REPUBLIC OF KENYA

MINISTRY OF HEALTH

KENYA

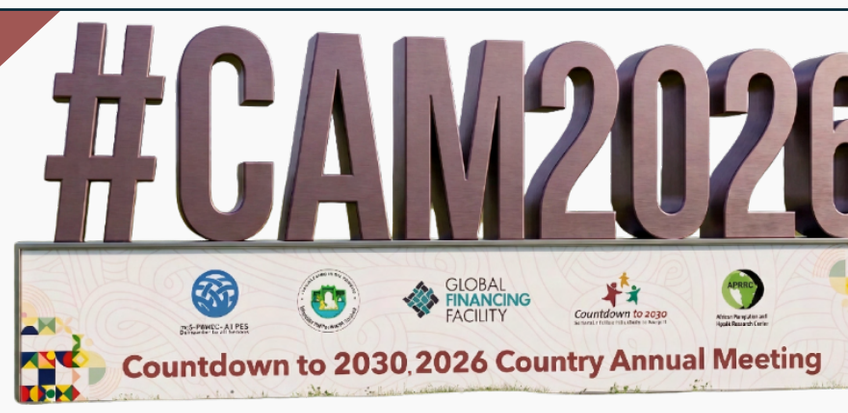
SYNTHESIS REPORT

2026

Analysis of Reproductive, Maternal, Newborn, Child and Adolescent Health Indicators for 2020-2025



Countdown to 2030 in partnership with Kenya`s Ministry of Health, JKUAT, Global Financing Facility, WHO, WAHO & UNICEF



Team Members

Dr. Helen Kiarie, Rose Muthee, Dr. Martin Mutua, Dr. Hannah Kagiri, Godfrey Adero, Diana Munjuri, Dr. Susan Mambo, Dr. Henry Kissinger, Dr. Betsy Rono, Anna Lauzi

KEY FINDINGS

1. Health facility data quality assessment: Numerators and Denominators

NUMERATORS: Routinely reported health facility data are an important data source for health indicators. The data are reported by health facilities on events such as immunizations given, or live births attended. As with any data, quality is an issue. Data are assessed for completeness of reporting by health facilities, extreme outliers and internal consistency. Appropriate adjustments are made to the data before use to compute statistics.

Summary of reported health facility data quality, DHIS2, 2020-2025

	Data Quality Metrics	2020	2021	2022	2023	2024	2025
1. Completeness of monthly facility reporting (mean of ANC, delivery, immunization)							
1a	% of expected monthly facility reports (national)	96	96	95	96	96	96
1b	% of districts with completeness of facility reporting >= 90	86	88	85	90	90	87
1c	% of districts with no missing values for the 4 forms	81	85	85	86	84	89
2. Extreme outliers (mean of ANC, delivery, immunization)							
2a	% of monthly values that are not extreme outliers (national)	96	100	100	100	100	96
2b	% of districts with no extreme outliers in the year	82	88	93	94	92	88
3. Consistency of annual reporting							
3a	Ratio ANC1 / Penta1	1.11	1.10	1.06	1.07	1.06	1.03
3b	Ratio Penta1 / Penta3	1.04	1.06	1.04	1.04	1.02	1.03
3c	% district with ANC1/Penta1 in expected range	96	91	85	85	79	72
3d	% district with Penta1/Penta3 in expected range	89	98	87	94	72	87
4	**Annual data quality score**	**89**	**92**	**90**	**92**	**88**	**88**

Interpretations

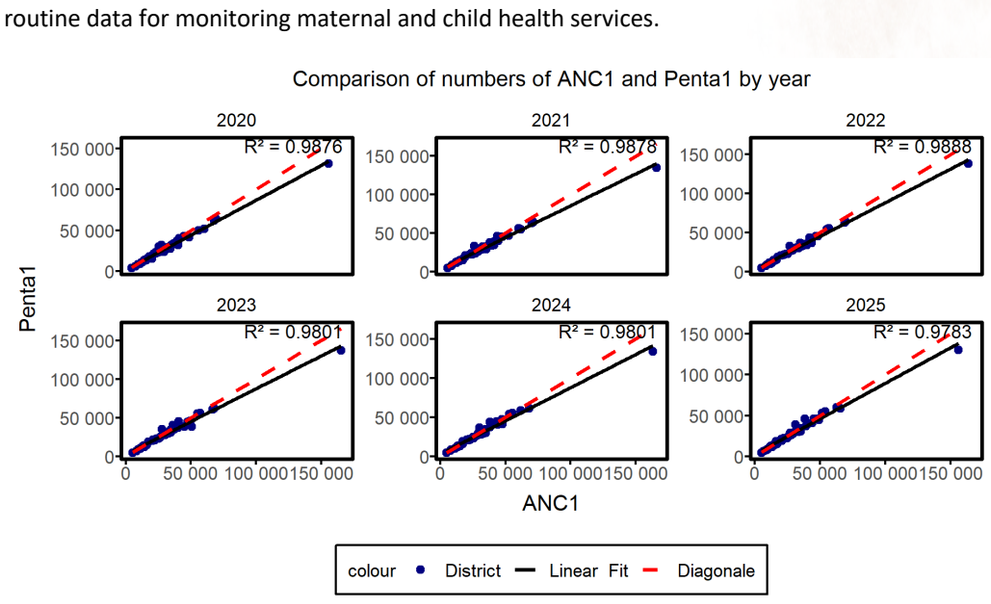
- The annual data quality score remained high, at or above 90% from 2021 to 2023 (peaking at 92% in 2021 and 2023), before declining slightly to 88% in both 2024 and 2025.
- Extreme outliers were minimal, with 100% of national monthly ANC, delivery, and immunization records free of extreme outliers from 2021–2024. This declined slightly in 2025 (96% nationally; 88% county level), driven by isolated BCG reporting anomalies in a few counties (Bungoma, Kisumu, Machakos, Murang'a, Narok, Trans Nzoia, and Turkana) rather than widespread data quality issues.
- The Penta1-to-Penta3 ratio remained within the expected range of (1.04 - 1.14) throughout the period, with observed values ranging from 1.02 to 1.06, indicating good internal consistency of immunization reporting.
- To account for missing reports from health facilities, adjustment factors of k = 0.50 for delivery data and k = 0.25 for immunization and under-five OPD data were applied to correct for incomplete routine health information system reporting.

📌 Key Message

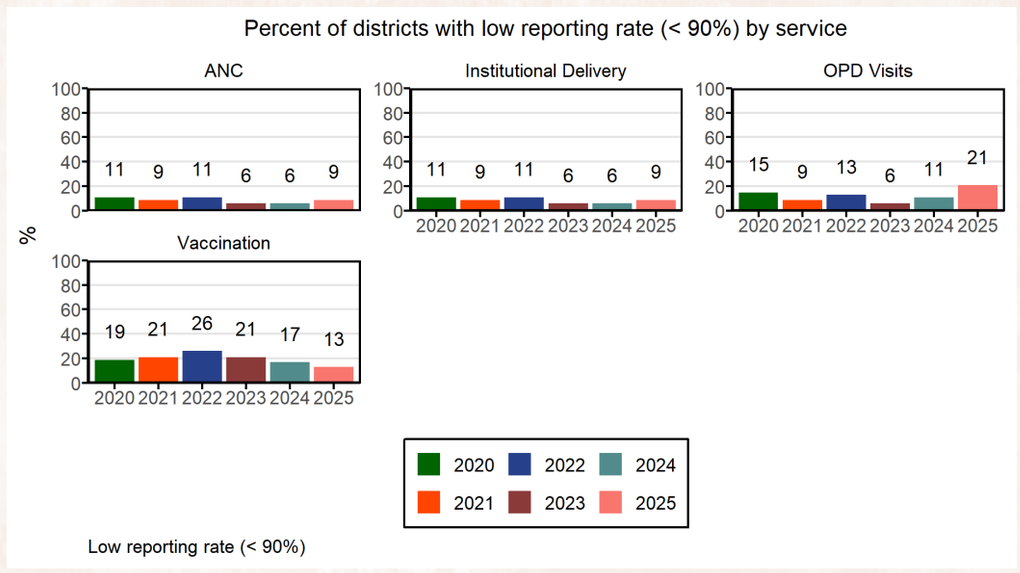
Routine health information system data are of sufficient quality to support national monitoring. However, to address localized reporting anomalies and improve overall accuracy, specific interventions must be implemented. These include strengthening supportive supervision and feedback mechanisms at the county level, ensuring all facilities use standardized tools with clear indicator definitions, conducting regular data quality audits, providing targeted training for health records information officers, and leveraging digital health tools to improve reporting efficiency.

Facility Data Quality

- The ANC1/Penta1 ratio declined steadily from 1.11 in 2020 to 1.03 in 2025, approaching the ideal ratio of 1 and indicating improved alignment between first ANC visits and first Penta dose reporting.
- ANC1 and Penta1 remained highly correlated across all years (R^2 = 0.978 - 0.989), demonstrating excellent and stable consistency between maternal and immunization reporting at the county level.
- This strong and improving agreement between ANC1 and Penta1, indicates reliable, internally consistent routine data for monitoring maternal and child health services.

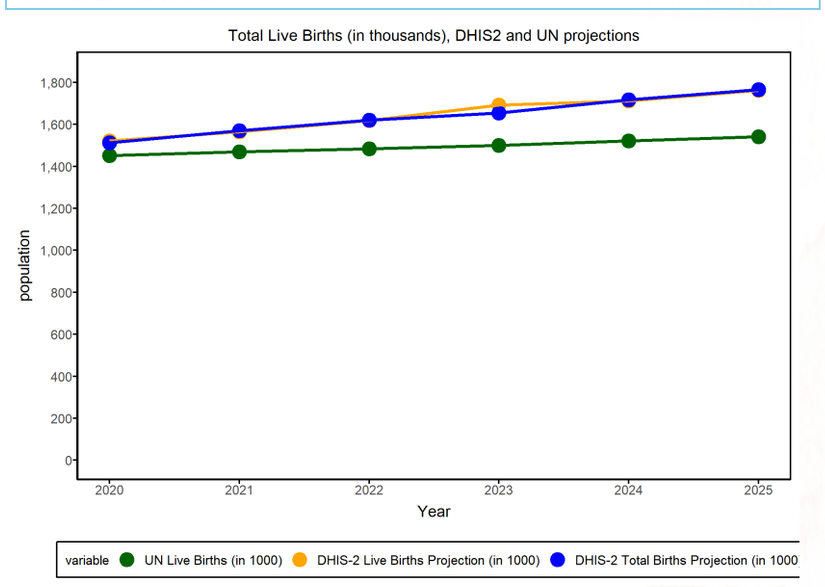


- ANC and institutional delivery consistently had the strongest reporting performance, with only 6–11% of counties reporting completeness below 90% each year.
- Vaccination reporting remained the weakest, with 13 - 26% of counties reporting below 90% completeness annually, although performance improved from the 2022 peak to 13% in 2025. OPD reporting was generally strong but showed localized declines in 2025.
- Routine reporting is generally robust, but targeted support is needed to improve immunization reporting and address emerging OPD reporting gaps in affected counties.

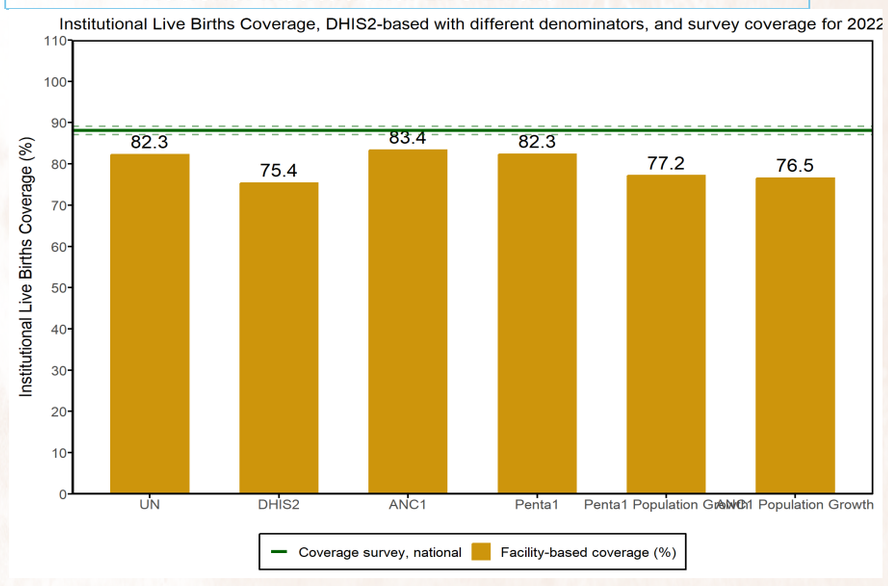


DENOMINATORS: Service coverage is defined as the population who received the service (numerator) divided by the population who need the services: (the denominator). We test four options for denominator measures using institutional live births and Pent-3 immunization coverage. The quality of the population projections in DHIS2 is assessed through consistency over time and comparison with the UN projections. Two denominators are also derived using near universal service such as ANC-1 and Penta-1.

Total Livebirths



National Institutional Live Births



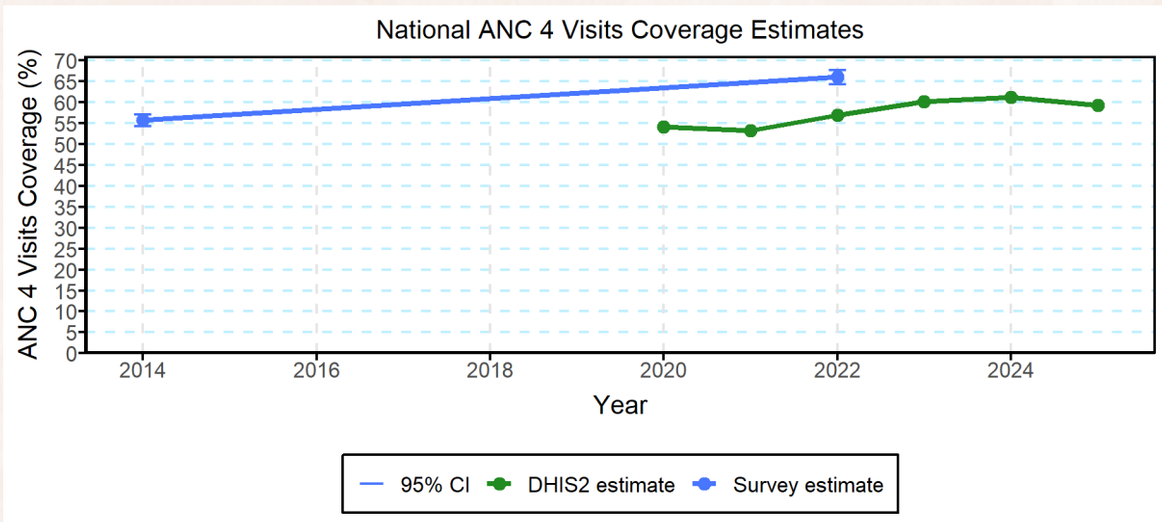
Interpretations

- DHIS2 live births and total births projections converged by 2025. These projections remained consistently higher than UN estimates, suggesting possible overestimation of live births in KHIS (left Fig.).
- Service-derived denominators (ANC1 and Penta1) consistently produced coverage estimates closest to survey results and demonstrated the greatest temporal stability at both national and subnational levels, outperforming DHIS2 population and population-growth denominators (Middle Fig.).
- ANC1 and Penta1 were the best-performing denominators for national Penta3 coverage, producing estimates (95% and 94%, respectively) that closely matched survey results, whereas DHIS2 population and population-growth denominators consistently underestimated coverage
- ANC1 and Penta1 generated the most stable and plausible county-level coverage estimates, while DHIS2 population and population-growth denominators generally underestimated coverage, supporting ANC1 as the preferred denominator for maternal indicators (Right Fig.)
- Based on agreement seen with survey estimates, temporal stability, reporting completeness, and internal consistency, ANC1 was selected as the preferred denominator for maternal indicators, while Penta1 was selected for vaccination indicators.
- Using ANC1 and Penta1 as denominators improves the accuracy, consistency, and comparability of routine coverage estimates, supporting reliable monitoring and evidence-based planning

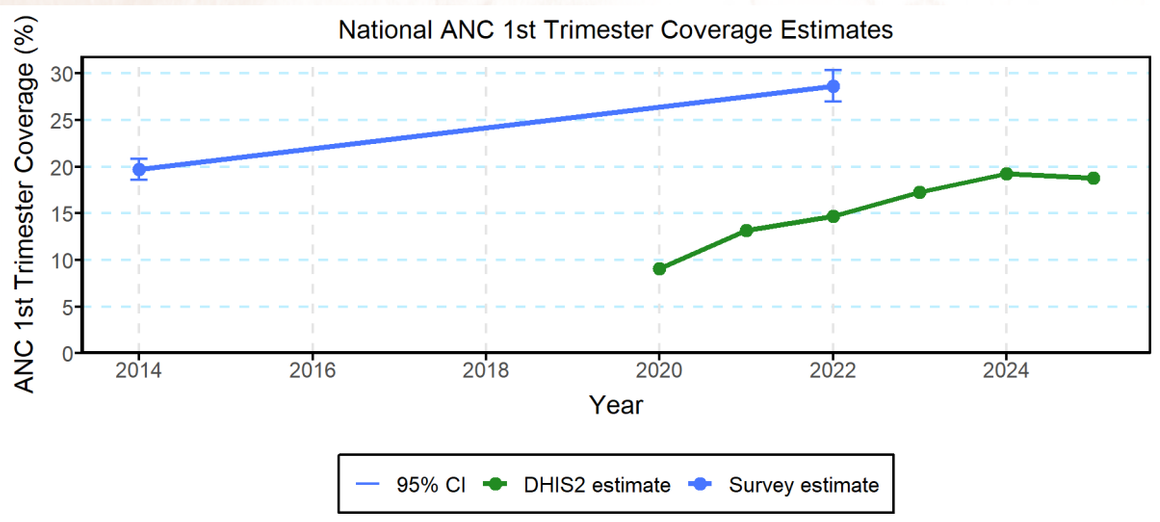
2. National coverage trends: facility data and surveys

Antenatal care: ANC4, ANC early visit, first trimester of pregnancy

ANC 4



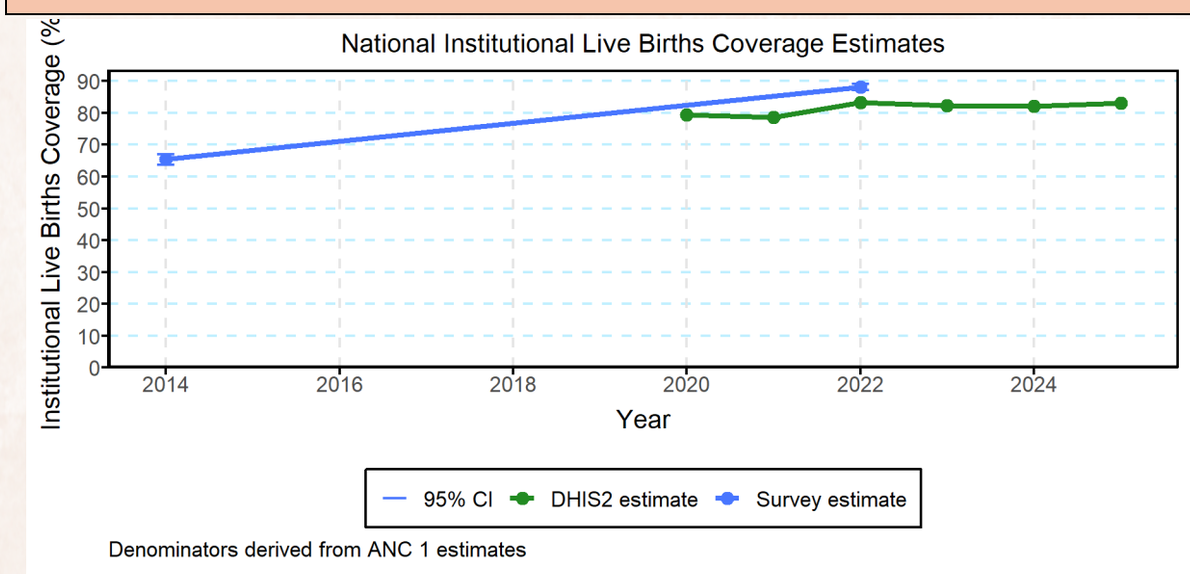
ANC early visit



Interpretations

- ANC4 coverage improved in both data sources. Survey estimates increased from 56% in 2014 to 66% in 2022, while DHIS2 estimates increased from 54% in 2020 to 61% in 2024, with a slight decline to 59% in 2025.
- DHIS2 estimates remained consistently lower than survey estimates. In 2022, ANC4 coverage was 57% in DHIS2 compared with 66% in the survey, indicating that routine data slightly underestimate ANC4 coverage despite showing a similar upward trend.
- First-trimester ANC coverage also improved over time. Survey estimates increased from 20% in 2014 to 28% in 2022, while DHIS2 estimates increased from 9% in 2020 to 19% in 2024, remaining stabilized thereafter.
- The gap between survey and routine estimates is much larger for early ANC initiation. In 2022, first-trimester ANC coverage was 15% in DHIS2 compared with 28% in survey (14% difference), suggesting under-recording of the timing of the first ANC visit in routine health information systems.
- Routine DHIS2 data can reliably track ANC4 coverage trends but require continued improvements in data quality. Additionally, routine data systems need strengthening to accurately capture early ANC initiation

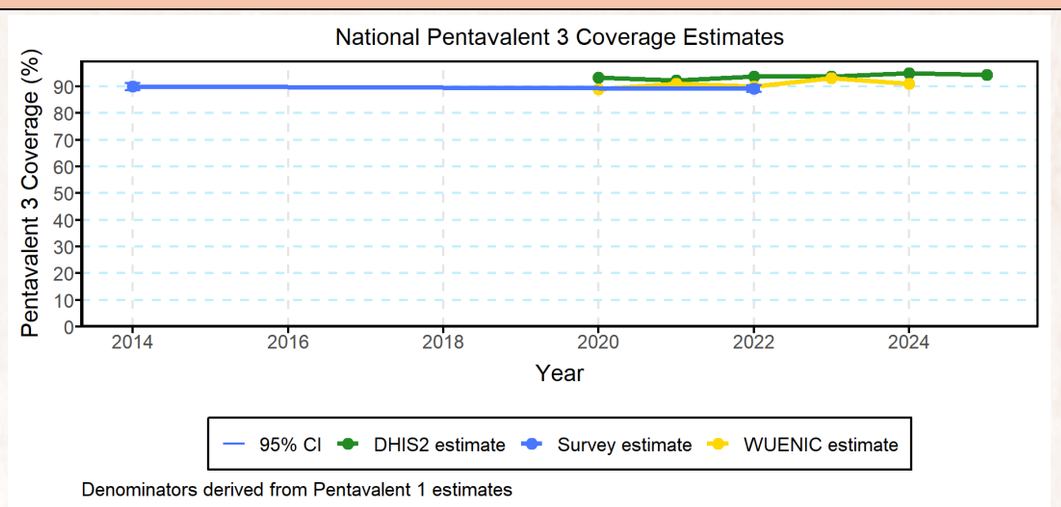
Institutional delivery

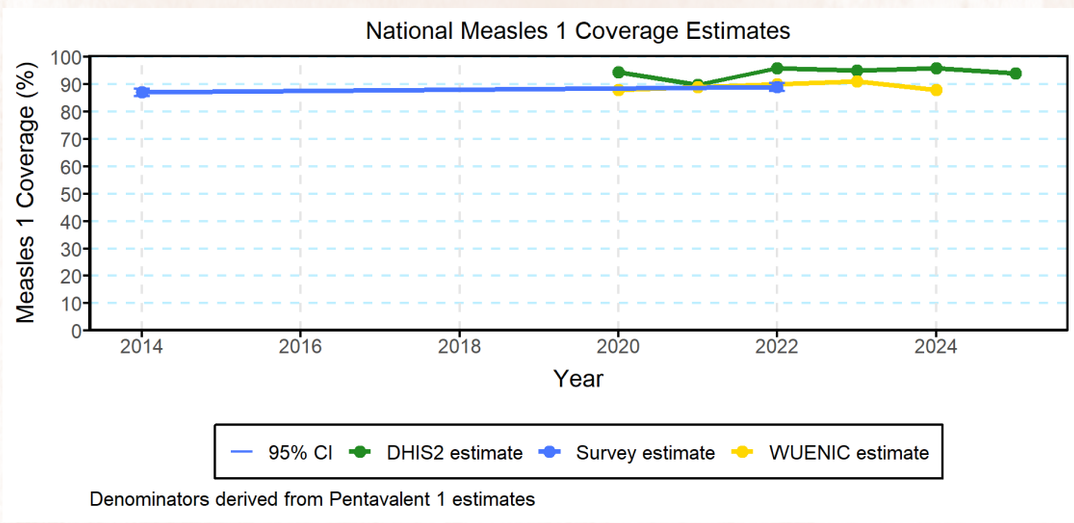


Interpretations

- Institutional live births coverage increased in both survey and routine data. Survey estimates rose from 65% in 2014 to 89% in 2022, while DHIS2 estimates increased from 79% in 2020 to 83% in 2022 and remained plateaued at 82–83% through 2025.
- DHIS2 estimates closely tracked survey estimates, with only a modest difference in 2022. Institutional live births coverage was 83% in DHIS2 compared with 89% in the survey (6% difference), suggesting good agreement between routine and survey data.
- Routine DHIS2 data provide a reliable source for monitoring institutional live births coverage over time.

Immunization: Penta 3, Measles 1



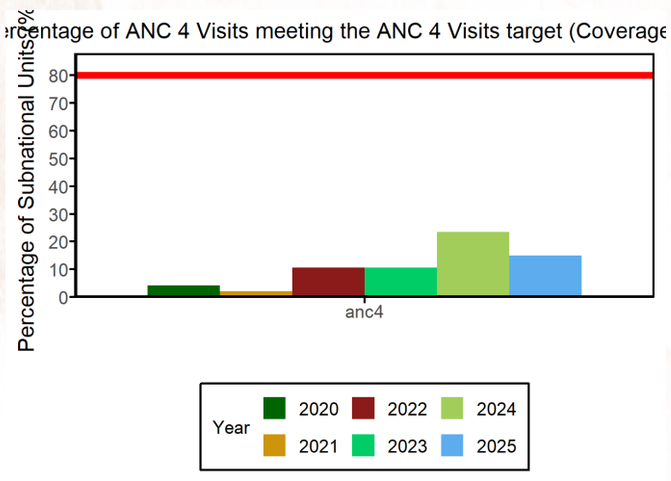


Interpretations

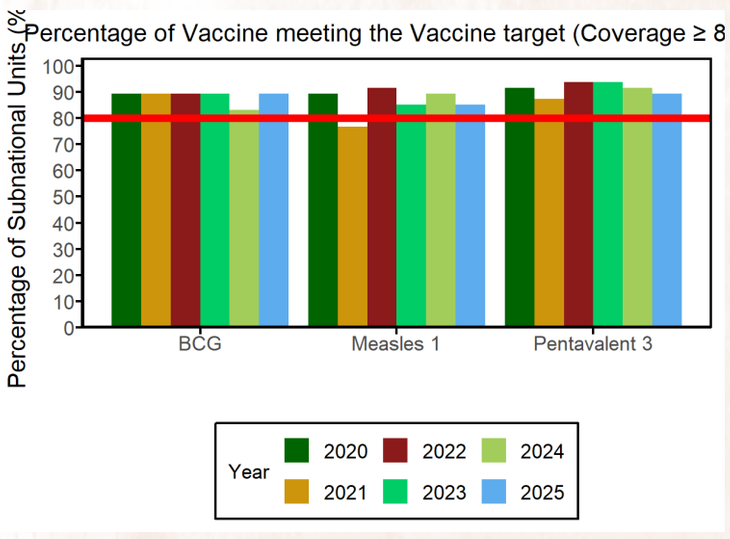
- Pentavalent 3 coverage remained high across the survey (~90%), DHIS2 (92–95%), and WUENIC (89–93%) throughout the follow-up period.
- The close agreement among the three data sources indicates consistent and reliable national coverage estimates.
- Measles 1 coverage remained high, with survey (88–89%), DHIS2 (90–96%), and WUENIC (88–91%) showing similar trends.
- DHIS2 estimates were slightly higher than survey and WUENIC but remained broadly consistent across all data sources.
- The close agreement among DHIS2, survey, and WUENIC indicates that DHIS2 data provide a reliable source for monitoring national Pentavalent 3 and Measles 1 vaccination coverage

Percent of counties achieving high coverage targets

ANC 4



Child Health Indicators



Interpretations

ANC4

- The proportion of subnational units achieving the ANC4 coverage target (≥70%) remained low throughout 2020–2025. It increased from approximately 5% in 2020 to a peak of 24% in 2024, before declining to 15% in 2025.
- The 80% benchmark was not achieved in any year. At its highest, only about one-quarter of subnational units met the ANC4 coverage target, indicating substantial geographic variation in ANC4 service coverage.

Child health indicators

- Most subnational units consistently achieved the national vaccination coverage target (≥80%) for BCG, Measles 1, and Pentavalent 3 throughout 2020–2025. For all three vaccines, approximately 85–95% of subnational units met the target in most years.
- Pentavalent 3 showed the highest performance, with over 90% of subnational units meeting the target in most years. BCG also maintained consistently high performance, while Measles 1 showed greater year-to-year variation, particularly in 2021, but remained above the 80% benchmark overall.

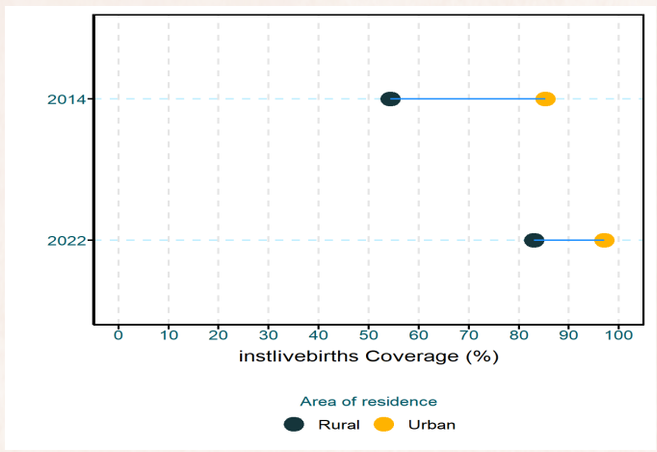
Key Message

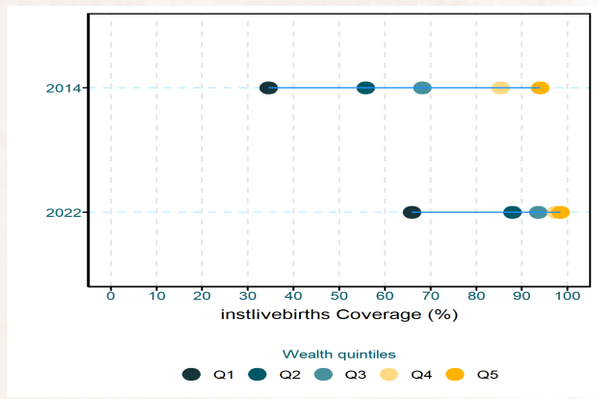
Most subnational units met national vaccination coverage targets, but few achieved the ANC4 target, highlighting the need to strengthen antenatal care services in low-performing counties while sustaining gains in immunization.

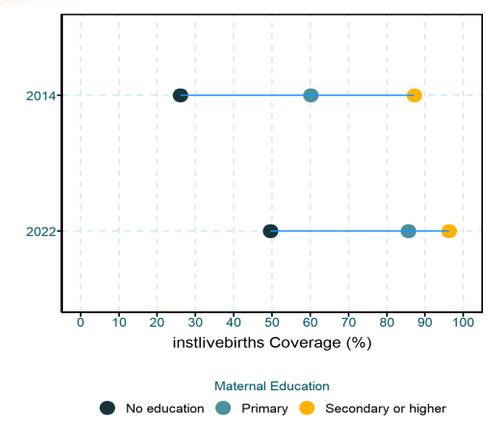
3. Equity

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

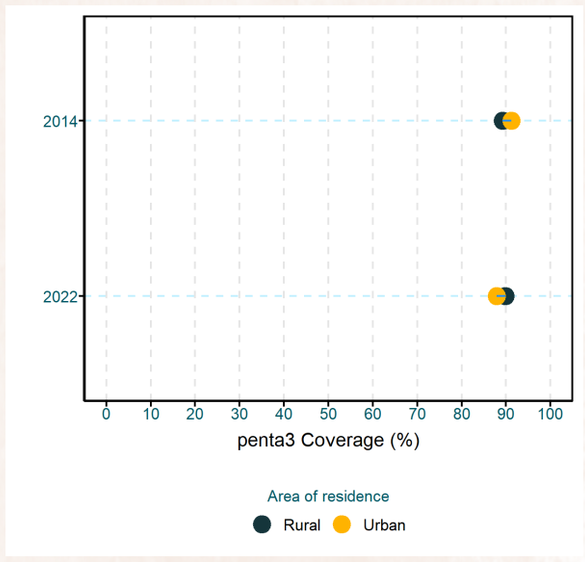
InstitutionalLive Births

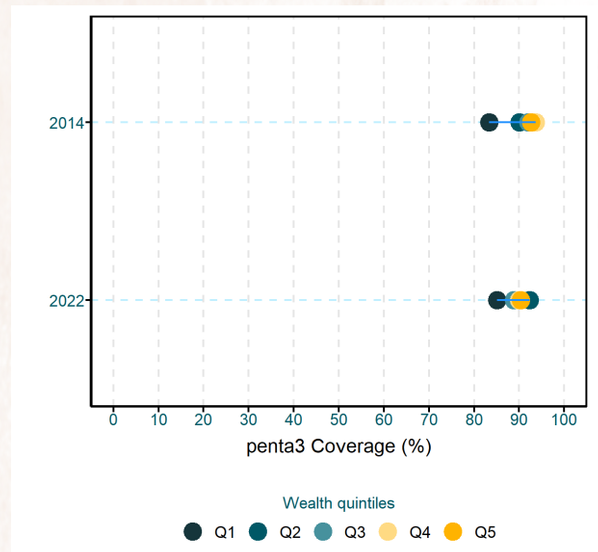


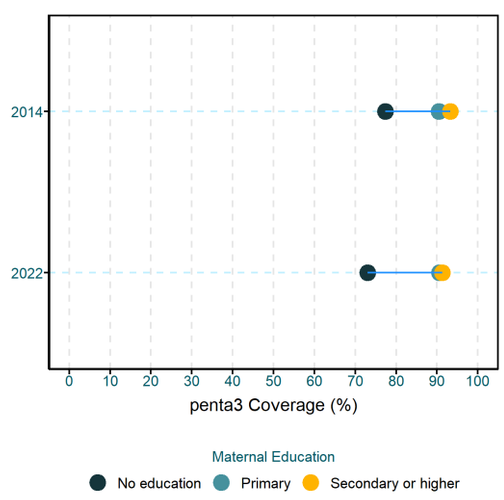




Pentavalent 3rd Dose







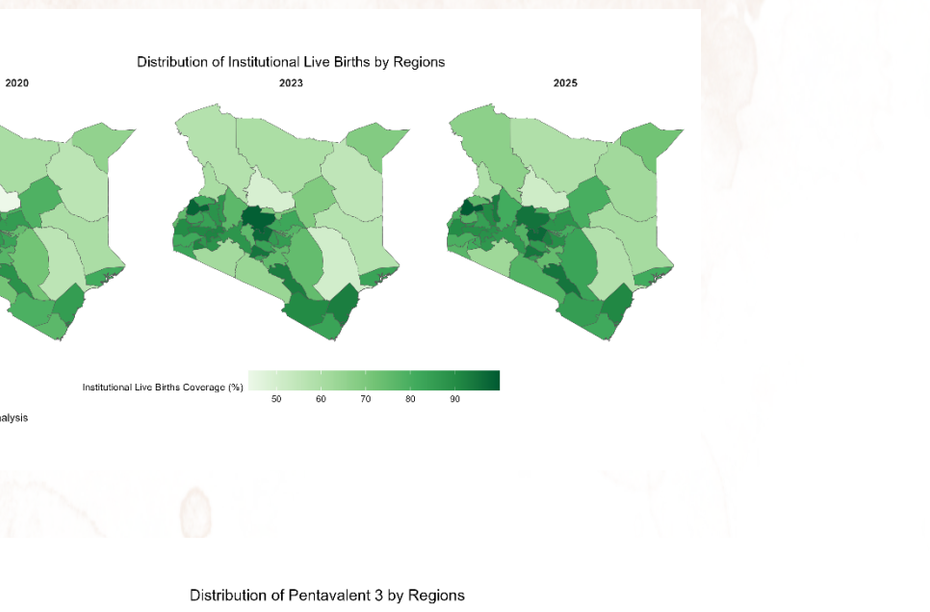
Interpretations

- Institutional delivery improved across all equity dimensions between 2014 and 2022, but rural women, the poorest households, and women with no formal education consistently had the lowest coverage.
- Although coverage increased for all groups, progress was slowest among the poorest, least educated, and rural women, resulting in persistent and widening education related inequalities.
- DPT3 coverage remained high and equitable across residence and wealth, with only children of mothers with no formal education consistently recording lower coverage.
- Coverage improved slightly across all subgroups, while inequalities remained small and stable, with a modest but persistent education-related gap.

📌 **Key Message:** Targeted interventions should prioritize disadvantaged populations - particularly women and children from less educated households to reduce the remaining equity gaps while sustaining overall gains in maternal and child health.

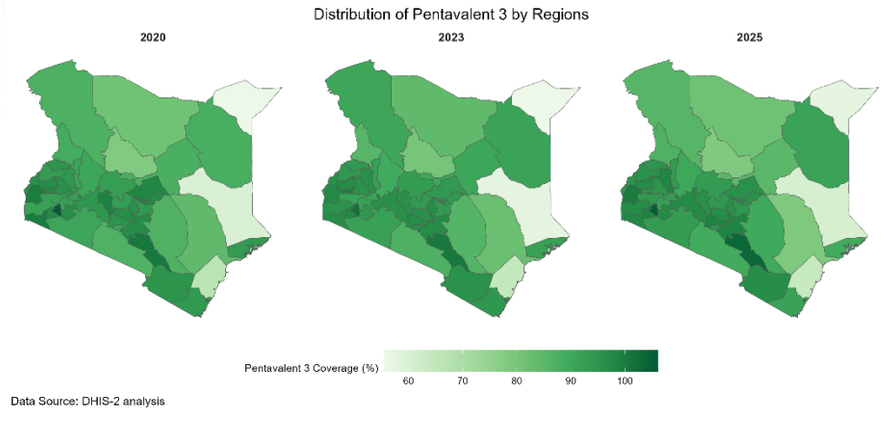
Geographical inequalities: Health facility data

InstituionalLive Births

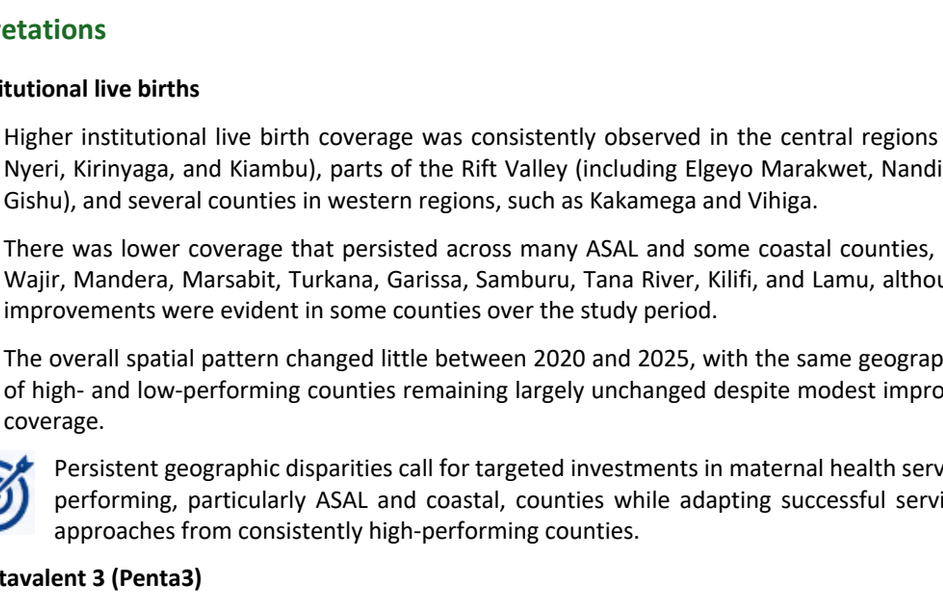


Interpretations

- National institutional live births coverage remained relatively stable at around 79 - 83% throughout 2020 - 2025.
- However, subnational inequality fluctuated over time, increasing between 2022 and 2024 before declining markedly in 2025, suggesting an improvement in the equity of institutional live birth coverage across subnational units.
- National Pentavalent 3 coverage remained consistently high (~ 92 - 95%) throughout 2020 - 2025. Similarly, most subnational units also maintained high coverage, with relatively limited variation around the national average.



Pentavalent 3rd Dose



- Subnational inequality remained low and relatively stable over time. MADM fluctuated modestly from 5.35 to 6.45 for different years, with a final reduction in year 2025 at 5.95. These small fluctuations indicate consistently low geographic disparities in Pentavalent 3 coverage. A good number of ASAL counties seem to consistently shown low coverage.

📌 **Key Message:** Sustaining high immunization coverage while prioritizing targeted investments in low-performing, particularly ASAL, counties is essential to reduce geographic inequalities in institutional live births.

Interpretations

Institutional live births

- Higher institutional live birth coverage was consistently observed in the central regions (Murang'a, Nyeri, Kirinyaga, and Kiambu), parts of the Rift Valley (including Elgeyo Marakwet, Nandi, and Uasin Gishu), and several counties in western regions, such as Kakamega and Vihiga.
- There was lower coverage that persisted across many ASAL and some coastal counties, particularly Wajir, Mandera, Marsabit, Turkana, Garissa, Samburu, Tana River, Kilifi, and Lamu, although modest improvements were evident in some counties over the study period.
- The overall spatial pattern changed little between 2020 and 2025, with the same geographic clusters of high- and low-performing counties remaining largely unchanged despite modest improvements in coverage.

Persistent geographic disparities call for targeted investments in maternal health services in low-performing, particularly ASAL and coastal, counties while adapting successful service delivery approaches from consistently high-performing counties.

Pentavalent 3 (Penta3)

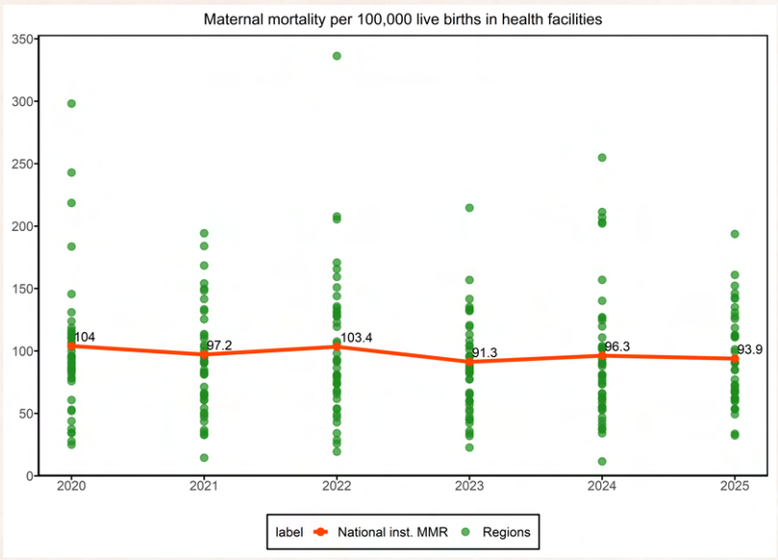
- Pentavalent 3 coverage remained consistently high across most counties during 2020–2025, with particularly strong performance in Murang'a, Nyeri, Kirinyaga, Kiambu, Elgeyo Marakwet, Nandi, Uasin Gishu, Kakamega, and Vihiga.
- Relatively lower coverage persisted in Wajir, Mandera, Marsabit, Turkana, Garissa, and Samburu, although the overall spatial pattern remained stable over time, indicating sustained national immunization performance.

Sustain the strong performance of the immunization programme while prioritizing targeted outreach in persistently lower-performing ASAL counties, particularly Wajir, Mandera, Marsabit, Turkana, Garissa, and Samburu.

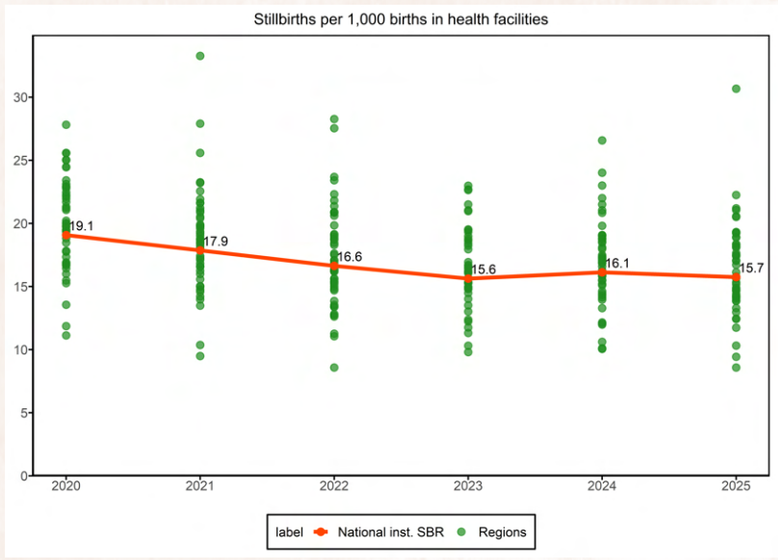
Institutional mortality

Institutional Mortality trends (iMMR, iSBR)

iMMR



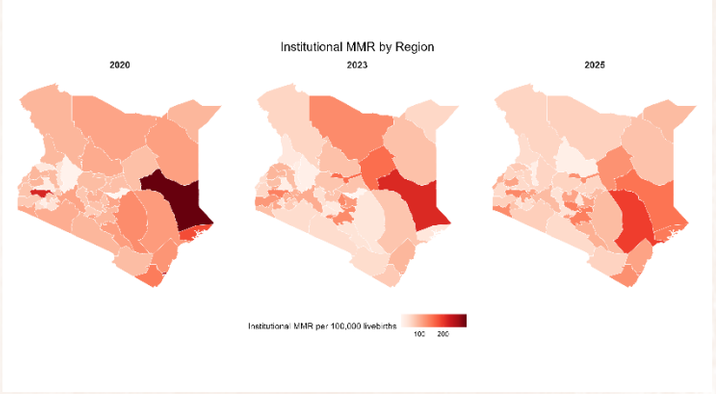
iSBR

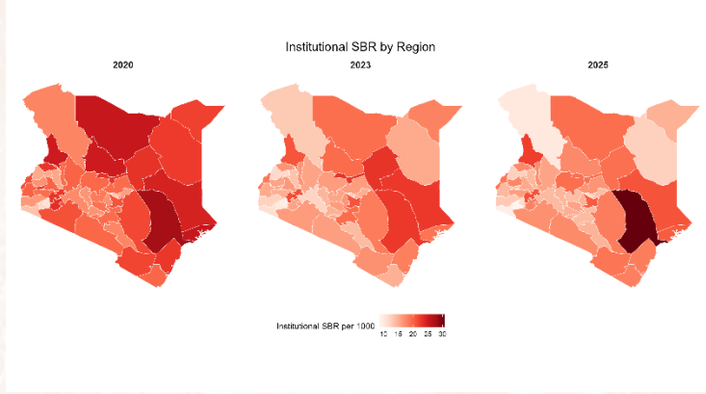


Interpretations

- The national iMMR remained relatively stable between 2020 and 2025, fluctuating between 91.3 and 104.0 deaths per 100,000 live births, with no consistent downward trend.
- Large regional disparities persisted throughout the study period, with a few counties consistently reporting substantially higher maternal mortality ratios than the national average, indicating persistent geographic inequalities.
- iSBR has shown a declining trend over the review period, with most counties clustering around the national estimate and few notable outliers, such as Tana River in 2025.

Institutional Mortality by Counties





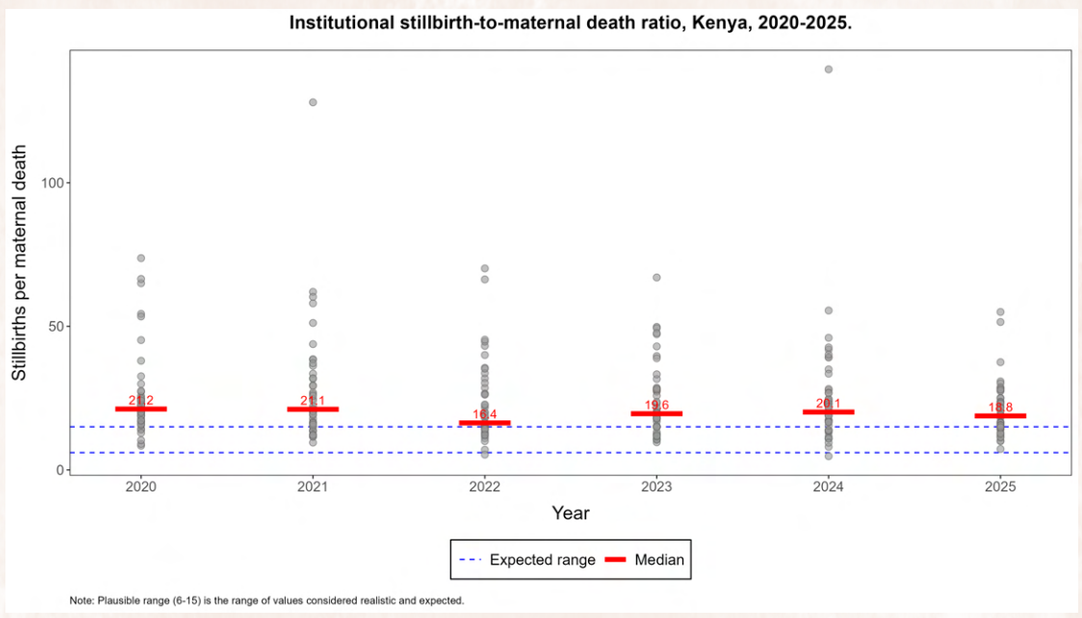
Interpretation

- Institutional maternal mortality remained highest in the north-eastern and parts of the coastal regions throughout 2020–2025. Counties such as Wajir, Garissa, Mandera, Marsabit, Tana River, and Taita Taveta consistently exhibited higher iMMR than the rest of the country.
- The overall spatial pattern changed little over time. While some counties showed modest improvements, the same geographic clusters of high maternal mortality persisted, indicating entrenched regional disparities in maternal health outcomes.
- Institutional stillbirth rates remained highest in Taita Taveta, with persistently elevated rates also observed in parts of the eastern and north-eastern regions, indicating enduring geographic disparities in stillbirth outcomes.

Taita Taveta remained a persistent hotspot for institutional stillbirths, highlighting the need for targeted investments in the quality of antenatal, intrapartum, and newborn care, alongside strengthened perinatal death surveillance and response

Data quality metrics

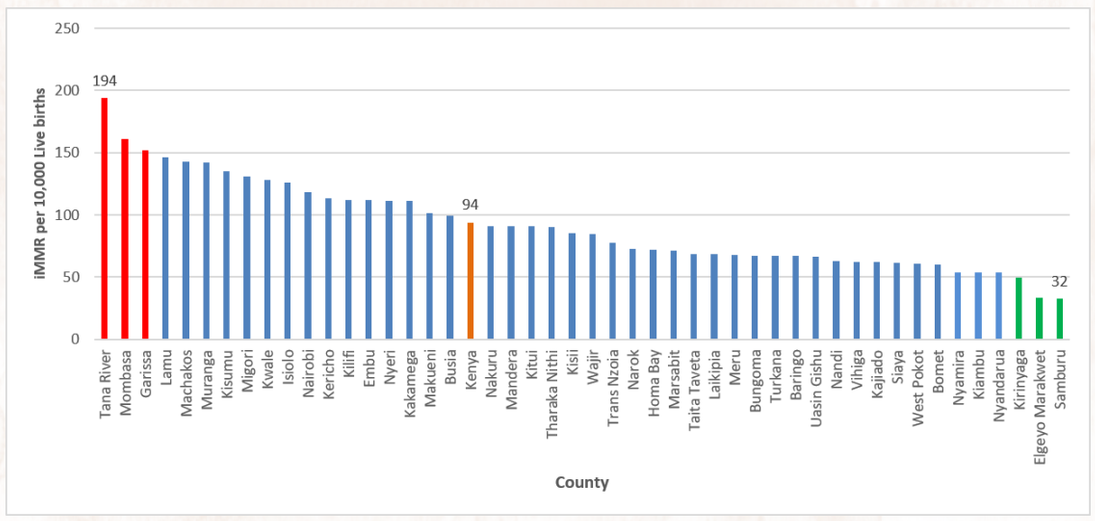
Ratio stillbirth to maternal deaths in the health facility data at national level



Interpretations

- The median stillbirth-to-maternal death ratio remained above the expected range (6–15) throughout 2020–2025, fluctuating between 16.4 and 21.2.
- Wide county-level variation suggests inconsistencies in maternal and perinatal death reporting and surveillance.
- The persistently high ratio highlights the need to strengthen maternal and perinatal death surveillance and reporting, particularly in counties with exceptionally high ratios.

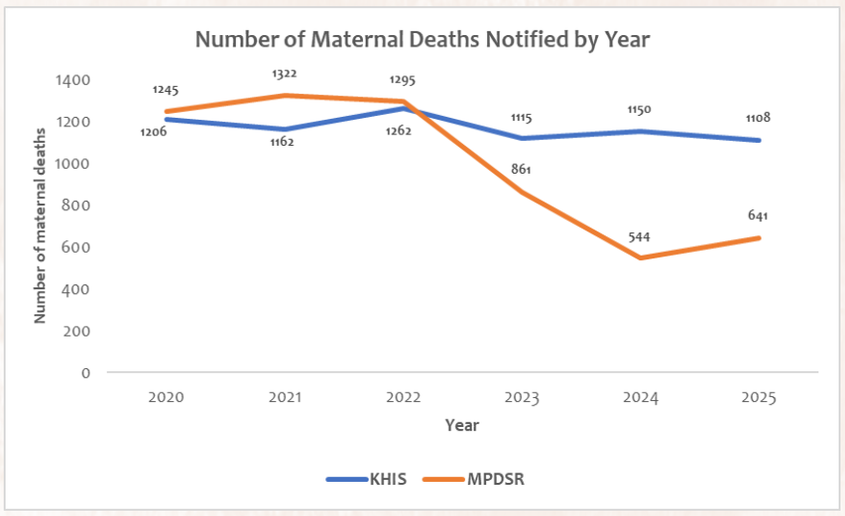
iMMR by County in 2025



Interpretations

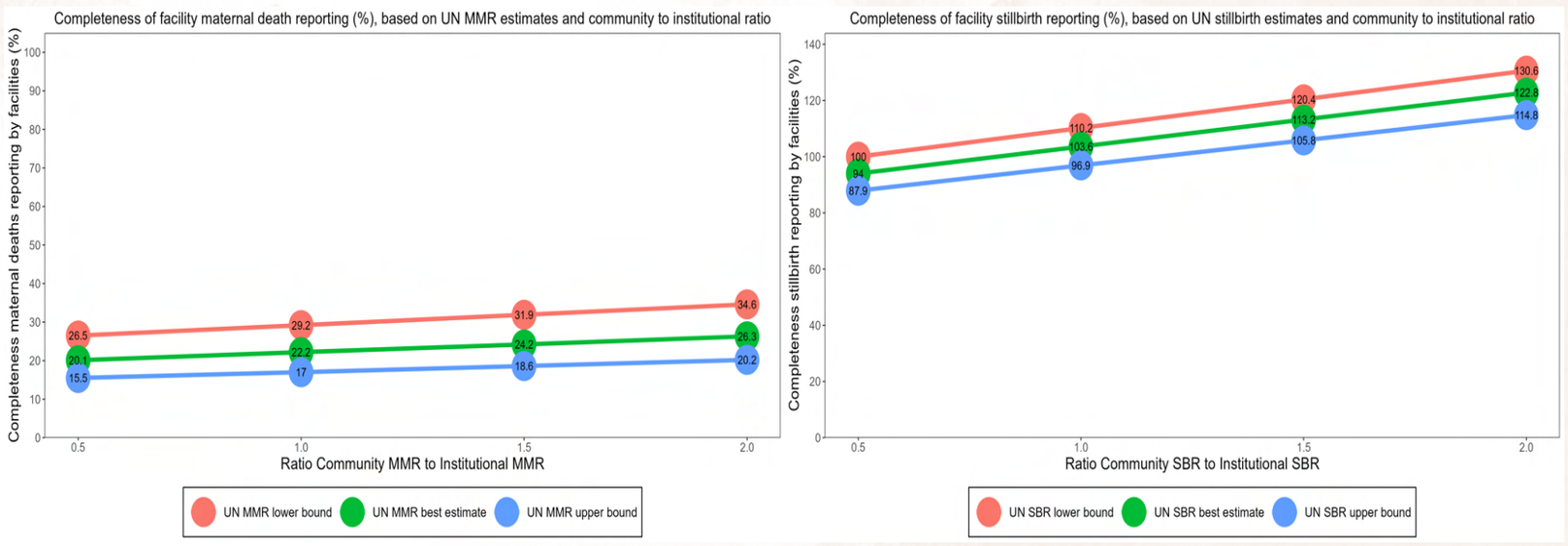
- In 2025, Tana River country had the highest iMMR at 194 while Samburu County had the lowest at 32.
- Most counties with poorer health services, more geographic barriers such as inadequate infrastructure and difficult terrain had higher iMMR, mostly in the northern half of Kenya. But several poorer counties e.g. Samburu, Elgeyo Marakwet, West Pokot and Mandera reported unexpectedly low iMMR, which may be associated with data quality issues.
- Maternal deaths reported through KHIS remained relatively stable over the period, ranging from 1,108 to 1,262 deaths annually, with only minor fluctuations.

Comparison of Maternal Deaths in the KHIS and MPDSR, 2020-2025



- In contrast, MPDSR notifications closely aligned with KHIS reports from 2020–2022, but had a sharp decline from 1,295 deaths in 2022 to 544 in 2024, with a slight increase to 641 in 2025.
- Gap between KHIS and MPDSR notifications from 2023 indicates reduced completeness of maternal death identification and reporting through MPDSR, rather than a true reduction in maternal deaths
- There is need to strengthen maternal death surveillance, notification, and review systems, including reconciliation of KHIS and MPDSR data.

Completeness of reporting of institutional MMR and SBR based on the population MMR and the Community to Institutional ratio



Interpretations

- Reconciling the UN MMR estimate with the observed iMMR would require an implausibly high level of underreporting.
- Even assuming a community-to-institutional mortality ratio of 2:1, iMMR reporting completeness is estimated at only 26%.

✓ The UN MMR estimate is likely overestimated, and a national assessment of maternal death reporting completeness is needed, particularly for deaths occurring outside maternity wards.

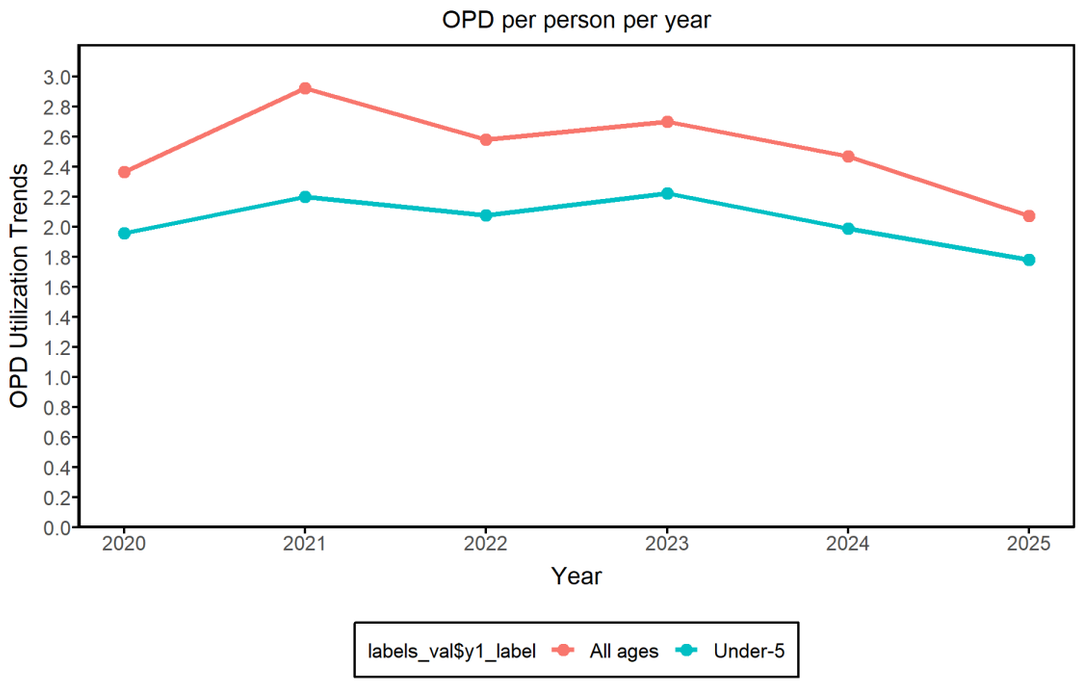
The observed iSBR closely matches the UN stillbirth estimate after accounting for community stillbirths.

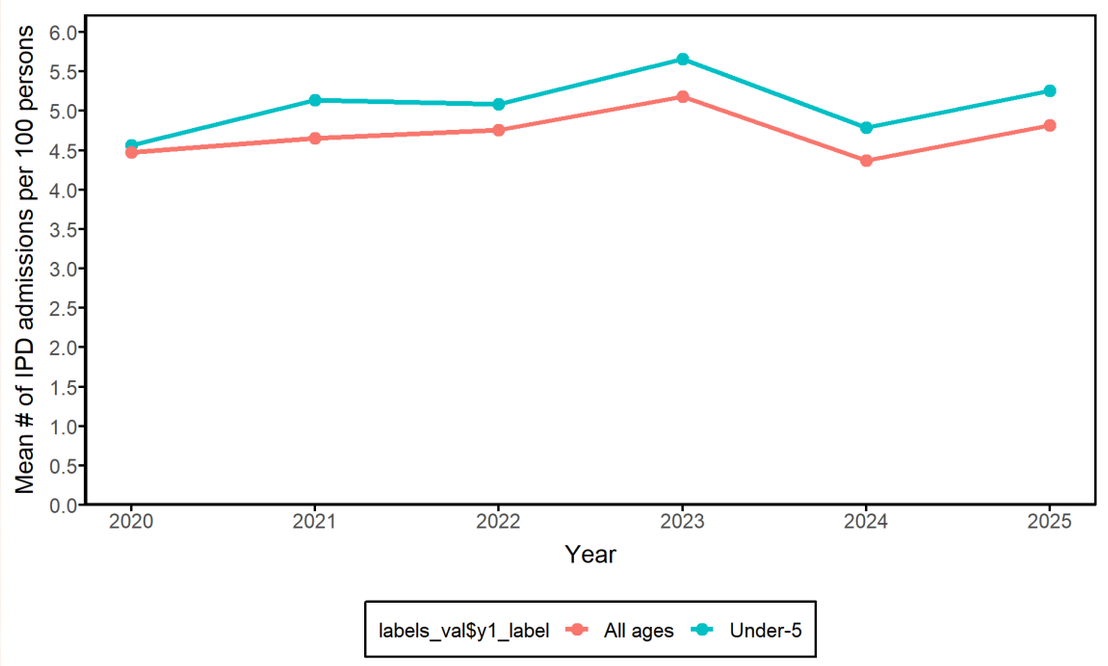
- The best-fit scenario suggests near-complete reporting (~104%), indicating excellent agreement between routine data and UN estimates.

✓ Routine iSBR data are of good quality and can be reliably used for national stillbirth estimation, unlike iMMR, which appears substantially

5. Curative health service utilization for sick children

Outpatient and inpatient service utilization





Interpretations

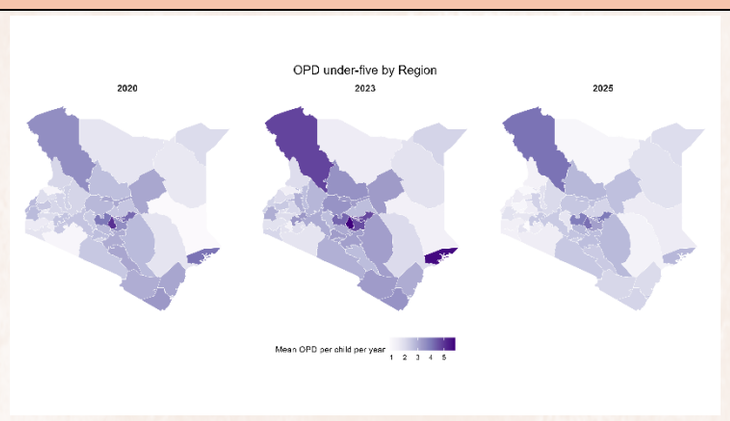
DQA

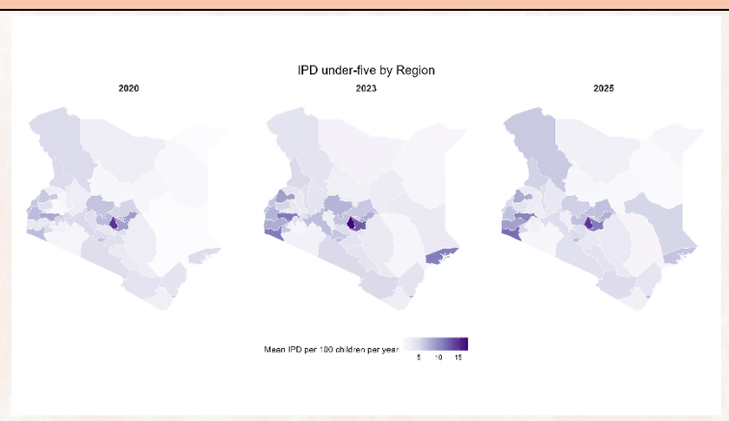
- Results from the DQA indicates that reporting completeness remained high nationally (96–100%), but the proportion of counties achieving >90% completeness declined over time, reaching its lowest level (79%) in 2025.
- OPD data quality was consistently strong, with 100% of national monthly values free of extreme outliers and at least 94% of counties reporting no extreme outliers throughout the period.
- The OPD/IPD under-5 ratio exceeded the expected range in all years except 2025, primarily reflecting persistent under-reporting of under-5 IPD rather than OPD over-reporting, as OPD under-5 proportions remained within the expected range while IPD under-5 proportions consistently remained below it.

OPD and IP results

- National OPD utilization among children under five remained consistently above the ≥1 visit per child per year benchmark, ranging from 1.8 to 2.2 visits between 2020 and 2025. The all-ages rate (2.1–2.9 visits per person per year) also remained above the expected threshold. Both trends peaked in 2021/2023 before declining, with the under-5 rate reaching its lowest level (1.8 visits) in 2025, suggesting a modest reduction in service utilization while still maintaining acceptable access levels.
- IPD admissions among under-5s ranged from 4.6 to 5.7 per 100 children per year across 2020-2025 well above the 2-per-100 low-access threshold throughout. The series shows a mild overall upward trend (4.6 in 2020 to 5.3 in 2025), with a peak in 2023 (5.7) and a dip in 2024 (4.8) that is worth verifying, as it could reflect either a genuine service disruption or a reporting gap.
- Both the OPD and IPD national trend lines move smoothly year-on-year with no implausible spikes, gaps, or breaks, which is a reasonable indication of consistent reporting at the national level between 2020 and 2025. That said, this consistency check is only possible at the aggregate, as facility or county-level completeness cannot be assessed from these two charts alone and should be verified separately.

Regional/provincial service utilization



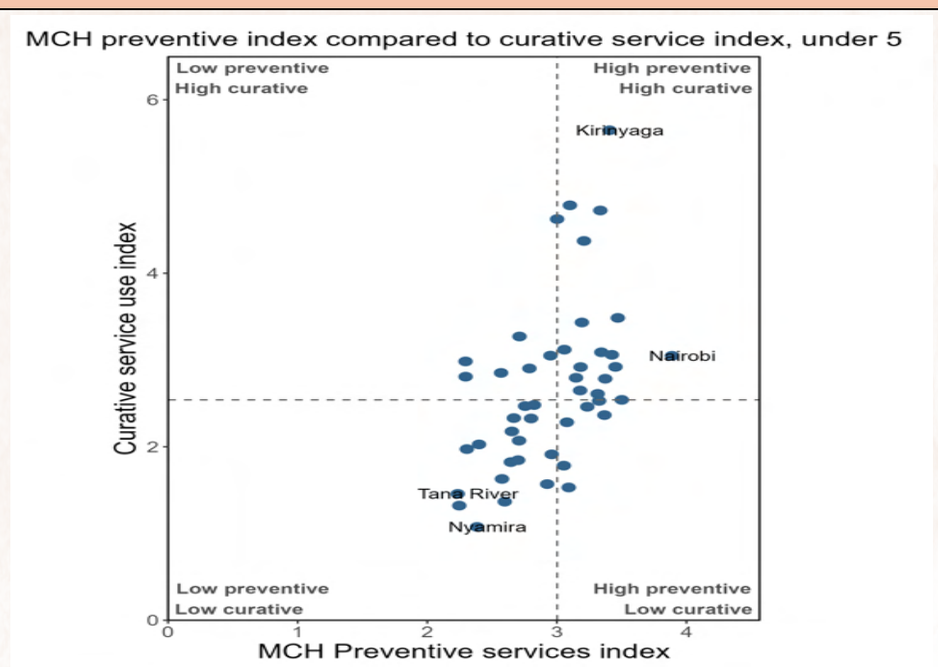


Interpretations

- Under-5 service utilization showed persistent geographic variation, with OPD utilization consistently highest in Turkana and IPD admissions concentrated in Kirinyaga.
- These patterns likely reflect differences in disease burden, healthcare access, referral systems, and care-seeking behaviour, although changes over time should be interpreted alongside reporting completeness and data quality.

Persistent geographic disparities in under-5 service utilization highlight the need to investigate local drivers of high OPD and IPD use while strengthening reporting quality to support reliable interpretation of trends.

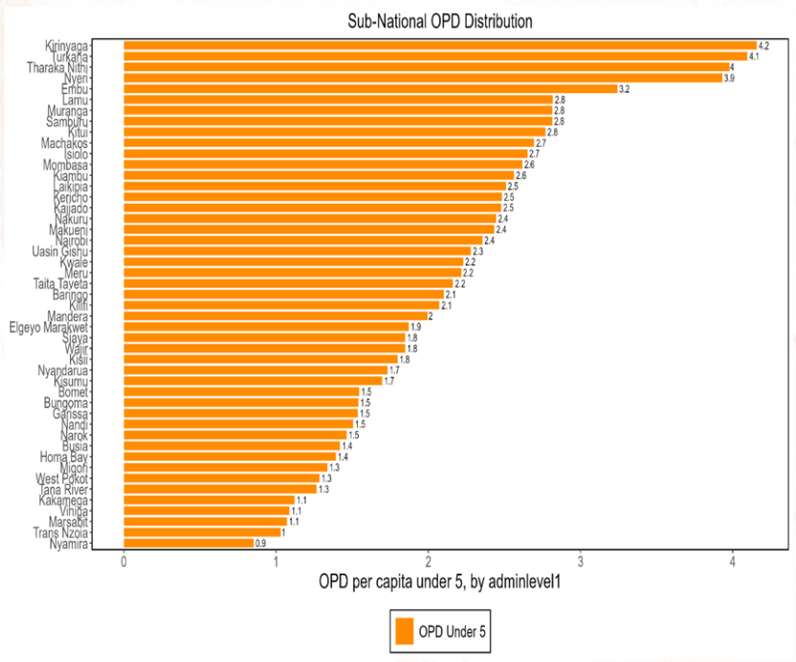
MCH Preventive vs Curative Index

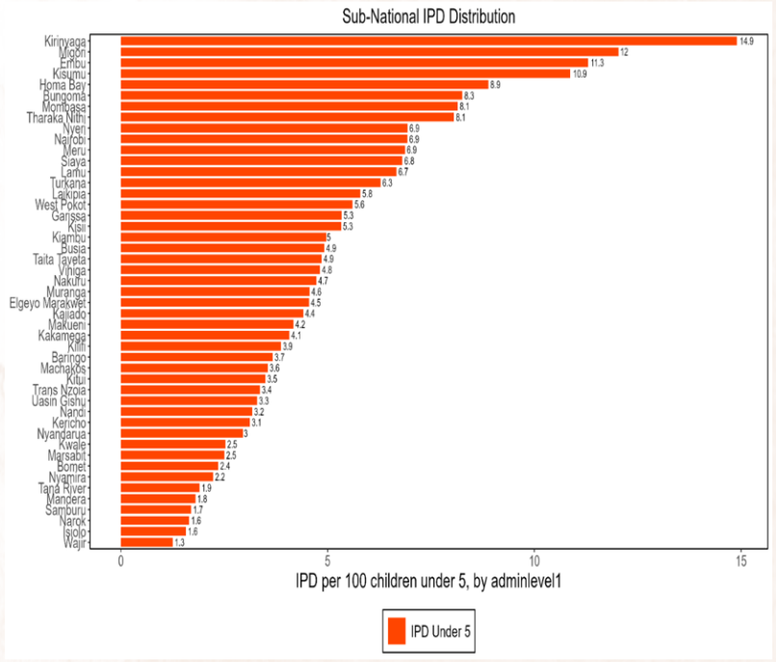


Interpretations

- Most counties cluster in the mid-range on both indices (roughly 2.5-3.5 preventive, 2-3 curative); Kirinyaga is a standout with both high preventive and high curative service use, while Tana River and Nyamira fall into the low-preventive/low-curative quadrant.
- Since this is a service-balance index rather than an outcome measure, it speaks to coverage patterns more than clinical quality of care. Counties sitting in the low-preventive/low-curative quadrant (e.g., Tana River, Nyamira) are the clearest priority for support, since low activity on both fronts is a stronger signal of weak access than a quality problem.

Subnational service utilization





Interpretations

- Nyamira recorded the lowest under-5 OPD utilization (0.9 visits per child), while Wajir had the lowest under-5 IPD admission rate (1.3 admissions per 100 children).
- Low utilization may reflect unmet need, limited access to services, weak referral systems, or incomplete reporting rather than a low disease burden.

County-specific assessments are needed to identify and address barriers to under-5 service utilization while strengthening data quality and referral systems.

6. Health system progress and performance

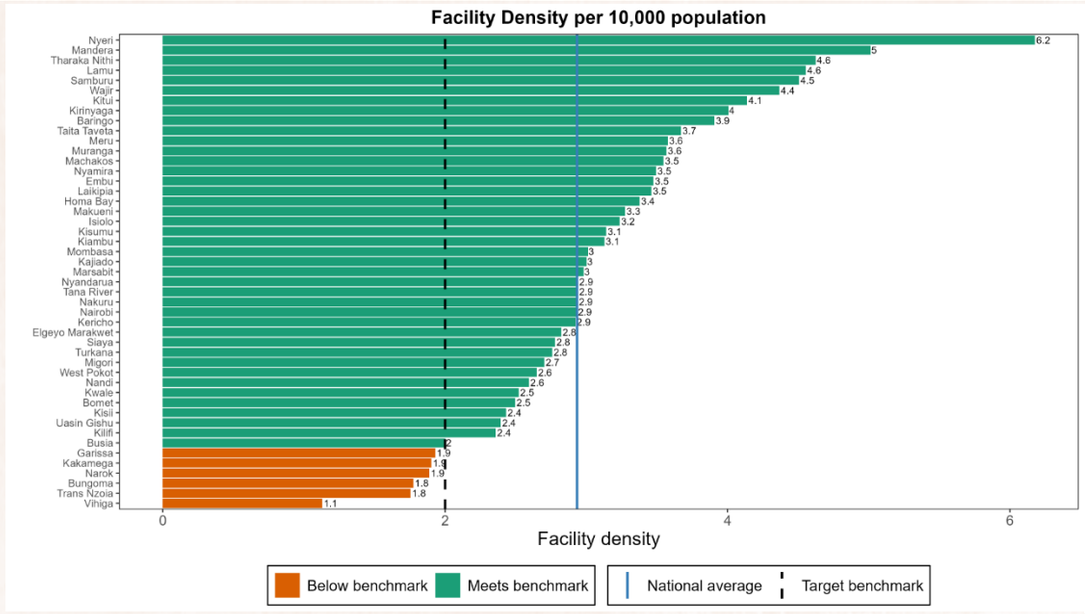
Health system inputs

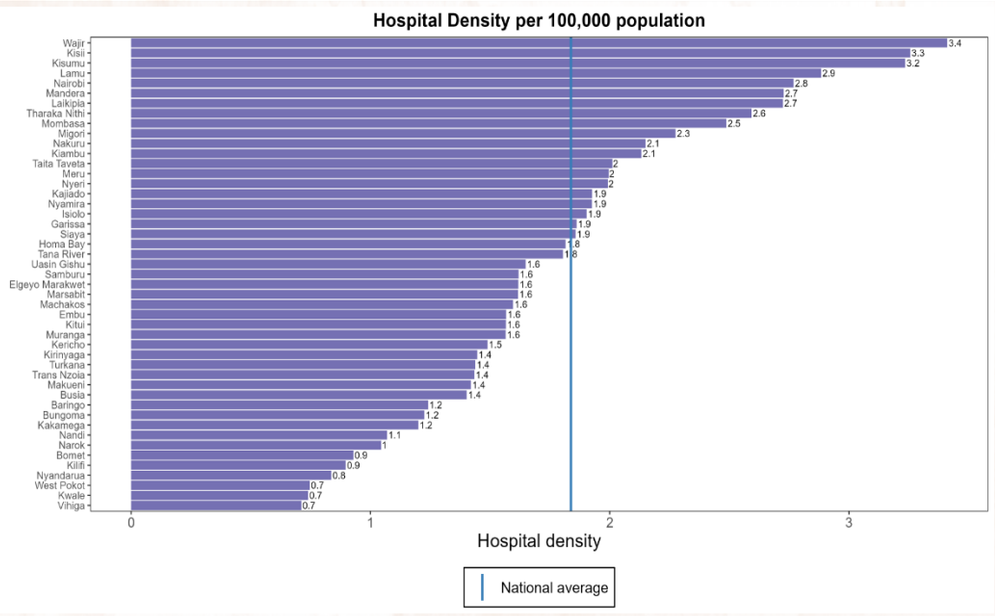
2025		
Indicator	**Value**	**Unit**
Health infrastructure		
Health facility density	2.9	per 10,000
Share of facilities that are hospitals	6.3	%
Hospital density	1.8	per 100,000
Inpatient bed density	3.0	per 10,000
Health workforce		
Health workforce density	10.0	per 10,000
Skills mix ratio nurse-midwives per physician	11.4	
Role of private sector		
Share of Private facilities	49.3	%
Share of NGO facilities	8.5	%

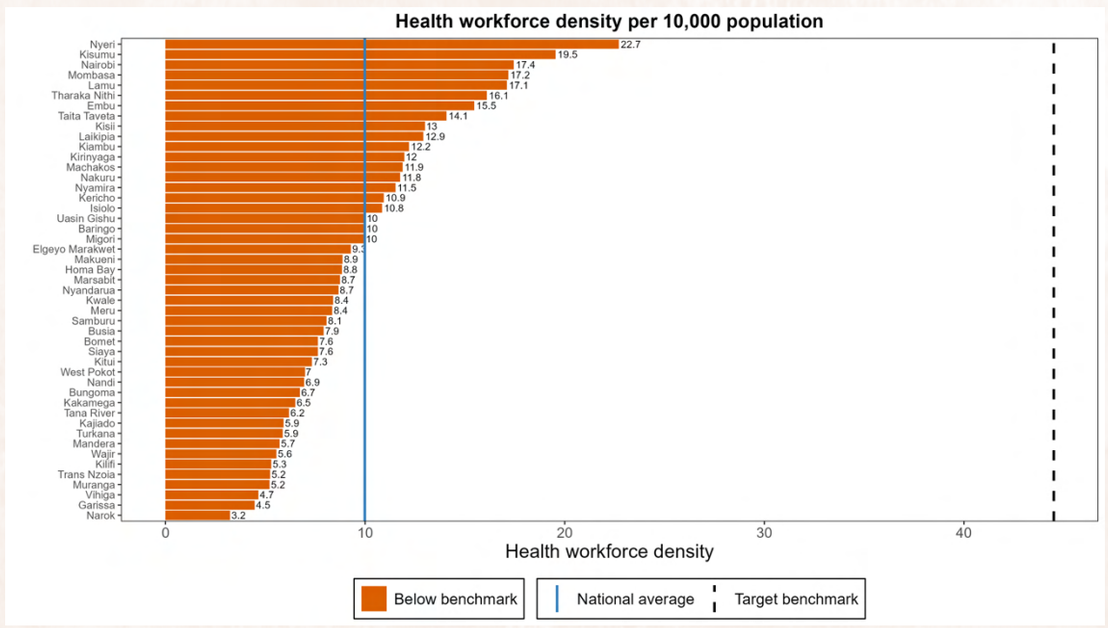
Interpretations

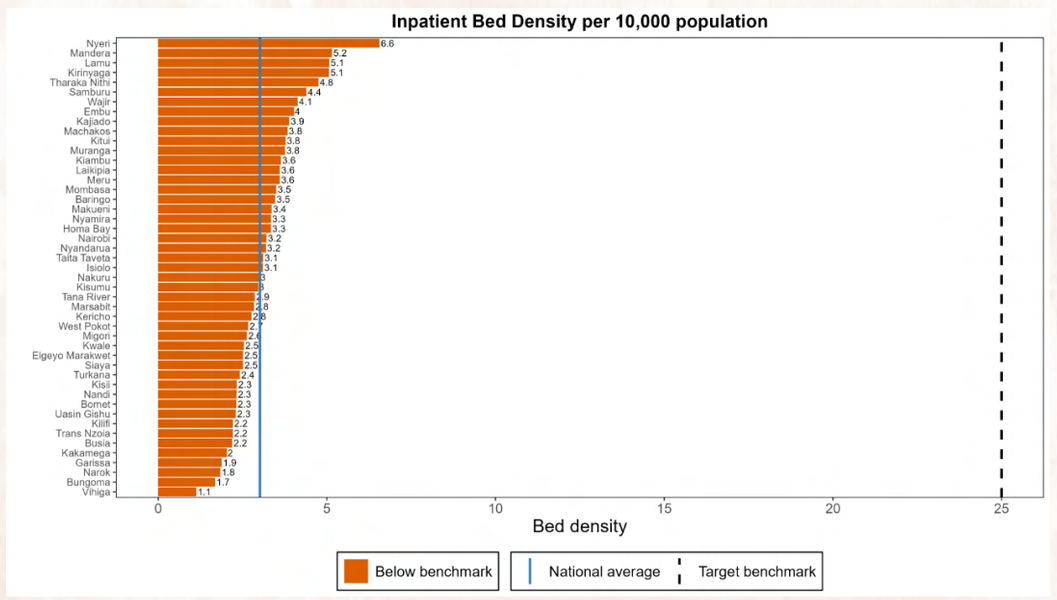
- Private facilities account for 49.3% of all facilities and NGO facilities a further 8.5%.
- Health infrastructure counts (facility, hospital, bed density) look reasonably complete across sectors.
- Kenya's 2025 health facility density (2.9 per 10,000) exceeds the benchmark of 2, indicating adequate physical access nationally.
- However, inpatient bed density (3.0 per 10,000) is far below the benchmark of 25, and health workforce density (10.0 per 10,000) sits well under both the 23-per-10,000 benchmark for major MNCH mortality progress and the 44.5-per-10,000 mark needed for universal health coverage.
- Together this points to a system with an adequate facility footprint but a severe shortfall in beds and skilled health workers relative to what is needed.

Health system inputs by region/province







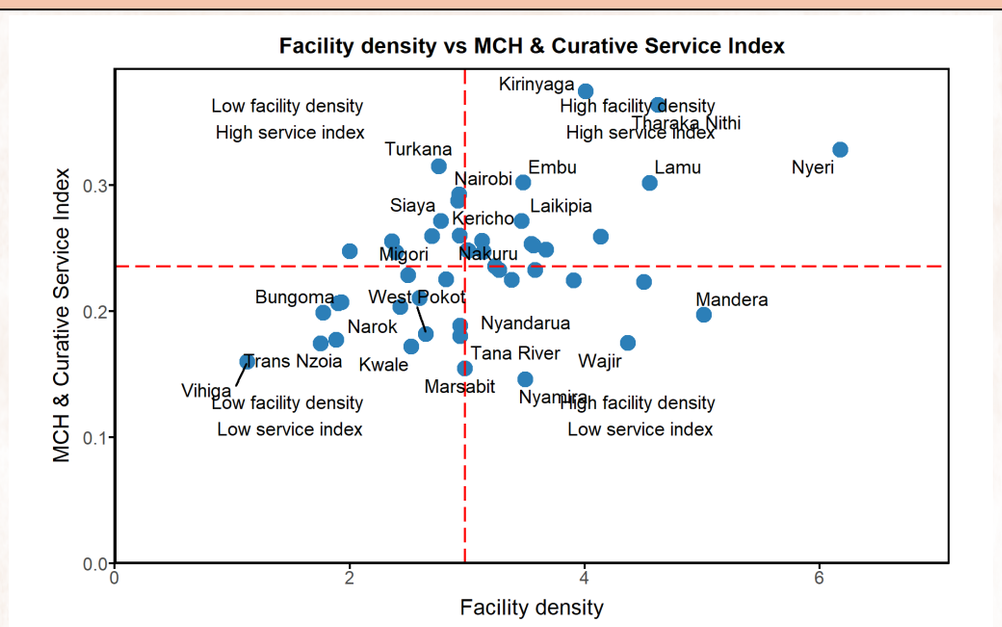


Interpretations

- Most counties (41/47) met the benchmark of ≥2 health facilities per 10,000 population, with Nyeri (6.2) and Mandera (5.0) recording the highest densities, while Vihiga (1.1), Bungoma, and Trans Nzoia were among the lowest.
- No county met the WHO benchmark of 44.5 skilled health workers per 10,000 population. Nyeri (22.7), Kisumu (19.5), and Mombasa (17.2) recorded the highest densities, while Narok (3.2), Garissa, Vihiga, and Murang'a (3.5 each) had the lowest.
- Workforce density did not always mirror facility density, highlighting persistent staffing and retention challenges despite the presence of health facilities.
- Higher facility density was common in sparsely populated ASAL counties, whereas more populous western counties had lower per-capita facility density, indicating that facility density is influenced by population size and does not necessarily reflect service capacity or quality.
- Similarly, no county met the WHO benchmark of 25 hospital beds per 10,000 population, with bed density ranging from 1.1 (Vihiga) to 6.6 (Nyeri), indicating widespread shortages.
- The consistently low bed density across all counties suggests a national infrastructure gap rather than isolated regional disparities.

There is need to allocate health sector resources using a needs-based approach to expand the health workforce, hospital bed capacity, and facility readiness in underserved counties, ensuring that infrastructure investments translate into improved access and quality of care.

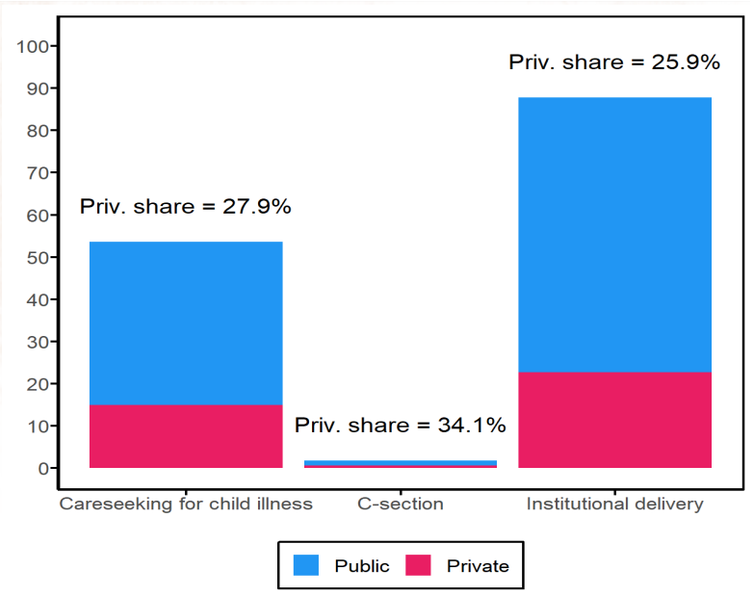
Health system outputs by inputs at the subnational level

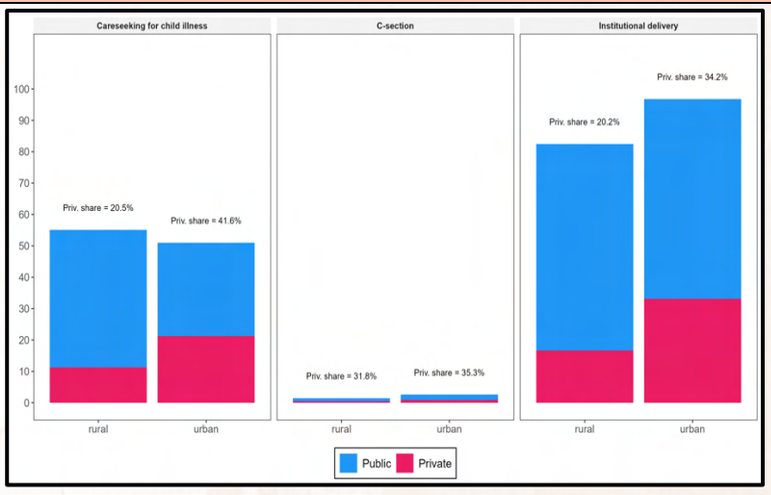


Interpretations

- Facility density vs MCH & Curative service index largely has face validity.
- Better-resourced counties such as Nyeri, Tharaka Nithi, Kirinyaga and Embu (high facility density) also sit in the high-service-index quadrant, consistent with the expectation that more developed, better-resourced counties perform better.
- A few counties break this pattern, notably, Turkana and Siaya, which post a relatively high service index despite modest facility density need a closer look, as this could reflect strong outreach/CHV performance or a data anomaly.
- Good performers (high facility density and high service index): Nyeri, Tharaka Nithi, Kirinyaga, Embu, Lamu. Poor performers (low facility density and low service index): Vihiga, Trans Nzoia, Marsabit, Nyamira, Wajir several of which are historically underserved arid/semi-arid counties, reinforcing known geographic equity gaps in the health system.

Private sector and RMNCAH services





Interpretations

- The private sector accounted for the largest share of C-sections (34.1%), followed by care-seeking for child illness (27.9%) and institutional delivery (25.9%). Although C-section volumes were relatively low, a disproportionate share was provided by private facilities.
- Private-sector utilization was consistently higher in urban than rural areas across all services, with the private share of institutional delivery increasing from 20.2% to ~34% and care-seeking for child illness from 20.5% to ~41%, reflecting greater availability and access to private healthcare in urban settings.

The findings highlight the important role of the private sector in service delivery, particularly in urban areas, emphasizing the need to strengthen public-private partnerships while improving access to quality maternal and child health services in underserved rural communities

COUNTDOWN TO 2030

COUNTRY ANNUAL MEETING

CAM 2026



JUNE 2026