ETHIOPIA

Analysis of Reproductive, Maternal, Newborn, Child and Adolescent Health Indicators for 2019-2024: Synthesis Report

ANALYSIS REPORT 2025

Countdown to 2030 in Partnership with Ministry of Health-Kenya, Global Financing Facility, WHO, WAHO, UNICEF
Country Annual Meeting (CAM), Nairobi, 16-20 June 2025

Team Members

1. Ashenif Tadele
2. Tamrat Awell
3. Shegaw Mulu
4. Fikresilassie Getachew
5. Tsedeke Mathewos
6. Dessalegn Y Melesse
7. Aderajew Mekonnen

List of Abbreviations and Acronyms

ANC1	Antenatal Care one visits
ANC4+	Antenatal care four or more visits
CFR	Case fatality rate
CI	Confidence Interval
CS	Caesarean section
DHIS	District Health Information System
HMIS	Health Management Information System
HSTP	Health Sector Transformation Plan
iMMR	Institutional maternal mortality ratio
iNMR	Institutional neonatal mortality rate
IPD	Inpatient admission
iSBR	Institutional still birth rate
MADM	Mean absolute difference from the mean
MNCH	Maternal, Newborn, and Child Health
OPD	Outpatient admission
Penta1	pentavalent vaccine first dose
Penta3	pentavalent vaccine three doses
PNC	Postnatal care
RMNCAH	Reproductive Maternal, Newborn, Child, and Adolescent Health
SBA	Skilled Birth attendant
UN	United Nation
WHO	World Health Organization
WUENIC	WHO/UNICEF Estimates of National Immunization Coverage

Executive Summary of Key Findings

- Data quality and reporting remained consistently strong, ranging from 82% to 87% between 2019 and 2024, with regional reporting completeness increasing from 64% to 77% in the same period, though still below target. While reporting for most maternal and child health services is robust, Inpatient Department (IPD) reporting remains suboptimal.

- Key maternal and child health coverage trends indicate significant progress: ANC4+ coverage rose from 18% in 2011 to 54% in 2022 (DHIS2 estimates 59% in 2019 to 68% in 2024), early ANC visits increased from 10% to 36% (despite a DHIS2 decline from 29% to 24%), and institutional births surged from 10% to 48% (DHIS2: 57% to 69%). However, Penta3 vaccination coverage stagnated around 71% with minimal regional inequality, and Measles1 coverage saw only a modest increase from 68% to 71%.

- Significant inequalities persist in maternal, neonatal, and child health (MNCH) services. Urban areas consistently show higher coverage for institutional deliveries, although the urban-rural gap narrowed from 46 to 30 percentage points by 2019. Maternal literacy and wealth are strongly correlated with higher service coverage. For Penta3 vaccination, the urban-rural gap also reduced from 42 to 26 percentage points, but substantial wealth disparities remain, with 66% coverage for the richest compared to 20% for the poorest. While the number of regions achieving over 70% ANC4+ coverage increased from 14.3% to 35.7% over time, few regions reached 80% for institutional births (7%), and none achieved over 90% immunization coverage.

- Regarding maternal, stillbirth, and neonatal mortality, the institutional Maternal Mortality Rate (iMMR) declined from 44.7 to 29.6 per 100,000 live births. Despite this reduction, it remains above the WHO threshold of 25, with persistent regional disparities evident (e.g., Harari at 115.9 compared to Central Ethiopia at 16.4). Stillbirths also decreased from 14.3 to 9.5 per 1,000 facility live births, and neonatal mortality saw a decline from 11.1 to 4.5 per 1,000 live births. While disparities in stillbirth and neonatal mortality are narrowing, some regions still report high rates.

- Child health service utilization shows that under-five outpatient visits increased from 1.6 to 2.5 per child/year, but overall utilization remains low with significant regional disparities. Inpatient admissions (IPD) slightly rose from 1.7 to 2.2 per 100 children/year, with higher rates in urban areas and a concerning increase in the case fatality rate from 3.5% to 4.8%.

- The health systems capacity and performance indicate that while health facility density is slightly above WHO benchmarks, core health worker density (15.9/10,000) and hospital beds (4.2/10,000) are substantially below standards. Significant regional variations in workforce density favour urban areas. The private sector's contribution to RMNCAH services remains minimal, particularly in rural areas, with underreporting and low utilization limiting its potential.

Recommendations

While progress in maternal and neonatal mortality reduction, child service utilization, and health system strengthening is evident, it remains inconsistent. Persistent regional disparities, inadequate health workforce and facility density, and limited private sector involvement impede rapid advancement towards universal health coverage. Therefore, focused strategies are essential to enhance data quality, expand access in underserved regions, and improve the quality of care to achieve equitable health outcomes. Hence:

- Standardize denominators: Utilize Penta1- and ANC1-derived denominators for consistently estimating population coverage in maternal and immunization programs.
- Institutionalize data quality: Establish regular data quality audits and district-level data validation reviews to create robust feedback loops.
- Strengthen the support and follow-up for Underperforming Regions: Provide tailored support to conflict-affected and underperforming regions to improve reporting completeness, access to essential maternal, neonatal, and child health (MNCH) services, and service quality.
- Strengthen mortality surveillance: Enhance maternal and perinatal death surveillance systems and improve the reporting of stillbirths and maternal deaths from health facilities.
- Increase workforce and infrastructure Investments: Expand investments in the health workforce and infrastructure, prioritizing increasing hospital bed and staff density in underserved areas.
- Promote equitable access: Foster equitable access through community outreach, engagement, and differentiated support for regions and populations lagging behind national averages.
- Enhance private sector engagement: Improve private sector engagement and reporting, especially in urban areas, to leverage their potential in providing outpatient and inpatient services, including essential and life-saving interventions like C-sections and skilled birth services.

Additional information about the Ethiopian Trends of coverage and inequalities analysis using both survey and routine health facility data analysis found in Health System Research Directorate, Ethiopian Public Health Institute (EPHI), Gulele Arbegnoch Street, Gulele Sub-City, Addis Ababa, Ethiopia. Telephone: +251.11.275.4647; Fax: +251.11.275.4744; Website: http://www.ephi.gov.et.
Information about the Countdown to 2030 can be obtained from website: https://www.countdown2030.org/.

Suggested citation:

Countdown to 2030 – Ethiopia Country Collaboration: Ministry of Health, Ethiopian Public Health Institute, African Population and Health Research Center, Countdown to 2030 for Women's, Children's and Adolescents' Health. (2025). *Analytical synthesis report: trends in coverage, service utilization, geographic inequalities, and health system performance for reproductive, maternal, newborn, child, and adolescent health services in Ethiopia, 2019–2024.* MOH/EPHI/APHRC, Addis Ababa, Ethiopia, June 2025.

Introduction

Strengthening data analytics, systems, and use is central to building a resilient and responsive health system. In Ethiopia, reliable and timely health data have become essential for identifying service delivery gaps, guiding resource allocation, and informing evidence-based planning and policy decisions. By embedding data-driven approaches into routine health system functions, the country is making significant strides toward improving performance, accountability, and equity. These efforts are especially critical in the context of health system strengthening, where timely, accurate, and actionable data serve as the foundation for continuous quality improvement and effective service delivery at all levels.

Routinely reported health facility data serve as a crucial resource for monitoring health indicators, providing real-time insights into service delivery and population health outcomes. These data are typically reported by health facilities on events such as live births attended, immunizations administered, and other health services provided. To ensure the reliability of these data for policy and program decision-making, it is essential to assess their quality by examining completeness of reporting, identifying extreme outliers, and evaluating internal consistency. Appropriate adjustments are applied to the data prior to analysis to generate accurate health statistics.

Methods

This analysis, part of a multi-country study led by the Countdown to 2030 collaboration, utilized data from the Health Management Information System (HMIS)/District Health Information Software 2 (DHIS2), which contains comprehensive data on all health services offered at health facilities, including reproductive, maternal, newborn, child, and adolescent health (RMNCAH). We extracted DHIS2 data monthly at the facility level for 2019-2024, followed by rigorous data quality assessments for completeness, consistency, and outlier detection to identify and rectify discrepancies. Denominator adjustments for coverage estimations were performed using data from DHIS2, United Nations population estimates, Penta1, and ANC1, while WUENIC vaccination estimates were also used for comparison of immunization coverage. We employed the Family Planning Estimation Tool (FPET) for estimation of family planning coverage. The UN population and mortality estimates also used for the estimation of institutional mortality. National household survey data from 2011-2022 used to examine coverage trends and inequalities over time. All analyses were conducted using R Studio and the Shiny App for comprehensive evaluation and visualization [see details on the report].

1 Health facility data quality assessment: numerators and denominators

Table1: Summary of reported health facility data quality, DHIS2, 2020-2024

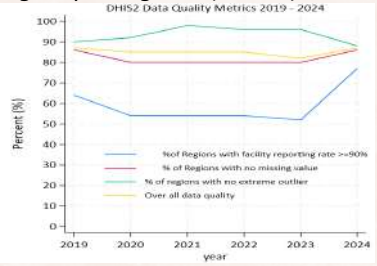
no	Data Quality Metrics	2019	2020	2021	2022	2023	2024
Type: 1. Completeness of monthly facility reporting (mean of ANC, delivery, immunization, OPD)							
1a	% of expected monthly facility reports (national)	89	89	87	86	88	90
1b	% of Regions with completeness of facility reporting >= 90	64	59	54	54	52	77
1c	% of Regions with no missing values for the 4 forms	86	80	80	80	80	86
Type: 2. Extreme outliers (mean of ANC, delivery, immunization, OPD)							
2a	% of monthly values that are not extreme outliers (national)	94	95	100	100	100	93
2b	% of Regions with no extreme outliers in the year	90	92	98	96	96	88
Type: 3. Consistency of annual reporting							
3a	Ratio anc1/penta1	1.10	1.08	1.05	1.05	1.05	1.11
3b	Ratio penta1/penta3	1.09	1.07	1.10	1.08	1.08	1.08
3c	% Regions with anc1/penta1 in expected ranged	86	71	69	77	54	86
3d	% Regions with penta1/penta3 in expected ranged	100	100	100	100	100	93
4	**Annual data quality score**	**87**	**85**	**85**	**85**	**82**	**87**

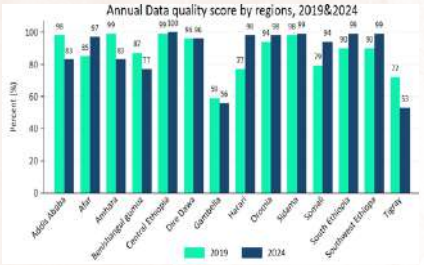
Data Quality Score

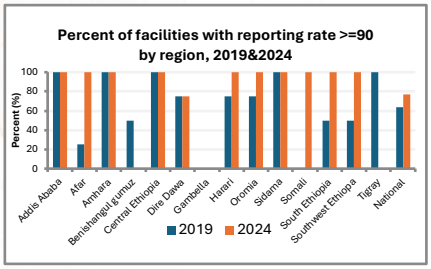
- The completeness of report across various period shows excellent results except in 2024 where the result fails to meet target.
- The fluctuation in the overall data quality score maybe due to some health facilities failure to submit reports on time or at all
- The inconsistency with annual report can be attributed to errors in data transcription, such as wrong figures or misaligned indicators, lead to unreliable results and score variation.
- There seems to be to consistent issues with ANC and immunization services with respect to completeness of services. This is mainly due to lack of logistics to follow up on clients who initially enrol on the services.

i. Annual Data Quality Scores

Figure 1.1: Data quality metrics annual data quality score, and percentage of facilities within the region that has high reporting rate (>=90%) 2019-2024







Interpretations

- The proportion of regions with facilities reporting completeness greater than 90% is decreased from 64% to 52% in 2023 then rise to 77% in 2024.
- In 2019, all regions (100%) reported with no missing values, but this figure dropped to 93% in subsequent years, signalling a need for improved attention to missing values in recent years. Additionally, the percentage of regions with no extreme outliers decreased from 95% in 2019 to 87% in 2024.

Interpretations

- Annual data quality scores improved across most regions, but Addis Ababa, Amhara, Benishangul Gumuz, Gambella, and Tigray experienced declines. In 2024, their respective scores were 83%, 83%, 77%, 56%, and 53%, respectively.
- Notably, Benishangul Gumuz and Gambella consistently reported lower data quality scores throughout the period, likely due to security challenges hindering monthly data compilation and submission via DHIS2. Conversely, Central Ethiopia, Dire Dawa, Oromia, and Sidama consistently maintained high data quality scores.

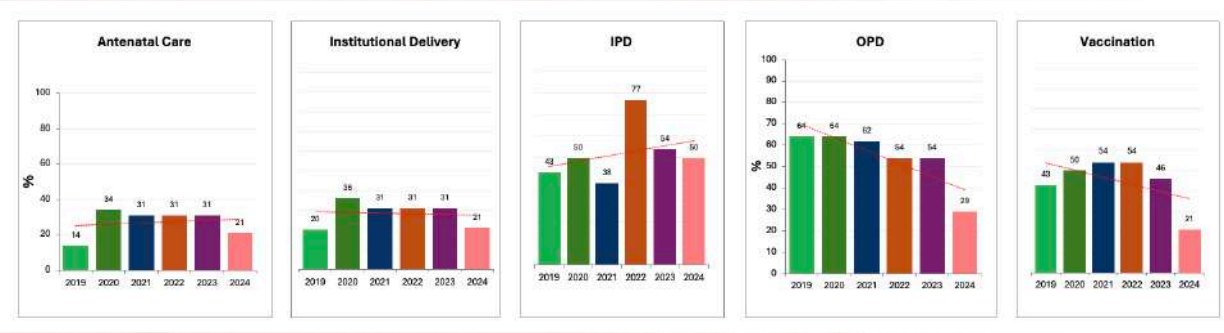
Interpretations

- In 2024, the regions who have reporting rate >=90% is zero in Benishangul gumuz, Gambela, and Tigray, while 75% of facilities Dire Dawa had >90% reporting rate.
- Further investigation and targeted support are recommended for regions with zero reporting rate, especially Gambella, Benishangul gumuz, and Tigray region.

Reporting rate by service type and by year

- Reporting rates for Antenatal Care (ANC) and Institutional Delivery remained consistent over time, showing a decline in the number of regions with low reporting rates in 2024. In 2024, reporting completeness for most health services was generally good. However, 21% of regions exhibited low reporting rates for ANC, institutional deliveries, and vaccination, while 29% of regions had low reporting for Outpatient Department (OPD). In contrast, Inpatient Department (IPD) low reporting rate was notably high, with 50% of regions showing low reporting rates, primarily attributed to challenges in the suboptimal implementation of ICD-11.

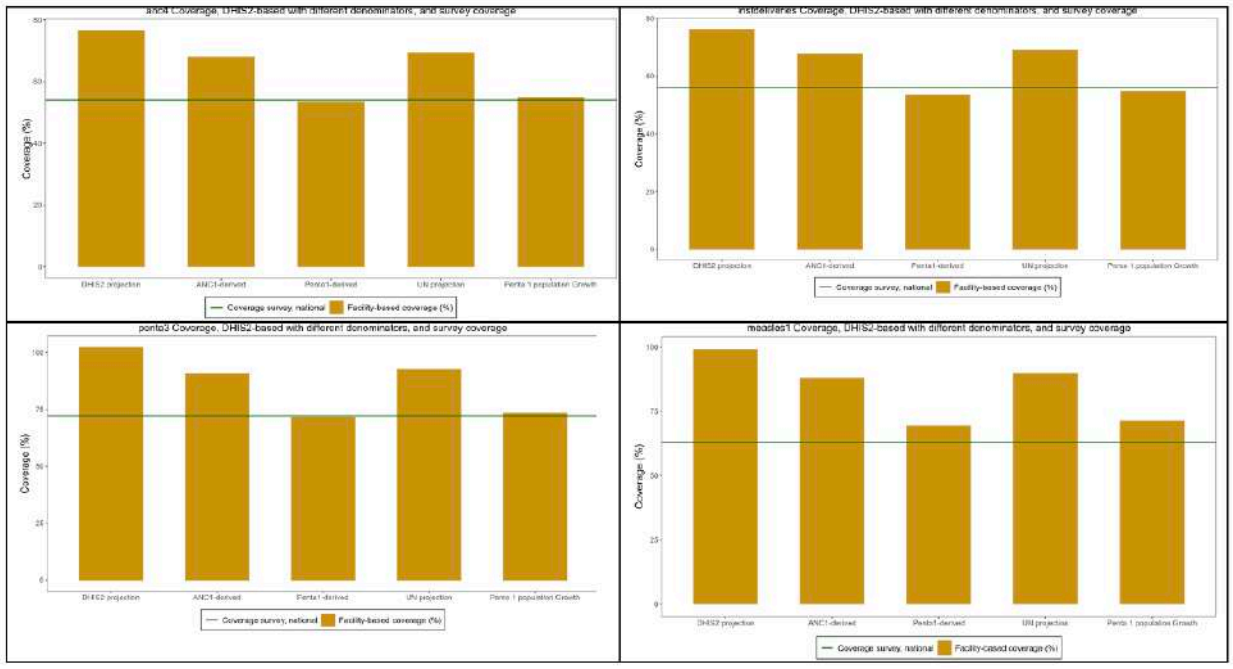
Figure 1.2: Percentage of regions with low reporting rate (<90%) by service and by year



ii. Denominator adjustment and selection

We evaluated various denominators to accurately estimate health service coverage, including two population-based (DHIS2 and UN Population) and two service-based (ANC1 and Penta1) options.

Figure 1.3 the coverage of ANC4, institutional delivery, Penta3 and measles1 vaccination using the different denominators

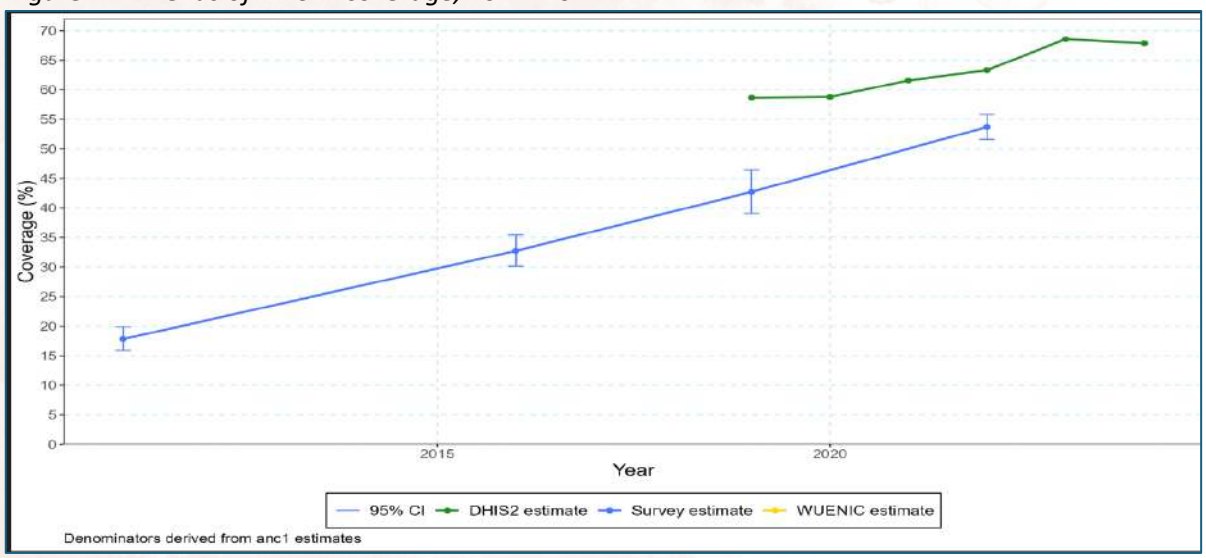


- For ANC+4 coverage, Penta1-derived and Penta1 population growth denominators closely aligned with survey estimates: while for penta3 coverage the penta1 derived coverage provides near to the survey estimates leading to the recommendation of the Penta1-based denominator for its accuracy in reflecting the target vaccination population.
- However, all denominators overestimated measles1 coverage, which consistently remained above 60% compared to survey findings. Therefore, we used the ANC1-derived denominator for maternal health indicators and the Penta1-derived denominator for vaccination coverage estimates.

2 National coverage trends: facility data and surveys

Antenatal care coverage trends

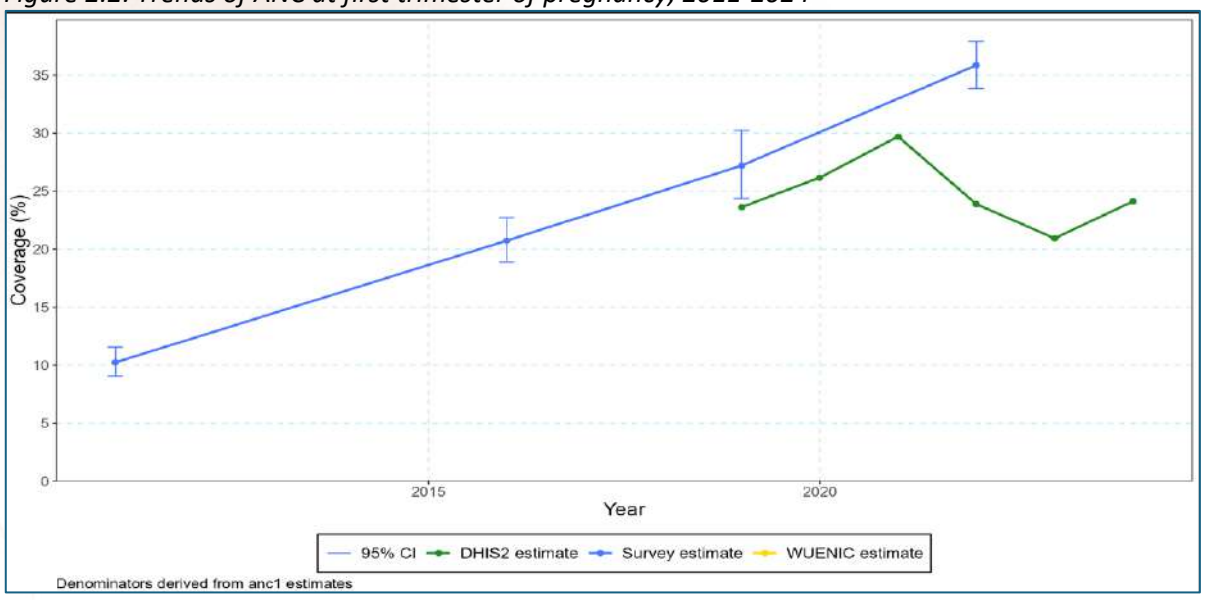
Figure 2.1: Trends of ANC4+ coverage, 2011 -2024



Interpretations

- The survey showed that ANC4+ coverage has shown a consistent increase, rising from 18% in 2011 to 54% in 2022. Similarly, the ANC1-derived denominator also steadily increased from 59% in 2019 to 68% in 2024. This consistent upward trend suggests that the ANC1-derived denominator can be a valuable tool for more accurately estimating ANC4+ coverage and monitoring improved ANC service utilization. However, existing discrepancies highlight the critical need to enhance data quality and consistency to better track progress and inform policy decisions.

Figure 2.2: Trends of ANC at first trimester of pregnancy, 2011-2024



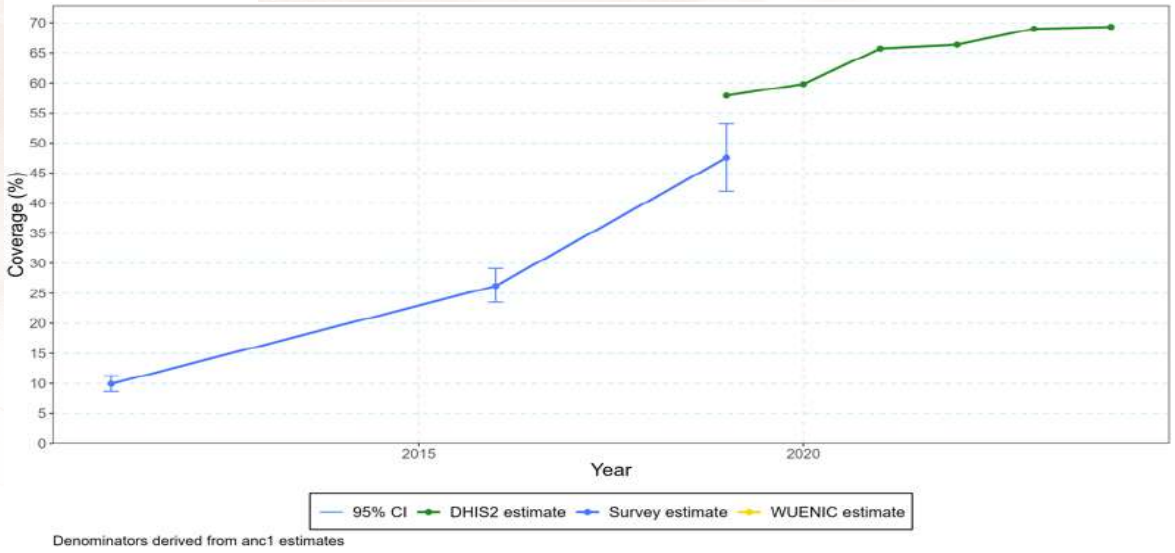
Interpretations

- Survey data indicate a consistent increase in early Antenatal Care (ANC) visits, rising from 10% in 2011 to 36% in 2022. In contrast, ANC1-derived denominator-based estimates for early ANC visits showed inconsistency, increasing from 23% in 2019 to 29% in 2021, before declining to 24% in 2024. This inconsistency in DHIS2 data may be attributed to the low reporting rate due to the ongoing conflicts in certain regions of the country.

Institutional delivery and postnatal care

Institutional delivery

Figure 2.3: Trends of institutional delivery coverage, 2011 - 2024

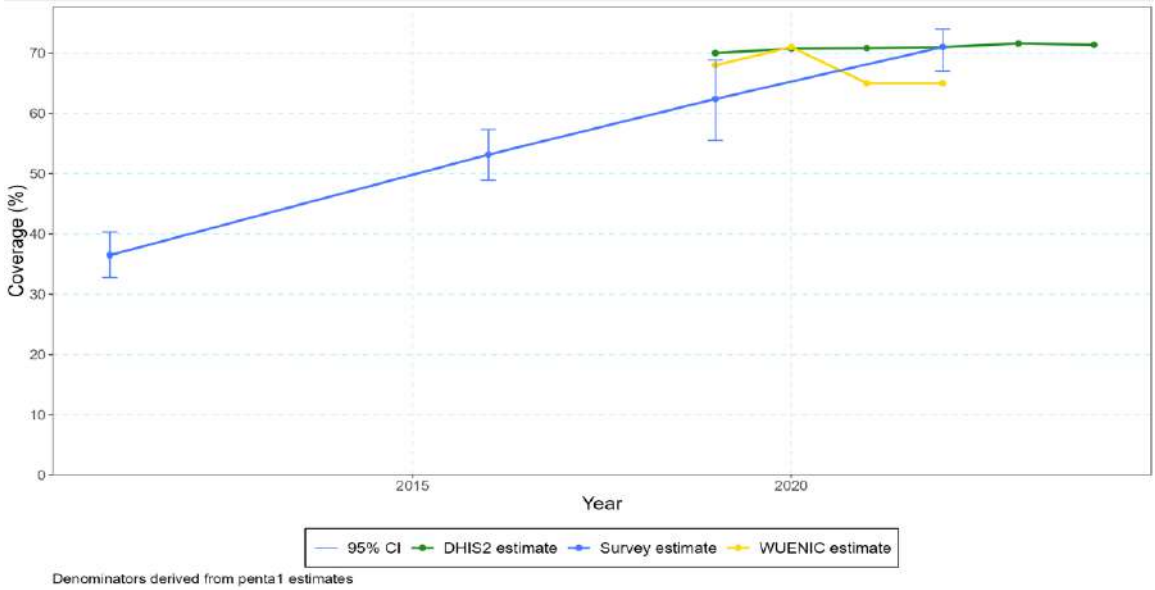


Interpretations

- Institutional live births showed a consistent upward trend, increasing from 10% in 2011 to 48% in 2019. Similarly, ANC1_derived denominator-based estimates for institutional live births also demonstrated a steady rise, from 57% in 2019 to 69% in 2024.

Postnatal care within 48 hours

Figure 2.4: Trends of postnatal care coverage within 2 days, 2011-2024



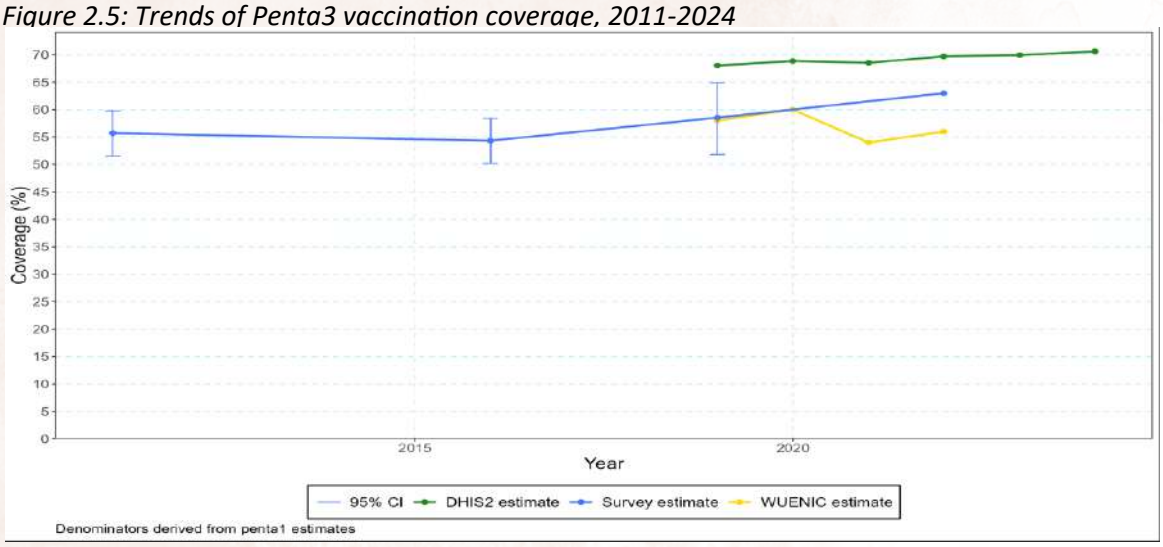
Interpretations

- Survey data showed that postnatal care (PNC) increased significantly from 7% in 2011 to 46% in 2022. The ANC1-derived denominator based estimates for PNC also rose consistently, from 53% in 2019 to 65% in 2024.

Immunization

Penta 3 Coverage

Figure 2.5: Trends of Penta3 vaccination coverage, 2011-2024

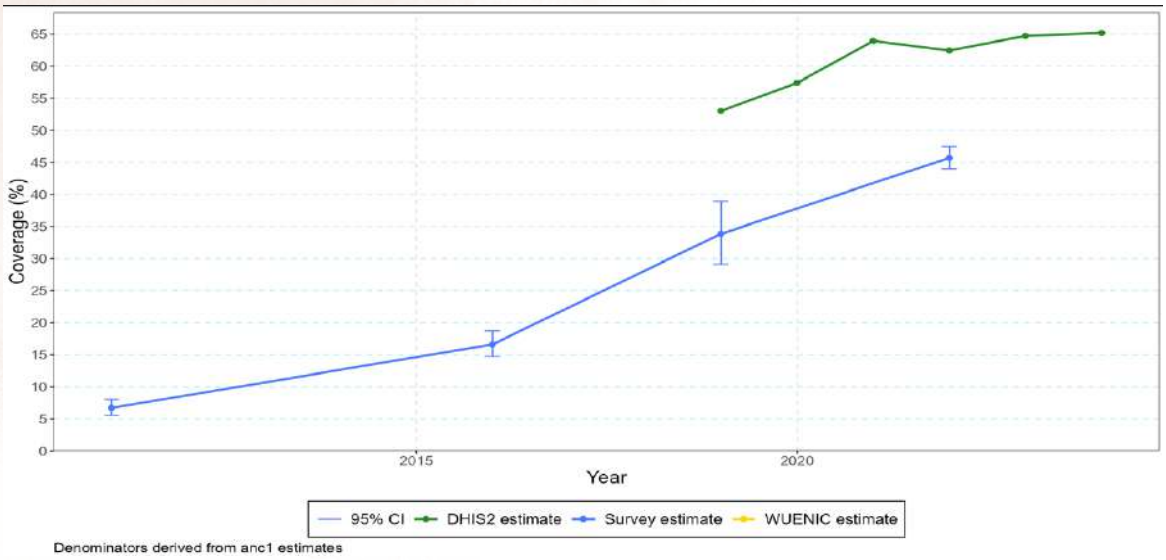


Interpretations

- Penta3 vaccination coverage at the national level has remained relatively stagnant, hovering around 70% from 2019 to 2024, according to DHIS2 estimates using a Penta1-derived denominator. This contrasts with survey data, which indicated a consistent increase in Penta3 coverage from 2011 to 2022. WUENIC estimates for Penta3 coverage showed no significant difference from the 2019 survey, falling within its 95% confidence interval. In 2022, the DHIS2 derived denominator-based estimates lie within the 95% CI of the survey. However, the DHIS2 derived coverage is stagnant growth rate, despite some progress, suggests a need to strengthen efforts to accelerate service uptake and improve reporting rate.

Measles 1

Figure 2.6 Trends of measles 1 dose vaccination, 2011-2024

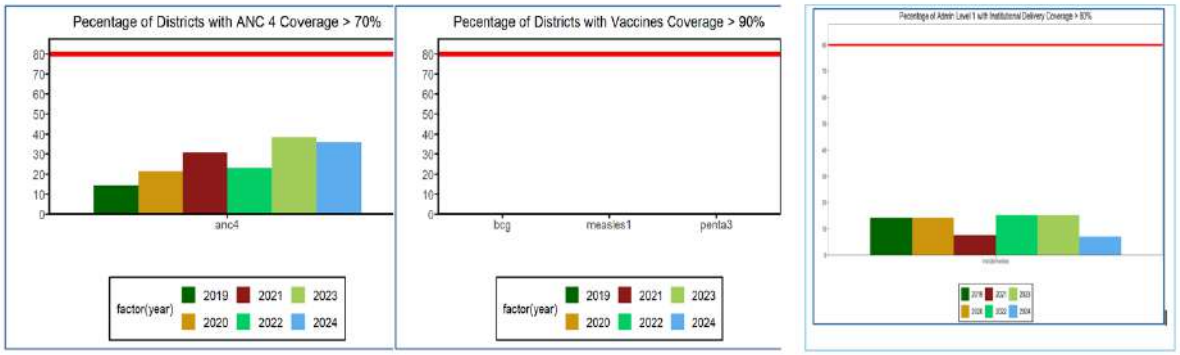


Interpretations

- The survey data indicated that Measles1 coverage saw a modest increase from 2011 to 2022. The Penta1 derived denominator-based estimate also showed a slight increment 68% in 2019 to 71% in 2024. Conversely, WUENIC estimates initially rose from 58% in 2019 to 60% in 2020 but then declined to 56% by 2023. This divergence in WUENIC estimates highlights potential inconsistencies or data gaps, emphasizing the need for better surveillance and coverage tracking to accurately monitor progress and inform immunization strategies.

Percent of regions achieving high coverage targets

Figure 2.7: Percent of regions with ANC 4+, Institutional deliveries, and vaccination coverage with the international targets, 2019 - 2024



Interpretations

- Over time, regional coverage targets for essential health services have shown mixed trends. The proportion of regions surpassing 70% coverage for ANC4+ increased from 14.3% in 2019 to 35.7% in 2024, indicating some progress in antenatal care services. However, for institutional deliveries, regions exceeding 80% coverage declined from 14.3% in 2019 to just 7% in 2024, highlighting a setback in facility-based childbirth services. Additionally, no regions achieved the recommended vaccination coverage of over 90%, underscoring significant gaps in immunization efforts. These findings suggest that while improvements are evident in antenatal care, the overall attainment of high coverage remains low in other critical areas, emphasizing the urgent need for targeted interventions to enhance service uptake across regions.

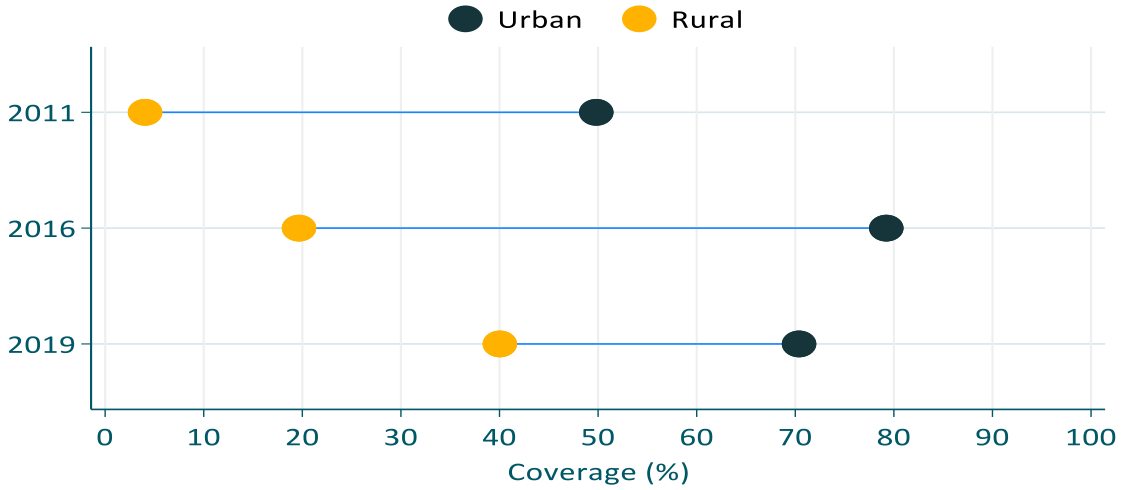
3. Equity

Equity by wealth, education, rural-urban residence (from surveys)

Institutional live birth

Place of residence

Figure 3.1: Equiplots of institutional live births by place of residence, 2011-2019

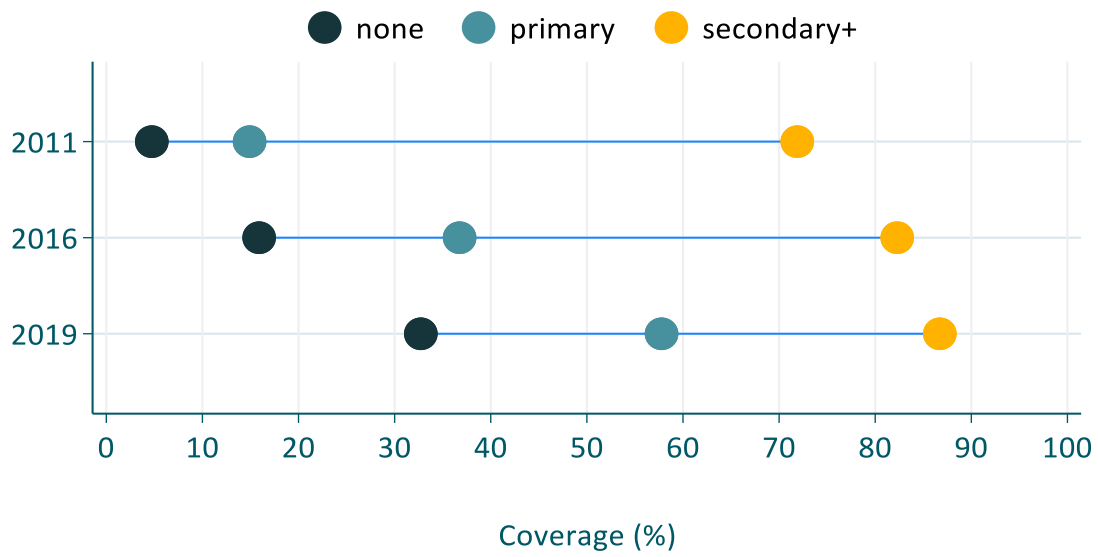


Interpretations

- Institutional live birth coverage consistently showed significant disparities based on location, with urban areas consistently having higher rates than rural areas across all years.
- The absolute difference between urban and rural coverage notably decreased over time, narrowing from a 46-percentage point (pp) gap in 2011 to 30 pp in 2019.
- To further reduce this urban-rural gap, targeted interventions and increased resource allocation are recommended for rural areas to improve access to and utilization of institutional delivery services.

Education status

Figure 3.2: Equi plots of institutional live births by educational status, 2011-2019

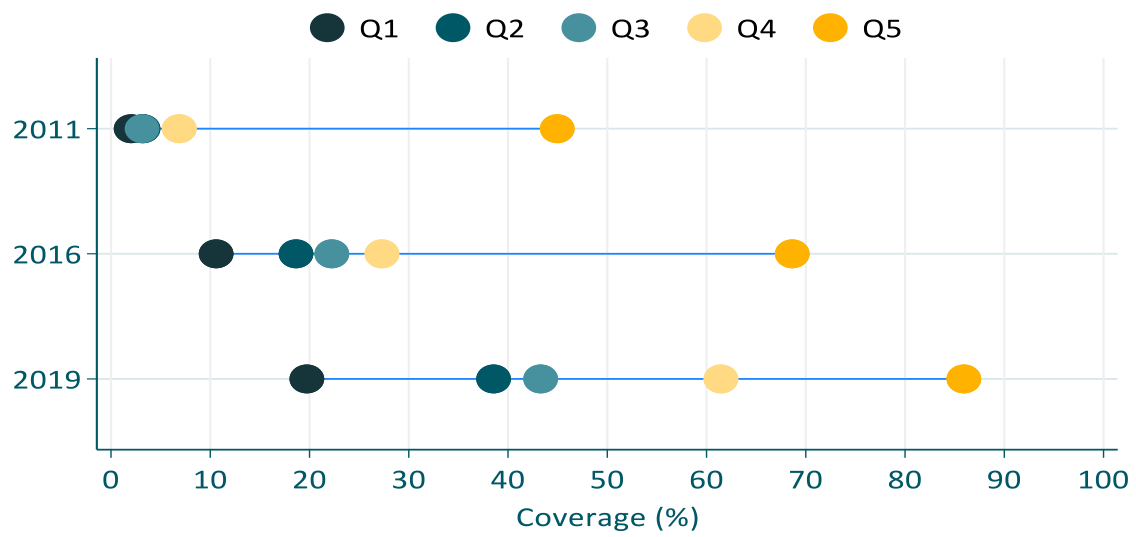


Interpretations

- Institutional delivery rates consistently rose with increased maternal literacy in periodic surveys, indicating that coverage remains concentrated among educated mothers. Across all years, women with at least secondary education utilized institutional delivery more frequently than uneducated women. The absolute difference in utilization between these groups decreased, narrowing the gap from 67 pps in 2011 to 54 pps in 2019.
- To further reduce disparities in institutional delivery utilization, programs should prioritize enhancing the awareness of women, especially in underserved communities. Targeted interventions that address barriers to access for less educated mothers are also crucial to ensure more equitable health outcomes.

Household wealth quintile

Figure 3.3: Equiplots of institutional live births by wealth quintile, 2011-2019

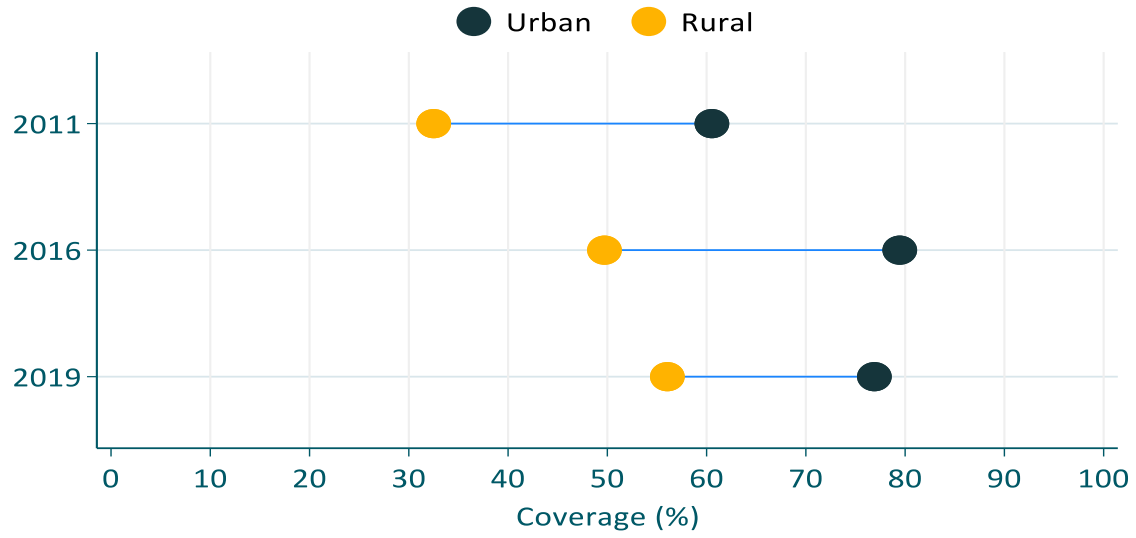


Interpretations

- Institutional delivery coverage consistently increases with a mother's wealth quintile, indicating a strong correlation between socioeconomic status and access to these services. Despite this trend, a significant disparity by wealth quintile persists. The gap between the richest and the poorest regarding institutional delivery utilization widened from 43 pps in 2011 to 66 pps in 2019.
- This requests focus on improving access to and affordability of institutional delivery services for mothers in lower wealth quintiles, promote female education and economic empowerment are crucial, as these factors are strongly linked to increased institutional delivery rates.

Pentavalent 3rd dose

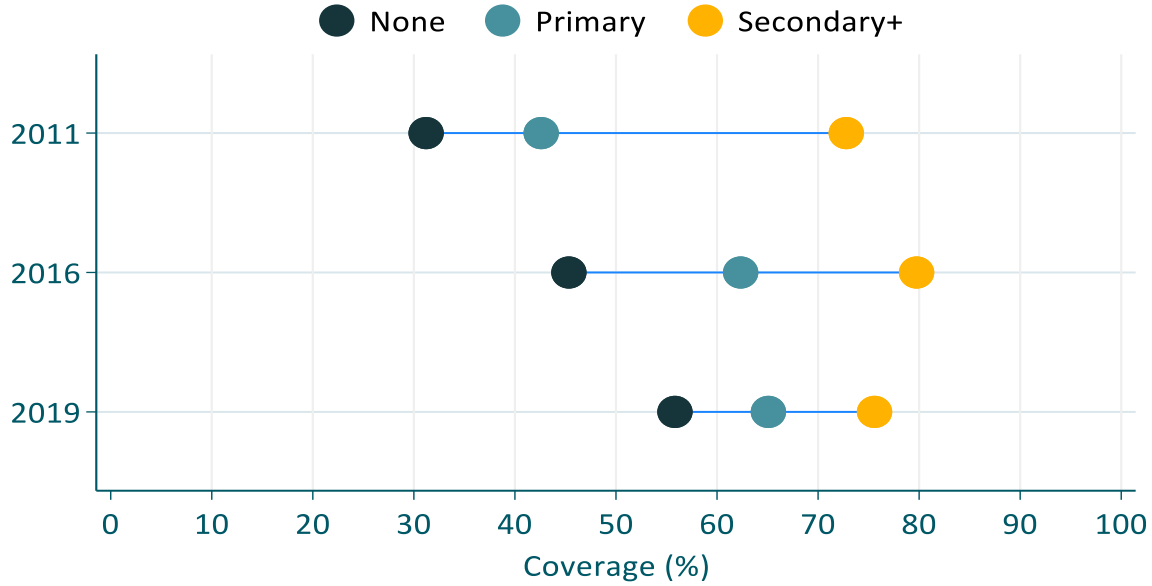
Figure 3.4: Equiplots of Penta 3doses vaccination coverage by place of residence, 2011-2019



Interpretations

- Penta3 vaccination coverage varied significantly by place of residence, with urban areas consistently showing higher utilization than rural areas across all years. However, the disparity between these areas decreased over time; the absolute gap narrowed from 28 pps in 2011 to 21 pps in 2019.
- To further close the urban-rural gap in Penta3 vaccination, targeted outreach programs and improved healthcare access are recommended for rural populations. This could include mobile vaccination clinics or community health worker initiatives to address unique barriers in these areas.

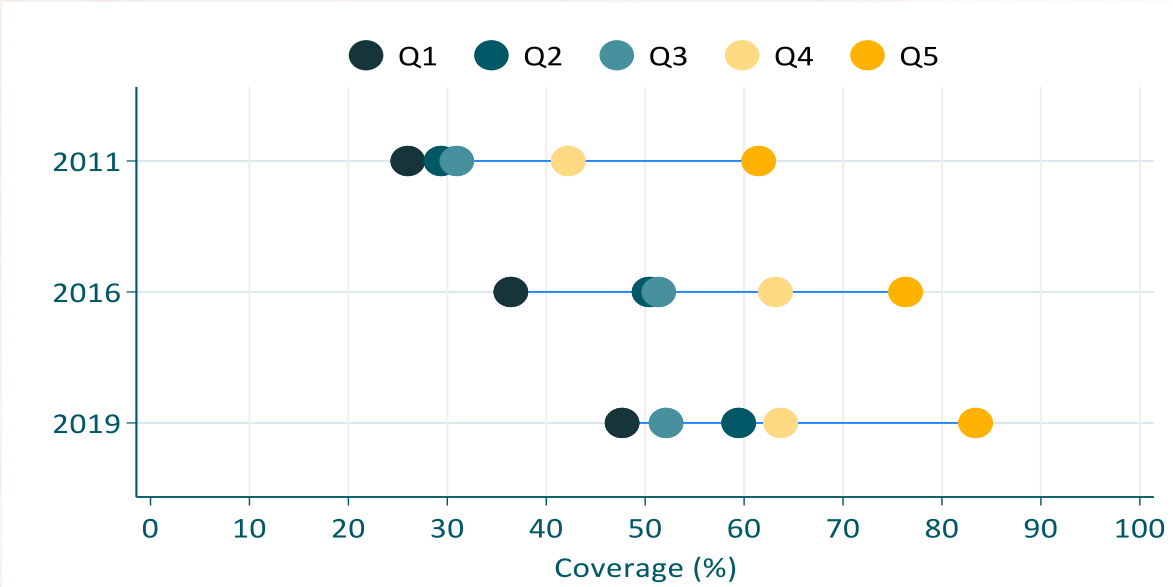
Figure 3.5: Equiplots of Penta 3doses vaccination coverage by Education level, 2011-2019



Interpretations

- Penta3 vaccination coverage consistently improved with increased maternal literacy in periodic surveys, indicating that coverage remains more concentrated among educated mothers. However, the disparity in coverage between women with at least a secondary education level and those with no education significantly decreased, with the absolute gap narrowing from 42 percentage points (pp) in 2011 to 20 pp in 2019.
- This calls to strengthen the awareness creation initiatives focusing on communicating the benefits of vaccination and addressing any barriers to access, such as lack of information or logistical challenges.

Figure 3.6: Equiplots of Penta 3doses vaccination coverage by wealth quintile, 2011-2019



Interpretations

- Penta3 vaccination coverage consistently improved with a mother's wealth quintile, indicating that higher socioeconomic status correlates with increased vaccination rates. However, the absolute difference in coverage between the highest (Q5) and lowest (Q1) wealth quintiles remained stagnant at 35 pps. This suggests no progress in reducing inequalities in Penta3 coverage across different wealth quintiles.
- To address the persistent inequality in Penta3 vaccination coverage, it is crucial to implement financial and logistical barriers to vaccination access, potentially through community outreach programs, subsidized services, or mobile clinics.

Geographical inequalities: Health facility data

Figure 3.7: Trends of inequalities on institutional deliveries by region with mean absolute deviation from mean, 2019–2024

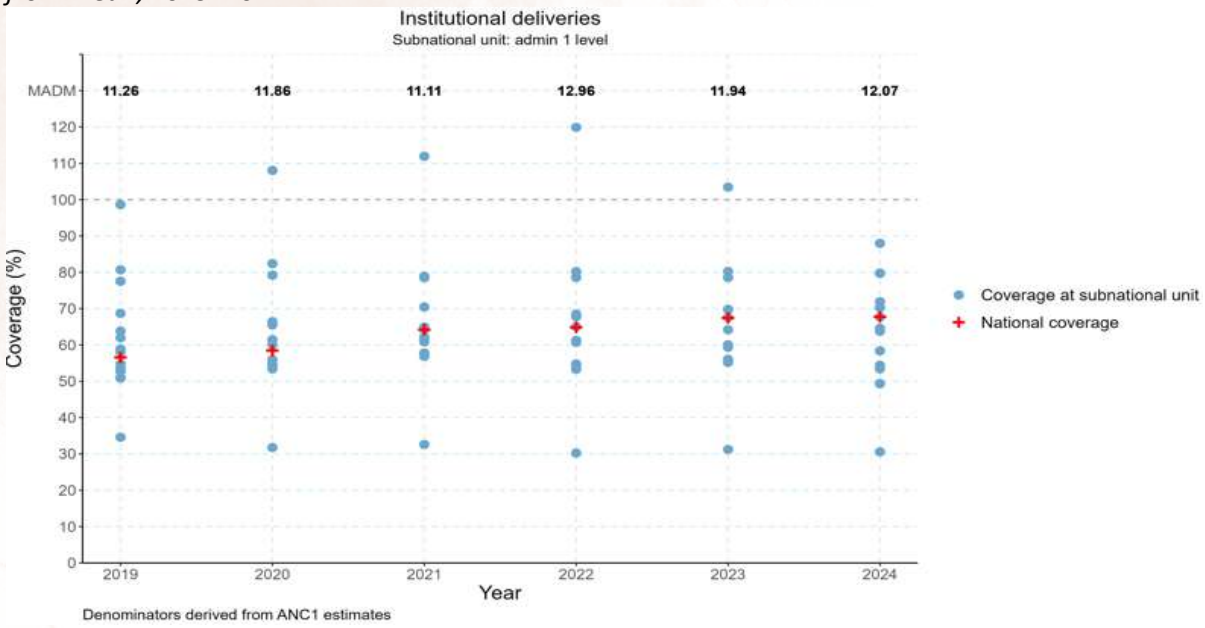
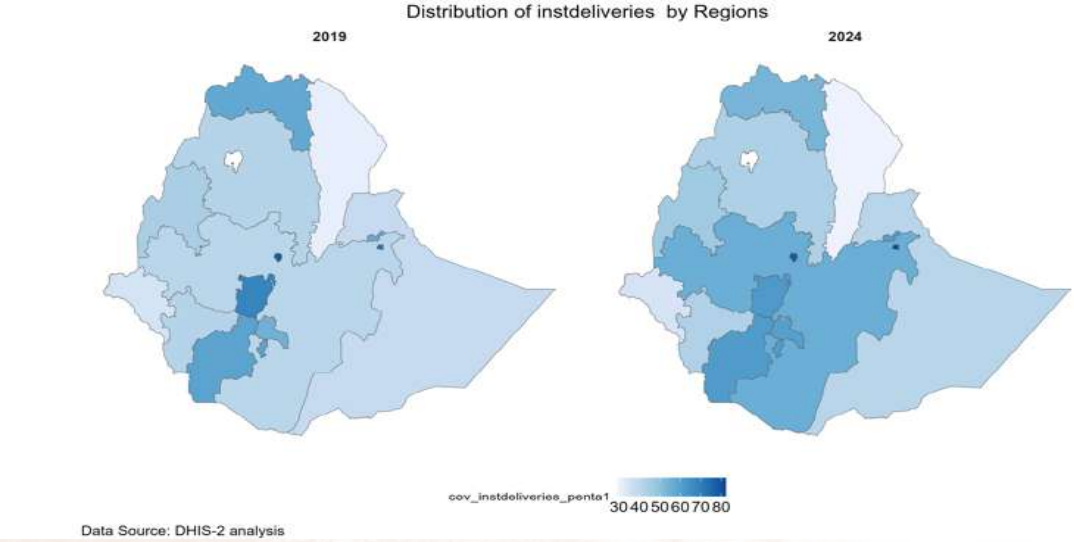


Figure 3.8: Distribution of institutional deliveries by region, 2019 & 2024



Interpretations

- HMIS analysis revealed persistent regional inequalities in institutional delivery utilization that did not decline over time. In 2019, the lowest inequality was observed in Afar (31%), while the highest was in Addis Ababa (78%). These disparities remained largely unchanged in 2024, with Afar at 29% and Addis Ababa still at 78%, underscoring ongoing inequities. The inequality measure, Mean Absolute Deviation from the Median (MADM), further confirmed these persistent regional inequalities, showing values of 11 in 2019 and 12 in 2024, indicating no significant decline.
- To address these persistent regional inequalities, a comprehensive approach is required, including context-specific interventions tailored to the unique challenges of regions with lower utilization (e.g., Afar). Efforts should focus on identifying and overcoming barriers to institutional delivery at the regional level, considering factors such as infrastructure, healthcare worker availability, cultural norms, and geographic accessibility and reporting completeness at the facility level.

Figure 3.9: Trends of inequalities on Penta3 vaccination coverage by region with mean absolute deviation from mean, 2019–2024

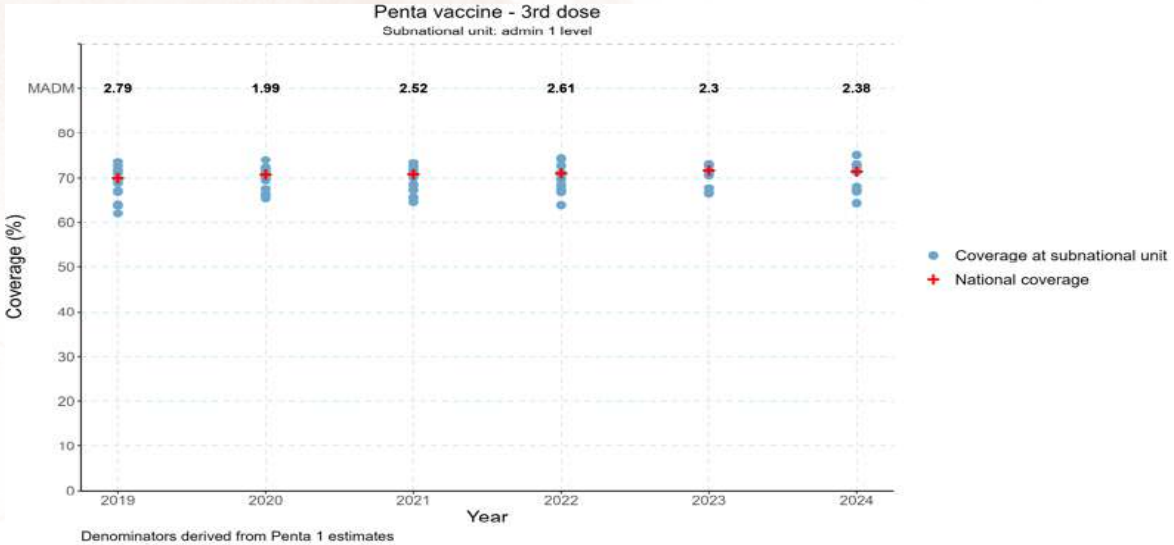
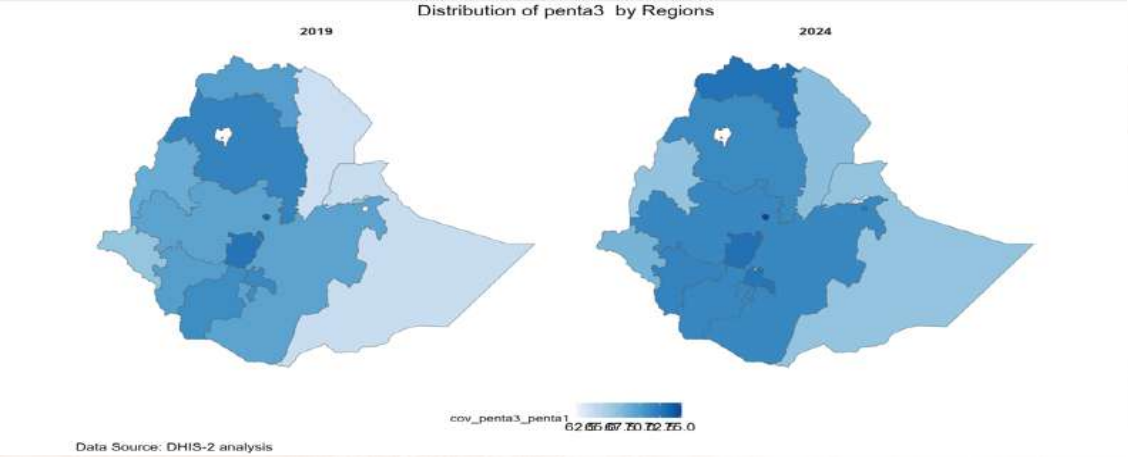


Figure 3.10: Distribution of Penta3 vaccination coverage by region, 2019&2024



Interpretations

- The national coverage of Penta3 vaccination has remained relatively stagnant, hovering around 70% over the analyzed period. While inequalities in Penta3 coverage, as measured by the Mean Absolute Deviation from the Median (MADM), slightly decreased from 2.8 in 2019 to 2.4 in 2024, this marginal improvement indicates no significant progress in reducing disparities.
- To overcome the stagnation in national Penta3 coverage and address persistent inequalities, it's crucial to identify and target specific barriers to vaccination uptake, particularly in underserved populations. This could involve strengthening outreach programs, improving vaccine accessibility in remote areas, and enhancing community engagement to build trust and address vaccine hesitancy. And, necessary to follow the completeness of the reporting system at the facility levels.

4 Institutional mortality

Institutional Mortality trends (iMMR, iSBR)

iMMR

Figure 4.1: Trends and distribution of Institutional maternal mortality ratio by region, 2019 - 2024

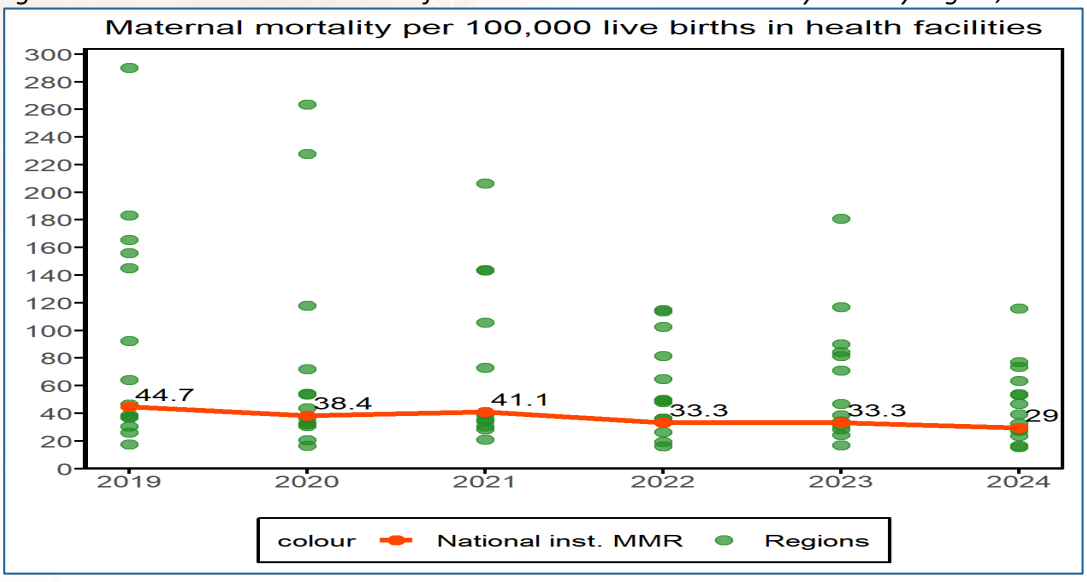
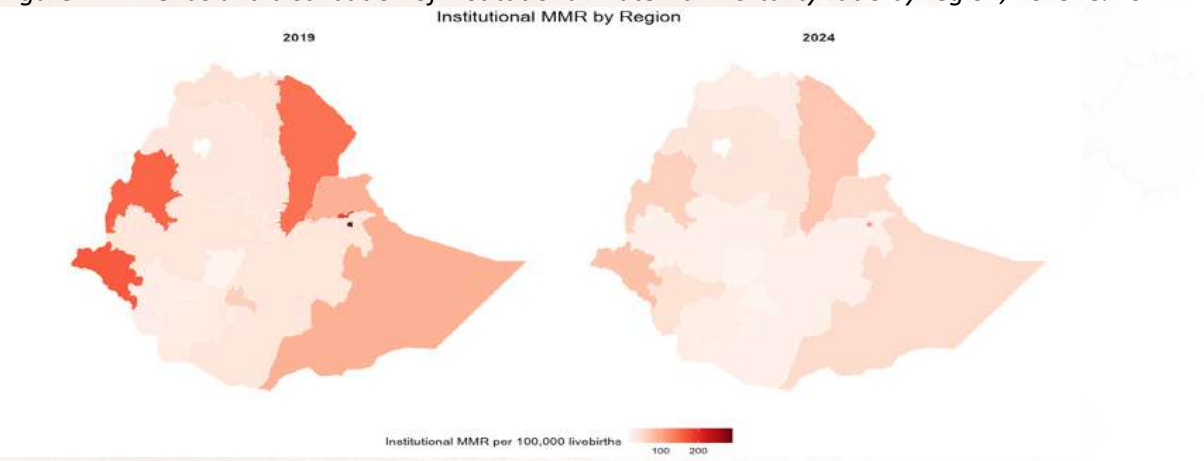


Figure 4.2: Trends and distribution of Institutional maternal mortality ratio by region, 2019 & 2024



Interpretations

- Between 2019 and 2024, the iMMR has declined from 44.7 to 29.6 per 100,000 live births, indicating progress in maternal health outcomes or low reporting of the maternal mortality by the facility. Despite this reduction, the rate remains above the WHO threshold of 25 per 100,000 live births.
- Regional disparities have also decreased over time, with Harari consistently exhibiting the highest iMMR— 289.9 in 2019 and 115.9 in 2024—while Central Ethiopia maintained the lowest rates, at 17.5 in 2019 and 16.4 in 2024. In 2024, only three regions—Sidama, Central Ethiopia, and Oromia—have maternal mortality rates below the threshold, underscoring the need for targeted interventions in the most affected regions.
- These findings highlight ongoing challenges in maternal health, emphasizing the importance of strengthening health systems, improving access to quality care, improving the maternal mortality reporting by the facility, and addressing regional disparities to further reduce maternal mortality.

iSBR

Figure 4.3: Trends and distribution of Institutional stillbirth rate by region, 2019-2024

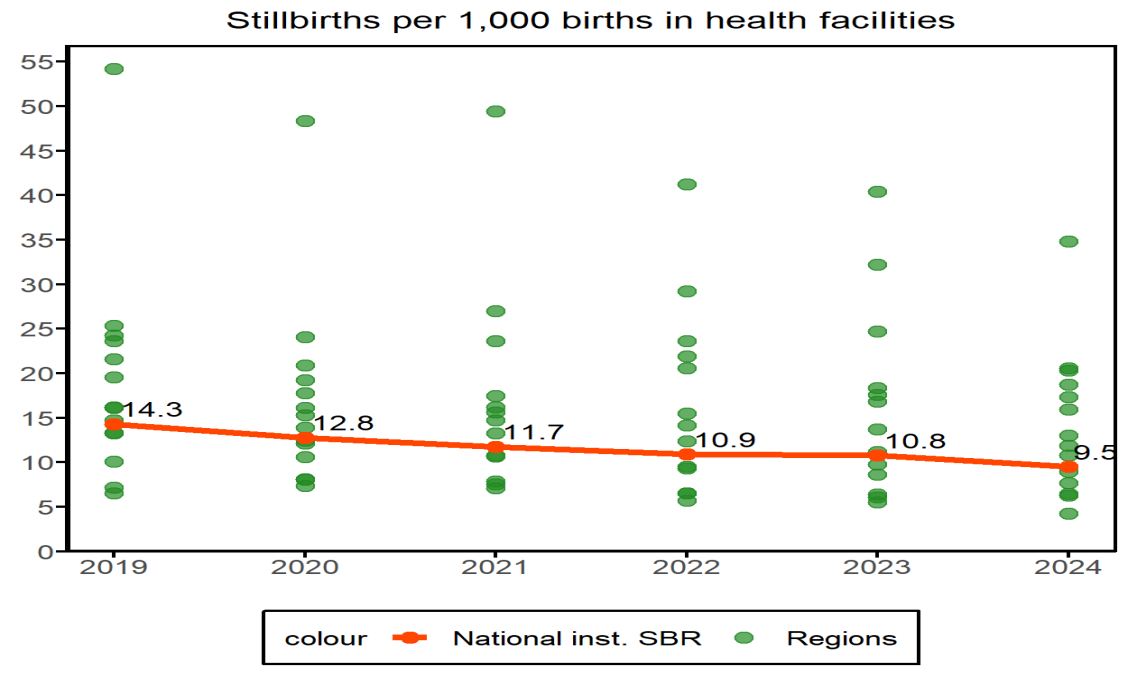
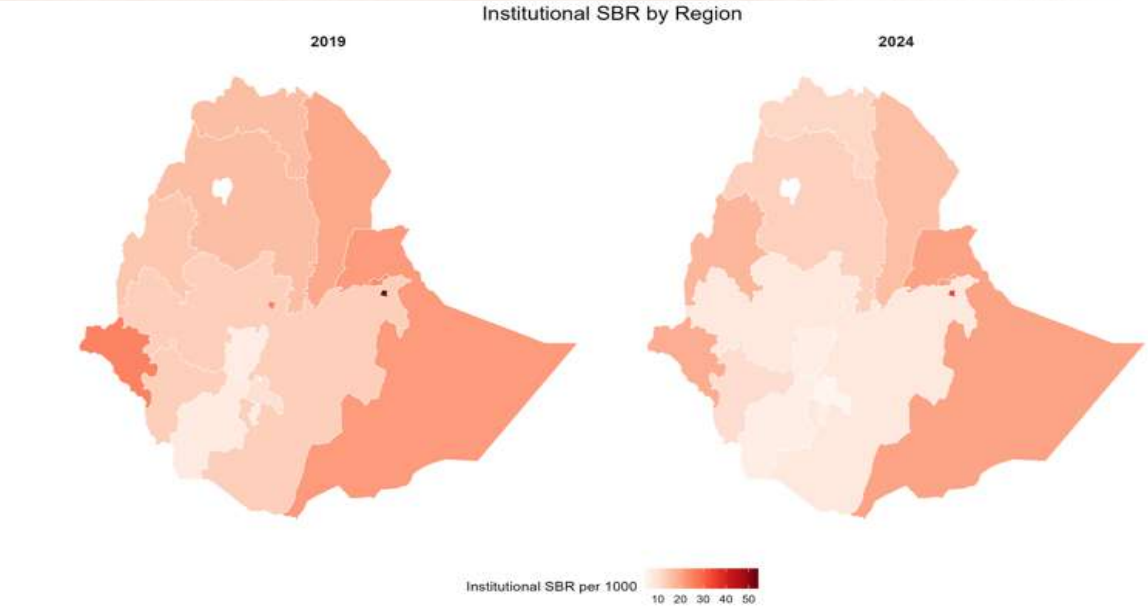


Figure 4.4: Distribution of Institutional stillbirth rate by region, 2019&2024



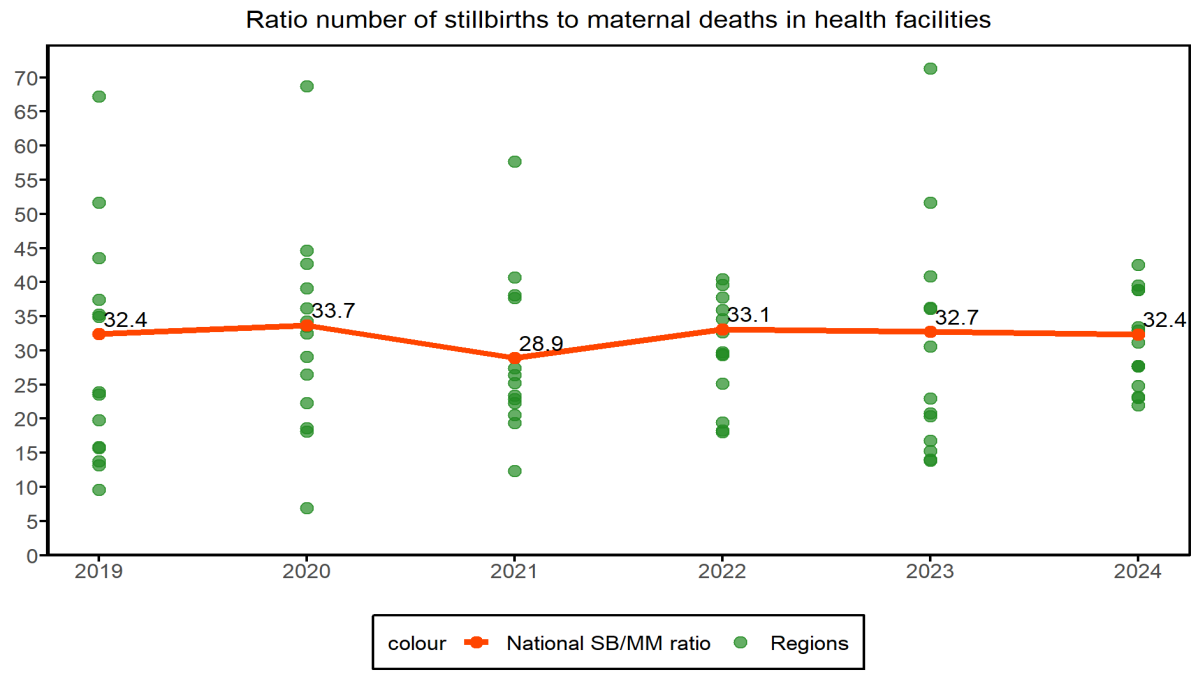
Interpretations

- The institutional stillbirth rate decreased from 14.3 per 100,000 facility live births in 2019 to 9.5 in 2024, with regional disparities narrowing over time. In 2019, Harari had the highest rate at 54.2, while Central Ethiopia (6.5) and South Ethiopia (7.2) had the lowest. By 2024, rates ranged from 4.2 in Sidama to 34.8 in Harari, with only Sidama below the threshold of 6 per 1000 live births. Although progress has been made, high stillbirth rates in some regions indicate ongoing gaps in quality maternal and neonatal care, necessitating targeted strategies to further reduce stillbirths and achieve equitable health outcomes.

Data Quality Metrics

Ratio stillbirth to maternal deaths in the health facility data at national level

Figure 4.5: Trends and distribution of Ratio of stillbirths to maternal deaths by region, 2019-2024

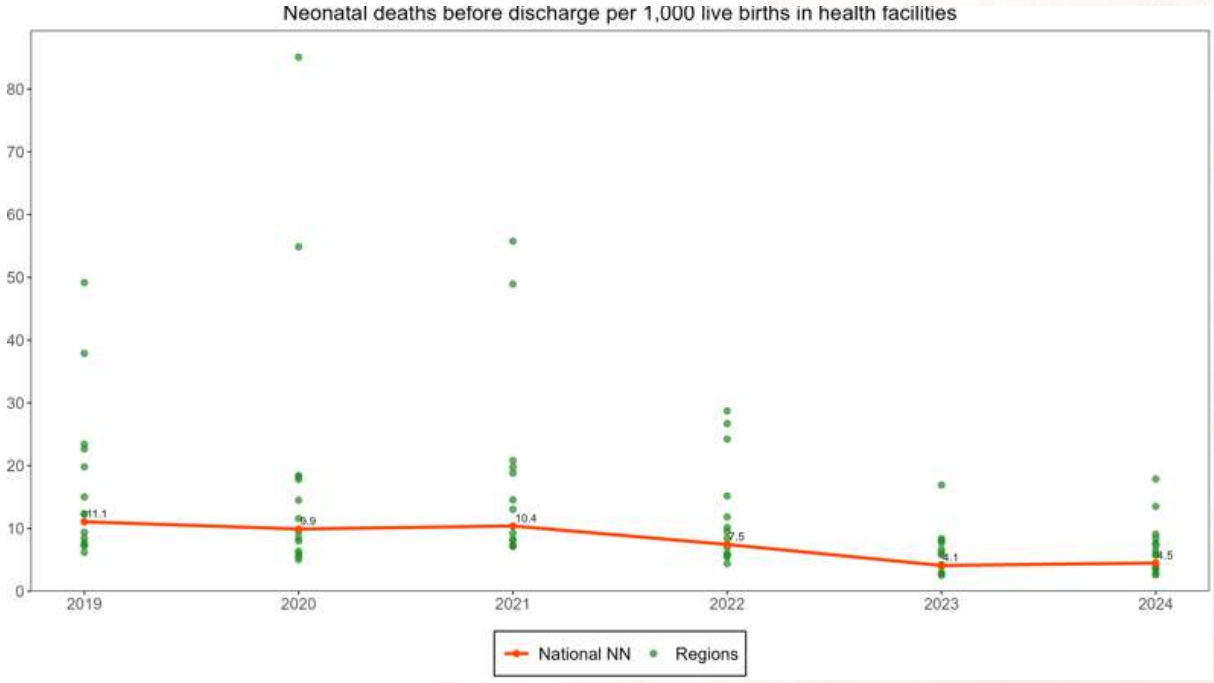


Interpretations

- From 2019 to 2024, the ratio of institutional stillbirth rate to maternal mortality ratio has nearly constant between 29 and 34. The disparity among regions also decreased. In 2014, Benishangul Gumuz had the lowest ratio at 9.6, while Addis Ababa recorded the highest at 67.2. By 2024, this range persisted, with Afar at 22 and Tigray at 42.5, reflecting ongoing regional variations.
- Throughout this period, the ratio consistently exceeds the WHO-recommended threshold of 5–15, suggesting significant underreporting of maternal deaths and potential gaps in maternal health data accuracy.
- This underscores the urgent need to strengthen maternal death surveillance and reporting systems, improve data quality, and implement targeted interventions to reduce maternal mortality and address regional disparities effectively.

iNMR

Figure 4:6: Trends and distribution of early neonatal mortality before discharge per 1000 live births in health facilities based on reported data in DHIS2 by region, 2019-2024



Interpretations

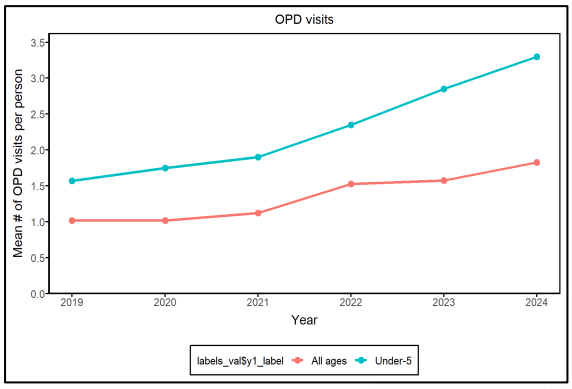
- Between 2019 and 2024, the institutional neonatal mortality ratio declined11.1 to 4.5 per 1000 live births. Although neonatal mortality rates were notably high in 2019, 2020, and 2022, regional disparities have gradually decreased over time. By 2024, mortality rates varied considerably across regions, ranging from as low as 2.6 per 1000 live births in South Ethiopia to 17.9 in Harari, indicating the need for targeted strategies to ensure equitable improvements in neonatal outcomes.
- The observed decline in the institutional neonatal mortality ratio indicates progress in improving neonatal health outcomes or low reporting. Regions like Harari, with higher mortality rates, showed good reporting of the event. These disparities highlight the need for targeted, region-specific interventions to address the underlying factors contributing to the low reporting of institutional neonatal mortality. Addressing these gaps is crucial for achieving equitable health improvements across all regions and ensuring that gains in neonatal survival are sustained and widespread.

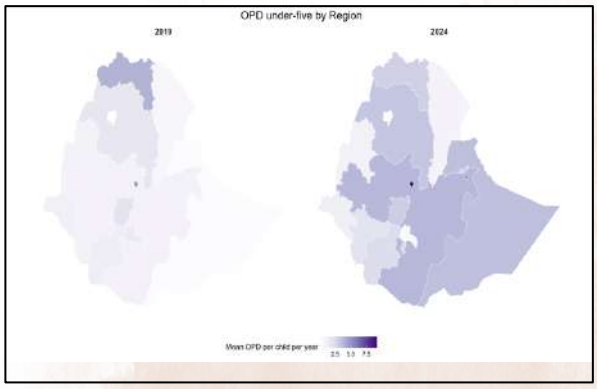
5 Curative health service utilization for sick children

Outpatient and inpatient service utilization

OPD

Figure 5.1: Trends of outpatient utilization by all age and under 5 years reported in DHIS2, 2019-2024



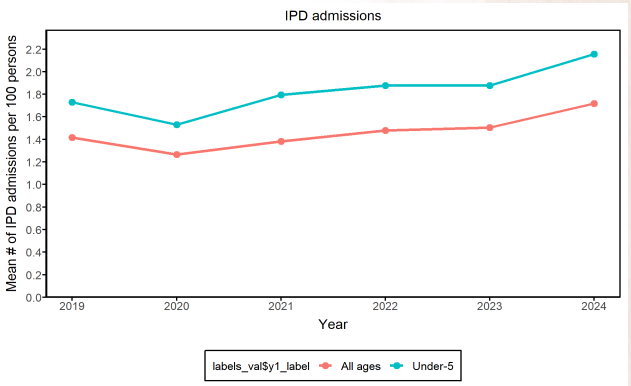


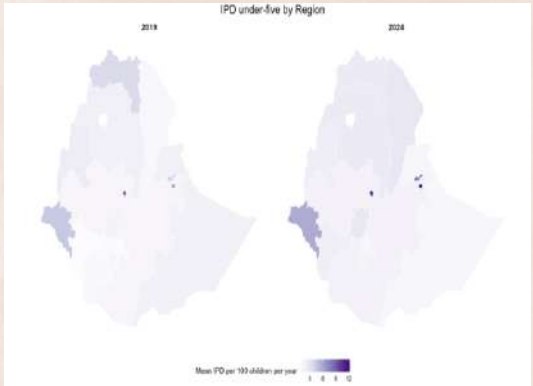
Interpretations

- Under-5 OPD visits increased significantly (1.6 to 2.5/child/year) from 2019-2024, showing improved access for this age group. However, overall OPD utilization remains low (1.0-1.3/person/year).
- In 2024, Addis Ababa had the highest OPD visits (8.3/person), while Sidama, Afar, and Benishangul Gumuz had the lowest (<1.0/person).
- Improved under-5 OPD access has shown a positive trend. However, the overall low utilization and wide regional disparities indicate significant unmet healthcare needs, which need targeted interventions.

IPD

Figure 5.2: Trends of inpatient admission by all age and under 5 children reported in DHIS2, 2019-2024



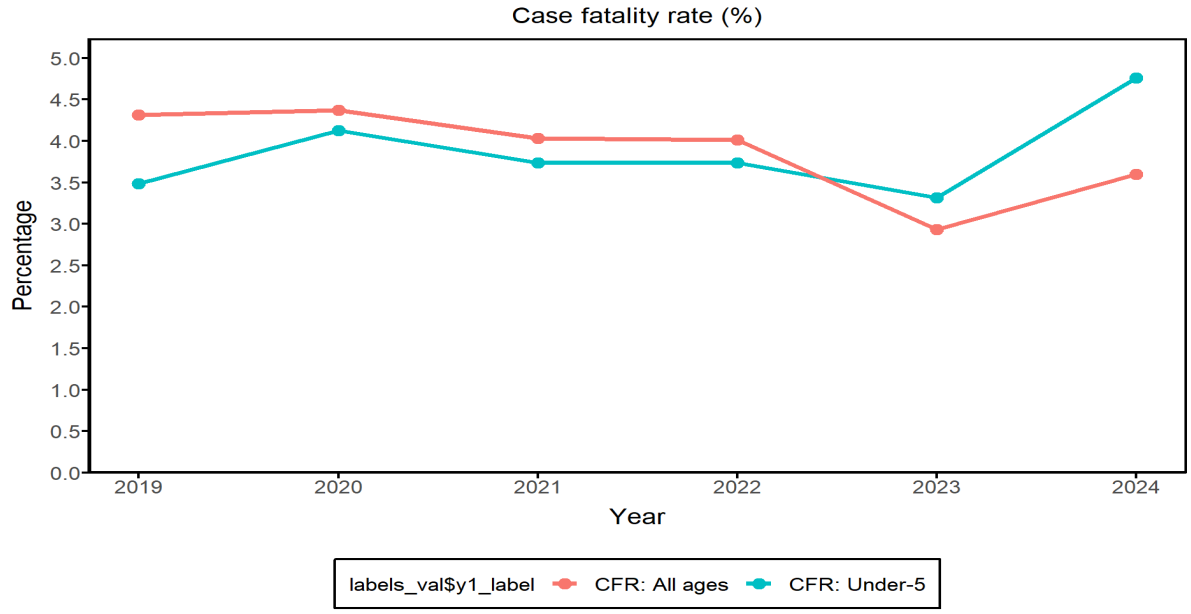


Interpretations

- Inpatient service utilization (IPD) among under-5 children also increased, from 1.7 in 2019 to 2.2 admissions in 2024 per 100 children per year. Although the trend is increasing, the rate is still only slightly above 2 per 100, which may reflect limited access or lower severity of cases. Among the general population, IPD admissions increased slightly from 1.4 to 1.7 per 100 persons during the same period.
- In 2024, the highest mean IPD per 100 children per year were recorded in urban based regions, Harari(12.2), Addis Ababa (10.4) and Dire Dawa (8.1). Somali and Sidama reported the lowest mean IDP, 1.3 and 1.4 IPD per 100 children per year

Case fatality rate among admissions under-fives

Figure 5.3: Case fatality rate for under_5 children and all age reported in DHIS2, 2019-2024



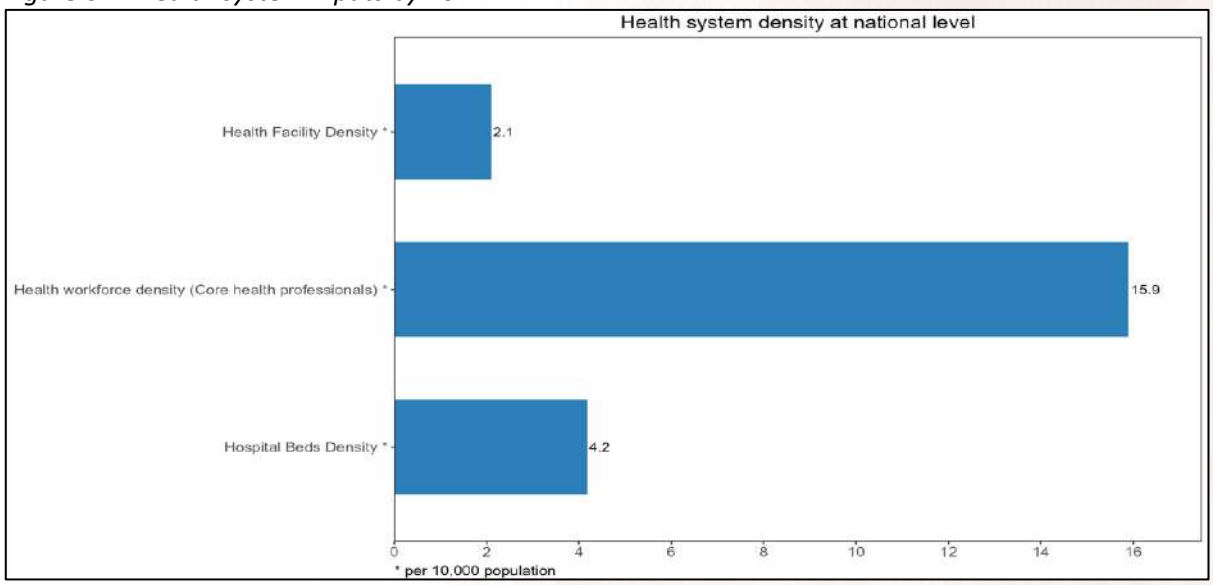
Interpretations

- Under-five CFR increased from 3.5% to 4.8% between 2019 and 2024, indicating a worsening trend in child mortality within healthcare facilities. In contrast, the overall CFR declined from 4.3% to 3.6% during the same period.
- This worsening trend indicates that despite more children getting care, the quality of care provided to children is less likely compared to all age groups, which leads to more deaths. Addressing these inequities and quality concerns will require targeted interventions.

6 Health system progress and performance

Health System Inputs

Figure 6.1: Health system inputs by 2024

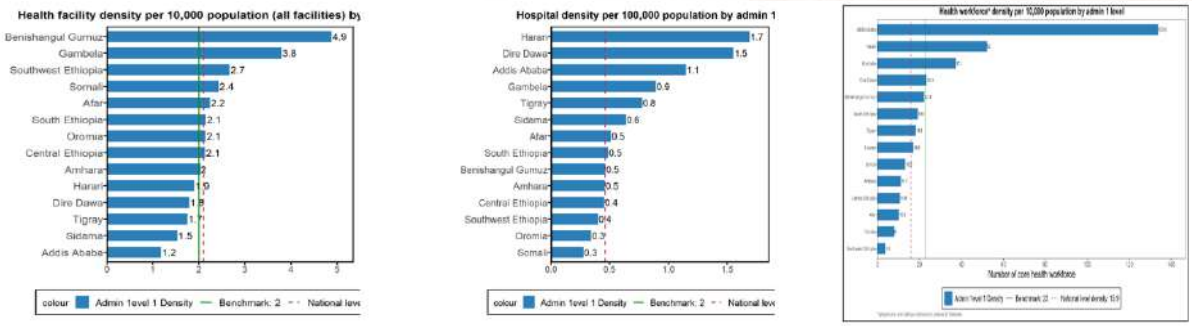


Interpretations

- At the national level, Ethiopia's health facility density (HFD) is at 2.1 per 10,000 populations. This is in line with the WHO benchmark, but the health workforce density (core health professionals) remains significantly below the global standard, at 15.9 per 10,000 population compared to the recommended 23. Meanwhie, hospital bed density stands at only 4.2 per 10,000, far below the expected 25 per 10,000 population.
- These gaps highlight the urgent need for strategic deployment and strengthened political commitment to increase health workforce and hospital bed capacity, ensuring equitable access to quality health services and progress toward meeting international standards.

Health system inputs by region/province

Figure 6.2: Health facility density, hospital density, and health workforce density by 2024

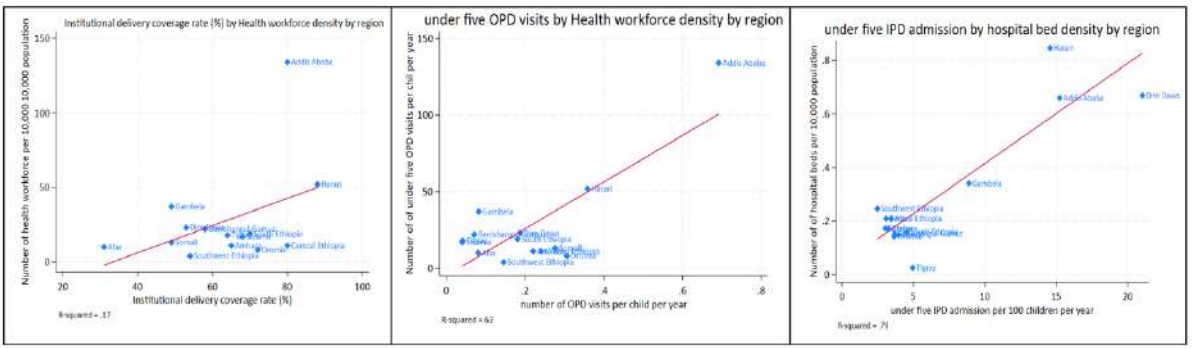


Interpretations

- Ethiopia’s health system inputs, specifically health facility density, hospital density, and health workforce density, generally fall below World Health Organization (WHO) standards, with notable regional disparities in 2024
- Health Facility Density (HFD): While the national average HFD is 2.1 per 10,000 populations, in line with the WHO benchmark of 2 per 10,000.Benishngul gumuz is 4 times higher than Addis Ababa. Critically, 36% of all regions remain below the recommended HFD level
- Hospital Density: hospital density is significantly below the national target of 2 per 100,000. Harari has five times more hospital density than Somali. Only Addis Ababa, Harari, and Dire Dawa exceed 1 hospital per 100,000 populations.
- Core Health Workforce (CHWF) Density: Addis Ababa had 38 times more CHWF than Southwest Ethiopia. Addis Only Addis Ababa, Harari, Dire Dawa, and Gambella have met the WHO target of 23 health workers per 10,000 populations.
- The data clearly indicates a severe maldistribution of health professionals, who predominantly prefer to serve in urban areas, likely due to the higher concentration of private health facilities. This urban-rural disparity in health system inputs directly impacts equitable access to healthcare.

Health system outputs by inputs at the subnational level

Figure 6.3: Association of health inputs and health outputs by 2024

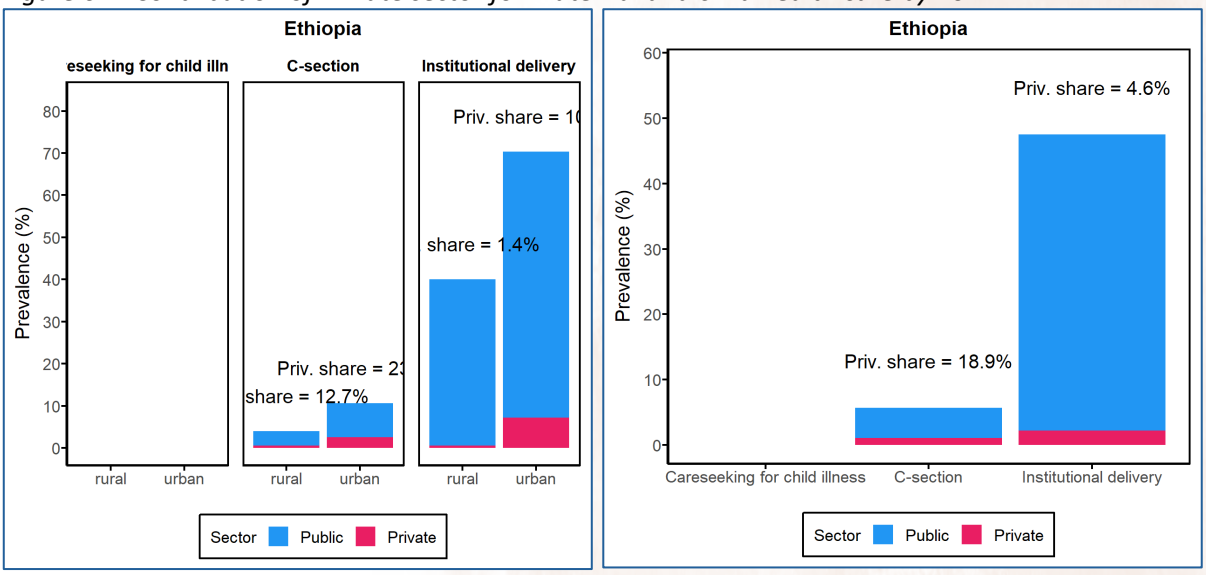


Interpretations

- Based on 2024 data, a clear positive correlation exists between health infrastructure and key maternal and child health outcomes in Ethiopia:
- Institutional Deliveries: Regions with a higher density of core health workers experience increased institutional delivery rates. Addis Ababa, with the highest workforce density, recorded the highest institutional delivery rate, followed by Harari. Conversely, afar region, with the lowest workforce density, showed the lowest institutional delivery rate
- Under-five Outpatient Department (OPD) Visits: A greater number of core health workers per 10,000 population correlates with higher under-five OPD visits per child per year. Addis Ababa and Harari, having higher health workforce densities, demonstrated higher under-five OPD service utilization. Overall, under-five OPD utilization remains low across most regions, with the exception of Addis Ababa and Harari.
- To improve maternal and child health outcomes nationwide, it is recommended to strategically increase the density of core health workers and expand hospital bed availability, particularly in underserved and conflict-affected regions. Prioritizing these investments will likely lead to higher rates of institutional deliveries, improved under-five OPD service utilization, and increased under-five IPD admissions.

Private sector and RMNCAH service

Figure 6.4: Contribution of Private sector for maternal and child health care by 2024



Interpretations

- The private sector accounts for 18.9% of caesarean sections, with 95% of deliveries remaining in public health facilities, indicating that private sector contribution is currently minimal, possibly due to low reporting, preference for public services owing to accessibility and costs, and the need for further qualitative research.
- In urban areas, private facilities perform nearly 25% of cesarean sections, compared to 12.7% in rural areas, reflecting better access to CS and SBAs in urban private facilities. However, SBA coverage remains low overall, despite being relatively higher in urban settings.

Limitations

- **Geographic exclusion**: Some regions were excluded for specific years due to limited data availability, primarily from areas where routine reporting was affected by the ongoing conflict. Therefore, national averages for specific years may not fully reflect national representativeness and should be interpreted with caution.
- **Missing data:** Data from private health providers were not included due to significant underreporting, despite their increasing role in service delivery. While adjustments were made to account reporting gaps, the omission of actual reporting data may bias estimates.
- **Impact of conflict on reporting data:** Although assumptions were applied to account for under-reporting during conflict, some residual bias may remain beyond the scope of those assumptions.
- **Limitations of module-based reporting:** Completeness was assessed using module level report submissions. This approach may overlook content-level underreporting, particularly at lower-level facilities such as health posts), potentially leading to overestimation of completeness rates and limiting.
- **Interpretation:** This report should be interpreted with caution. Further triangulation with other data sources is recommended. Where applicable, sensitivity analyses should be incorporated into follow-up analyses to validate the strength of conclusions. For clarification, validation, or collaboration, readers are encouraged to contact the Ethiopia-Countdown team.

Conclusions and recommendations

Conclusions

- The quality of routine health facility data in Ethiopia has generally remained stable between 2019 and 2024, with scores consistently above 80%. However, completeness still falls behind, especially in regions affected by conflict. The most significant issues were observed in outpatient, inpatient, and vaccination reporting.
- Adjustments for missing and extreme values led to minor increases in service coverage figures, suggesting that the approach makes a minimal contribution in re-adjusting underreported data.
- The analysis demonstrated that denominators derived from Penta1 closely align with survey-based estimates for immunizations indicators. This confirms that the Penta1-derived

denominator is more robust than existing census-based and UN-based projections for coverage estimations.

- Although coverage of MCH services has improved gradually, discrepancies between survey data and facility-based estimates point to possible under-reporting by health facilities. The MCH services coverage are still lag behind national targets while CS coverage fall far below from WHO's 15% recommended coverage.
- There exist persistent disparities in MCH service coverage by region, residence, education, and wealth status, emphasizing that national averages mask deep inequities. These have remained unchanged or worsened over the years, especially among the poorest and rural populations.
- Despite modest reduction in the overall rate of institutional stillbirth, and maternal and neonatal mortality, the rates remain above desired thresholds, and regional disparities are significant. The high ratio of stillbirths to maternal deaths signals continued underreporting of maternal death by health facilities.
- Service utilization for under-5 children has shown modest improvement, with notable increases in outpatient visits. However, the rising case fatality rate in this age group highlights serious gaps in service quality, perhaps indictive of poor clinical management and suboptimal facility readiness.
- While health facility density slightly exceeds WHO's benchmark, hospital bed and health workforce densities remain far below global targets. Inter-regional inequalities in health infrastructure and workforce staffing further constrain service delivery, particularly worse in rural areas.
- The private sector's role in delivering maternal and child health services is limited, especially in rural areas. Most women access services in public facilities, and low reporting from the private sector constrain efforts to fully understand its contribution to health outcomes.

Recommendations

- Standardize Penta1- and ANC1-derived denominators for estimating population coverage indicators, specifically for maternal and immunization programs.
- Institutionalize feedback loop systems with enhanced and regular data quality audits and district-level data validation reviews.
- Targeted underperforming and conflict-affected regions with tailored support for reporting completeness, access to essential MNCH services, and service quality.
- Strengthen maternal and perinatal death surveillance systems and improve facility-based reporting of stillbirth and maternal deaths.
- Expand investments in health workforce and infrastructure, prioritizing hospital bed and staff density in underserved geographies.
- Promote equitable access through outreach, community engagement, and differentiated support to geographies and populations lagging the national average.
- Enhance private sector engagement and reporting, especially in urban areas, to leverage their role in provisions of outpatient and inpatient services, and essential and life-saving interventions (such as C-section and skilled birth services).

Table of Results (National)

	2011	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Antenatal Care indicators											
ANC early visit, first trimester of pregnancy											
Survey	10		21			27					
Facility data						24	26	30	24	21	24
ANC 4 or more visits											
Survey	18		33			43					
Facility data						59	59	62	63	69	68
Intermittent preventive therapy second dose (IPT2)											
Survey											
Facility data											
Maternal and newborn health indicators											
Institutional delivery											
Survey	10		26			48					
Facility data						58	60	66	66	69	69
Caesarean section rate among all live births											
Survey	2		3			6					
Facility data						4	4	4	5	5	5
Postnatal care within 48 hours											
Survey	7		17			34					
Facility data						53	57	64	63	65	65
Low birth weight (< 2500 g) among institutional live births											
Survey											
Facility data						1.8	1.8	1.8	1.7	1.9	2.0
Child Health Indicators - Immunization											
Immunization: three doses of DTP / pentavalent vaccine coverage											
Surveys	36		53			62					
Facility data						70	71	71	71	72	71
UN estimates						68	71	65	65		
Measles vaccination (MCV1) coverage											
Surveys	56		54			59					
Facility data						68	69	69	70	70	71
UN estimates						58	60	54	56		

Measles vaccination (MCV2) coverage											
Surveys											
Facility data						38	51	55	60	61	62
UN estimates						41	46	46	48		
Family Planning											
Demand for modern methods satisfied											
Surveys	50		61								
FPET estimate						66	67	68	69	70	72
Institutional Mortality											
i-MMR						45	38	41	33	33	30
i-SBR						14	13	12	11	11	10
i-NMR						11	10	10	7	4	4
Curative Health service utilization for children under-five *											
N OPD visits per child per year						1.6	1.7	1.9	2.3	2.8	3.3
N admissions per 100 children per year						1.7	1.5	1.8	1.9	1.9	2.2

Selected denominator (Health facility data):
Maternal indicators: **ANC1**
Child health indicators: **Penta1**