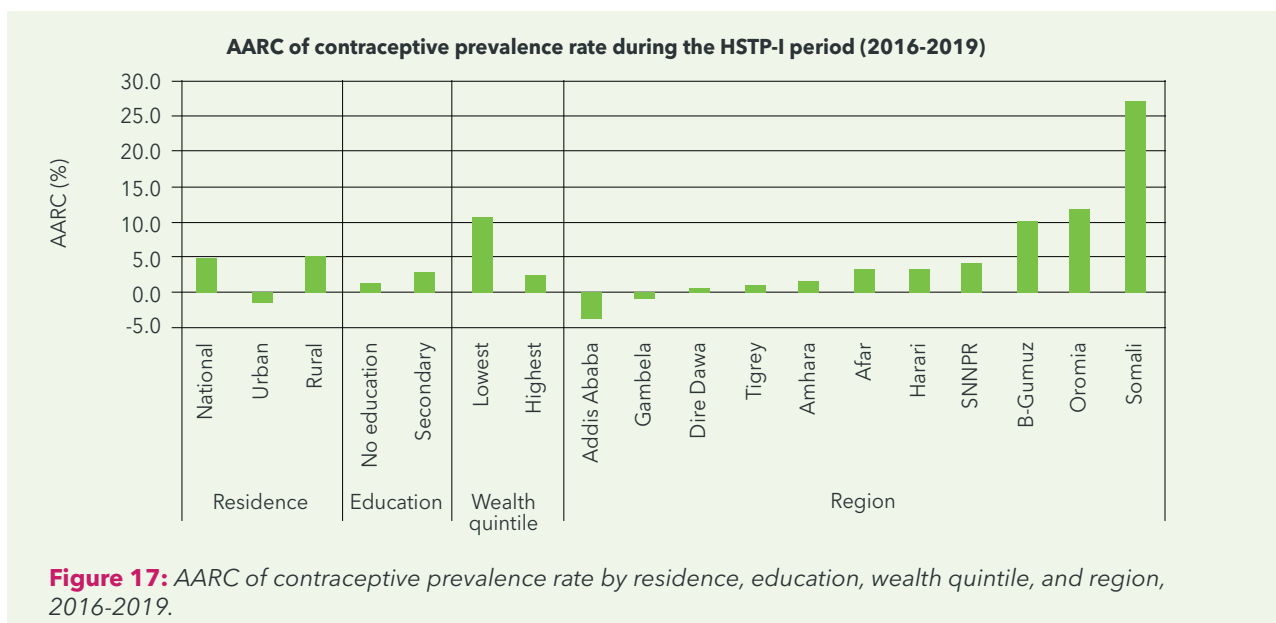


Figure 17: AARC of contraceptive prevalence rate by residence, education, wealth quintile, and region, 2016-2019.

» Unmet need for family planning

Trends in the reduction of the unmet need for family planning varied among different sub-populations. At the national level, the unmet need for family planning declined from 16.0% in 2016 to 13.9% in 2019. The unmet need for family planning was higher in rural areas, among those in the highest wealth quintile, and among the uneducated. Reduction of the unmet need for family planning varied across regions. In Oromia, it reduced from 22.0% to 16.7%, in Tigray from 14.0% to 10.3%, while in Addis Ababa it increased from 3.0% to 8.2% (Figure 18).

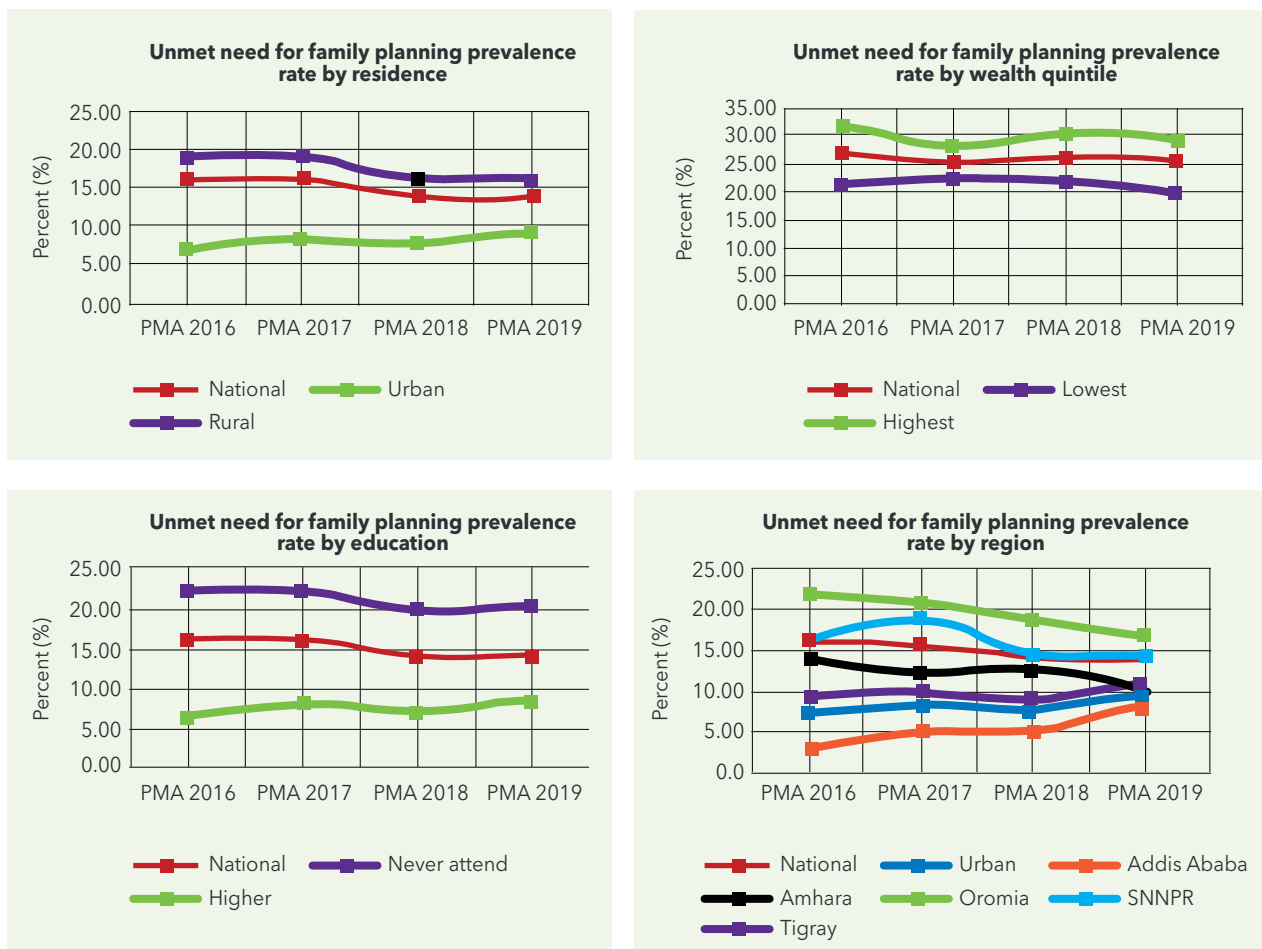


Figure 18: Trends in the unmet need for family planning by residence, education level, wealth quintile, and region, 2016-2018.

» Family planning demand satisfied by modern contraceptives

Demand satisfied by modern contraceptives at national level increased from 60.0% in 2016 to 63.4% in 2019. The percentage of demand satisfied by modern contraceptives is higher in urban areas, among those with higher education levels and those in the highest wealth quintile. Among regions, it increased in Oromia and Tigray while it decreased in Addis Ababa and Amhara.

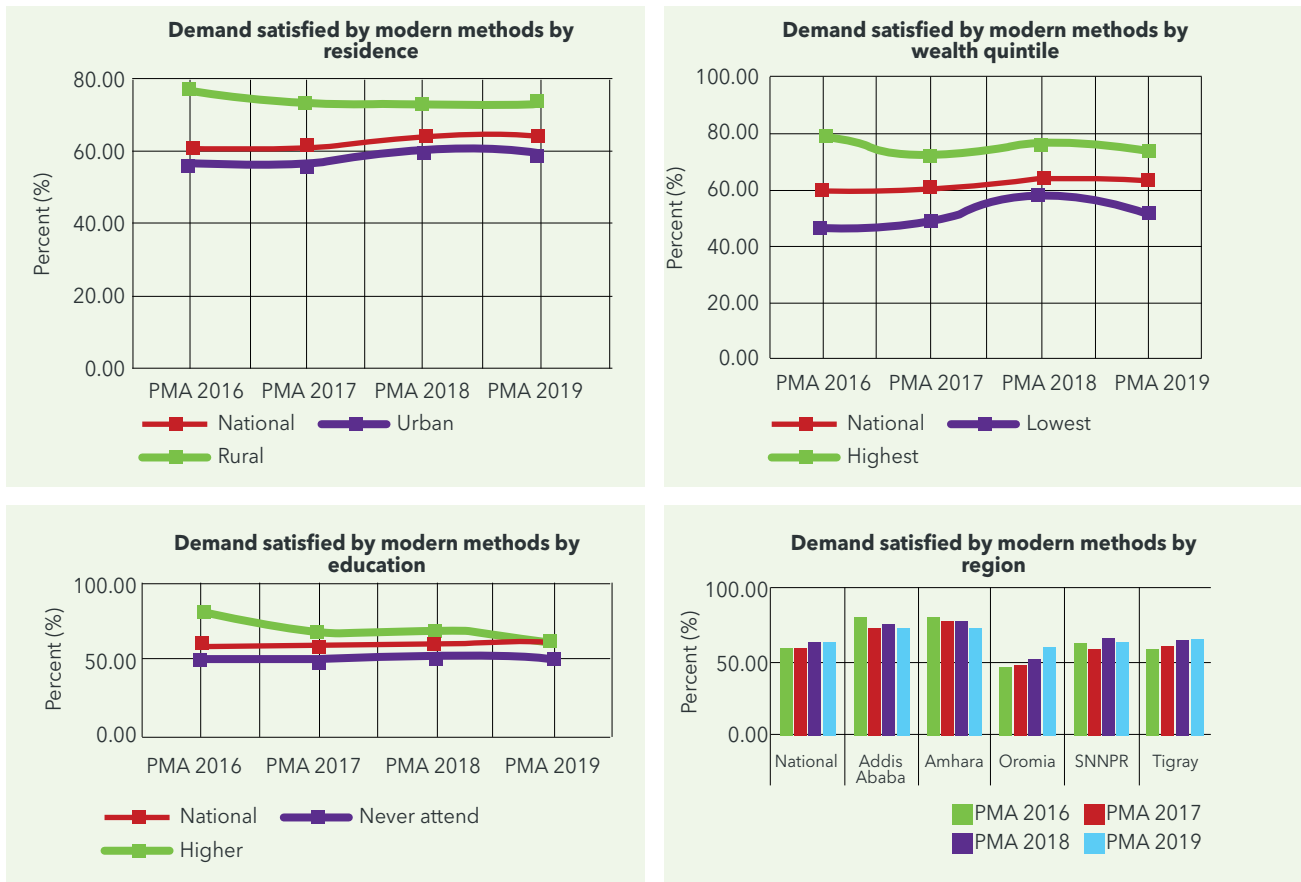


Figure 19: Trends in demand satisfied by modern contraceptives by place of residence, education level, wealth quintile, and region, 2016-2018.

Ethiopia has increased family planning service coverage by providing various contraceptive methods at the household level. The positive factors contributing to the steady increase of CPR and rising coverage of family planning include the health extension program which incorporates family planning as one of 16 essential health services provided at the community level by health extension workers; expansion of health facilities; introduction of long-serving contraceptive methods; and the increased availability of free family planning services. Conversely, contributing factors for the low utilization of family planning include education level, knowledge of and attitudes towards contraceptives, fear of contraceptive side effects, cultural and traditional restrictions, lack of women’s autonomy in healthcare decisions, the desire for additional children, male involvement in family planning decisions, previous use of modern contraceptive methods, and poor health service provision. ³⁹⁻⁴¹

3.7 CHILDHOOD IMMUNIZATION

Immunization of children against preventable diseases is crucial to curb childhood mortality and morbidity. Improving routine immunization services is one of the best options for prevention and control of vaccine preventable diseases such as tuberculosis, diphtheria, whooping cough (pertussis), tetanus, polio, and measles. Other childhood vaccines provided in Ethiopia protect against Hepatitis B, Haemophilus influenza type B (HiB), pneumococcal conjugate vaccine (PCV) and the rotavirus vaccine. Figure 20 shows the consistent increments in child immunization coverage from 2000 to 2019. The Bacille Calmette-Guerin (BCG) vaccine, Penta-3/DPT-3, and all eight basic vaccinations showed consistent increments. Conversely, the incidence of children receiving no vaccination

decreased from 83.8% in 2000 to 42.2% in 2019. In 2019, 7 in 10 children received the BCG vaccine, 6 in 10 children received the Penta-3/DPT-3 vaccine, while 6 in 10 children received the measles vaccine. Vaccination coverage increased for all vaccines during the HSTP-I period. BCG increased by 5.5% (69.2% in 2016 to 73.0% in 2019), Penta-3/DPT-3 by 11.1% (53.2% in 2016 to 59.1% in 2019), measles by 7.7% (54.3% in 2019 to 58.5% in 2019), and all eight basic vaccinations by 14.5% (38.5% in 2016 to 44.1% in 2019). On the other hand, the incidence of no vaccination decreased by 22.6% (54.4% in 2016 to 42.1% in 2019).

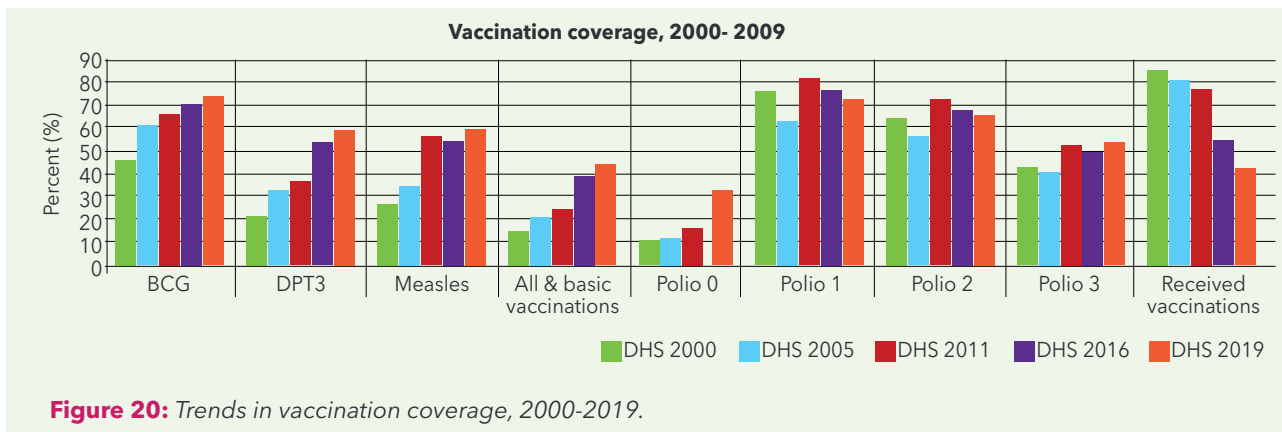


Figure 20: Trends in vaccination coverage, 2000-2019.

Figure 21 shows the average annual rate of change for selected vaccinations during the HSTP-I period (2016-2019). Nationally, the average annual rate of change for Penta-3, all eight basic vaccinations, measles, and BCG increased by 4.6%, 4.5%, 2.5%, and 1.8%, respectively during the HSTP-I period. Drivers of the rise in basic immunization and Penta-3 coverage are the increases seen in rural areas, among those with no education and those in the lowest wealth quintile. Immunization coverage decreased in urban areas, among the educated, and those in the highest wealth quintile. Coverage of measles and BCG vaccines decreased in rural areas, among those with no education and those in the lowest wealth quintile during the HSTP-I period.

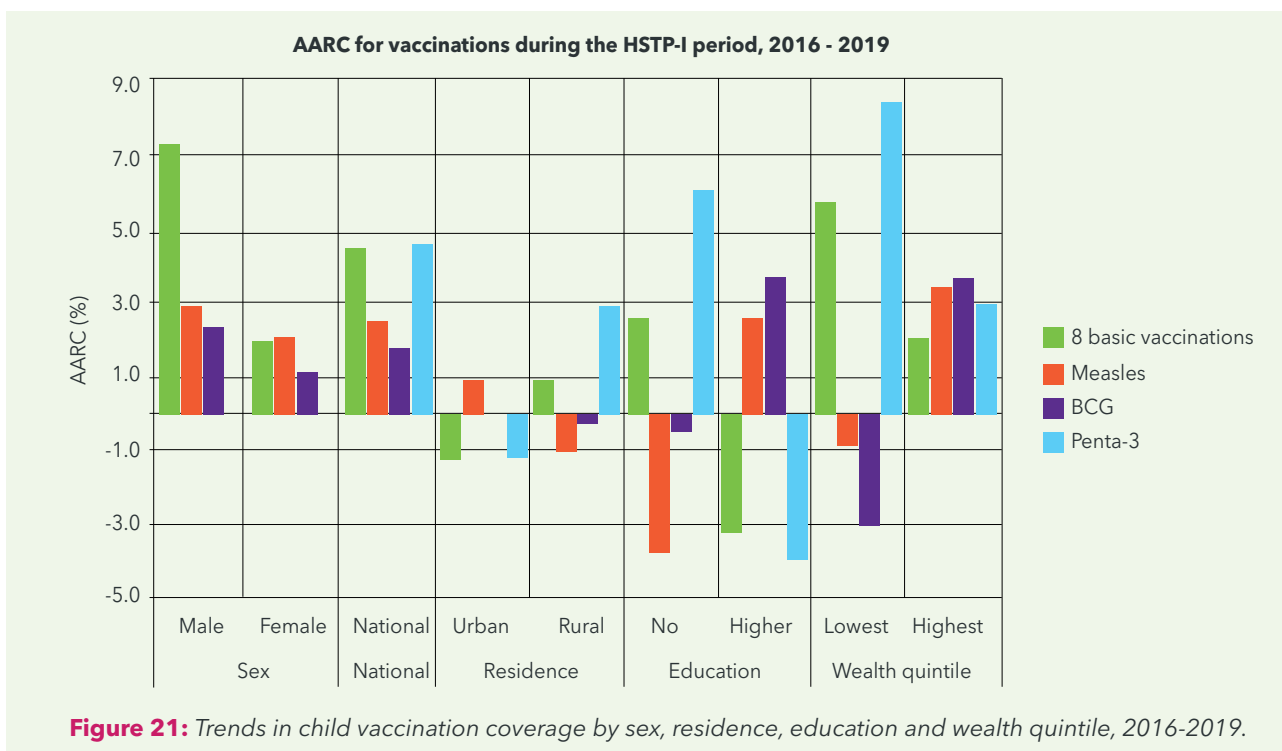


Figure 21: Trends in child vaccination coverage by sex, residence, education and wealth quintile, 2016-2019.

The AARC for all vaccines increased in Tigray, Afar, Amhara, Oromia, and Benishangul-Gumuz regions. This contributed to the increase in vaccinations at the national level, while administration of all vaccines decreased in Somali and in the Dire Dawa city administration. In the Somali region, the AARC of eight basic vaccinations, measles, BCG, and Penta-3 decreased by 5.5%, 14.8%, 11.6%, and 10.9%, respectively. In SNNPR, all vaccinations decreased except measles. In Addis Ababa, all vaccinations decreased except BCG, while in Harari region, BCG and DPT-3 decreased during the HSTP-I period (Figure 22).

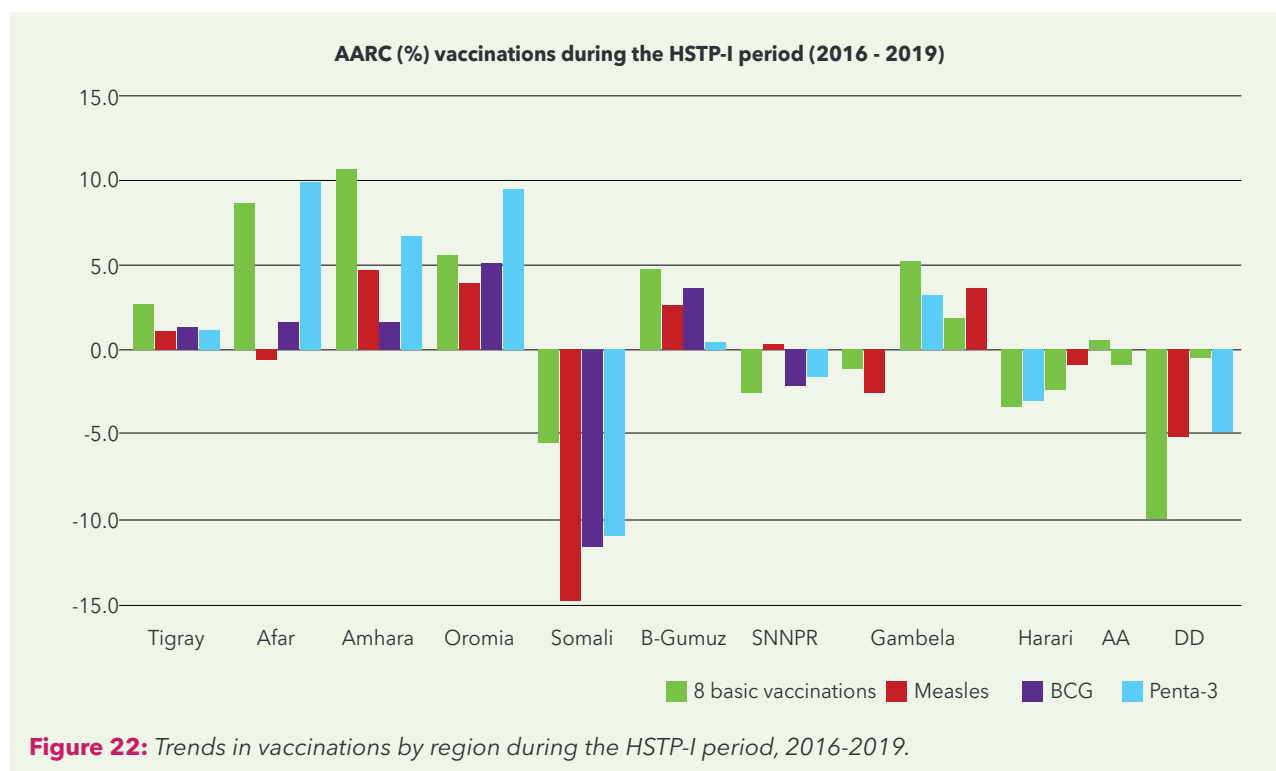


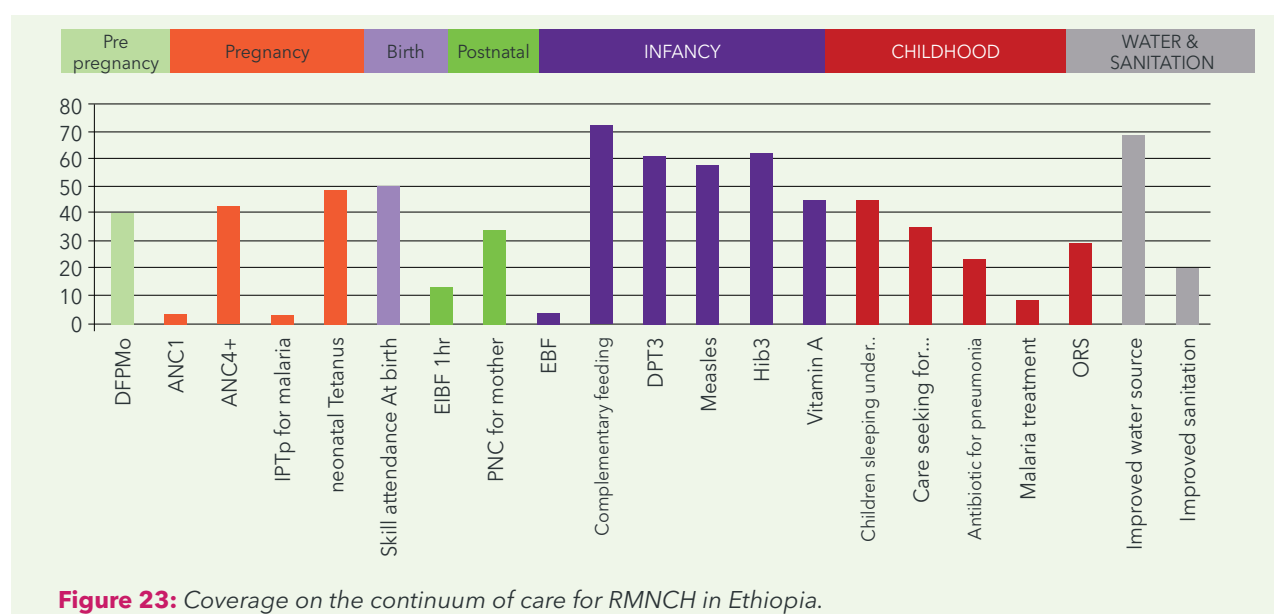
Figure 22: Trends in vaccinations by region during the HSTP-I period, 2016-2019.

Ethiopia's Expanded Programme for Immunization (EPI) launched in 1980, with the goal of increasing immunization coverage, has been one of the core priorities in HSTP-I.^{3,42} The increased coverage was due to mobilization of the women development armies, volunteers, health extension workers and health facilities to deliver immunization services. Three important service delivery platforms for vaccination services were the stationary, outreach and mobile platforms. In addition, several campaigns provided polio, measles and other antigens to children.^{42,43} While immunization coverage was increasing in Ethiopia, it was still significantly lower than the global target. Factors associated with child immunization including socio-demographic characteristics (mother's educational status and residence), health service delivery (place of delivery, ANC follow-up, vaccine availability, residence, and cold chain management),⁴⁴ maternal healthcare utilization, mother's or caretaker's knowledge on vaccines and vaccine-preventable diseases,⁴⁵ female household heads and wealth index were all considered to influence vaccine utilization.⁴⁶

3.8 COMPOSITE COVERAGE INDEX OF RMNCH INTERVENTIONS

» Continuum of care

The figure below shows the continuum of care on reproductive, maternal, newborn and child health (RMNCH). It consists of seven categories and 21 indicators. Most of the data were from EDHS 2016 and 2019. During the pre-pregnancy phase, demand for modern family planning covered was 40.0% while during pregnancy, neonatal tetanus protection at birth was the highest indicator at 49.0%. At birth, skilled provider attendance was 50.0% while in the postnatal period, early initiation of breastfeeding within the first hour after birth was 13.0% and PNC for mothers in the first two days was 34.0%. During infancy, complementary feeding had the highest score of 72.0%. In general, indicators for care during the infancy period were recorded above 40% except exclusive breastfeeding. In the water and sanitation phase, improved water source was recorded at 69% which was the second highest score after complementary feeding, among the 21 indicators included. A lot of efforts and interventions are needed to address ANC1 coverage, early initiation of breastfeeding, malaria treatment and improved sanitation.



» Composite coverage index (CCI) of RMNCH interventions

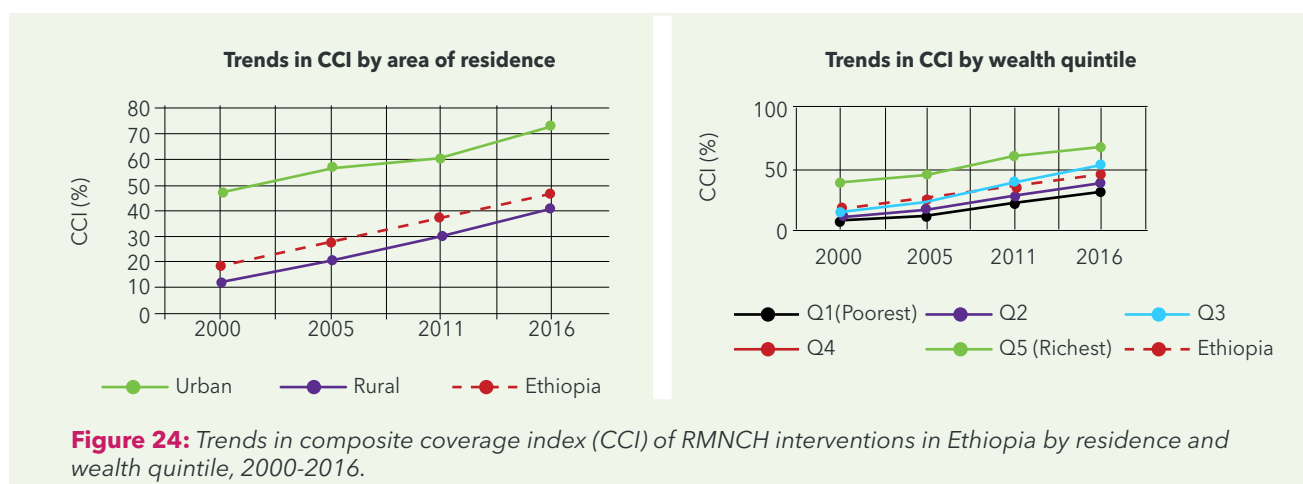
The data used in this analysis was drawn from population-based surveys, specifically the nationally representative data of EDHS 2000, 2005, 2019 and 2016, and the mini-DHS 2019. Multiple surveys were utilized to examine progress and narrowing gaps in RMNCH coverage over time. The composite coverage index (CCI) includes the weighted average results of eight interventions, based on a set of indicators covering the four stages of the continuum of care: family planning (1 indicator), maternal and newborn care (2 indicators), immunization (3 indicators), and treatments for diarrhea and suspected pneumonia for sick children (2 indicators). The composite coverage index is calculated using the equation:⁴⁷

$$CCI = \frac{1}{4} \left(DFPSm + \frac{ANC4 + SBA}{2} + \frac{BCG + 2 \times penta3/DPT3/+MSL}{4} + \frac{ORS + CAREP}{2} \right)$$

- Where (1) **DFPSm** = demand for family planning satisfied with modern methods;
 (2) **ANC4** = four or more antenatal care visits, SBA = skilled birth attendant;
 (3) **BCG vaccine, Penta-3/DPT-3 vaccine, MSL** = measles vaccine;
 (4) **ORS** = oral rehydration salts; CAREP = care seeking for suspected pneumonia/ Acute Respiratory Infection (ARI)

The CCI is used to measure the country's progress in terms of equity in RMNCH. Its output provides evidence on who is being left behind, in order to inform health policies, programs and practices that can close existing equity gaps.

Over time, RMNCH coverage has increased in both urban and rural areas. The national CCI increased from 16.6% in 2000 to 46.0% in 2016 (AARI of 6.5%). The CCI in urban areas increased from 46.8% in 2000 to 72.8% in 2016 (AARI of 2.6%), while in rural areas it increased from 12.7% in 2000 to 42.2% in 2016 (AARI of 7.6%). Significant progress was observed in rural areas which saw a 73.0% increase (7.6% annual increase). Still, the disparities between urban and rural areas remains high. The CCI increased from 38.5% in 2000 to 67.5% in 2016 (AARI of 3.7%) among the wealthiest while among the poorest, the CCI increased from 10.7% to 30.7% (AARI of 7.0%). Disparities based on place of residence and wealth quintile continue to persist.



Geographical disparities also persisted in terms of progress and performance. Among the regions, the highest AARI of 8.0% was recorded in Amhara and SNNPR, while low AARI was recorded in Addis Ababa (1.2%), Somali (2.0%) and Harari (2.0%). Addis Ababa recorded the highest coverage, but little progress was made relative to other regions over time. Despite remarkable progress in improving national RMNCH coverage, there is still significant work to be done in narrowing gaps among different sub-populations. People from rural areas and in the poorest households remain far behind in terms of RMNCH coverage.

3.9 AVAILABILITY OF SERVICES AT HEALTH FACILITIES

» 3.9.1 Basic emergency and essential obstetric and newborn care (BEm/EONC)

Ethiopia has made great progress in the expansion of BEm/EONC services throughout its health facilities. During the HSTP-I period, two health facility surveys (Service Availability and Readiness Assessment (SARA)) in 2016 and 2018 showed that, with the exception of health posts, BEm/EONC service provision remained almost the same: 55.0% in 2016 and 53.0% in 2018. Parenteral administration of antibiotics, anticonvulsants, and assisted vaginal deliveries have increased. Facilities providing emergency newborn care also did not show significant improvements at national level. The services are all found in hospitals but are offered at lower rates in private clinics. Provision of BEm/EONC services was below the national level in the health facilities found in Gambela, Harari,

Dire Dawa, and Addis Ababa (Annex Table 5 and Annex Table 6).

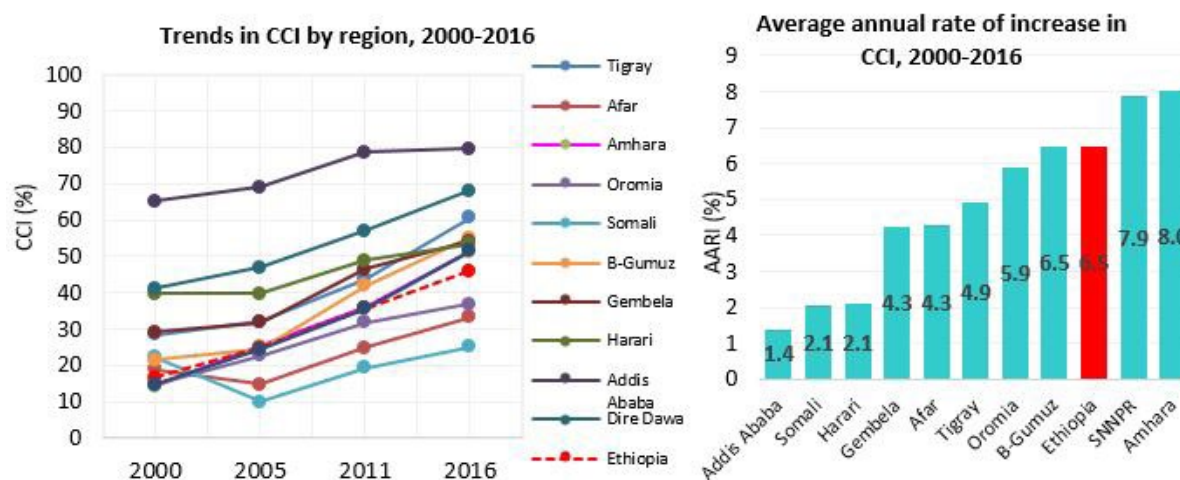


Figure 25: Trends and average annual rate of increase of composite coverage index (CCI) of RMNCH interventions by region, 2000-2016.

Table 2: Availability of basic emergency and essential obstetric and newborn care (BEm/EONC), SARA 2016 and 2018

	2016	2018
Total number of facilities (n)	698	764
Availability of obstetric signal functions offered (%)		
Offers delivery services	55	53
Parenteral administration of antibiotics	46	49
Parenteral administration of oxytocic drugs	51	50
Parenteral administration of anticonvulsants	28	36
Assisted vaginal delivery	39	52
Manual removal of placenta	55	53
Manual removal of retained products	53	49
Mean availability of obstetric signal functions offered	46	48
Availability of newborn signal functions (%)		
Antibiotics for pre-term or prolonged PROM	39	40
Neonatal resuscitation	54	52
Corticosteroids in pre-term labor	9	14
KMC for premature/very small babies	46	47

» 3.9.2 Family planning, ANC, child health and adolescent health services in health facilities

Antenatal care (ANC) service availability decreased from 80.0% in 2016 to 78.0% in 2018. The availability of tracer items for ANC also decreased from 41.0% in 2016 to 32.0% in 2018, and it was below the national level in Oromia, Somali, Benishangul-Gumuz, SNNPR, and Gambela regions. Family planning provided by all facilities was 94.0% in 2016 and 95.0% in 2018. Only 7.0% of the facilities had all the tracer items in both 2016 and 2018. Mean availability of tracer items for family planning was 63.0% in 2018, while it was below the national average in Somali, Afar, Gambela, and Benishangul-Gumuz regions. Availability of curative and preventive care services declined from 91.0% in 2016 to 79.0% in 2018. Service availability for adolescents declined from 60.0% in 2016 to

51.0% in 2018 (Annex Table 5 and Annex Table 6).

Table 3: Availability of family planning, ANC, child and adolescent health services in health facilities

	2016	2018
Total number of facilities (n)	698	764
Facilities offering family planning services (%)		
Facilities offering family planning services	94.0	95.0
National family planning guidelines	38.0	47.0
Family planning checklists	77.0	73.0
Training on family planning (at least one)	57.0	63.0
Mean availability of tracer items	64.0	63.0
ANC services (%)		
Facilities offering antenatal care (ANC) services	80.0	78.0
Iron supplementation	76.0	61.0
Folic acid supplementation	57.0	53.0
Tetanus toxoid immunization	74.0	65.0
Monitoring for hypertensive disorder of pregnancy	59.0	53.0
ANC guidelines	29.0	35.0
ANC checklists	57.0	61.0
Any ANC training	44.0	31.0
Mean availability of tracer items	41.0	32.0
Child health services (%)		
Provide preventive and curative care services for children under-5 years	91.0	79.0
Diagnose and/or treat child malnutrition	79.0	76.0
Provide vitamin A supplementation	79.0	66.0
Provide iron supplementation	44.0	40.0
Provide ORS/zinc to children with diarrhea	73.0	73.0
Child growth monitoring	73.0	66.0
Treatment of pneumonia	83.0	71.0
Treatment of malaria in children	73.0	61.0
Mean availability of tracer items	49.0	49.0
Adolescent health services (%)		
Adolescent health services	60.0	51.0
National guidelines for service provision to adolescents	9.0	20
Training for adolescent health service provision	20.0	21
Mean availability of tracer items	25.0	32.0

» 3.9.3 Availability of essential medicines

The health sector is supposed to ensure the regular availability of essential medicines. Figure 26 shows the availability of drugs used during emergencies and signal functions in hospitals and health centers from the Emergency Obstetric and Newborn Care (EmONC) 2008 and 2016 survey data. In health facilities providing Basic and Comprehensive Emergency Obstetric and Newborn Care (BEmONC and CEmONC) services, the availability of anticonvulsants increased from 54.0% to 87.0% and antihypertensive medicines increased from 78.0% to 92.0%, while Oxytocics and prostaglandins increased from 84% to 94% from 2008 to 2016. No change was observed in the availability of emergency medicines and injectable antibiotics during the same period.

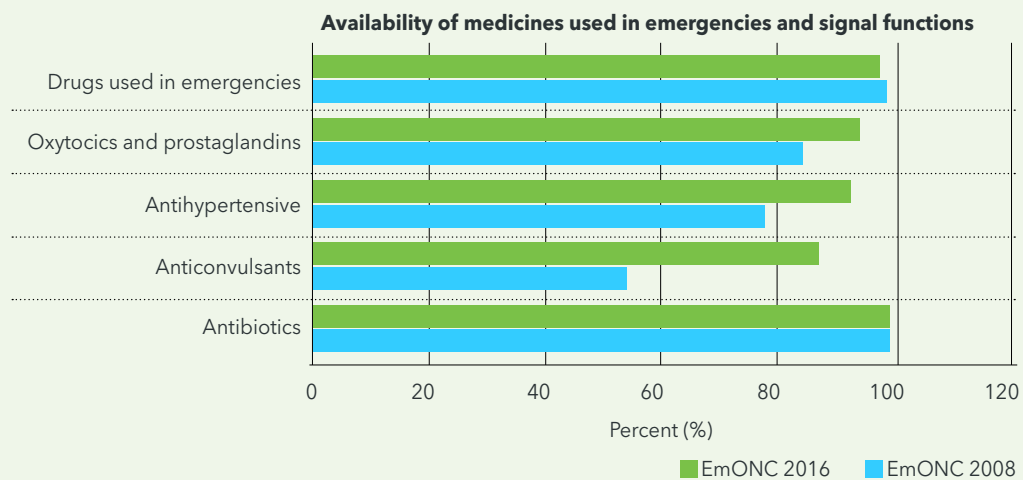


Figure 26: Availability of medicines used in emergencies and signal functions, 2008 & 2016.

The SARA 2016 and 2018 survey data also showed improvements in the availability of essential medicines. Among the total 24 essential medicines, the availability of oral rehydration solution (ORS) increased from 55% to 59%. Availability of zinc sulphate increased from 33.0% to 51.0%, while amoxicillin tablets or syrups, aspirin and ampicillin injections decreased during the same period.

At national level, the mean availability of essential medicines tracer items in health facilities (excluding health posts) level almost no change, 26.0% in 2016 to 28.0% in 2018. The availability of essential medicines varied across regions. Dire Dawa, Benishangul-Gumuz, Somali, Afar and Tigray regions had higher availability than the national average, while availability was lower in Gambela, followed by Addis Ababa, SNNPR, and Amhara regions.

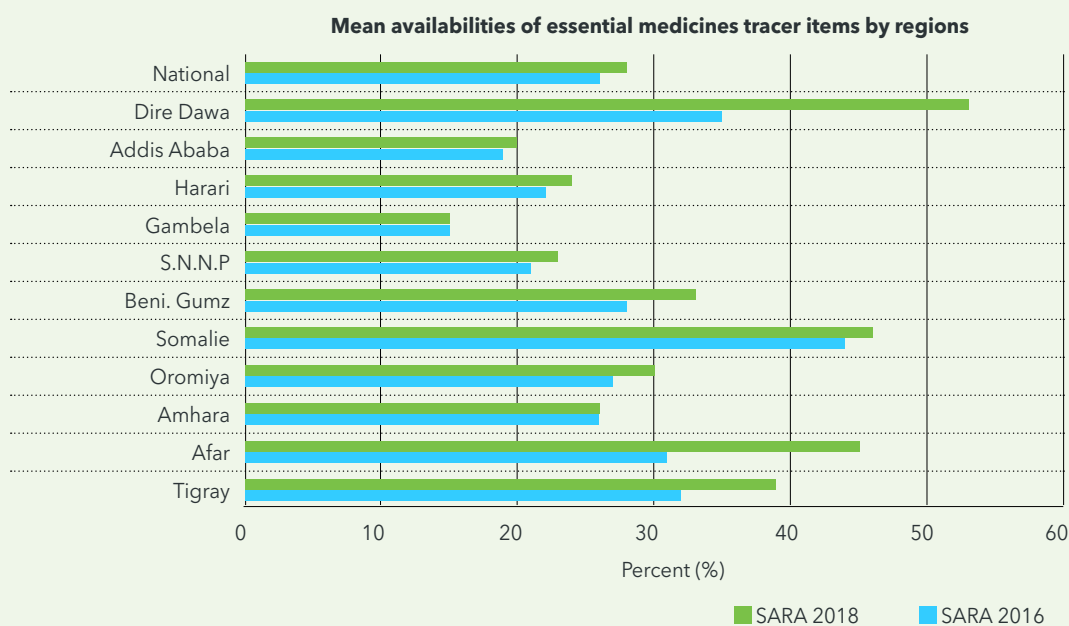
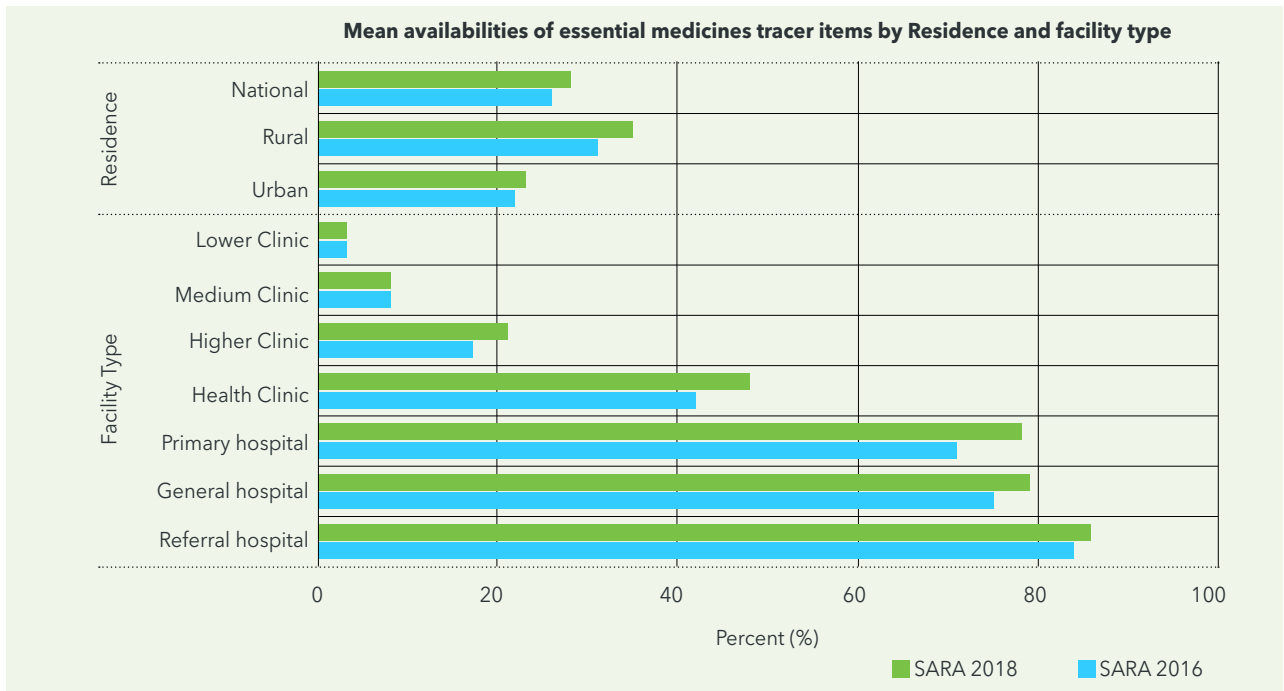


Figure 27: Mean availability of tracer items by region and facility type, SARA 2016 and SARA 2018



3.9.4 Outpatient department (OPD) attendance per capita

Outpatient service utilization, as measured by the number of outpatient department (OPD) visits per person per year, is one of the core indicators of health service delivery. It is a proxy indicator for accessibility and utilization of health services, which likely reflects the quality of services. In HSTP-I, Ethiopia planned to increase OPD attendance per capita from 0.48 in 2015 to 2.0 in 2020. However, the country achieved an OPD attendance per capita of 1.02 which was an improvement of only 50.0%.

Wide disparities were observed in terms of regional performance of OPD attendance per capita. The highest OPD attendance per capita was in Tigray and Addis Ababa regions, with an OPD attendance per capita of 2.07 and 1.97 respectively. The lowest performance was reported in Somali (0.25), Afar (0.36) and Gambela (0.67) regions. At the end of the HSTP-I period, six regions had an OPD attendance per capita that was less than or equal to 1.0, namely SNNPR, Benishangul-Gumuz, Oromia, Gambela, Afar and Somali.

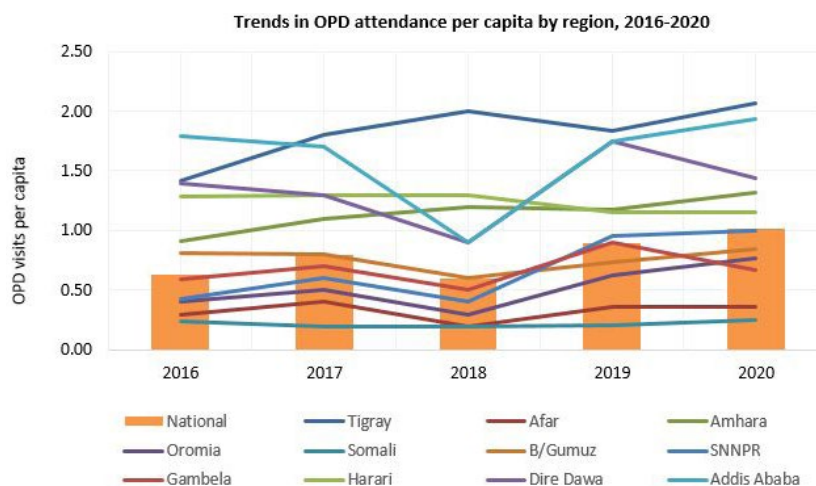
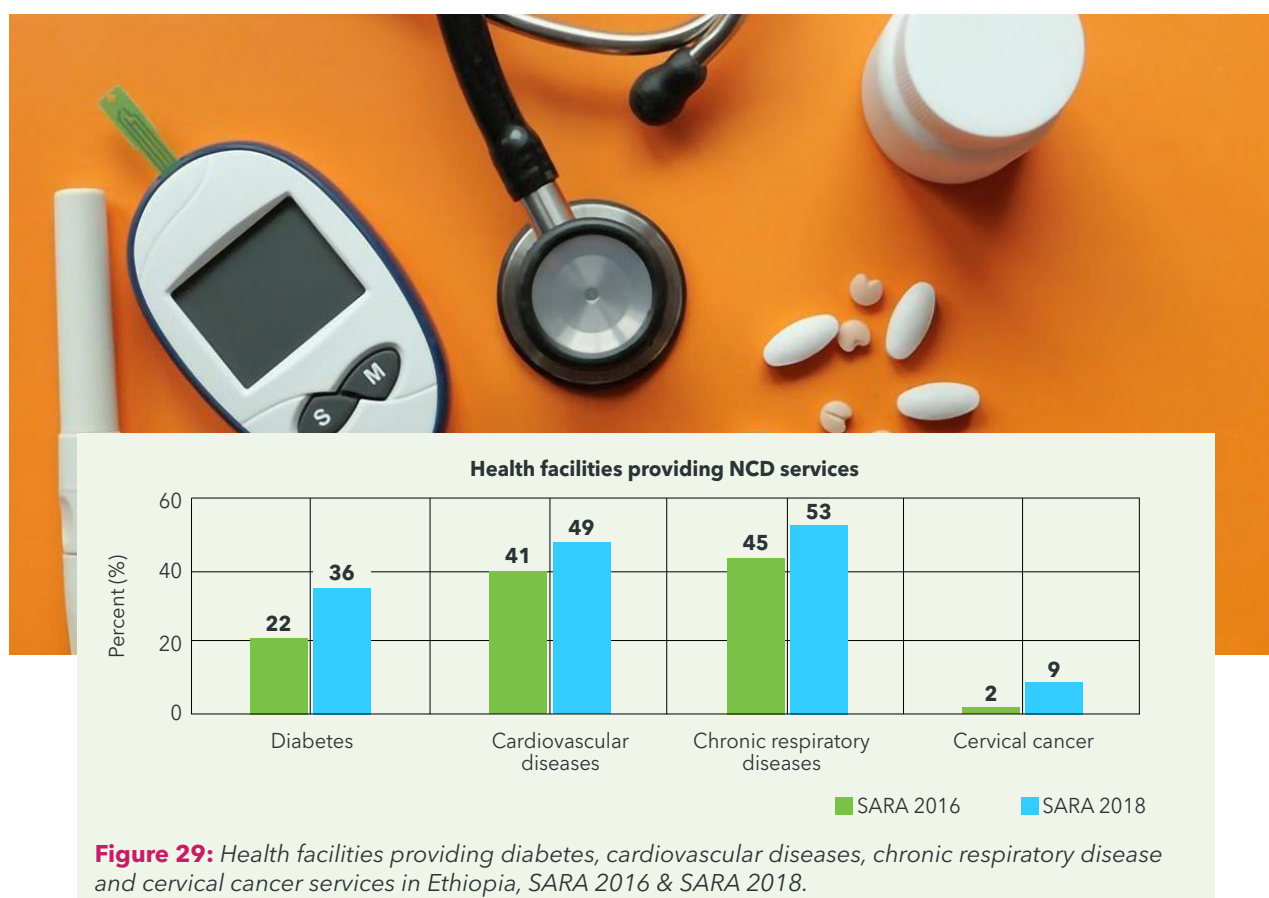


Figure 28: OPD attendance per capita by region, 2016-2020.

» 3.9.5 Service availability for non-communicable diseases (NCDs)

The SPA+ 2014, SARA 2016 and 2018 data showed the services available for the diagnosis and/or management of diabetes had not improved in the 2014 to 2018 period. Service availability was 59% in 2014, 22% in 2016 and 36% in 2018. Similarly, for cardiovascular diseases, service availability was 73% in 2014, 41% in 2016 and 49% in 2018. For chronic respiratory disease, service availability was 76% in 2014, 45% in 2016 and 53% in 2018 (Figure 29). Regional differences were also observed in the availability of health facilities offering services for the management of NCDs. The availability of essential guidelines, trained personnel and materials and equipment for the management of NCDs varied by survey year and by region.



» 3.9.6 Availability of water, sanitation and electricity in health facilities

WATER

Data from SARA 2016 and 2018 showed that the availability of water in the health facilities at national level increased over time from 30.0% in 2016 to 34.0% in 2018. In health facilities found in urban areas, the availability of water decreased from 76.0% to 67.0% while in rural areas it increased from 20.0% to 23.0%. Hospitals were better off in terms of water availability while health centers and health posts were worse off.

Among regions, the health facilities found in Addis Ababa, Dire Dawa and Harari showed higher availability of water sources while Afar, Somali, Benishangul-Gumuz and SNNPR had lower availability of water sources than the national average. Tigray and Somali regions showed decreased availability while in other regions it increased from 2016 to 2018 except in Oromia where availability remained constant.

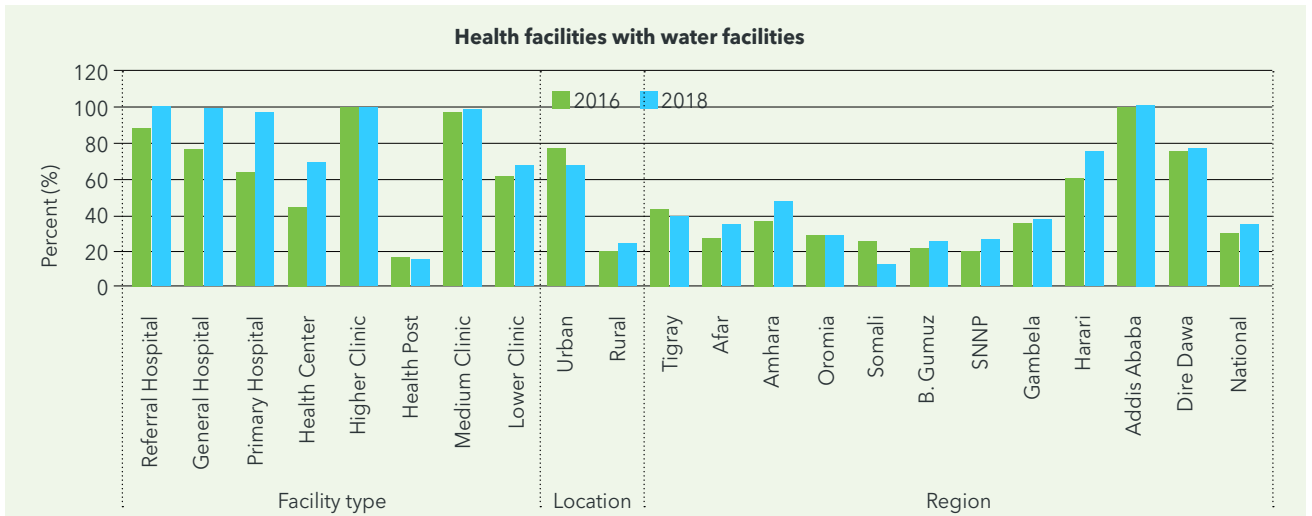


Figure 30: Trends in water availability by type of health facility, location and region, SARA 2016 & SARA 2018.

SANITATION FACILITIES

The availability of sanitation facilities decreased over time at national level from 69.0% in 2016 to 61.0% in 2018. There was better availability of sanitation facilities in referral and general hospitals, however, it was very low in health posts where it decreased from 60.0% to 51.0%. Health facilities in Amhara, SNNPR and Gambela had lower availability of sanitation facilities, while those in Addis Ababa, Dire Dawa and Harari had higher availability than the national average.

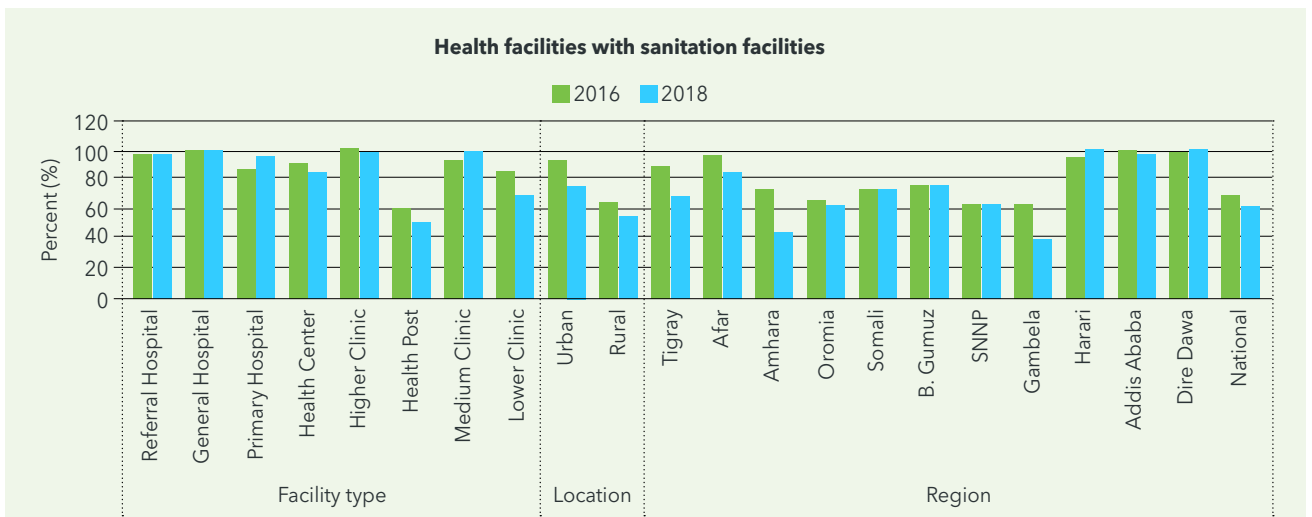
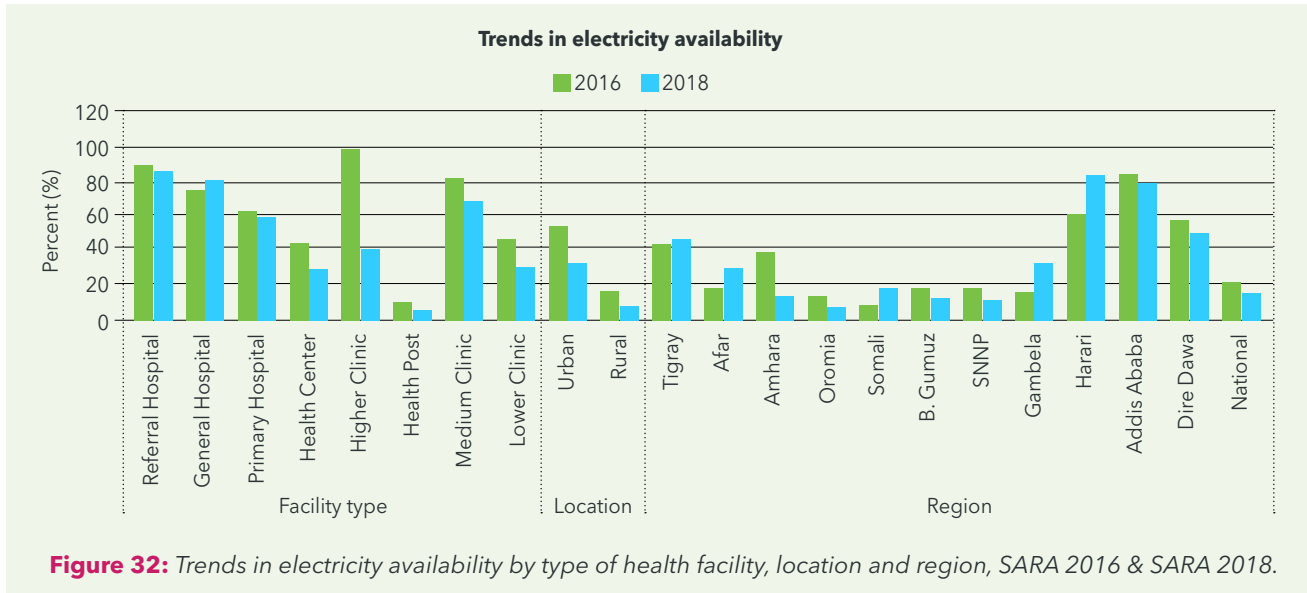


Figure 31: Trends on sanitation availability by type of health facility, location and region, SARA 2016 & SARA 2018.

ELECTRICITY

The figure below shows the availability of electricity in 2016 and 2018. Electricity availability in health facilities, regardless of the power source decreased over time at the national level from 23.0% in 2016 to 15.0% in 2018. There was better availability in referral and general hospitals, however, it was very low in health centers and health posts, decreasing from 44.0% to 28.0% (2016-2018) and 10.0% to 5.0% (2016-2018), respectively.

Health facilities in Oromia, Somali, Benishangul-Gumuz, SNNPR and Gambela regions had lower availability of electricity while health facilities in Addis Ababa, Dire Dawa, Harari, and Tigray had higher electricity availability than the national average. The Amhara, Oromia, Benishangul-Gumuz, SNNPR, Addis Ababa and Dire Dawa regions showed decreased availability over time.





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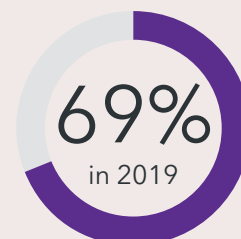
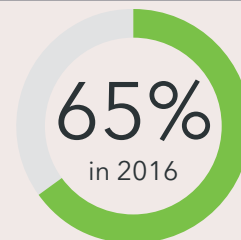
CHAPTER 4

Water, Sanitation and Hygiene (WASH)

Summary

- » The coverage of improved water supply increased from 65% in 2016 to 69% in 2019. It declined in Gambela, Afar, Dire Dawa and Addis Ababa, as well as in urban areas.
- » The coverage of improved sanitation increased from 14.8% in 2016 to 19.5% in 2019. It decreased in urban areas and in pastoralist regions such as Afar, Somali, and Gambela.
- » Open defecation decreased from 32.3% in 2016 to 27.1% in 2019. Open defecation increased in urban areas and in Afar, Somali, Benishangul-Gumuz, and in Addis Ababa.

WATER SUPPLY INCREASED FROM



» Trends in households with improved water supply, improved sanitation and reduction of open defecation

Figure 33 shows the trends in improved water supply. In 2000, the coverage of improved water supply was 25.3% at the national level, rising to 68.7% in 2019. In rural areas, coverage increased from 13.5% in 2000 to 60.1% in 2019. Coverage increased by 63.0% nationally and by 77.0% in rural areas over the last two decades.

During the HSTP-I period, coverage of improved water and sanitation increased by 5.4 and 31.8 percentage points, respectively, while open defecation declined by 16.1 percentage points. In rural areas, the coverage of improved water and sanitation increased by 6.3 and 70.2 percentage points respectively, while in urban areas, the coverage of improved water and sanitation declined even as open defecation increased.

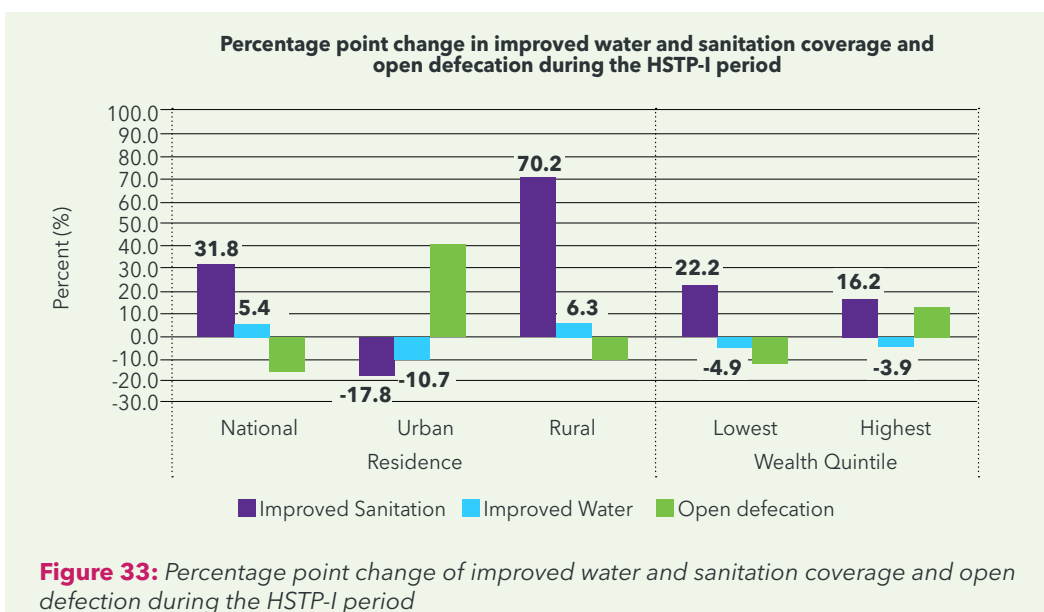


Figure 33: Percentage point change of improved water and sanitation coverage and open defecation during the HSTP-I period

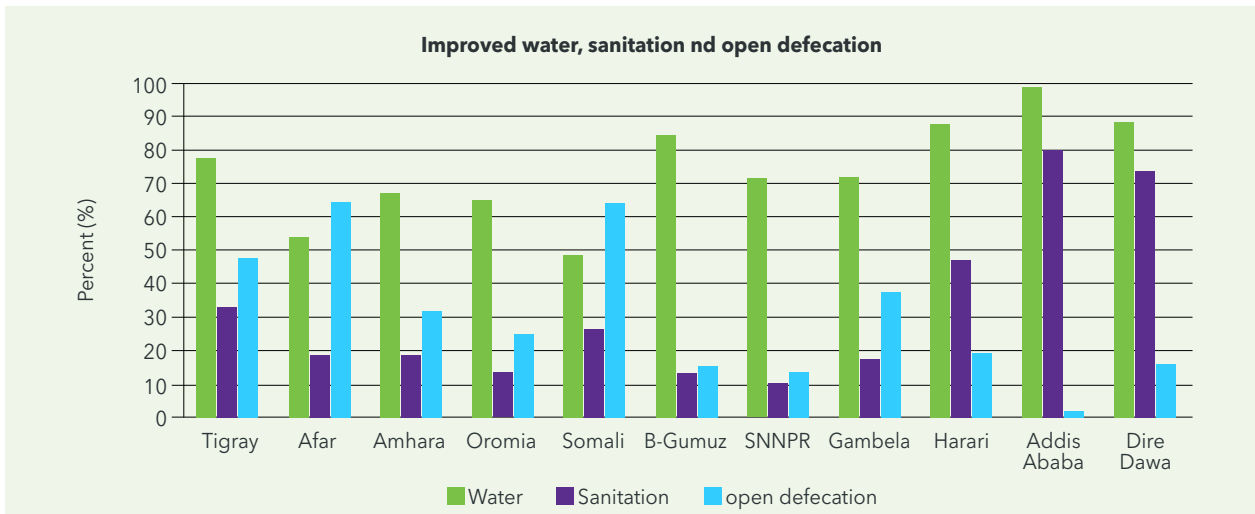


Figure 34: Trends in improved water, sanitation and reduction of open defecation by region during HSTP-I period, 2016 -2019.

» Inequalities in improved water and sanitation

Ratio analysis showed that there are inequalities in the coverage of improved water and sanitation between urban and rural areas. The ratio of improved water was 1.4 in 2016 and rose to 1.7 in 2019 meaning coverage decreased in rural areas by 2019. For improved sanitation, the ratio was 8.9 in 2016 and 4.3 in 2019, meaning sanitation coverage increased in rural areas.

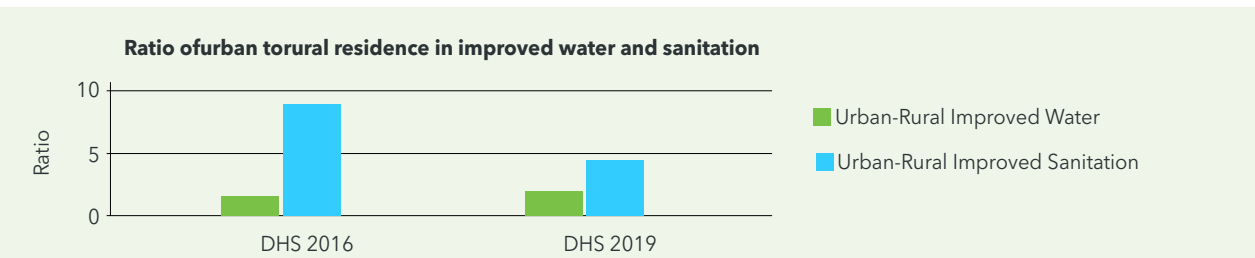


Figure 35: Urban-rural ratios in improved water and sanitation, DHS 2016 & DHS 2019

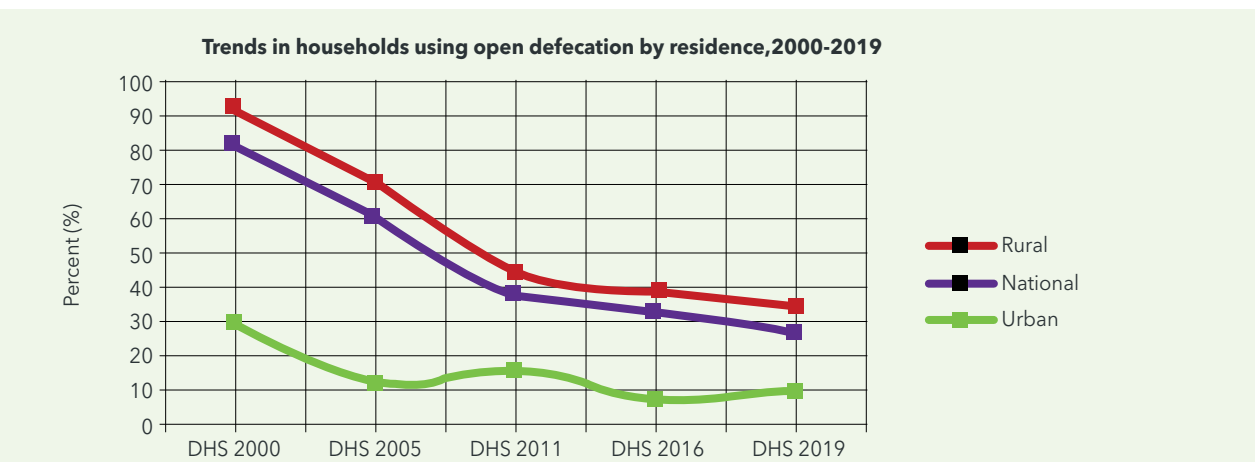


Figure 36: Trends in households using open defecation, 2000-2019.



HEALTH SECTOR TRANSFORMATION PLAN-I (HSTP-I) END-LINE REVIEW STUDY

CHAPTER 5

Nutrition and nutritional risk factors



Summary

- » At national level, the median exclusive breastfeeding levels increased from 3.1% in 2000 to 3.7% in 2019.
- » At national level, there was no significant change in the early initiation of breastfeeding within one hour after birth (73.3% in 2016 and 72.0% in 2019). Early initiation of breastfeeding decreased in Somali, Dire Dawa, Harari, SNNPR, and Amhara regions.
- » Use of micronutrients supplements such as Vitamin A supplementation and women taking iron tablets after birth increased.
- » During the HSTP-I period, the AARR for stunting and wasting, was 1.0% and 12.0%, respectively. In 2019, 36.8% of children nationally were stunted and the prevalence of stunting varied substantially by place of residence (rural/urban), region, household wealth, and mother's education level.
- » Stunting increased in Tigray, Afar, Somali, and Harari regions while wasting increased in SNNPR and underweight increased in Tigray and Somali regions.
- » Targets for stunting and wasting at the end of the HSTP-II period are 25.0% and 5%, respectively. Achievement of these targets requires an AARR of 10.0% and 7.0% respectively, which requires greater effort than that seen during the HSTP-I period.
- » There are disparities in reduction of stunting and wasting between rural and urban areas, rich and poor households, and between non-pastoralist and pastoralist regions. Prevalence of stunting increased in rural areas, and among those in the lowest wealth quintile in 2019.
- » Wasting increased in rural areas, among those in the lowest wealth quintile, and in pastoralist regions in 2019.

5.1 EXCLUSIVE BREASTFEEDING

Figure 37 shows the trends in median exclusive breastfeeding levels of children by gender and residence. At national level, median exclusive breastfeeding increased from 2.5% in 2000 to 3.7% in 2019. Among male children, median exclusive breastfeeding increased from 2.9% in 2016 to 3.2% in 2019, and among female children it increased from 3.3% in 2016 to 4.4% in 2019.

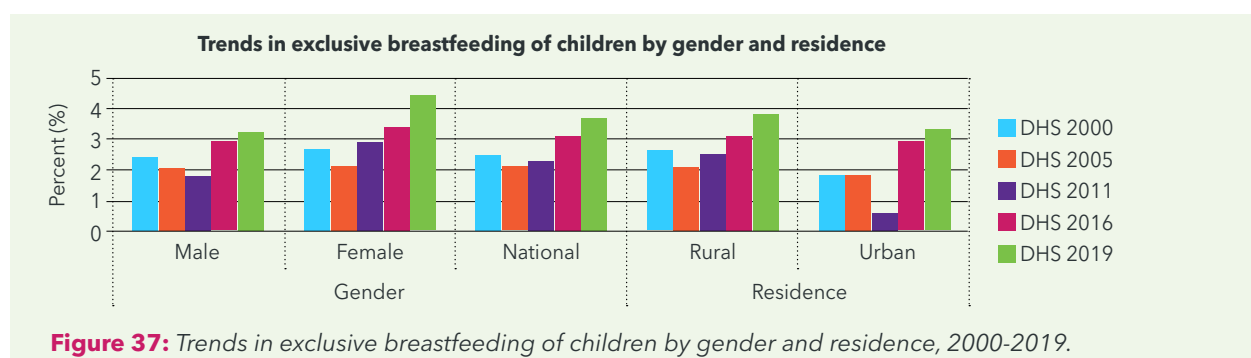


Figure 37: Trends in exclusive breastfeeding of children by gender and residence, 2000-2019.

5.2 PREDOMINANT BREASTFEEDING

Predominant breastfeeding at national level increased from 4.2% in 2000 to 5.5% in 2019, while no change was reported between 2016 and 2019. In rural areas, it increased from 5.6% in 2016 to 5.8% in 2019, while in the lowest wealth quintile it decreased from 6.2% to 5.6% from 2016 to 2019.

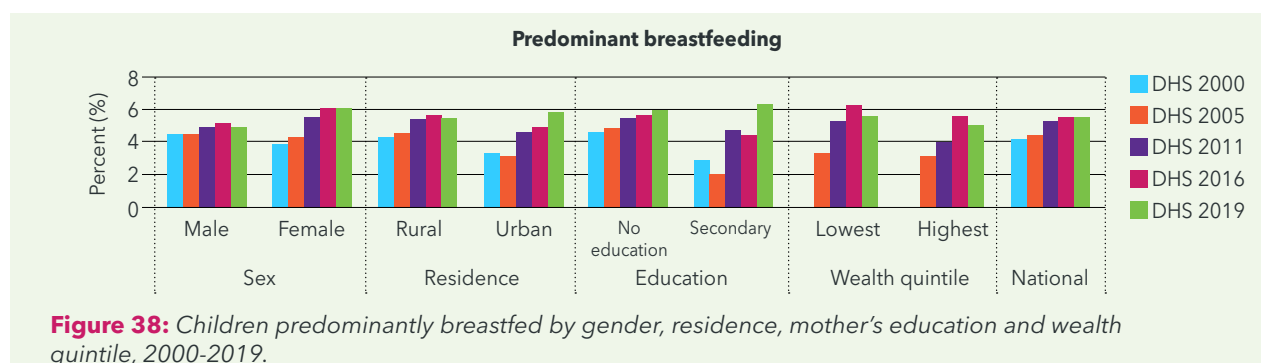


Figure 38: Children predominantly breastfed by gender, residence, mother's education and wealth quintile, 2000-2019.

5.3 EARLY INITIATION OF BREASTFEEDING

The proportion of children who experienced early initiation of breastfeeding (within one hour after birth) reached 72.0% in the 2016-2019 period. In rural areas, the proportion decreased from 73.4% in 2016 to 72.6% in 2019. The level of reduction also varied by educational level and wealth quintile.

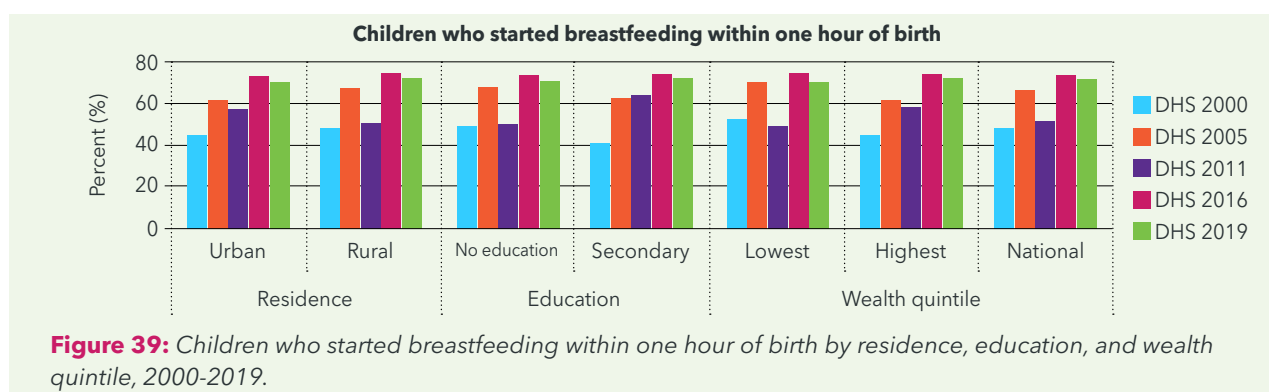


Figure 39: Children who started breastfeeding within one hour of birth by residence, education, and wealth quintile, 2000-2019.

At regional level, higher AARI for early initiation of breastfeeding was recorded in Afar region at 15%, followed by Gambela at 6%. The AARR for early initiation of breastfeeding in Somali was 10.4%, Dire Dawa was 7.9%, Harari was 7.2%, SNNPR was 3.9% and Amhara was 2.5% from 2016 to 2019 during the HSTP-I period.

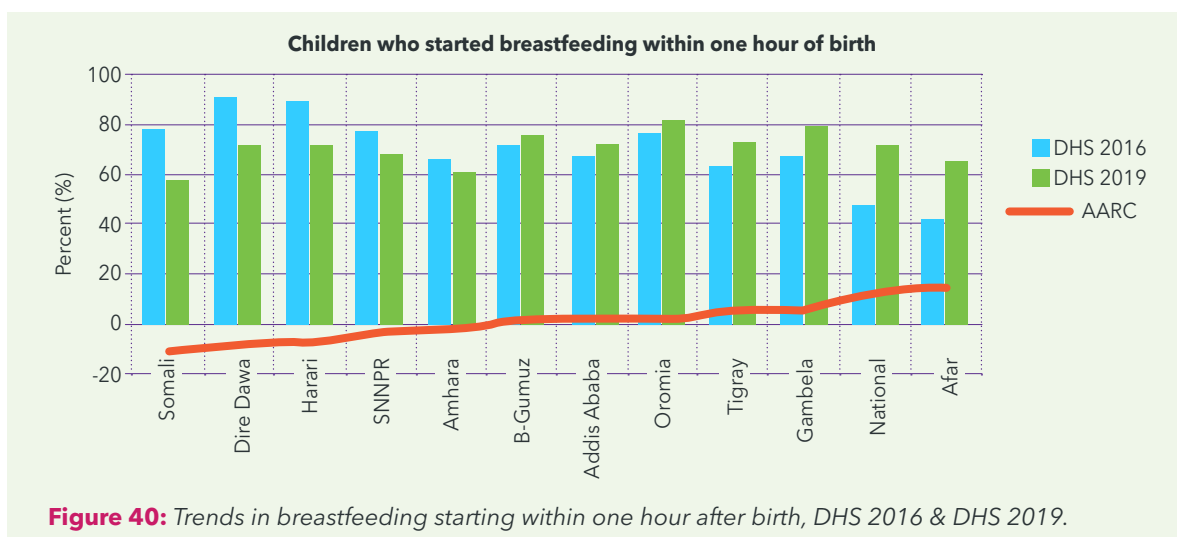


Figure 40: Trends in breastfeeding starting within one hour after birth, DHS 2016 & DHS 2019.

5.4 MICRONUTRIENTS

Micronutrient deficiency is a major contributor to childhood morbidity and mortality. Micronutrients are available in foods and can also be provided through direct supplementation. Vitamin A supplementation increased from 45.0% in 2016 to 47% in 2019, while women taking iron tablets after birth increased from 29.4% to 36% (Figure 41).

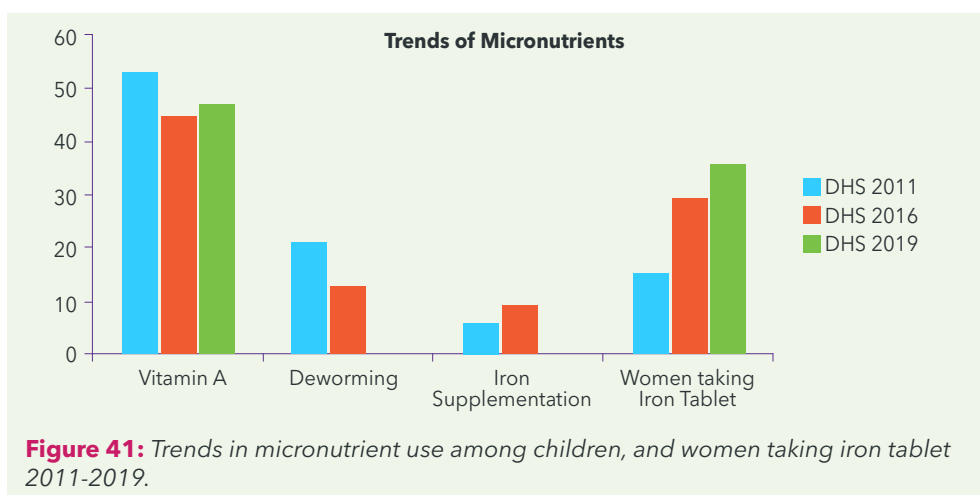


Figure 41: Trends in micronutrient use among children, and women taking iron tablet 2011-2019.

Levels of Vitamin A supplementation were higher in urban areas, among those with higher education levels and those in the highest wealth quintile. Among the regions, Afar, Somali, SNNPR and Harari showed lower levels of Vitamin A supplementation than other regions.

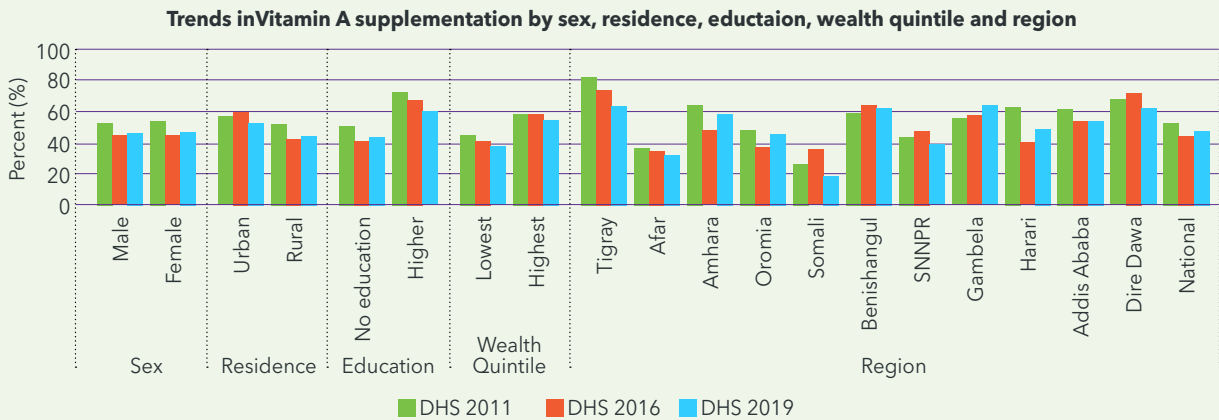


Figure 42: Vitamin A supplementation by sex, residence, education, wealth quintile and region, 2011-2019.

5.5 NUTRITION-RELATED RISK FACTOR INDICATORS

» 5.5.1 Stunting, wasting and underweight

Ethiopia has one of the highest rates of malnutrition in sub-Saharan Africa and its people experience high rates of acute and chronic malnutrition and micronutrient deficiencies. Between 2000 and 2019, the prevalence of stunting decreased from 52.0% to 37.0%, underweight prevalence declined from 16.5% to 5.9% and wasting prevalence decreased from 11.0% to 7.0%. During the HSTP-I period, the AARR for stunting and wasting, was 1.0% and 12.0%, respectively. The targets for stunting and wasting at the end of HSTP-II period are 25.0% and 5%, respectively. Achieving these targets will require an AARR of 10% for stunting and 7% for wasting which will require greater effort than the HSTP-I period.

Prevalence of extreme stunting, wasting and underweight reduced from 2000 to 2019. During the HSTP-I period, extreme stunting decreased from 17.6% to 12.4%, extreme wasting decreased from 2.9% to 1.2% and extreme underweight decreased from 7.0% to 5.9%. The percentage reduction was, 29.5%, 58.6% and 15.7%, respectively.

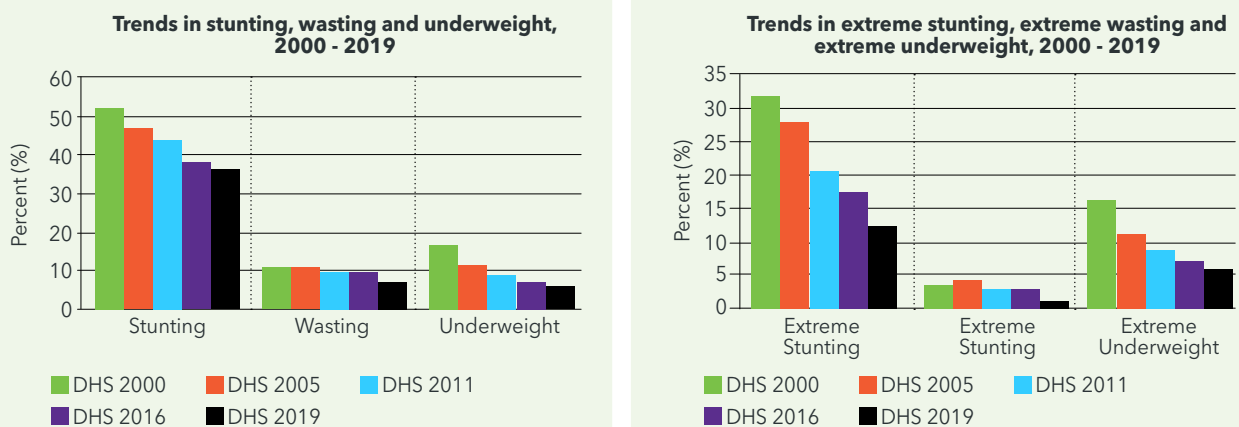


Figure 43: Trends in stunting, wasting and underweight in Ethiopia.

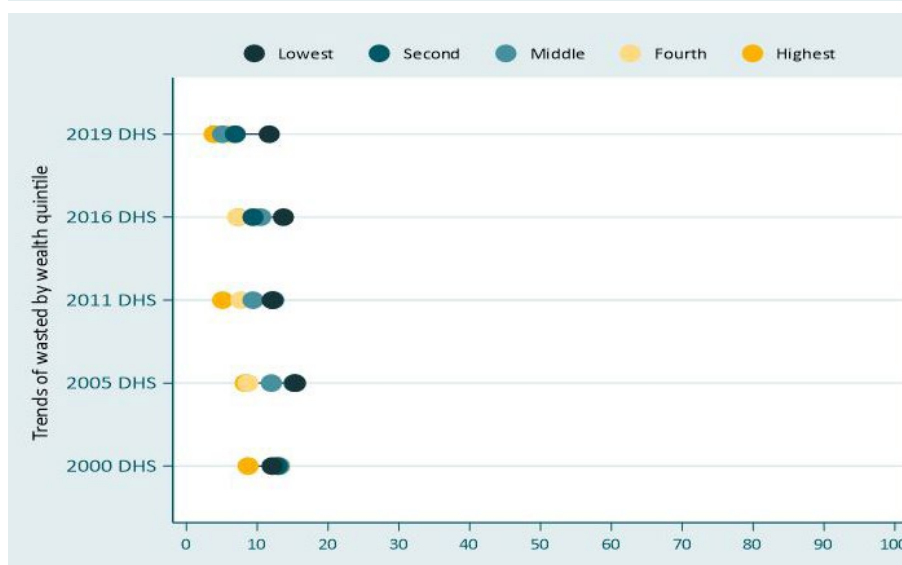
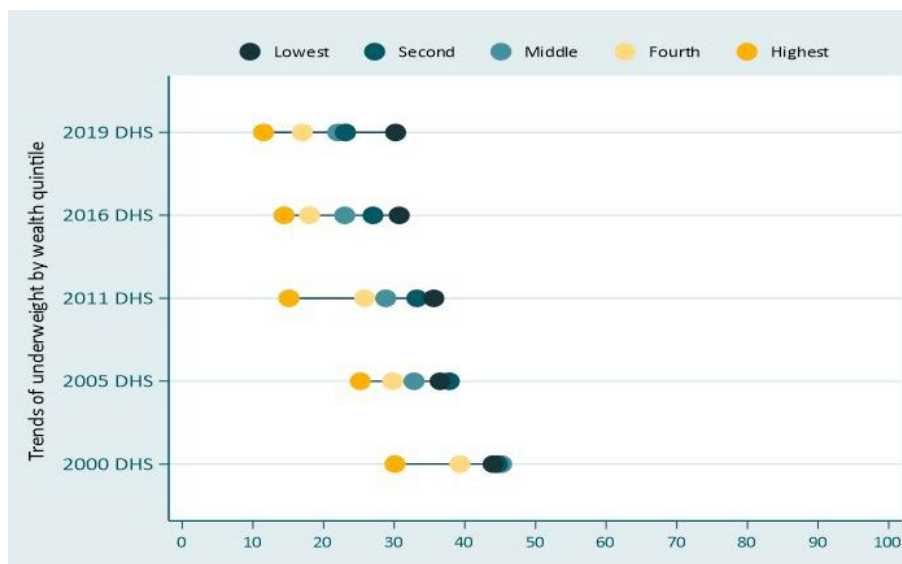
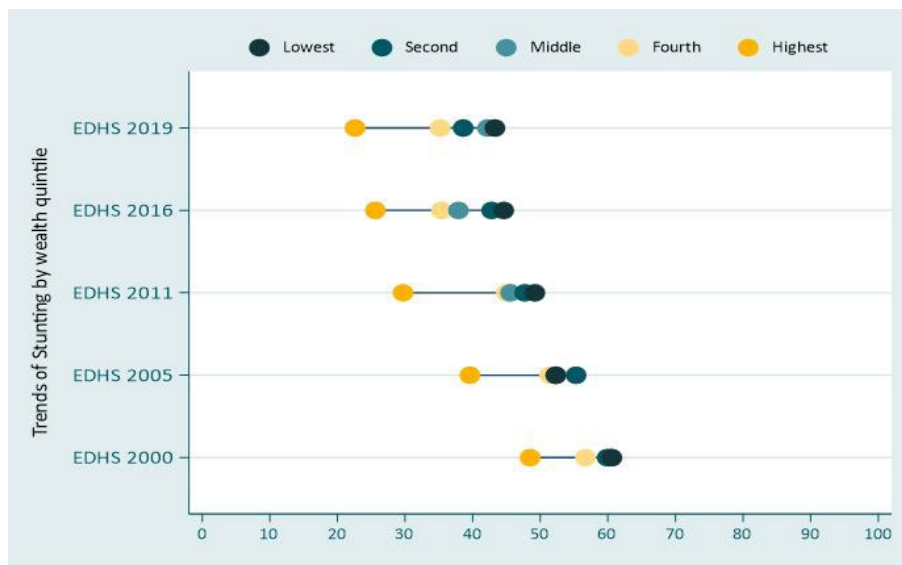


Figure 44: Trends in stunting, wasting and underweight stratified by by wealth quintile in Ethiopia, 2000-2019

Table 4 show the change in levels of stunting, wasting and underweight during the HSTP-I period. Stunting of under-five children at national level declined by 4.2%. High stunting reductions were observed in Dire Dawa, Gambela and Amhara regions. Stunting increased in Tigray, Afar, Somali, and Harari regions. Wasting of under-five children at national level dropped by 27.3% during the HSTP-I period. Prevalence of wasting decreased in all regions except SNNPR. Prevalence of underweight among under-five children at national level declined by 10.6% during the HSTP-I period. Underweight prevalence reduced in all regions except Tigray and Somali regions.

Table 4: Change in stunting, wasting and underweight during the HSTP-I period by gender, residence, wealth quintile, mother's education, and regions.

		Wasted (%)	Underweight (%)	Stunting (%)
Gender	Male	-13.7	-8.7	-2.7
	Female	-42.7	-13.2	-5.4
Residence	National	-27.3	-10.6	-4.2
	Urban	-34.5	6.7	0.8
	Rural	-23.8	-6.0	1.8
Wealth quintile	Lowest	-14.6	-8.8	-6.1
	Second	-18.1	-10.7	-2.1
	Middle	-54.3	2.2	4.7
	Fourth	-13.9	-11.1	-1.4
	Highest	-45.2	-19.4	-5.9
Region	Tigray	-17.1	32.2	23.9
	Afar	-21.5	-12.4	4.6
	Amhara	-22.4	-6.0	-10.8
	Oromia	-55.7	-28.4	-2.5
	Somali	-7.0	10.5	11.3
	B-Gumuz	-47.0	-8.5	-4.4
	SNNPR	5.0	-6.6	-6.0
	Gambela	-11.3	-6.7	-25.1
	Harari	-60.7	-5.5	8.4
	Addis Ababa	-34.3	-6.0	-4.8
	Dire Dawa	-40.2	-42.0	-36.8
Mother's educational level	No education	-14.0	-5.5	-0.2
	Primary	-46.2	-3.9	0.9
	Secondary	-21.9	-16.8	-13.2

Note: (-) indicates reduction

Several studies showed that various factors are also responsible for stunting such as poor family wealth status, low educational levels, frequent births or large family sizes, household food insecurity, and male sex preference of the household⁴⁸, presence of diarrhea, , inappropriate exclusive breastfeeding practices, number of under-five children in the household⁴⁹, age, place of residence, dietary diversity, sources of drinking water and family monthly income were important factors associated with stunting.^{50, 51-54}



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CHAPTER 6

Communicable and non-communicable diseases

6.1 HIV/AIDS

According to data from the World Health Organization (WHO), the prevalence of HIV decreased from 3.2% in 1990 to 0.2% in 2019. Moreover, the average annual rate of change (AARC) exhibited a downward trend since 1992, except for the year 1991 which had an increase of 4.7% (Figure 45).

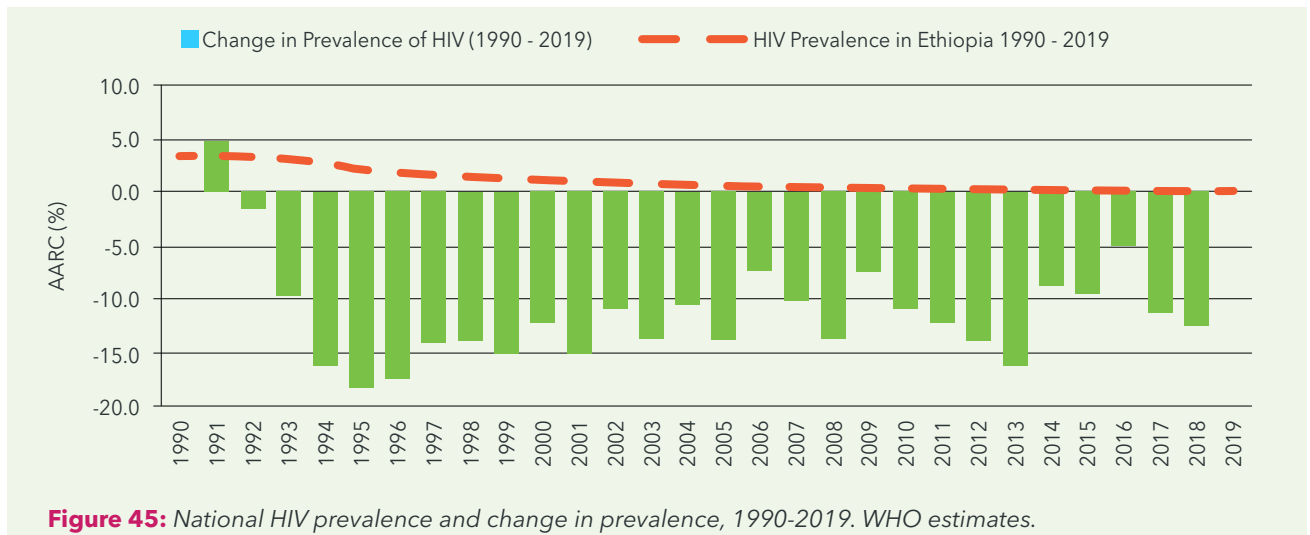


Figure 45: National HIV prevalence and change in prevalence, 1990-2019. WHO estimates.

The average annual rate of reduction (AARR) for HIV incidence in Ethiopia showed a reduction of 11.0% from 1990 to 2019. In the HSTP-I period, the AARR in HIV incidence was 8.2%. Over the past three decades, the AARC in HIV mortality reduced by 3.2% at the national level during 1990-2019 with the highest reduction recorded in the male population. However, during the HSTP-I period, the AARC for mortality due to HIV was 8.0%.

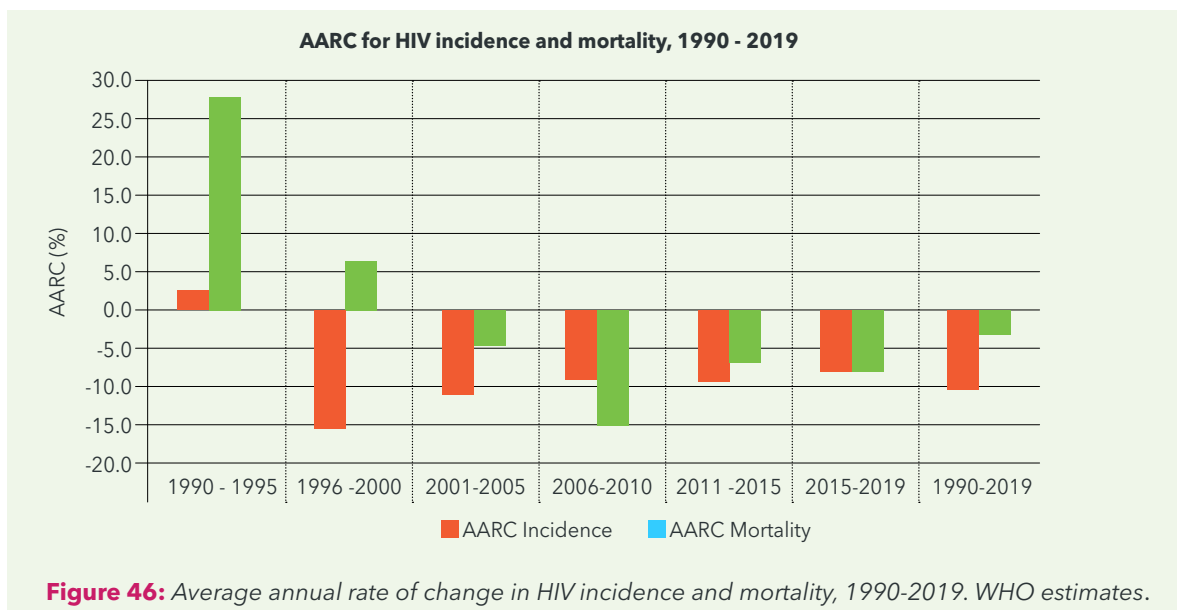
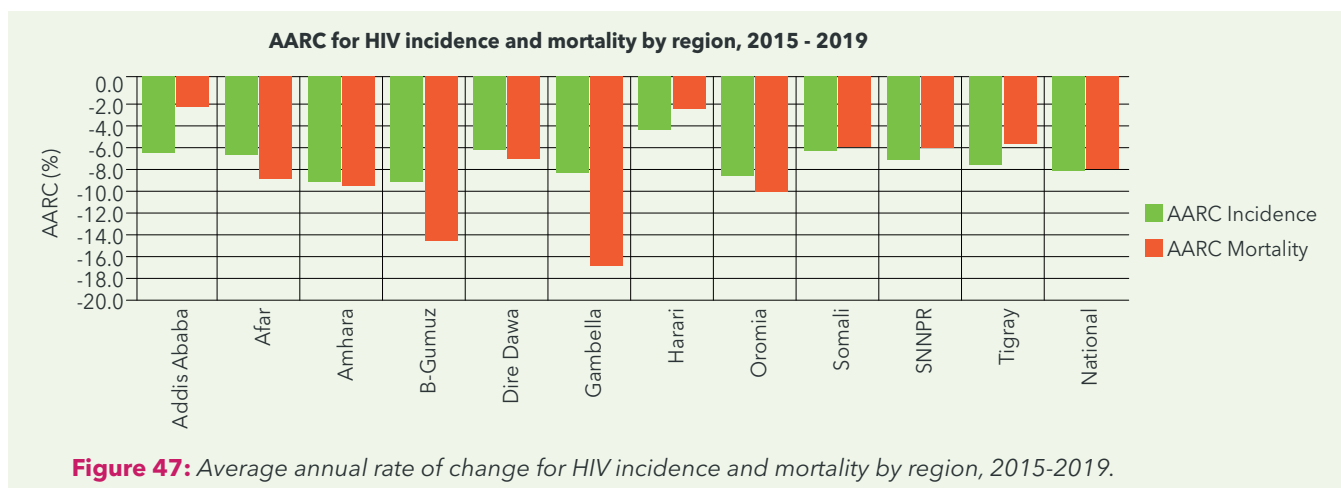


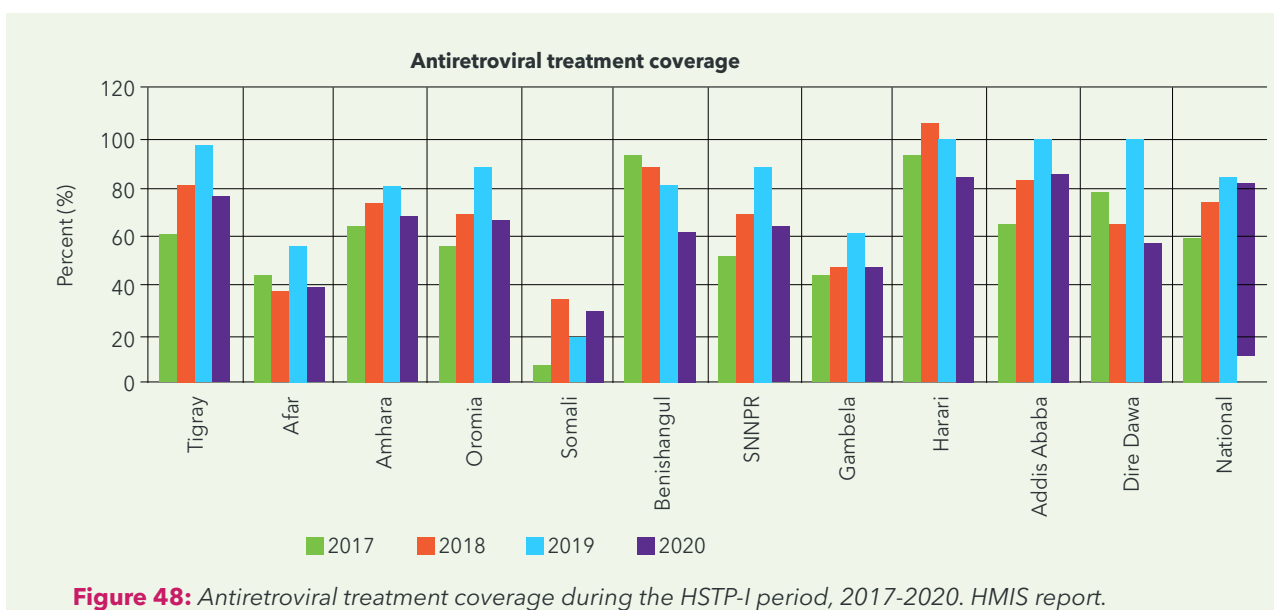
Figure 46: Average annual rate of change in HIV incidence and mortality, 1990-2019. WHO estimates.

The average annual rate of change in HIV incidence was highest in the Amhara (9.7%), Benishangul-Gumuz (9.7%) and Somali (9.7%) regions. The lowest AARR in HIV incidence was recorded in Harari region (4.9%). Mortality due to HIV reduced in all regions. The highest AARR for mortality due to HIV was in Gambela (17.2%), Benishangul-Gumuz (15.1%), Oromia (10.6%), Amhara (10.0%) and Afar (9.3%) regions. The lowest AARR was recorded in Addis Ababa (2.7%) and Harari (2.9%) regions (Figure 47).



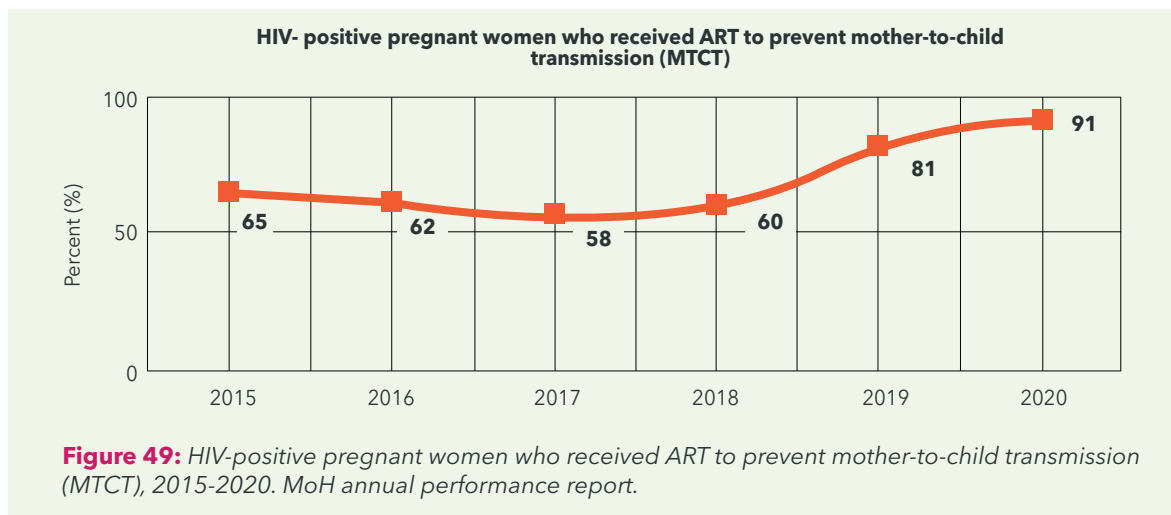
» Treatment coverage of HIV/AIDS

The antiretroviral treatment (ART) coverage during the HSTP-I period increased from 2017 to 2019 and then decreased thereafter. At national level, it increased from 59.0% in 2017 to 84.0% in 2019 and then decreased to 71.0% in 2020, the percentage change was 20.0%. In 2019, better ART coverage was recorded in all regions except Benishangul-Gumuz and Harari regions. The ART coverage in Somali region increased from 7.0% to 29.6%, in Gambela it increased from 44.0% to 47.6%, while in Afar it decreased from 44.0% to 39.1%. ART coverage in Benishangul-Gumuz decreased from 93% to 61%, in Harari from 93.0% to 85.0% and in Dire Dawa from 78.0% to 57.1%.



» HIV-positive pregnant women who received ART

The ART coverage for HIV-positive pregnant women also steadily increased throughout the HSTP-I period. It increased from 65.0% in 2015 to 91.0% in 2020, representing a change of 49.0%.



» 90-90-90 targets

Ethiopia has committed to achieve the 90-90-90 targets for HIV. The 90-90-90 targets refer to 90% of all people living with HIV knowing their status, 90% of all people diagnosed with HIV receiving ART and 90% of all people receiving ART having effective viral suppression. In 2020, the performance of the first 90-target was 78.7%, the second 90-target achieved 90% and the third 90-target achieved 91%. Ethiopia achieved the second and third 90-targets, but not the first. Interventions and actions should therefore be designed and implemented to increase the number of people who know their HIV status. Moreover, the existing treatment and viral suppression programs should be further strengthened to sustain and improve the gains in the second and third 90-targets. While the performance of the second 90-target was achieved, a large gap was observed between adults and children who were on ART. In 2020, 92.8% of adults who knew their status were receiving ART compared to only 50% of children.

6.2 MALARIA

According to WHO estimates, malaria incidence declined from 157.3 per 100,000 people in 2000 to 34.3 per 100,000 people in 2019, representing a 78% change. Mortality due to malaria also reduced from 31.28 per 100,000 people in 2000 to 7.38 per 100,000 people in 2019, for a 76% change.



The Ministry of Health (MoH) annual performance report showed that the incidence of malaria during the HSTP-I period reduced from 37 per 1,000 people at risk in 2016 to 28 per 1,000 people at risk in 2020, for a 24% reduction. The average annual rate of reduction of malaria incidence during the HSTP-I period was 7.0%. The HSTP-II targets reduction of malaria incidence to 8 per 1,000 people at risk. This requires an average annual rate of reduction of 31.0%, indicating that greater effort is required to reduce the incidence of malaria in Ethiopia.

Mortality due to malaria also decreased during the HSTP-I period from 0.83 per 100,000 people to 0.38 per 100,000 people at risk, for a 54.0% reduction. The average annual rate of reduction of mortality due to malaria during the HSTP-I period was 20.0%. The HSTP-II targets mortality reduction to 0.2 per 100,000 people at risk. This requires an average annual rate of reduction of 16.0%, a target that may be achieved if the previous level of effort is maintained.

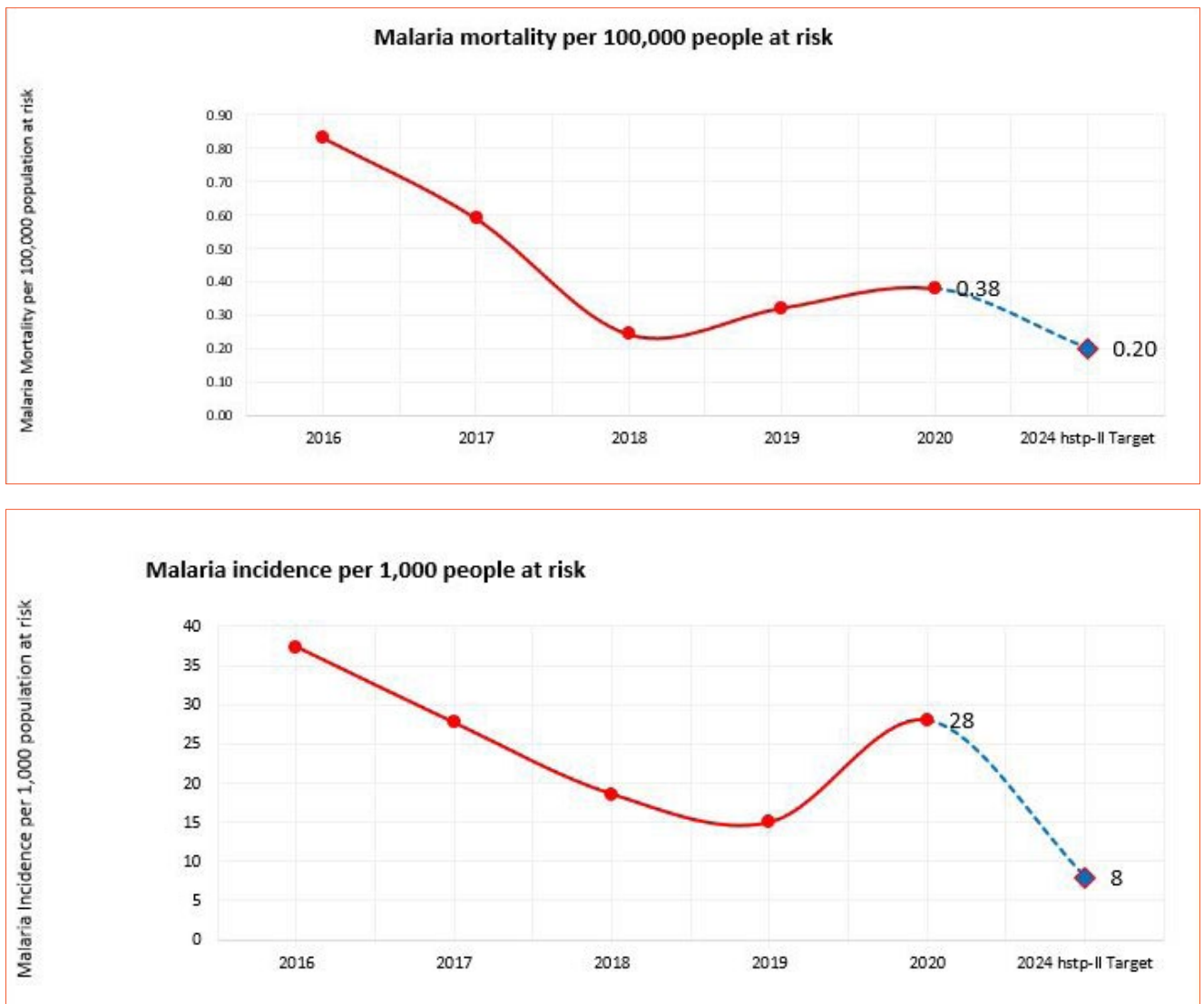


Figure 51: Malaria incidence rate per 1,000 people and mortality rate per 100,000 people, 2016-2019. HMIS report.

Mortality due to malaria during the HSTP-I period declined in all regions except in Amhara and Oromia. The highest mortality reduction was recorded in Afar (70.0%), Somali (62.0%), and SNNPR (43.0%). Malaria incidence reduced in all regions except Tigray, Afar, and Amhara with higher reductions recorded in Harari (55%) and Dire Dawa (48.0%).

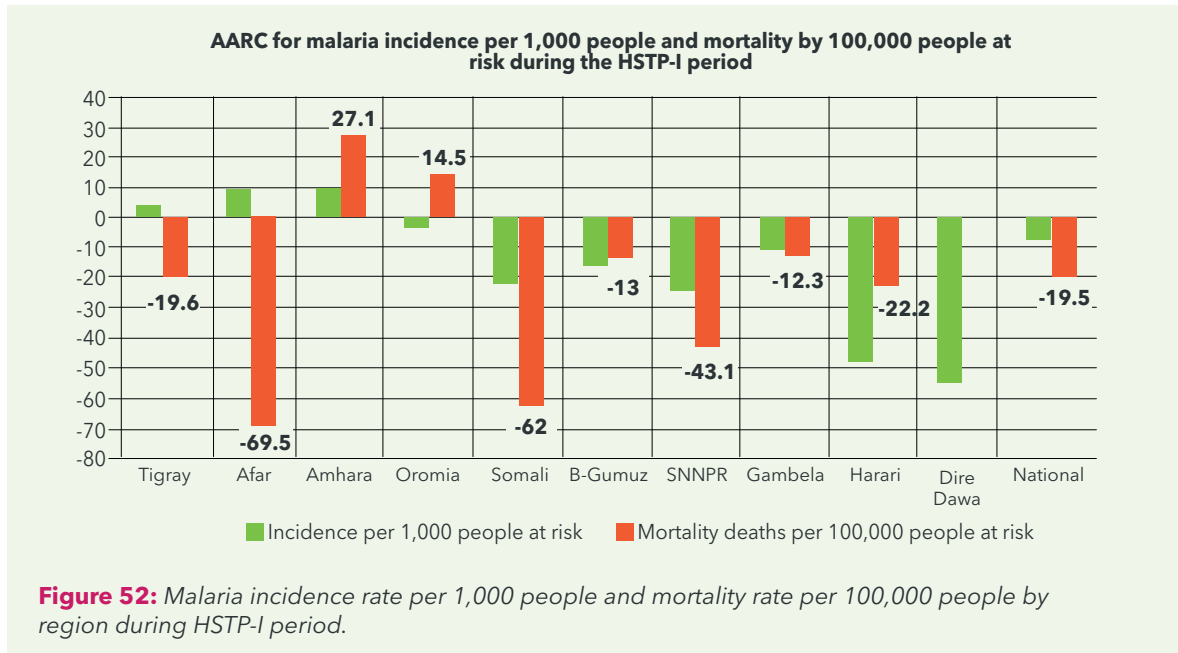


Figure 52: Malaria incidence rate per 1,000 people and mortality rate per 100,000 people by region during HSTP-I period.

6.3 TUBERCULOSIS

In terms of tuberculosis (TB) case detection, the HSTP-I target was to increase the TB detection rate from 61.0% to 87.0%. However, at the end of the HSTP-I period, the performance of the TB detection rate was 71.0%. The detection rate has consistently increased in the HSTP-I period. The treatment success rate was supposed to increase from 92.0% to 95.0%. At the end of the HSTP-I period, the TB treatment success rate was 95.0%, and the TB treatment cure rate was 80.0%.

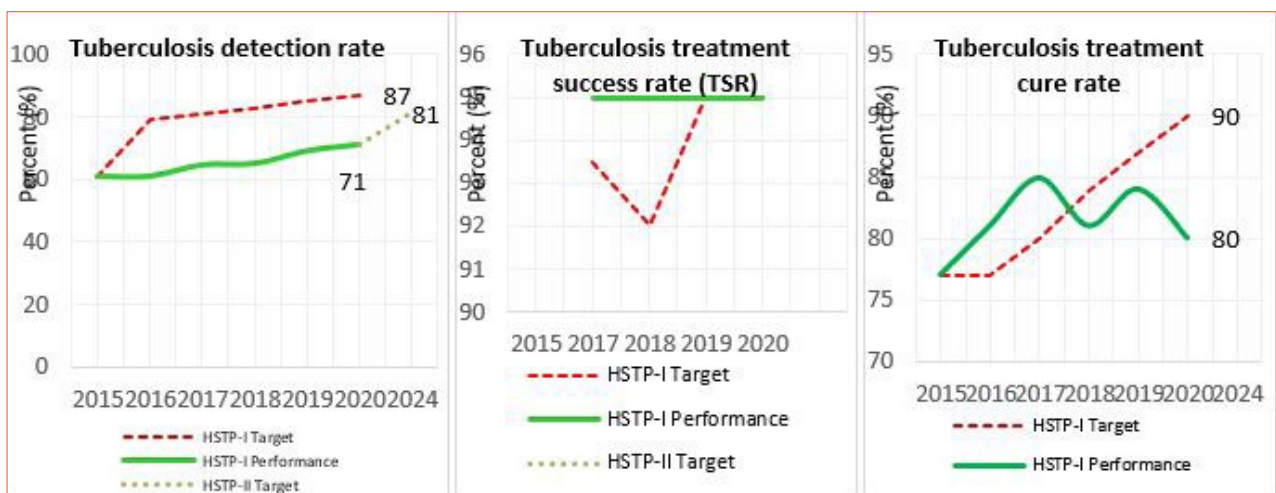


Figure 53: TB detection rate, treatment success rate, and cure rate during the HSTP-I period.

There were wide regional disparities in TB detection rates. The detection rate was as high as 100% (Addis Ababa, Harari, Gambela) and as low as 46% (Benishangul-Gumuz) at the end of the HSTP-I period (Figure 54).

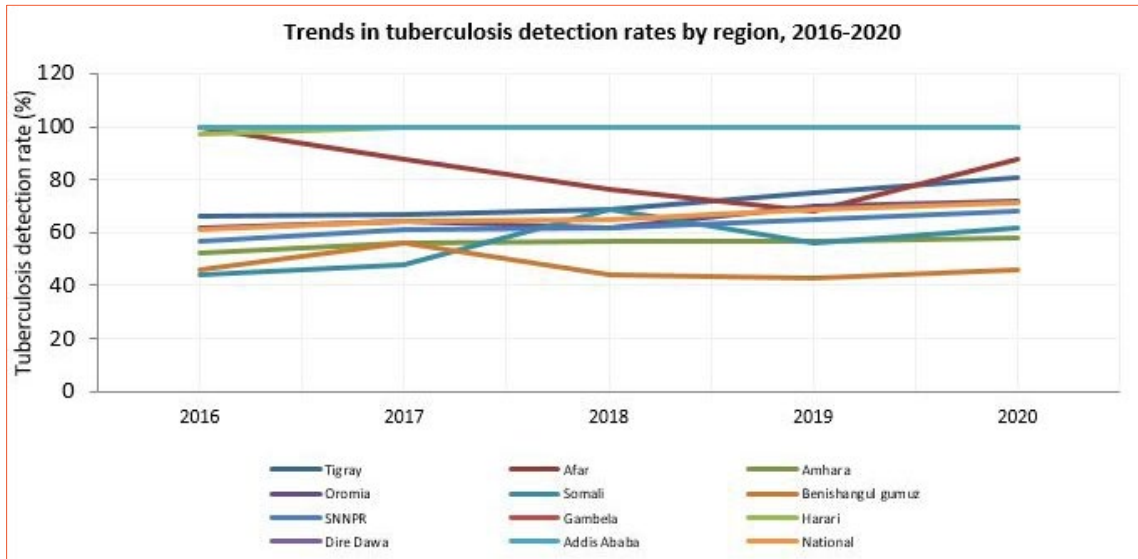


Figure 54: Trends in TB detection rates by region during HSTP-I period, 2016-2020.

Nationally, during the HSTP-I period, the increase in TB detection rates and treatment success rates was 16.0% and 3.2%, respectively, while the cure rate declined by 1.2%. The change in TB case detection during the HSTP-I period increased in all regions except Afar where it decreased by 12.0% while no change was recorded in Benishangul-Gumuz, Addis Ababa, and Dire Dawa. The highest change in treatment success rate was in Afar (26.1%), Somali (30.1%), and Gambela (25.7%). The treatment cure rate also varied among regions with the highest changes observed in Gambela (43.4%) and Afar regions (39.5%). The decline in TB cure rate was recorded in Somali (20.8%), followed by Oromia (6.7%), Addis Ababa (2.5%) and Amhara (2.2%) regions.

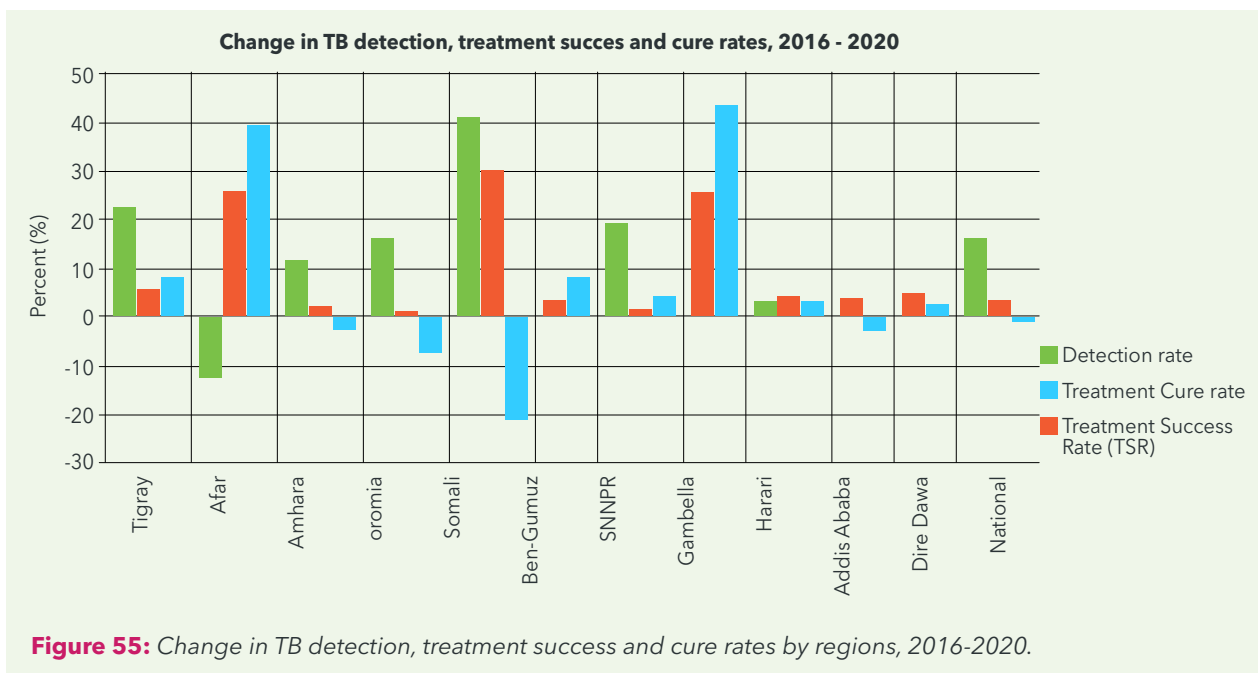
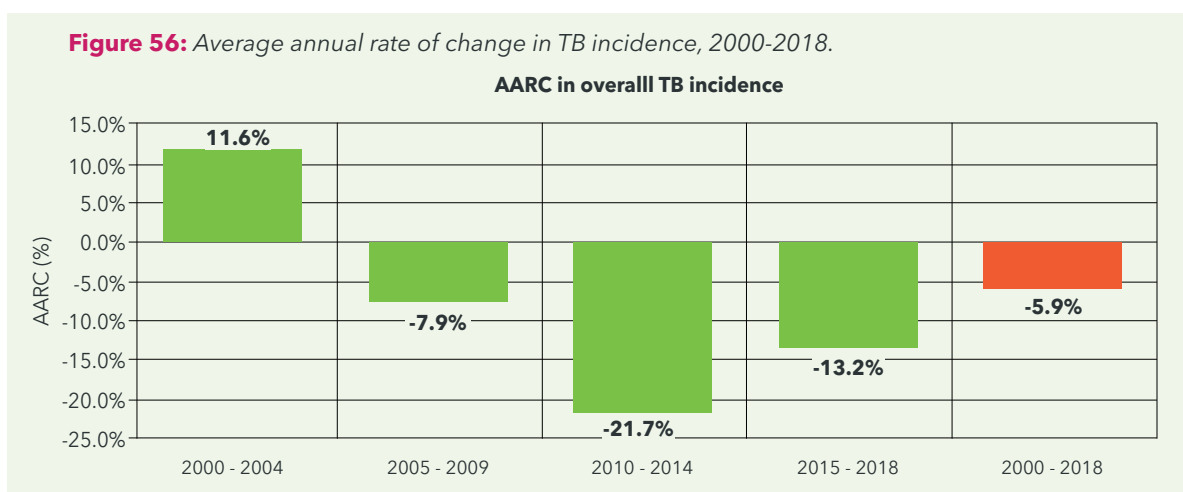


Figure 55: Change in TB detection, treatment success and cure rates by regions, 2016-2020.

According to WHO estimates, at the start of the HSTP-I period (2015), the incidence of TB in Ethiopia was 224 cases per 100,000 people. This incidence dropped to 140 per 100,000 people in 2020 at the end of the HSTP-I period. Ethiopia has achieved the target set by HSTP-I which was 155 cases per 100,000 people. This achievement made Ethiopia one of 78 countries worldwide that were on track to reach the 2020 tuberculosis milestone. Mortality due to TB reduced from 32 deaths per 100,000 people in 2015 to 19 deaths per 100,000 people in 2020. The target was to reduce mortality to 17 deaths 100,000 people.

The AARR of TB incidence was 5.9% in 2000 - 2018 while the AARR of TB incidence during the HSTP-I period was 13.2%. This was lower than the AARR during the 2010-2014 period, when it was 22%. Although there was a cumulative declining trend of tuberculosis over the last five years, prevention and control strategies still need to be improved to achieve the Stop Tuberculosis strategy.

Figure 56: Average annual rate of change in TB incidence, 2000-2018.



6.4 NON-COMMUNICABLE DISEASES (NCDs)

The WHO estimates indicate that total deaths from non-communicable diseases (NCDs) in Ethiopia increased over time from 220,678 deaths in 2000 to 271,291 deaths in 2019, representing a 23% increase. Premature deaths due to NCDs as a proportion of total NCD deaths decreased from 68.0% in 2000 to 55.0% in 2019, which was a 19.0% reduction.

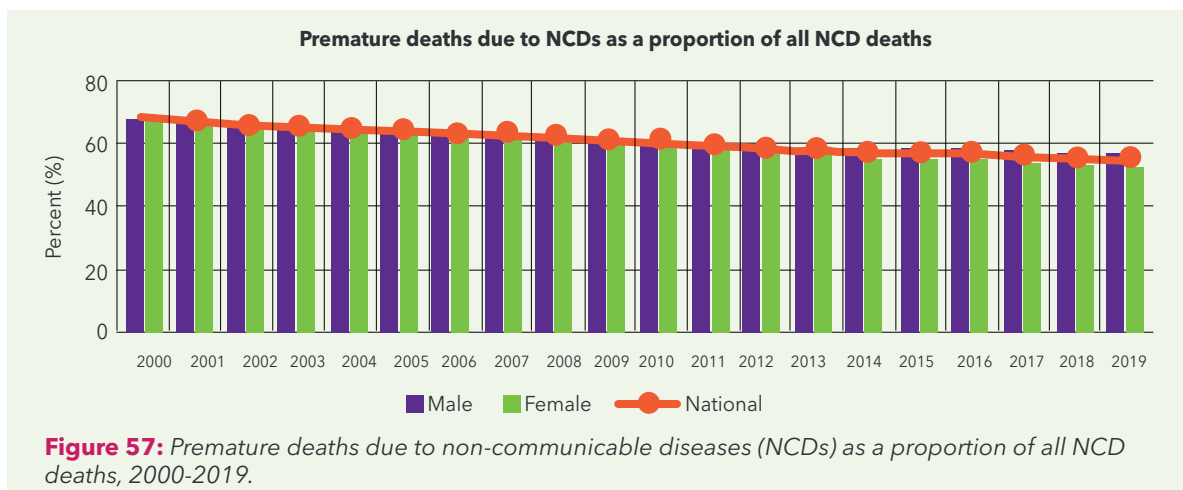


Figure 57: Premature deaths due to non-communicable diseases (NCDs) as a proportion of all NCD deaths, 2000-2019.

The probability of dying between 30 and 70 years from any NCD decreased from 27.3% in 2000 to 17.1% in 2019. The age standardized NCD mortality rate per 100,000 people decreased from 728 deaths per 100,000 people in 2000 to 511 deaths per 100,000 people in 2019.

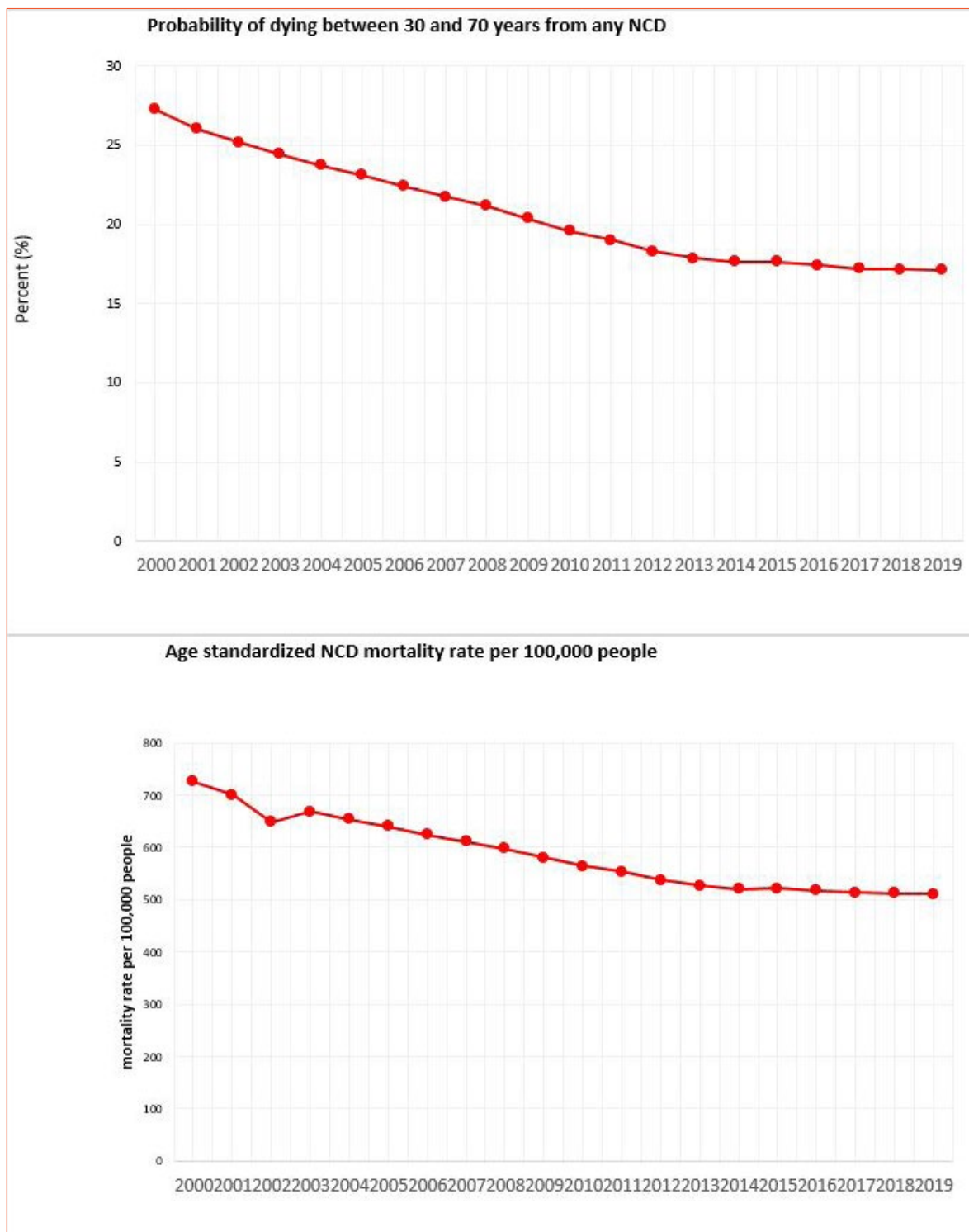


Figure 58: Probability of dying between 30 and 70 years and age standardized NCD mortality rate from any of NCD, 2000-2018.



HEALTH SECTOR TRANSFORMATION PLAN-I (HSTP-I) END-LINE REVIEW STUDY

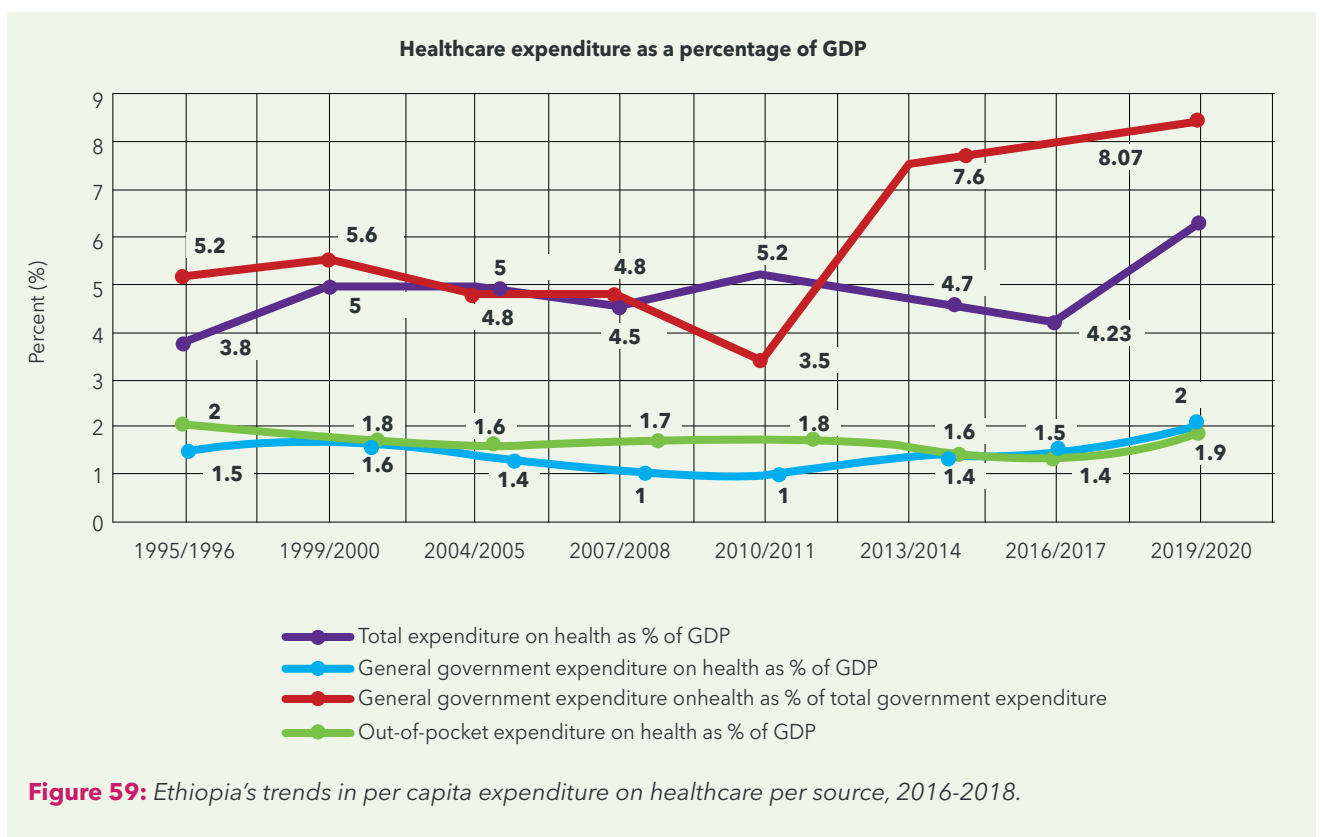
CHAPTER 7

Healthcare financing

7.1 TOTAL EXPENDITURE ON HEALTHCARE

The main sources of healthcare expenditure were the government, private sector, external funding and out-of-pocket (OOP) payments. The government's share of healthcare expenditure was 32.0%, expenditure from donors or external sources was 34.0% and out-of-pocket expenditure was 30.6% in 2019/20. Total expenditure on health as a percentage of GDP increased from 4.2% in 2016 to 6.3% in 2019/20 (Figure 59). General government expenditure on health as a percentage of total government expenditure increased from 8.0% in 2016 to 8.5% in 2019/20, while the general government expenditure on health as a percentage of GDP remained almost the same, except for a slight increase from 1.5% in 2016 to 2.0% in 2020. The contribution of out-of-pocket spending on healthcare expenditure as percentage of GDP showed no change (2.0% in 1995/96 and 1.9% in 2019/20).

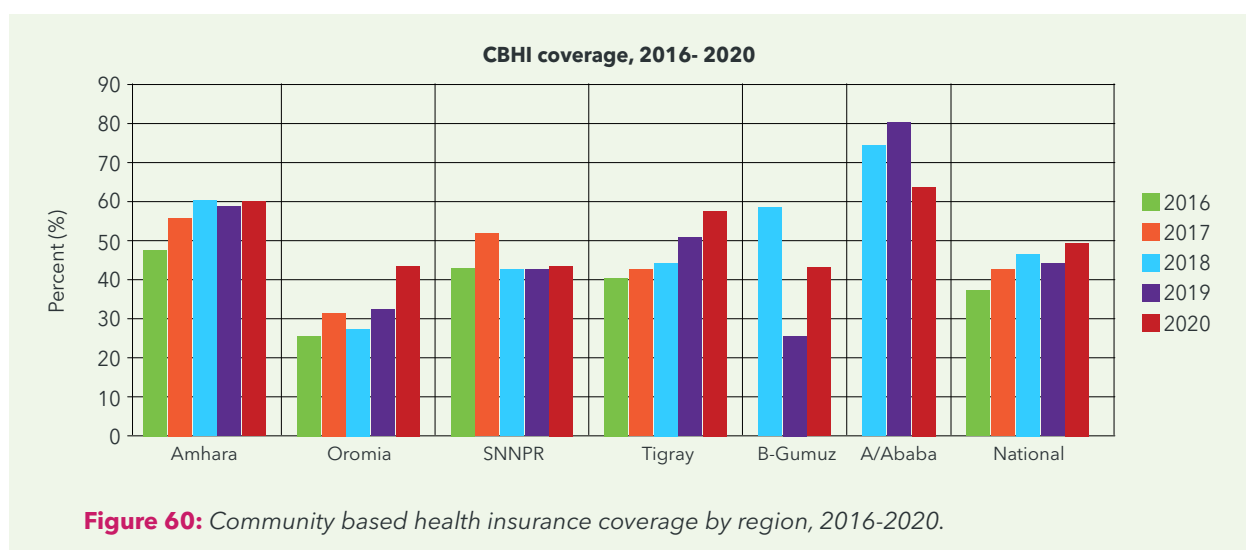
The high level of OOP payments creates financial obstacles in accessing healthcare services, especially among the poor and the most vulnerable who have limited income. They may end up with catastrophic healthcare costs that often push them further into poverty. Ethiopia needs to mobilize adequate resources for its healthcare system, in line with the needs of its population and international agreements. Inadequate resources put pressure on the ability of the health system to carry out its functions. Untreated illnesses can push some households into poverty and deepen the already high poverty levels in Ethiopia. Domestic resources are unlikely to be sufficient in the short-to medium-term to meet the population's healthcare needs, highlighting the critical role of external funding in Ethiopia's overall healthcare financing.



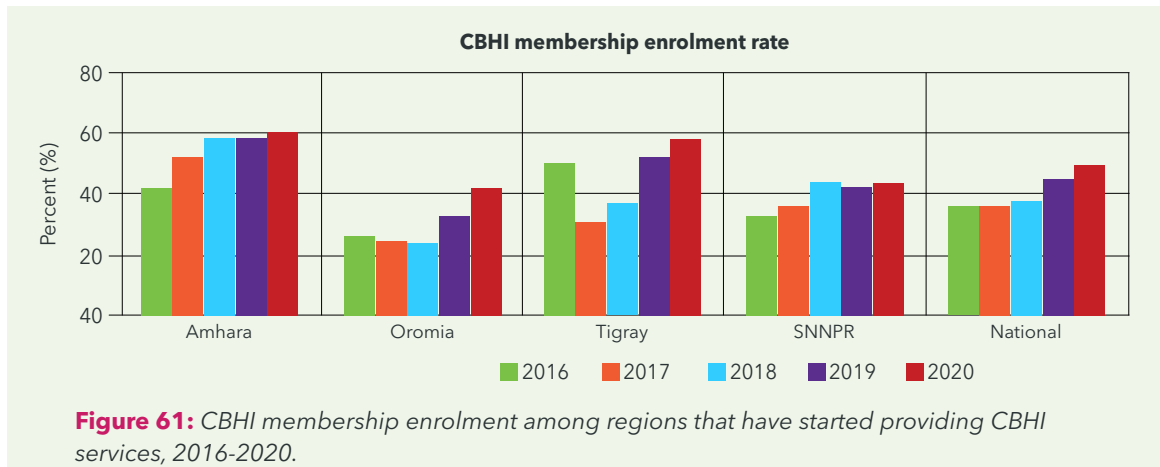
7.2 COMMUNITY-BASED HEALTH INSURANCE (CBHI) COVERAGE

Ethiopia introduced the community-based health insurance (CBHI) scheme in 2011, with the primary objective of improving the well-being and quality of life its people. The CBHI supports equitable access to quality healthcare services and increases financial protection and sustainability in health sector funding. It largely targets rural communities and people working in the small-scale and informal sectors in urban settings. The scheme pools members' premium payments, which range from 0.5% to 1.0% of monthly household income, in addition to a one-off registration fee that covers essential healthcare services.

The 2019 mini-DHS results showed that 28% of households had enrolled in the community-based health insurance scheme. Rural households (32%) were more likely to be enrolled than urban households (19%). At the population level, 3 out of 10 (28%) Ethiopians had enrolled, while 72% had not. The MoH annual performance report showed that the number of woredas (districts) implementing the CBHI scheme increased consistently, from 320 in 2016 to 827 (more than 80.0% of woredas) in 2020. The number of woredas that started health service provision with CBHI increased from 191 in 2016 to 743 in 2020. The HSTP-I targeted implementation of CBHI in 80.0% of the woredas and this target was achieved. The national CBHI coverage rate increased from 38.0% in 2016 to 50.0% in 2020. Among regions, the CBHI coverage rate increased during the HSTP-I period. In Amhara, coverage increased from 56.0% in 2016 to 61.0% in 2020, in Oromia coverage increased from 26.0% to 44.0%, and in Tigray, coverage increased from 43.0% to 58.0%.



Membership enrollment also increased over time. Nationally, the enrolment rate among eligible members increased from 36.0% in 2016 to 49.0% in 2020. Among the regions, Oromia saw an increase in enrolment rates from 26.0% in 2016 to 42.0% in 2020 while in SNNPR it increased from 33.0% in 2016 to 43.0% in 2020. The CBHI was part of the HSTP-I woreda transformation agenda. Coverage was targeted at 80.0%, however only half of the eligible members enrolled in the CBHI scheme.



Despite the CBHI's success, majority (72%) of Ethiopian households are not members of the CBHI, and so continue to make out-of-pocket payments to access the health services they need. There are substantial differences in CBHI enrolment by area of residence - more rural households (32%) are enrolled than urban households (19%).

Figure 59 indicates that the Ethiopian health sector functions with limited resources, including a relatively small external health funding per capita. As a result, the operating budget of many health facilities in the country is low, leading to poor performance in public sector healthcare provision and client dissatisfaction. The costs of seeking and obtaining healthcare in Ethiopia, especially for the poor and rural residents, remains a concern. Although rising sufficient and stable funding is important to remove financial barriers to access to care, there is also a need for better use of the limited resources available for healthcare service provision. Studies have shown that CBHI schemes can reduce catastrophic health expenditure (CHE) by reducing OOP payments and increasing resource mobilization. The barriers to greater CBHI enrolments are low levels of awareness, perceptions about high premium amounts and poor quality of services, as well as lack of trust.⁵⁵ Educational status, wealth, family size, occupation, marital status, travel time to the nearest health institution, perceived quality of care, first choice of place for treatment during illness and expected healthcare cost of a recent treatment are also identified barriers to joining community-based health insurance.^{56,57} Strong emphasis should therefore be placed on these factors to enhance enrolment into the community-based health insurance scheme.

HEALTH SECTOR TRANSFORMATION PLAN-I (HSTP-I) END-LINE REVIEW STUDY

CHAPTER 8

Healthcare Inequalities in Ethiopia

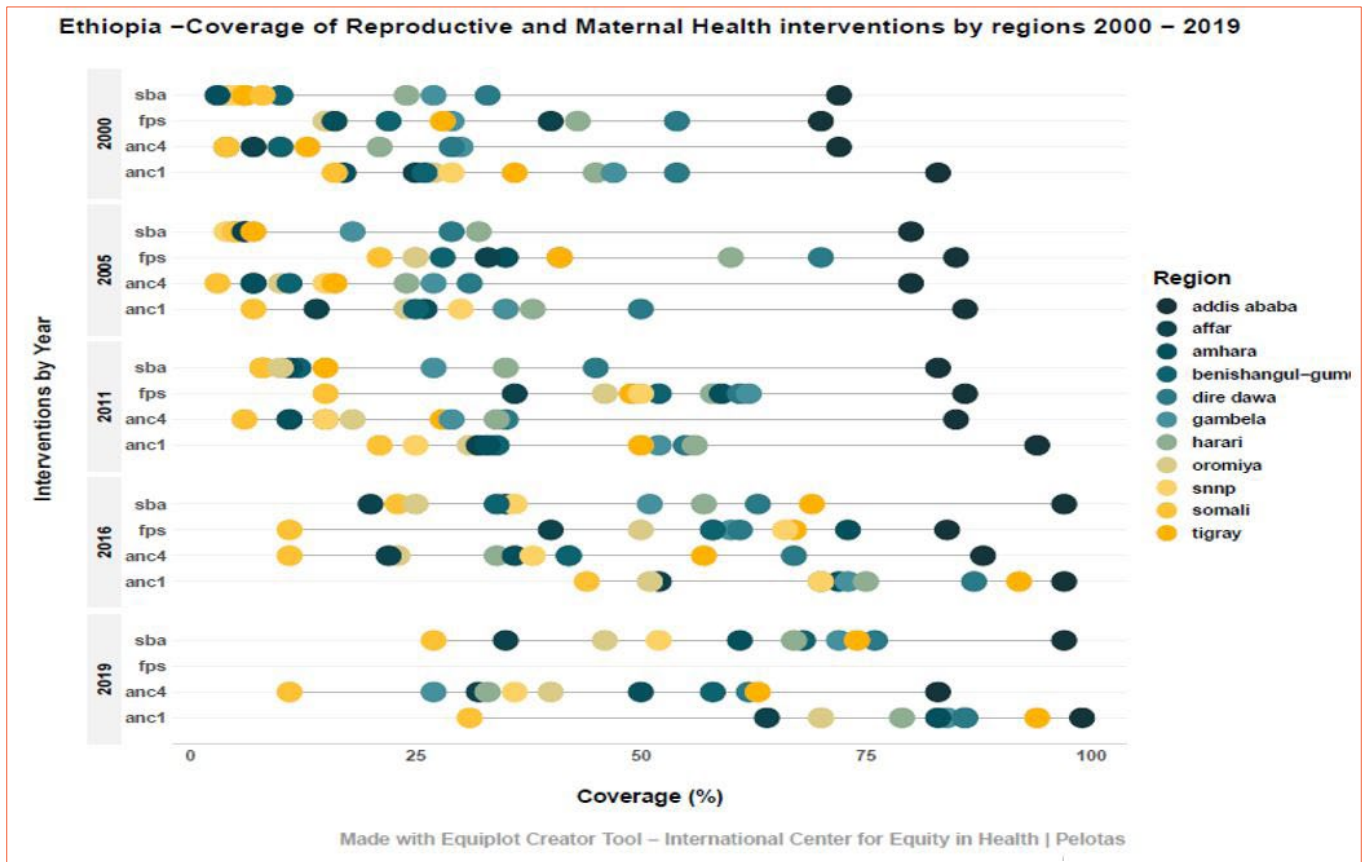


Figure 62: Coverage of RMNCH interventions by region, 2000-2019.

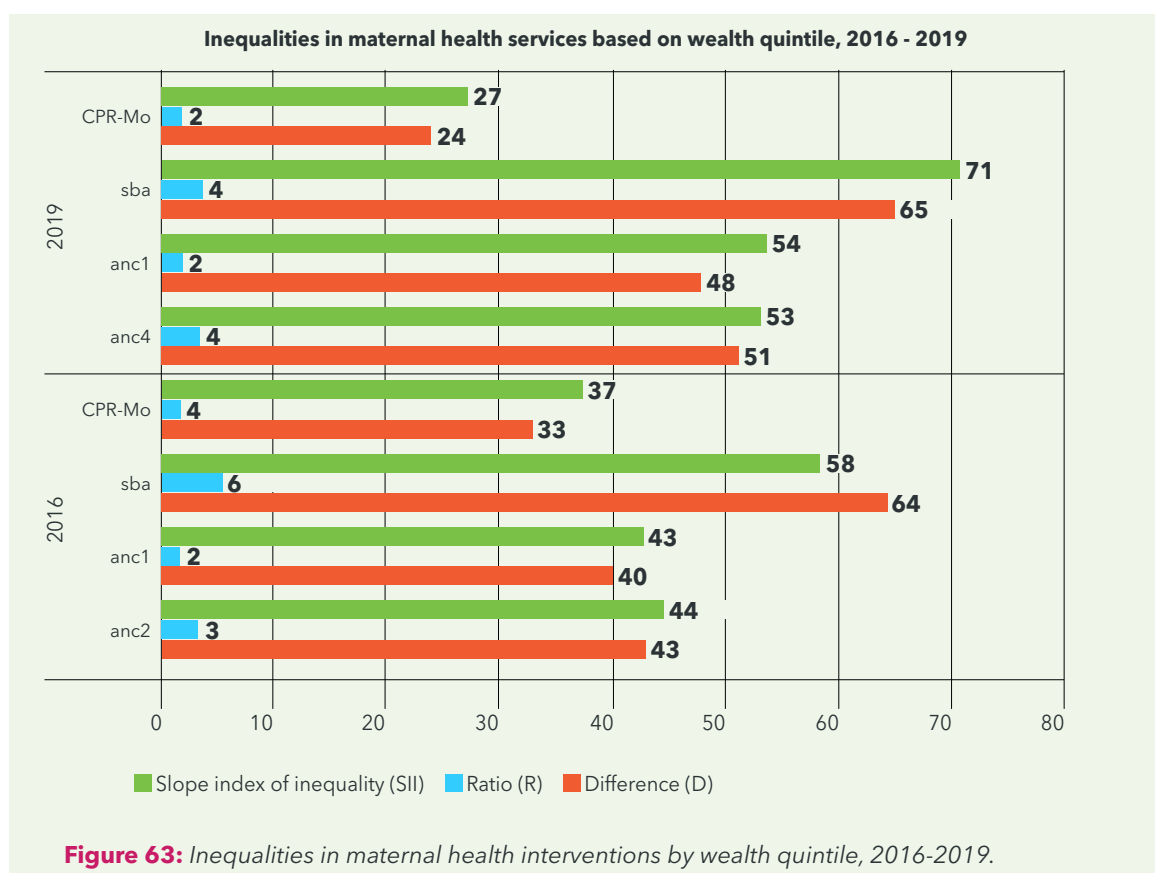
Figure 62 shows the coverage of reproductive, maternal, newborn and child health (RMNCH) interventions by region from 2000 to 2019.

Summary

- » There are inequalities in coverage of maternal health interventions in skilled birth attendance (SBA), ANC4+ and ANC1 visits between the richest and poorest sub-groups in 2019; interventions are concentrated among or are more utilized by the wealthy in the population.
- » Reducing child malnutrition is more pronounced on the richest and most privileged.
- » Vaccination is used more by the wealthiest segments of the population.
- » Reduction of Childhood malnutrition is more concentrated in the richest or more advantageous subpopulations. The reduction of stunting, wasting and underweight existed in 2000 and this inequalities more persisted in 2019.
- » Under-five mortality, infant mortality, stunting, wasting and underweight significantly increased as the wealth quintile decreased.

8.1 INEQUALITIES IN MATERNAL HEALTHCARE INTERVENTIONS

Regarding the maternal health interventions (Figure 63), all the analysis showed that there are inequalities in coverage of maternal health interventions between the richest and poorest sub-populations in 2016. These inequalities persisted into 2019. However, the slope index of inequality (SII), differences and ratios indicated that the inequalities in skilled birth attendance (SBA), ANC4+ and ANC1 visits, between the richest and poorest sub-groups increased in 2019 more than in 2016, meaning that the interventions are concentrated among or are more utilized by the wealthy in the population. Inequalities also persisted between rural and urban areas, the educated and uneducated, and among regions (Annex Table 7 and Table 8).



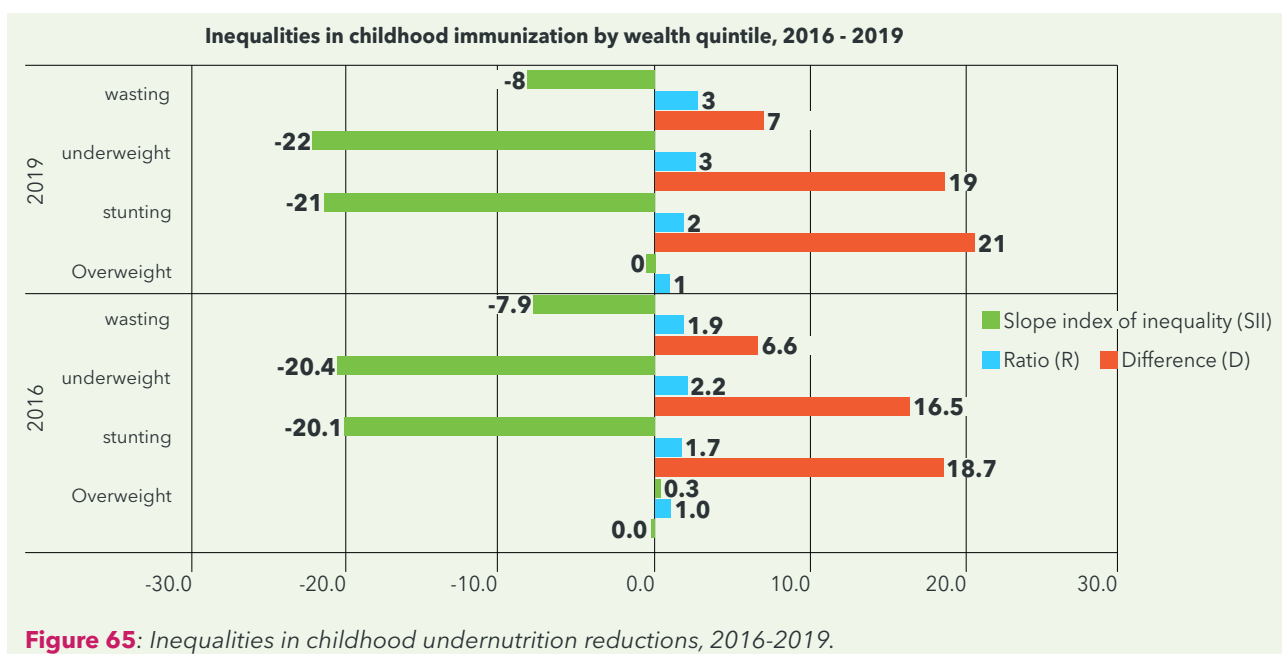
8.2 INEQUALITIES IN CHILDHOOD IMMUNIZATION

Variations persisted in childhood vaccinations based on wealth quintile (Figure 64). All slope index of inequality, ratio and difference figures showed inequalities between the wealthy and the poor in terms of utilization of childhood vaccinations. Inequalities increased in 2019 and persisted between rural and urban areas, the educated and uneducated, and among regions (Annex Table 7 and Table 8).



8.3 INEQUALITIES IN CHILDHOOD MALNUTRITION REDUCTIONS

Figure 65 shows the inequalities in childhood malnutrition reduction by wealth quintiles. The SII values are negative indicating that the reductions of childhood malnutrition are more concentrated among the wealthiest or more advantaged people. Inequalities in reduction of stunting, wasting and underweight existed in 2016 and persisted into 2019.

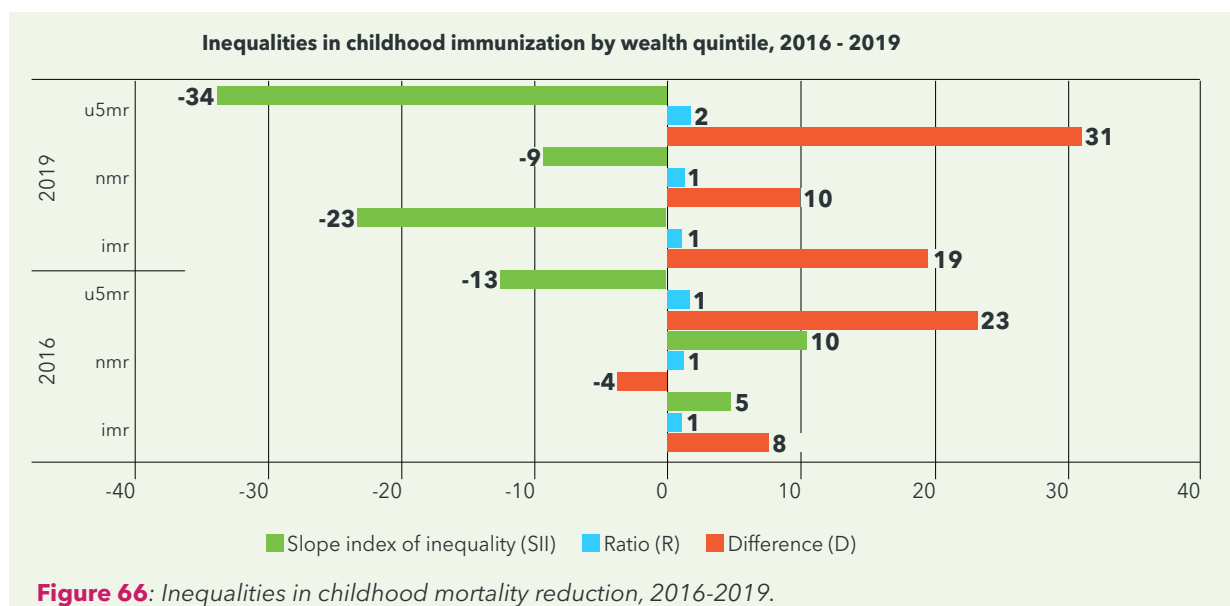


8.4 INEQUALITIES IN CHILDHOOD MORTALITY REDUCTION

The rates of neonatal, infant and under-five childhood mortality reduction showed inequalities among the wealthy and the poor in 2016 which persisted into 2019. In 2016, the reduction of under-five neonatal and infant mortality was higher among the poorest. In 2019, inequalities had still not reduced but continued to favor the less advantaged sub-populations as higher childhood mortality was observed among the wealthiest (Figure 66).

Generally, coverage of RMNCH indicators increased over the last two decades, however inequalities also persisted. This indicates that equal attention should be given to improving equity in addition to increasing the coverage of healthcare interventions, if the SDG 2030 agenda to “leave no one behind” is to be met.

Inequalities were also analyzed on the basis of educational status, residence, and region in addition to the wealth quintiles. The analysis showed inequalities in health interventions between urban and rural areas, the uneducated and the better educated, as well as among regions (Annex Table 7 and Table 8). All the analysis showed inequalities exist among the RMNCH indicators and they are concentrated or utilized more by the advantaged sub-populations. Levels of accessibility and utilization of such services are still low among those in hard-to-reach areas.





1. CSA. *Central Statistical Agency Population Projections for Ethiopia 2007-2037.*; 2013.
2. *The Human Capital Index 2020 Update.*; 2020. doi:10.1596/978-1-4648-1552-2
3. FMOH. Ethiopian Health Sector Transformation Plan.2015/16 - 2019/20. Fed Democr Repub Ethiop Minist Heal. 2015;20(May):50.
4. Tessema GA, Laurence CO, Melaku YA, et al. Trends and causes of maternal mortality in Ethiopia during 1990-2013: findings from the Global Burden of Diseases study 2013. *BMC Public Health.* 2017;17(1):160. doi:10.1186/s12889-017-4071-8
5. Legesse T, Abdulahi M, Dirar A. Trends and causes of maternal mortality in jimma university specialized hospital, southwest ethiopia: A matched case-control study. *Int J Womens Health.* 2017;9:307-313. doi:10.2147/IJWH.S123455
6. Shiferaw MA, Bekele D, Surur F, Dereje B, Tolu LB. Maternal Death Review at a Tertiary Hospital in Ethiopia. *Ethiop J Health Sci.* 2021;31(1):35-42. doi:10.4314/ejhs.v31i1.5
7. Mekonnen W, Hailemariam D, Gebremariam A. Causes of maternal death in Ethiopia between 1990 and 2016: Systematic review with meta-analysis. *Ethiop J Heal Dev.* 2018;32(4):225-242.
8. Zewudie AT, Gelagay AA, Enyew EF. Determinants of Under-Five Child Mortality in Ethiopia: Analysis Using Ethiopian Demographic Health Survey, 2016. *Int J Pediatr (United Kingdom).* 2020;2020. doi:10.1155/2020/7471545
9. Gebrekirstos K, Fantahun A, Buruh G. Magnitude and Reasons for Harmful Traditional Practices among Children Less Than 5 Years of Age in Axum Town, North Ethiopia, 2013. *Int J Pediatr.* 2014;2014:1-5. doi:10.1155/2014/169795
10. Negera A, Abelti G, Bogile T, Gebrelassie T, Person R. An analysis of the trends, differentials, and key proximate determinates of infant and under-five mortality in Ethiopia: Further analysis of the 2000, 2005, and 2011 Demographic and Health Surveys. *DHS Furth Anal Reports No 79.* Published online 2013. <http://dhsprogram.com/pubs/pdf/FA79/FA79.pdf>
11. Geremew BM, Gelaye KA, Melesse AW, Akalu TY, Baraki AG. Factors Affecting Under-Five Mortality in Ethiopia: A Multilevel Negative Binomial Model. *Pediatr Heal Med Ther.* 2020;Volume 11:525-534. doi:10.2147/phmt.s290715
12. Abate MG, Angaw DA, Shaweno T. Proximate determinants of infant mortality in Ethiopia, 2016 Ethiopian demographic and health surveys: Results from a survival analysis. *Arch Public Heal.* 2020;78(1):1-10. doi:10.1186/s13690-019-0387-4
13. Mehretie Adinew Y, Feleke SA, Mengesha ZB, Workie SB. Childhood Mortality: Trends and Determinants in Ethiopia from 1990 to 2015—A Systematic Review. *Adv Public Heal.* 2017;2017:1-10. doi:10.1155/2017/7479295
14. Weldearegawi B, Melaku YA, Abera SF, et al. Infant mortality and causes of infant deaths in rural Ethiopia: A population-based cohort of 3684 births. *BMC Public Health.* 2015;15(1):1-7. doi:10.1186/s12889-015-2090-x
15. Shifti DM, Chojenta C, Holliday E, Loxton D. Effects of short birth interval on neonatal, infant and under-five child mortality in Ethiopia: A nationally representative observational study using inverse probability of treatment weighting. *BMJ Open.* 2021;11(8):1-10. doi:10.1136/bmjopen-2020-047892

16. Gebremeskel F, Dibaba Y, Admassu B. Timing of First Antenatal Care Attendance and Associated Factors among Pregnant Women in Arba Minch Town and Arba Minch District, Gamo Gofa Zone, South Ethiopia. *J Environ Public Health*. 2015;2015. doi:10.1155/2015/971506
17. Wolde HF, Tsegaye AT, Sisay MM. Late initiation of antenatal care and associated factors among pregnant women in Addis Zemen primary hospital, South Gondar, Ethiopia. *Reprod Health*. 2019;16(1):73. doi:10.1186/s12978-019-0745-2
18. Yakob B, Gage A, Nigatu TG, et al. Low effective coverage of family planning and antenatal care services in Ethiopia. *Int J Qual Heal Care*. 2019;31(10):725-732. doi:10.1093/intqhc/mzy251
19. Tesfaye G, Loxton D, Chojenta C, Semahegn A, Smith R. Delayed initiation of antenatal care and associated factors in Ethiopia: A systematic review and meta-analysis. *Reprod Health*. 2017;14(1). doi:10.1186/s12978-017-0412-4
20. Abuka T, Alemu A. Assessment of Timing of First Antenatal Care Booking and Associated Factors among Pregnant Women who attend Antenatal Care at Health Facilities in Dilla town, Gedeo Zone, Southern Nations, Nationalities, and Peoples Region, Ethiopia, 2014. *J Pregnancy Child Heal*. 2016;3(3). doi:10.4172/2376-127x.1000258
21. Kahasse G, Alemayehu W. Factors associated with late ANC initiation among pregnant women in select public health centers of Addis Ababa, Ethiopia: unmatched case-control study design. *Pragmatic Obs Res*. Published online 2017:223-230.
22. Worku AG, Yalew AY AM. Factors affecting utilization of skilled maternal care in Northwest Ethiopia: a multilevel analysis. *BMC Int Health Hum Rights*. 2013;13:20. <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emed13&NEWS=N&AN=23587369>
23. Ayele G. Prevalence and Associated Factors of Home Delivery in Arbaminch Zuria District, Southern Ethiopia: Community Based Cross Sectional Study. *Sci J Public Heal*. 2015;3(1):6. doi:10.11648/j.sjph.20150301.12
24. Kidanu S, Degu G, Tiruye TY. Factors influencing institutional delivery service utilization in Dembecha district, Northwest Ethiopia: A community based cross sectional study. *Reprod Health*. 2017;14(1):1-8. doi:10.1186/s12978-017-0359-5
25. Abebe F, Berhane Y, Girma B. Factors associated with home delivery in Bahirdar, Ethiopia: A case control study. *BMC Res Notes*. 2012;5. doi:10.1186/1756-0500-5-653
26. Shiferaw BB, Modiba LM. Why do women not use skilled birth attendance service? An explorative qualitative study in north West Ethiopia. *BMC Pregnancy Childbirth*. 2020;20(1):1-14. doi:10.1186/s12884-020-03312-0
27. Hailegebreal S, Gilano G, Seboka BT, et al. Prevalence and associated factors of caesarian section in Ethiopia: a multilevel analysis of the 2019 Ethiopia Mini Demographic Health Survey. *BMC Pregnancy Childbirth*. 2021;21(1):1-9. doi:10.1186/s12884-021-04266-7
28. Gebremedhin S. Trend and socio-demographic differentials of Caesarean section rate in Addis Ababa, Ethiopia: Analysis based on Ethiopia demographic and health surveys data. *Reprod Health*. 2014;11(1):1-6. doi:10.1186/1742-4755-11-14
29. Gebreegiabher Hailu A, Kebede Fanta T, Tekulu Welay F, et al. Determinants of Cesarean Section Deliveries in Public Hospitals of Addis Ababa, Ethiopia, 2018/19: A Case-Control Study. *Obstet Gynecol Int*. 2020;2020. doi:10.1155/2020/9018747

30. Wondie AG, Zeleke AA, Yenus H, Tessema GA. Cesarean delivery among women who gave birth in Dessie town hospitals, Northeast Ethiopia. *PLoS One*. 2019;14(5):1-13. doi:10.1371/JOURNAL.PONE.0216344
31. Ayalew M, Mengistie B, Dheressa M, Demis A. Magnitude of cesarean section delivery and its associated factors among mothers who gave birth at public hospitals in Northern Ethiopia: Institution-based cross-sectional study. *J Multidiscip Healthc*. 2020;13:1563-1571. doi:10.2147/JMDH.S277747
32. Tesfaye S, Barry D, Gobeza Y, et al. Improving coverage of postnatal care in rural Ethiopia using a community-based, collaborative quality improvement approach. *J Midwifery Womens Health*. 2014;59 Suppl 1:S55-64. doi:10.1111/jmwh.12168
33. Wassie GT, Belete MB, Tesfu AA, et al. Association between antenatal care utilization pattern and timely initiation of postnatal care checkup: Analysis of 2016 Ethiopian Demographic and Health Survey. *PLoS One*. 2021;16(10 October):1-13. doi:10.1371/journal.pone.0258468
34. Chaka EE, Abdurahman AA, Nedjat S, Majdzadeh R. Utilization and Determinants of Postnatal Care Services in Ethiopia: A Systematic Review and Meta-Analysis. *Ethiop J Health Sci*. 2019;29(1):935-944. doi:10.4314/ejhs.v29i1.16
35. Darega B, Dida N, Tafese F, Ololo S. Institutional delivery and postnatal care services utilizations in Abuna Gindeberet District, West Shewa, Oromiya Region, Central Ethiopia: A Community-based cross sectional study. *BMC Pregnancy Childbirth*. 2016;16(1):1-7. doi:10.1186/s12884-016-0940-x
36. Tiruneh GT, Worku A, Berhane Y, Betemariam W, Demissie M. Determinants of postnatal care utilization in Ethiopia: A multilevel analysis. *BMC Pregnancy Childbirth*. 2020;20(1):1-12. doi:10.1186/s12884-020-03254-7
37. Rwabufigiri BN, Mukamurigo J, Thomson DR, Hedt-Gautier BL, Semasaka JPS. Factors associated with postnatal care utilisation in Rwanda: A secondary analysis of 2010 Demographic and Health Survey data. *BMC Pregnancy Childbirth*. 2016;16(1):1-8. doi:10.1186/s12884-016-0913-0
38. Seid A, Ahmed M. Determinants of postnatal checkup for newborns in Ethiopia: Further analysis of 2016 Ethiopia demographic and health survey. *BMC Pregnancy Childbirth*. 2020;20(1):1-7. doi:10.1186/s12884-020-03468-9
39. Bekele D, Surur F, Nigatu B, et al. Contraceptive prevalence rate and associated factors among reproductive age women in four emerging regions of Ethiopia: a mixed method study. *Contracept Reprod Med*. 2021;6(1):1-13. doi:10.1186/s40834-021-00162-9
40. Wudineh KG, Nigusie AA, Gesese SS, Tesu AA, Beyene FY. Postnatal care service utilization and associated factors among women who gave birth in Debretabour town, North West Ethiopia: A community-based cross-sectional study. *BMC Pregnancy Childbirth*. 2018;18(1). doi:10.1186/s12884-018-2138-x
41. Mulatu T, Sintayehu Y, Dessie Y, Deressa M. Modern Family Planning Utilization and Its Associated Factors among Currently Married Women in Rural Eastern Ethiopia: A Community-Based Study. *Biomed Res Int*. 2020;2020. doi:10.1155/2020/6096280
42. FMOH. *Ethiopia National Expanded Programme On Immunization Comprehensive Multi- Multi - Year Plan 2016 - 2020 Federal Ministry Of Health, Addis Ababa*. Published online 2020:1-127.
43. CSA/ICF. *Ethiopia Demographic and Health Survey 2016*. Addis Ababa, Ethiopia and Calverton, Maryland, USA: *Central Statistical Agency and ICF International*.; 2016.

44. Asmamaw A, Getachew T, Gelibo T, Taye G, Bekele A, Teklie H. Original article Determinants of full valid vaccine dose administration among 12-32 months children in Ethiopia: Evidence from the Ethiopian 2012 national immunization coverage survey. Published online 2012.
45. Meleko A, Geremew M, Birhanu F. Assessment of Child Immunization Coverage and Associated Factors with Full Vaccination among Children Aged 12-23 Months at Mizan Aman Town, Bench Maji Zone, Southwest Ethiopia. *Int J Pediatr.* 2017;2017:1-11. doi:10.1155/2017/7976587
46. Tamirat KS, Sisay MM. Full immunization coverage and its associated factors among children aged 12-23 months in Ethiopia: Further analysis from the 2016 Ethiopia demographic and health survey. *BMC Public Health.* 2019;19(1):1-7. doi:10.1186/s12889-019-7356-2
47. Conti F, Pilkington C, Marongiu A, Benini L. He-P2012: Architectural heterogeneity exploration on a scalable many-core platform. *Proc Int Conf Appl Syst Archit Process.* Published online 2014:114-120. doi:10.1109/ASAP.2014.6868645
48. Afework E, Mengesha S, Wachamo D. Stunting and Associated Factors among Under-Five-Age Children in West Guji Zone, Oromia , Ethiopia. 2021;2021.
49. Tafesse T, Yoseph A, Mayiso K, Gari T. Factors associated with stunting among children aged 6-59 months in Bensa District, Sidama Region, South Ethiopia: unmatched case-control study. *BMC Pediatr.* 2021;21(1):1-11. doi:10.1186/s12887-021-03029-9
50. Kebede D, Prasad RPCJ, Asres DT, Aragaw H, Worku E. Prevalence and associated factors of stunting and thinness among adolescent students in Finote Selam Town, Northwest Ethiopia. *J Heal Popul Nutr.* Published online 2021:1-12. doi:10.1186/s41043-021-00269-4
51. Mengiste LA, Worku Y, Aynalem YA, Shiferaw WS. Prevalence of Stunting and Its Associated Factors Among Children Aged 6-59 Months in Angolela Tera District, Northeast Ethiopia. *Nutr Diet Suppl.* 2020; Volume 12:311-319. doi:10.2147/nds.s287232
52. Kassahun Alemu KM. Prevalence of Malnutrition and Associated Factors Among Children Aged 6-59 Months at Hidabu Abote District, North Shewa, Oromia Regional State. *J Nutr Disord Ther.* 2013;03(03):1-15. doi:10.4172/2161-0509.t1-001
53. Derso T, Tariku A, Biks GA, Wassie MM. Stunting, wasting and associated factors among children aged 6-24 months in Dabat health and demographic surveillance system site: A community based cross-sectional study in Ethiopia. *BMC Pediatr.* 2017;17(1):1-9. doi:10.1186/s12887-017-0848-2
54. Dires S, Mareg M. The Magnitude of Wasting and Associated Factors among Children Aged 2-5 Years in Southern Ethiopia: A Cross-Sectional Study. *Biomed Res Int.* 2021;2021. doi:10.1155/2021/6645996
55. Demissie GD, Atnafu A. Barriers and facilitators of community-based health insurance membership in rural amhara region, northwest ethiopia: A qualitative study. *Clin Outcomes Res.* 2021;13:343-348. doi:10.2147/CEOR.S293847
56. Atnafu DD, Tilahun H, Alemu YM. Community-based health insurance and healthcare service utilisation, North-West, Ethiopia: A comparative, cross-sectional study. *BMJ Open.* 2018;8(8):1-6. doi:10.1136/bmjopen-2017-019613
57. Mirach TH, Demissie GD, Biks GA. Determinants of community-based health insurance implementation in west Gojjam zone, Northwest Ethiopia: A community based cross sectional study design. *BMC Health Serv Res.* 2019;19(1):1-8. doi:10.1186/s12913-019-4363-z

HEALTH SECTOR TRANSFORMATION PLAN-I (HSTP-I) END-LINE REVIEW STUDY

Annex

Methods and data sources

1.1 OVERALL METHODOLOGICAL APPROACH

This HSTP-I Endline Review focuses on assessing Ethiopia's progress and performance towards achievement of the plan's targets through in-depth analyses of the existing national and sub-national population data sets. It includes:

- Extensive review of existing reports, scientific articles, national health strategy and policy documents, and programs
- Analysis of data from the Routine Health Management Information System (HMIS) and other secondary data sources
- Identification, retrieval and criteria-based assessments of nationally representative surveys in order to recalculate coverage, outcome and impact indicators relevant to RMNCAH-N
- Compilation of strategic inputs from experts and stakeholders (such as from key partners and the Ministry of Health (MoH)) through a series of consultative workshops and meetings to optimize and triangulate sources of information.

1.2 INDICATORS FOR THE HSTP-I ENDLINE REVIEW

The HSTP-I Endline Review mainly focused on impact and outcome indicators. Six health domains, namely: (1) Reproductive, maternal, newborn and child health (RMNCH); (2) Nutrition; (3) Communicable diseases (HIV, tuberculosis, and malaria); (4) Water, sanitation and hygiene (WASH); and (5) Non-communicable diseases (NCDs). In selecting these indicators for inclusion, consideration was given to their precise definition, their ability to provide an unambiguous measure for the issue being assessed, as well as the availability of data required for the assessment, both on the population and the geographical settings where the issue is measured. All selected indicators showed good characteristics of validity, data availability, and reliability of measurement that was relevant and could be disaggregated by one or more dimensions of equity stratification. Table 1 and Table 2 show indicators for the analysis, the sources and methods of calculation.

1.3 DATA SOURCES

For each indicator, national and sub-national trends were explored. Summary measures such as percentage change, average annual rate of change and rates were used to assess progress and performance of the health sector during the HSTP-I period and beyond, when needed. The country's progress and performance during the HSTP-I was assessed by comparing performance against its target, and annual rate of change over the HSTP-I period was assessed. Data were analyzed at national and sub-national level to examine trends and inequalities. In addition, sociodemographic and geographic variables (such as sex, area of residence, region, wealth quintile and education level) were used as stratifying variables for equity analysis. The targets set by the HSTP-II were also reviewed and compared with HSTP-I performance as appropriate to highlight the effort needed to achieve targets. It is also worth noting that year of survey was used as a time stamp to present trends as well as assess progress and performance.

1.4 EQUITY STRATIFICATION

National-level health statistics often have the limitation of hiding significant health inequalities among population sub-groups and geographical regions within a country. For this reason, the five health domains and twenty indicators used in this analysis were carefully selected to ensure disaggregation across specific population sub-groups and geographical regions using the most widely used equity strata. For outputs, we used the Health Equity Assessment Toolkit Plus (HEAT Plus) software for exploring and comparing health inequalities among strata. The Pelotas Equiplot creator tool was used to compare health inequalities among regions at the sub-national level.

Table 1: Health indicators included in the endline review analysis

Impact indicators	Outcome indicators
<p>Mortality</p> <ul style="list-style-type: none"> • Maternal mortality ratio • Under-5 mortality rate • Infant mortality rate • Neonatal mortality rate • Childhood mortality rate 	<p>Maternal health</p> <ul style="list-style-type: none"> • ANC4+ coverage • Skilled birth attendance • Caesarean section deliveries • Postnatal care coverage • Family planning • Contraceptive prevalence rate • Modern contraceptive prevalence rate • Unmet need for family planning • Demand satisfied by modern contraceptive methods
<p>Nutritional impact indicators</p> <ul style="list-style-type: none"> • Stunting • Wasting • Underweight 	<p>Child health</p> <ul style="list-style-type: none"> • Childhood immunization (BCG, DPT-3, measles, all eight basic vaccines) • Postnatal care for newborn coverage
<p>HIV, Tuberculosis, and Malaria</p> <ul style="list-style-type: none"> • HIV incidence, prevalence, mortality due to AIDS, ART coverage, 90-90-90 HIV targets • Tuberculosis incidence, detection rate, treatment success rate, and cure rate • Malaria incidence, mortality due to malaria 	<p>Nutritional Status</p> <ul style="list-style-type: none"> • Early initiation of breastfeeding • Exclusive breastfeeding • Predominant breastfeeding • Micronutrients
<p>Non-communicable diseases (NCDs)</p> <ul style="list-style-type: none"> • Deaths due to NCDs • Premature death due to NCDs • Probability of dying between 30 and 70 years from any NCD 	<p>Water, sanitation and hygiene (WASH)</p> <ul style="list-style-type: none"> • Improved water source • Improved latrines and hand washing facilities • Open defecation • Water, electricity and sanitation in health facilities
<p>Others</p> <ul style="list-style-type: none"> • Community-based health insurance • DHIS2/HMIS data completeness, consistency 	

Table 2: Data sources used for the endline review analysis

Population surveys	Health facility assessments	Routine health facility data and reports
<ul style="list-style-type: none"> • Ethiopia Demographic and Health Survey: DHS - 2000, 2005, 2011, 2016, 2019 (mini) • PMA 2020: 2014, 2015, 2016, 2017, 2018, 2019 • WHO/World Bank/GBD estimates 	<ul style="list-style-type: none"> • SARA 2016, 2018 • EmONC 2016 	<ul style="list-style-type: none"> • Health sector annual performance reports (2016-2020) • Health and health-related indicators (2016-2020) reports

Region A large area of country that has its own administrative sub-divisions, characteristics, and particular geographical features. 11 regions: Addis Ababa, Afar, Amhara, Benishangul-Gumuz, Dire Dawa, Gambela, Harari, Oromia, Somali, Southern Nations, Nationalities and Peoples' Region (SNNPR) and Tigray.

Table 3: Dimensions of inequality measures and sub-group categorization

Types of inequality indicator (measure)	Description of sub-group categorization indicator	Sub-group categorization method
Wealth (economic status)	The stock of accumulated assets an individual or a household own.	Five groups of all households ranked by income. Quintile one (lowest) to Quintile five (highest).
Gender	The two main categories (male and female)	Two sub-groups: female and male
Place of residence	Sub-division of a country (urban or rural) based on where a person resides.	Two sub-groups: rural and urban
Region	A large area of country that has its own administrative sub-divisions, characteristics, and particular geographical features.	11 regions: Addis Ababa, Afar, Amhara, Benishangul-Gumuz, Dire Dawa, Gambela, Harari, Oromia, Somali, Southern Nations, Nationalities and Peoples' Region (SNNPR) and Tigray.
Education	The highest level of education (schooling) that a person has successfully completed.	Three sub-groups used for most indicators: no education; primary; secondary and above

1.5 LIMITATIONS

Due to the lack of survey data in the HSTP-I period (2016-2019), the following outcome indicators are not covered in this report: treatment of diarrhea with ORS/ORT/Zinc/antibiotics; antibiotics for acute respiratory infections; treatment sought for children with fever; bed net utilization for under-five children and pregnant women; anemia and perinatal mortality.

HSTP-I and HSTP-II targets: Indicator targets are planned based on data from the HMIS dataset and demographic health surveys (DHS) which refrain from suggesting and/or recommending levels of achievements during HSTP-I and II periods since the datasets used for setting targets differ from those used to assess progress and performance.

ADDITIONAL RESULTS

Table 5: Availability of obstetric signal functions offered

	Offers delivery services		Parenteral administration of antibiotics		Parenteral administration of oxytocic drugs		Parenteral administration of anticonvulsants		Assisted vaginal delivery		Manual removal of placenta		Manual removal of retained products	
	2016	2018	2016	2018	2016	2018	2016	2018	2016	2018	2016	2018	2016	2018
Region														
Tigray	60	67	47	64	47	67	43	60	60	67	60	67	60	67
Afar	65	61	61	60	65	61	28	47	46	42	65	61	42	61
Amhara	59	53	45	44	59	47	30	42	45	50	59	53	59	50
Oromia	63	58	59	55	59	58	35	37	41	58	63	58	63	55
Somali	85	76	79	76	85	76	73	55	42	76	84	75	79	76
Benishangul-Gumuz	51	50	48	47	47	50	22	28	41	46	51	50	51	50
SNNPR	50	57	33	57	39	50	10	27	33	57	47	53	42	45
Gambela	23	27	19	20	23	20	12	9	23	27	23	27	23	27
Harari	32	33	32	33	30	33	30	23	32	33	32	33	32	30
Addis Ababa	29	22	28	19	28	19	18	18	27	22	28	22	28	22
Dire Dawa	36	43	36	40	36	43	34	43	36	40	36	36	36	38
Facility Type														
Referral Hospital	88	100	88	100	88	100	88	97	88	100	88	100	88	100
General Hospital	93	100	92	100	93	99	79	92	91	99	93	98	92	98
Primary Hospital	90	98	89	96	90	97	80	91	87	97	89	97	89	97
Health Center	97	99	80	94	90	98	48	68	68	99	96	99	94	90
Higher clinic	38	43	38	43	38	43	30	35	37	43	38	43	38	43
Medium Clinic	19	7	19	0	13	1	0	0	13	1	19	7	13	7
Lower Clinic	2	5	0	4	2	0	0	0	0	5	2	3	2	5
National	55	53	46	49	51	50	28	36	39	52	55	53	53	49

Table 6: Availability of newborn signal functions offered

Region	Antibiotics for pre-term or prolonged PROM		Neonatal resuscitation		Corticosteroids in pre-term labor		MC for premature/very small babies		Injectable antibiotics for neonatal sepsis	
	2016	2018	2016	2018	2016	2018	2016	2018	2016	2018
Region										
Tigray	52	56	60	67	4	33	56	66	47	56
Afar	43	51	55	57	20	28	63	61	39	53
Amhara	33	42	59	53	13	23	45	48	30	33
Oromia	48	41	63	58	4	10	62	51	34	37
Somali	78	76	74	66	21	11	58	75	68	66
Benishangul-Gumuz	44	47	47	50	9	20	47	44	44	22
SNNPR	30	38	44	54	7	6	30	45	27	39
Gambela	15	13	23	20	4	6	18	21	15	17
Harari	23	23	32	33	17	20	28	30	14	25
Addis Ababa	29	18	29	22	12	6	27	20	18	10
Dire Dawa	36	43	36	43	13	12	32	43	29	32
Facility Type										
Referral Hospital	88	100	88	100	81	97	88	97	88	97
General Hospital	92	100	93	100	81	90	85	91	84	93
Primary Hospital	89	96	89	97	79	82	84	88	82	90
Health Center	66	76	95	97	9	22	83	86	53	67
Higher clinic	37	43	37	43	30	8	37	42	37	9
Medium Clinic	18	0	13	7	7	0	7	7	13	0
Lower Clinic	0	0	2	5	0	0	0	5	0	2
National	39	40	54	52	9	14	46	47	31	35

INEQUALITIES IN REPRODUCTIVE, MATERNAL, CHILD HEALTH, NUTRITION AND CHILDHOOD MORTALITY BY DIFFERENT STRATA

Table 7: Inequalities in reproductive, maternal, newborn, and child health intervention by region, residence, education and wealth quintile, by absolute and relative simple and complex summary measures, Ethiopia, 2016

Indicator	Region			Residence			Education			Economic status (wealth quintile)		
	Difference (D)	Ratio	MDMW	Theil index (TI)	Difference (D)	Ratio (R)	Difference (D)	Ratio (R)	Slope index of inequality (SII)	Difference (D)	Ratio (R)	Slope index of inequality (SII)
Reproductive health intervention												
anc4	77.1	7.8	10.4	80.2	37.6	2.3	42.9	2.7	41.4	42.9	3.4	44.5
anc1	53.0	2.2	12.2	23.0	32.4	1.5	41.9	1.8	52.7	39.9	1.8	42.7
sba	77.4	4.9	9.6	81.4	59.6	3.2	62.9	3.9	59.6	64.3	5.6	58.4
fpsm	65.8	7.8	10.0	18.8	21.9	1.4	21.7	1.4	26.6	33.0	1.8	37.3
Child health and immunization												
vbcg	53.2	2.2	9.8	12.2	22.3	1.3	23.6	1.4	28.9	26.2	1.5	31.3
vdpt	75.6	4.8	13.6	41.8	29.7	1.6	34.4	1.8	42.6	39.9	2.1	43.1
vfull	74.1	5.9	14.0	83.6	29.4	1.8	39.6	2.3	42.0	40.8	2.8	40.5
vmsl	63.0	3.1	10.7	27.5	24.5	1.5	29.8	1.6	31.2	31.1	1.7	32.3
vpolio	60.4	2.7	12.9	30.8	26.0	1.5	28.7	1.6	37.5	32.4	1.7	34.2
vita	38.6	2.1	7.1	21.1	16.6	1.4	22.4	1.5	22.0	17.1	1.4	16.5
bearly	48.5	2.2	5.2	3.8	-0.8	1.0	-3.7	1.0	-1.5	0.6	1.0	-3.0
Child nutrition												
overweight	6.4	11.6	1.1	109.7	-0.2	0.9	-0.4	0.9	1.3	0.0	1.0	0.3
stunting	31.9	3.2	3.6	12.1	14.3	1.6	21.3	2.0	-20.2	18.7	1.7	-20.1
underweight	31.1	7.2	2.8	17.9	11.3	1.8	15.9	2.4	-22.3	16.5	2.2	-20.4
wasting	19.4	6.6	2.1	55.5	1.4	1.2	3.7	1.5	-4.9	6.6	1.9	-7.9
Childhood mortality												
imr					8.0	1.1	23.7	1.6	-23.0	7.6	1.1	4.8
nmr					-2.8	0.9	7.1	1.2	-9.4	-3.8	0.9	10.3
u5mr					16.7	1.3	36.0	1.7	-35.9	23.0	1.3	-12.7

Table 8: Inequalities in reproductive, maternal, newborn, and child health intervention by region, residence, education and wealth quintile, by absolute and relative simple and complex summary measures, Ethiopia, 2019

Indicator	Region			Place of residence			Education			Wealth quintile				
	Difference (D)(se)	Ratio	Theil index (TI)	MDMW	Difference (D)	Ratio	Difference (D)	Ratio	Slope index of inequality (SII)	ACI	Difference (D)	Ratio	Slope index of inequality (SII)	ACI
Reproductive health														
Cpmo	46(3.4)	15(7.1)	46	6	10(3.7)	1(0.1)	23(3.0)	2	33(2.2)	4.7	24(4)	2(0.2)	27(2)	4.4
anc4	73(4.6)	8(2.0)	50	9	20(5.7)	2(0.1)	46(4.3)	2	49(2.8)	7.2	51(4.2)	4(0.5)	53(3)	8.9
anc1	68(6.0)	3(0.6)	20	9	15(4.1)	1(0.1)	37(3.2)	2	53(5.3)	7.1	48(4.1)	2(0.2)	54(2)	8.8
Sba	71(5.8)	4(0.8)	31	10	29(7.8)	2(0.2)	52(4.8)	2	61(2.3)	9.0	65(4.3)	4(0.6)	71(2)	12.4
Child health and immunization														
Vbcg	57(7.7)	2(0.5)	14	8	23(5.3)	1(0.1)	31(4.5)	1(0.1)	39(4.9)	5.350758	41(6.4)	2(0.2)	48(4)	7.9
vdpt	67(7.4)	4(0.9)	38	14	21(8.8)	1(0.2)	20(8.4)	1(0.2)	26(5.5)	3.572348	36(10.8)	2(0.3)	41(5)	6.7
vfull	65(6.9)	5(1.2)	81	16	25(8.9)	2(0.3)	29(8.3)	2(0.3)	39(5.1)	5.64384	40(8.7)	2(0.4)	44(5)	7.2
vmsl	61(6.4)	3(0.6)	31	12	28(8.3)	2(0.2)	43(5.5)	2(0.2)	54(4.5)	7.978157	40(7.9)	2(0.3)	47(5)	7.8
vpolio	61(7.7)	3(0.9)	32	12	19(7.4)	1(0.1)	15(8.4)	1(0.2)	20(5.6)	2.812593	41(8)	2(0.3)	42(5)	6.9
vita	26(3.1)	4(0.7)	37	5	6(3.3)	1(0.1)	13(3.4)	2(0.2)	16(2.4)	2.2	15(3.4)	2(0.2)	16(2)	2.5
bfeearly	24(5.9)	1(0.1)	7	7	-1(3.9)	1(0.1)	2(4.4)	1(0.1)	3(3.8)	0.5	3(4.4)	1(0.1)	1(4)	0.2
Child nutrition														
overweight	5(1.7)	10(6.1)	141	1	-0.2(1.3)	1(0.5)	0(1.3)	0.6	-0.5(0.8)	-0.1	0.1(1.5)	1(0.6)	0(0.7)	-0.1
stunting	34(4.3)	3(0.7)	13	4	14(3.6)	2(0.2)	23(2.3)	0.3	-24(2.6)	-3.3	21(3.9)	2(0.2)	-21(2.3)	-3.4
underweight	27(3.7)	7(2.1)	48	5	8(2.4)	2(0.2)	18(0.6)	0.6	-24(2.3)	-3.0	19(3.6)	3(0.5)	-22(2)	-3.5
wasting	19(1.8)	9(3.5)	154	3	2(1.1)	1(0.3)	5(2.1)	0.8	-9(1.6)	-1.1	7(1.5)	3(0.6)	-8(1.3)	-1.3
Childhood mortality														
imr					25(9.0)	2	16(13.6)	1(0.5)	-14(8.8)	-1.7	19(13)	1(0.4)	-23(8)	-3.7
nmr					17(7.6)	2	8(11.6)	1(0.5)	3(7.0)	0.4	10(9)	1(0.5)	-9(6)	-1.4
u5mr					27(10.0)	2	30(13.8)	2(0.5)	-22(9.8)	-2.7	31(15)	2(0.5)	-34(9)	-5.3

INEQUALITIES BY RATIO AMONG DIFFERENT STRATA

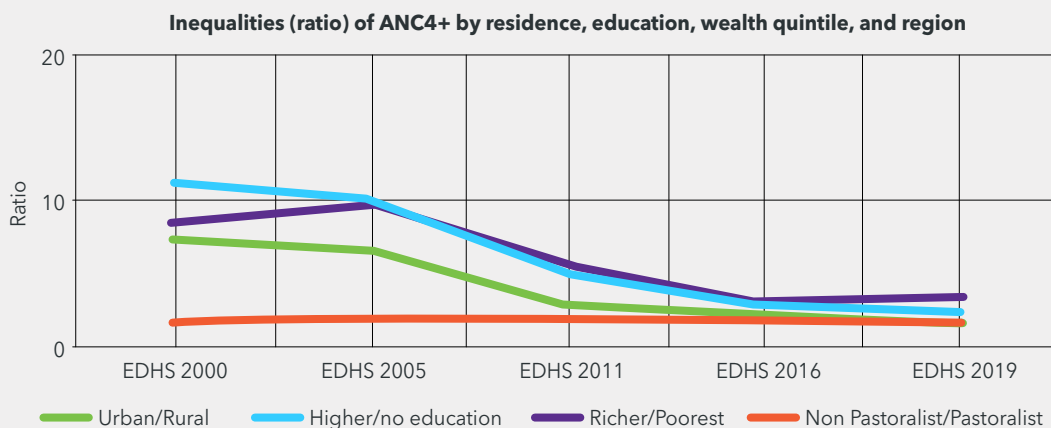


Figure 67: Trends in equity gaps for ANC4+ by residence, wealth quintile, education and region, 2000-2019.

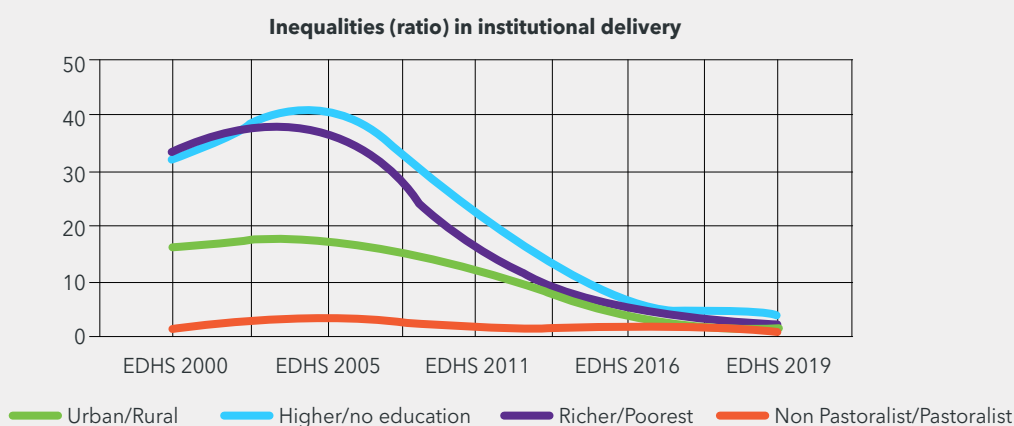


Figure 68: Inequalities (ratio) in institutional deliveries, 2000-2019.

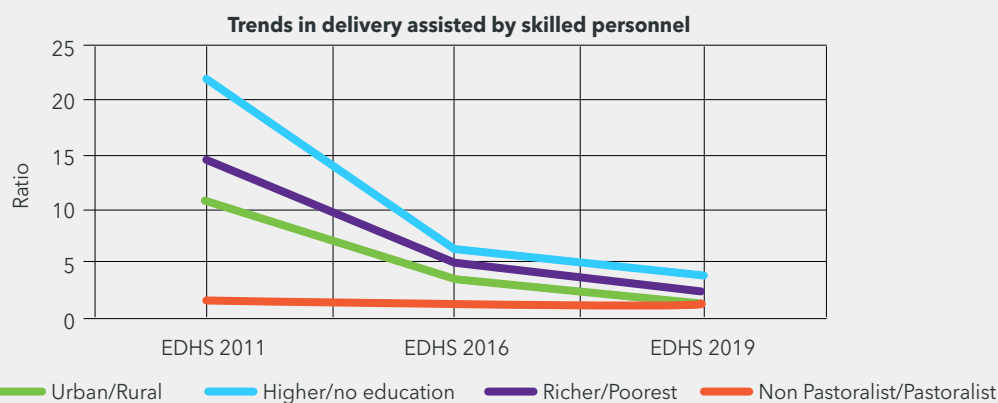


Figure 69: Assistance during delivery from a skilled provider, 2011-2019.

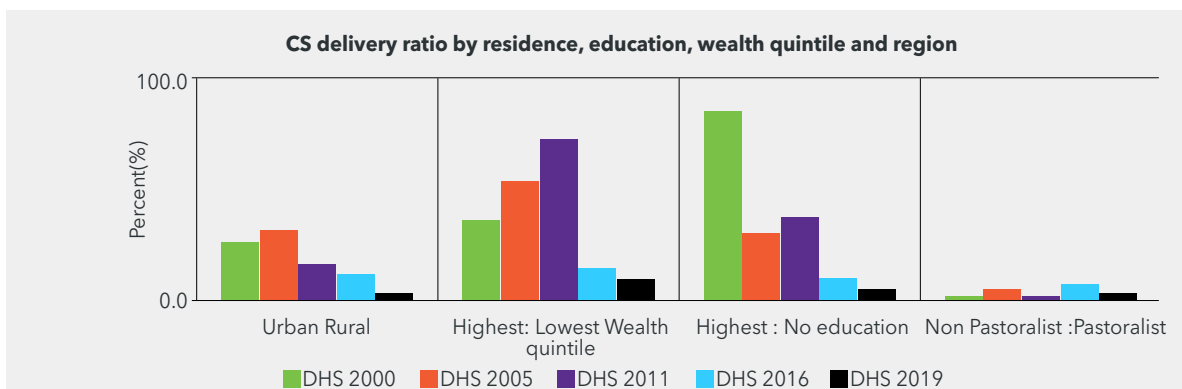


Figure 70: Inequalities (ratio) of CS delivery by residence, education, wealth quintile and region, 2000-2019.

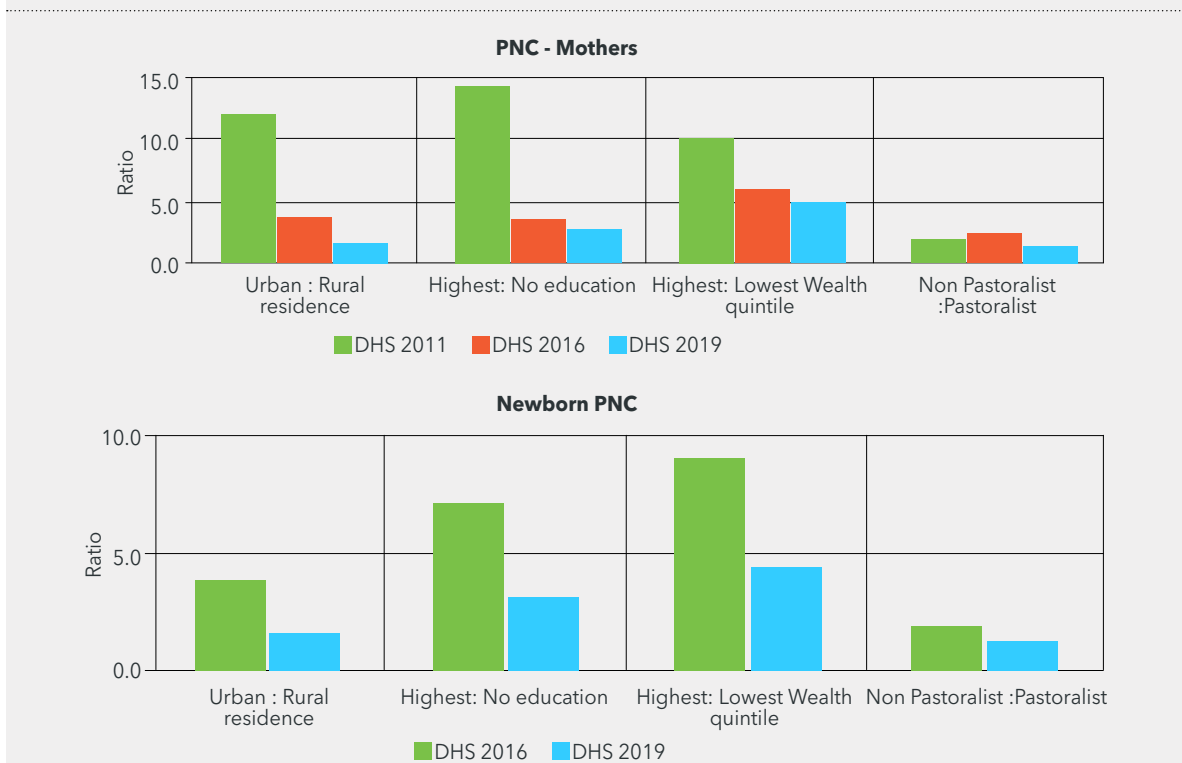


Figure 71: Ratio of PNC coverage for mothers and newborns by background characteristics

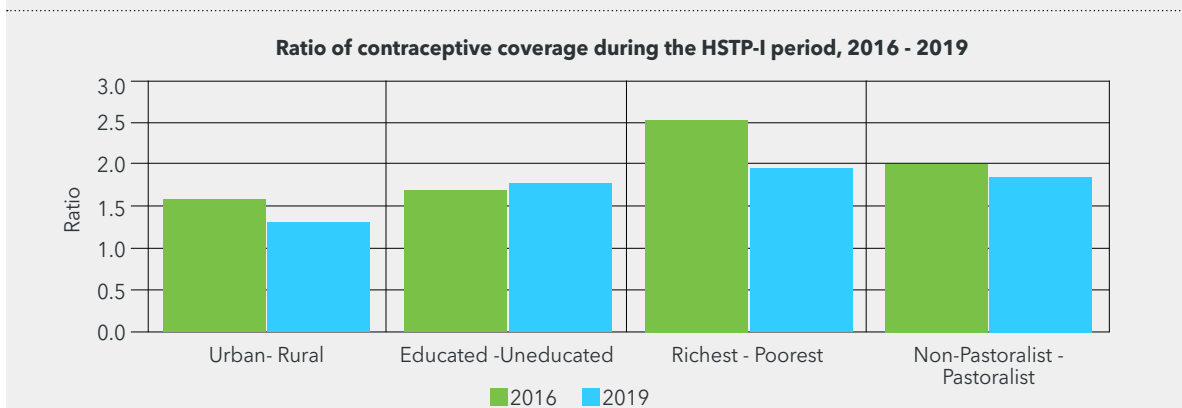


Figure 72: Trends in CPR ratios by residence, education, wealth quintile and regions, 2016 & 2019.

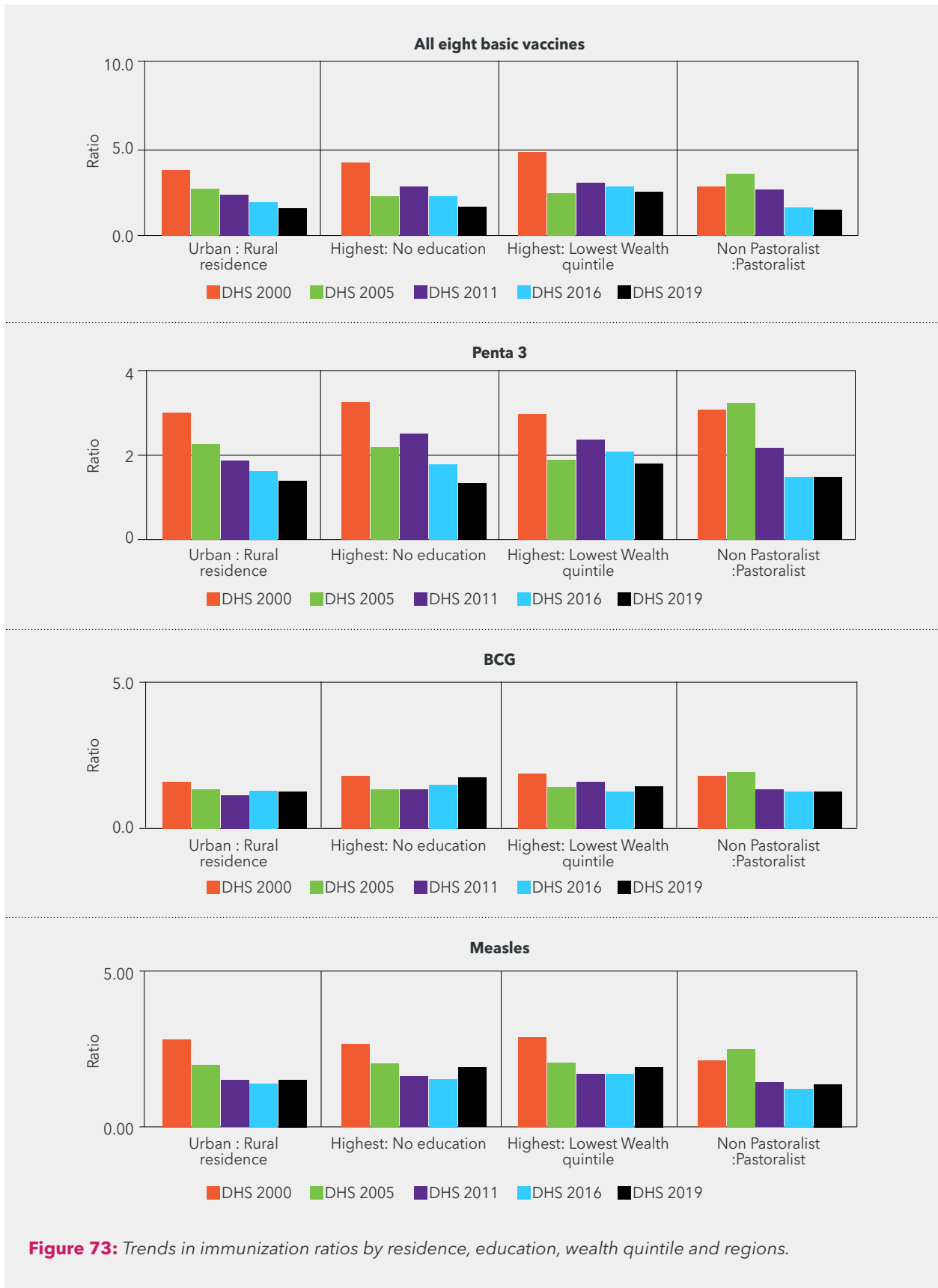


Figure 73: Trends in immunization ratios by residence, education, wealth quintile and regions.

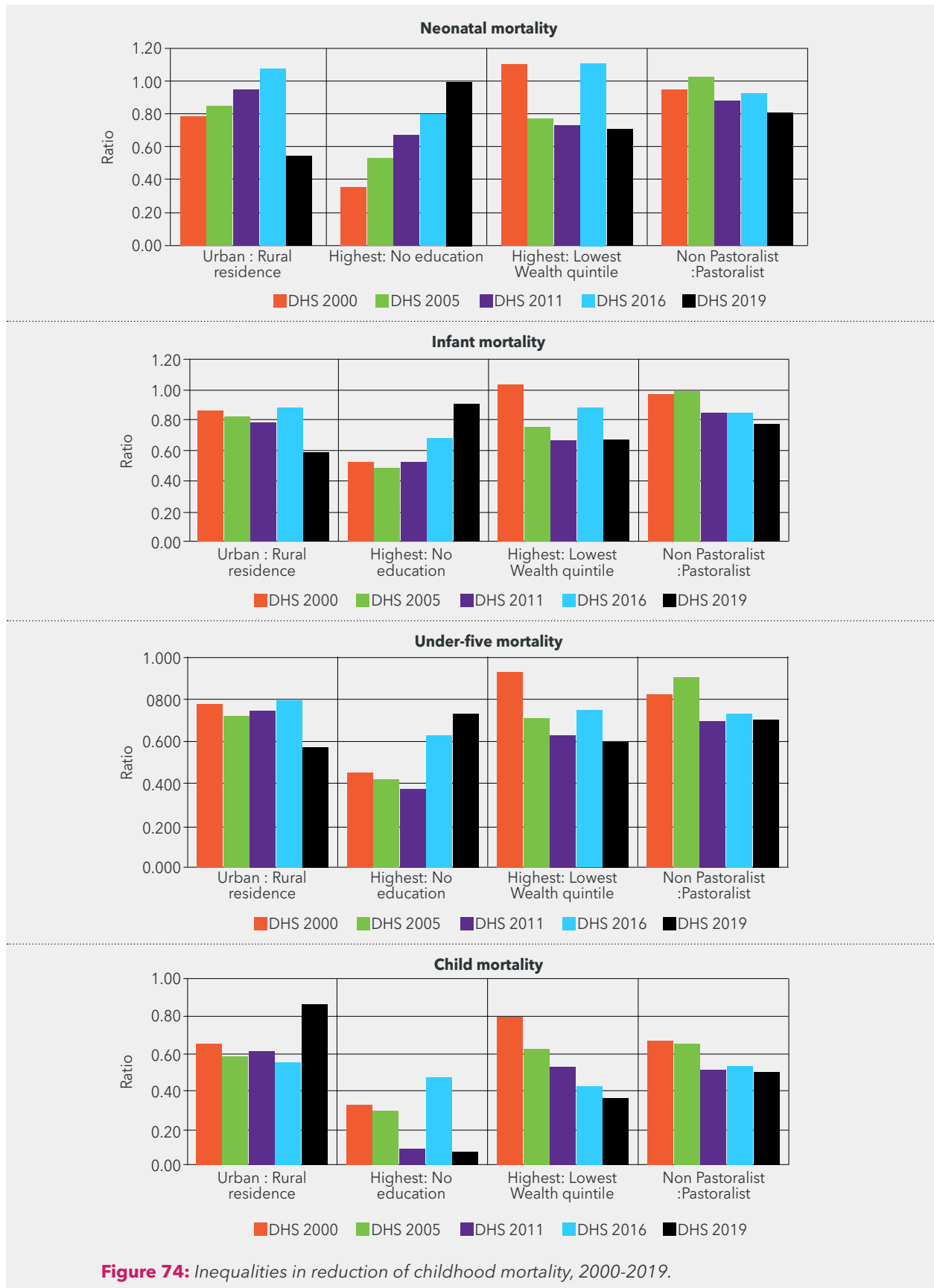


Figure 74: Inequalities in reduction of childhood mortality, 2000-2019.

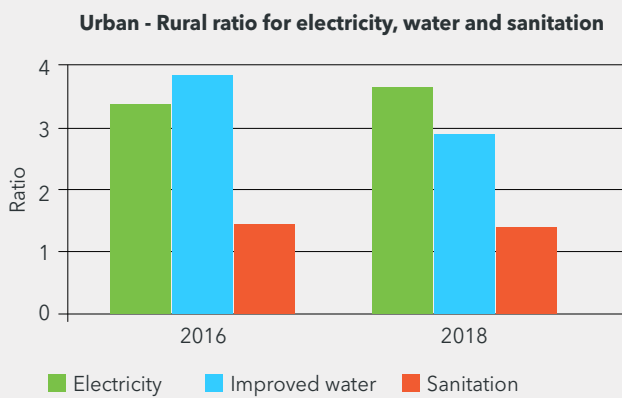


Figure 75: Inequalities in electricity, improved water and sanitation provision in health facilities, 2016 and 2018.

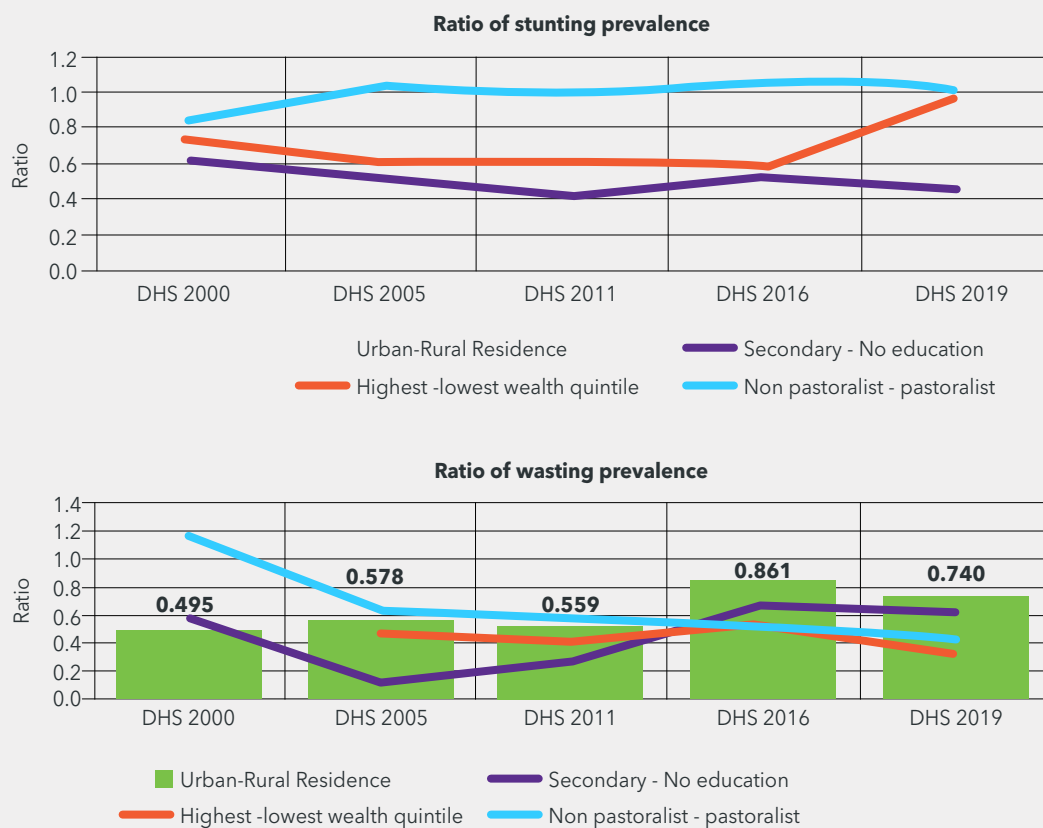


Figure 76: Inequalities in reduction of stunting and wasting, 2000-2019.



HEALTH SECTOR TRANSFORMATION PLAN-I (HSTP-I) END-LINE REVIEW STUDY



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