



# LIBERIA

## 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

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## 1

## Health facility data quality assessment: numerators and denominators

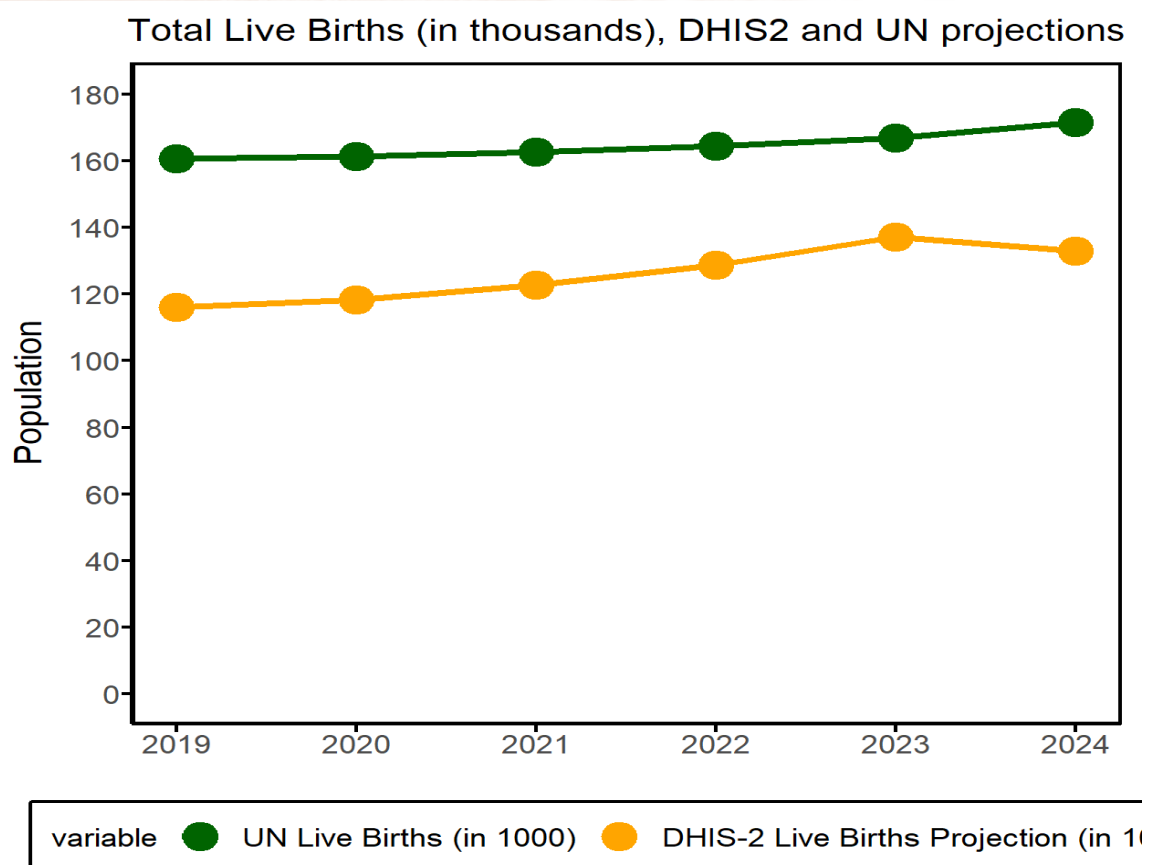
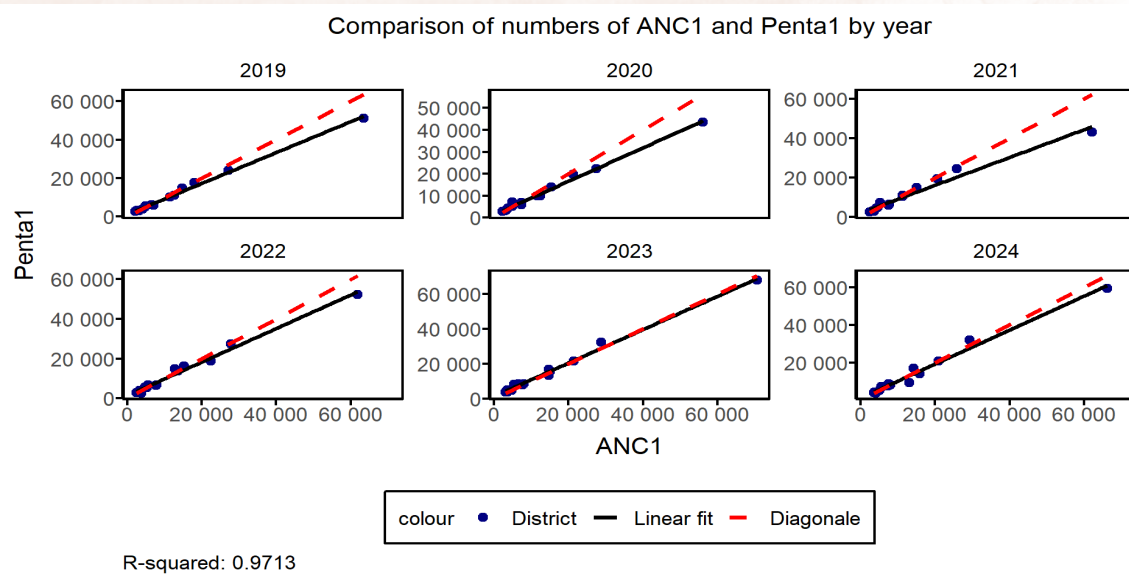
**NUMERATORS:** Routinely reported health facility data are an important data source for health indicators. The data are reported by health facilities on events such as immunizations given, or live births attended. As with any data, quality is an issue. Data are assessed for completeness of reporting 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, 2020-2024

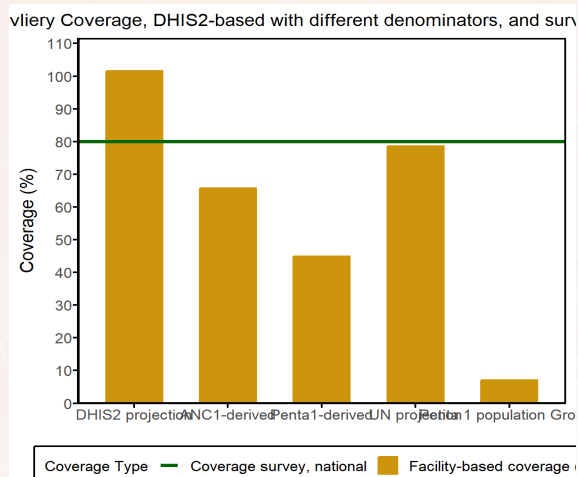
| no                                                                                                    | Data Quality Metrics                                             | 2019      | 2020      | 2021      | 2022      | 2023      | 2024      |
|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>type: 1. Completeness of monthly facility reporting (mean of ANC, delivery, immunization, OPD)</b> |                                                                  |           |           |           |           |           |           |
| 1a                                                                                                    | % of expected monthly facility reports (national)                | 97        | 98        | 97        | 98        | 96        | 99        |
| 1b                                                                                                    | % of districts with completeness of facility reporting $\geq 90$ | 92        | 95        | 93        | 100       | 87        | 100       |
| 1c                                                                                                    | % of districts with no missing values for the 4 forms            | 96        | 99        | 100       | 100       | 100       | 99        |
| <b>type: 2. Extreme outliers (mean of ANC, delivery, immunization, OPD)</b>                           |                                                                  |           |           |           |           |           |           |
| 2a                                                                                                    | % of monthly values that are not extreme outliers (national)     | 90        | 98        | 100       | 99        | 89        | 98        |
| 2b                                                                                                    | % of districts with no extreme outliers in the year              | 83        | 90        | 91        | 86        | 78        | 89        |
| <b>type: 3. Consistency of annual reporting</b>                                                       |                                                                  |           |           |           |           |           |           |
| 3a                                                                                                    | Ratio anc1/penta1                                                | 1.02      | 1.05      | 1.06      | 1.01      | 0.88      | 0.98      |
| 3b                                                                                                    | Ratio penta1/penta3                                              | 1.08      | 1.10      | 1.09      | 1.06      | 1.06      | 1.08      |
| 3c                                                                                                    | % district with anc1/penta1 in expected ranged                   | 67        | 67        | 67        | 40        | 13        | 33        |
| 3d                                                                                                    | % district with penta1/penta3 in expected ranged                 | 100       | 100       | 100       | 80        | 80        | 93        |
| 4                                                                                                     | <b>Annual data quality score</b>                                 | <b>88</b> | <b>91</b> | <b>91</b> | <b>84</b> | <b>74</b> | <b>85</b> |

#### Interpretations

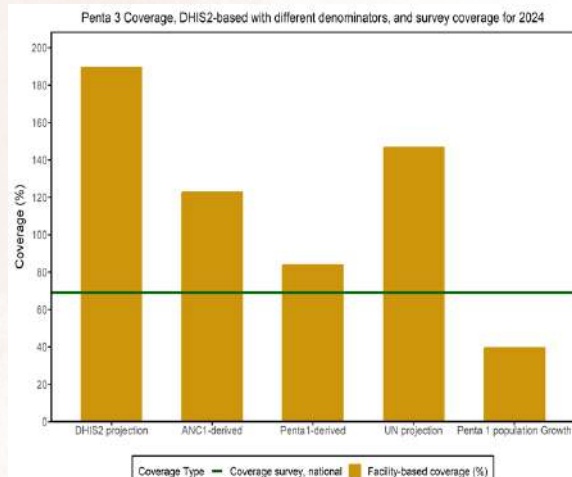
- The completeness of report across various period shows excellent results except in 2024 where the result fails to meet target.
- The fluctuation in the overall data quality score maybe due to some health facilities failure to submit reports on time or at all
- The inconsistency with annual report can 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



## Institutional deliveries



## Penta3



### Interpretations

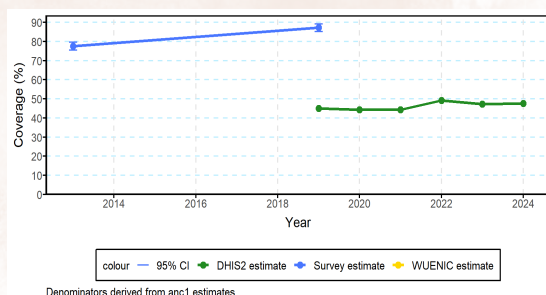
- The national projection of births does not align with the UN projection due to the different methods of fertility assumption
- The best denominator methods at the national level for the live birth coverage and penta3 coverage is DHIS2 projection
- The best denominators for the maternal (instdeliveries) and vaccination (penta3) indicators in the coverage analyses is Penta1 derived

## 2

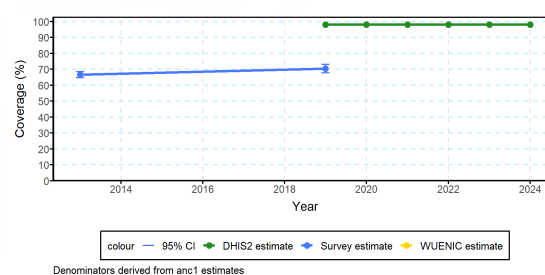
### National coverage trends: facility data and surveys

#### Antenatal care coverage trends

##### Coverage trends for ANC4



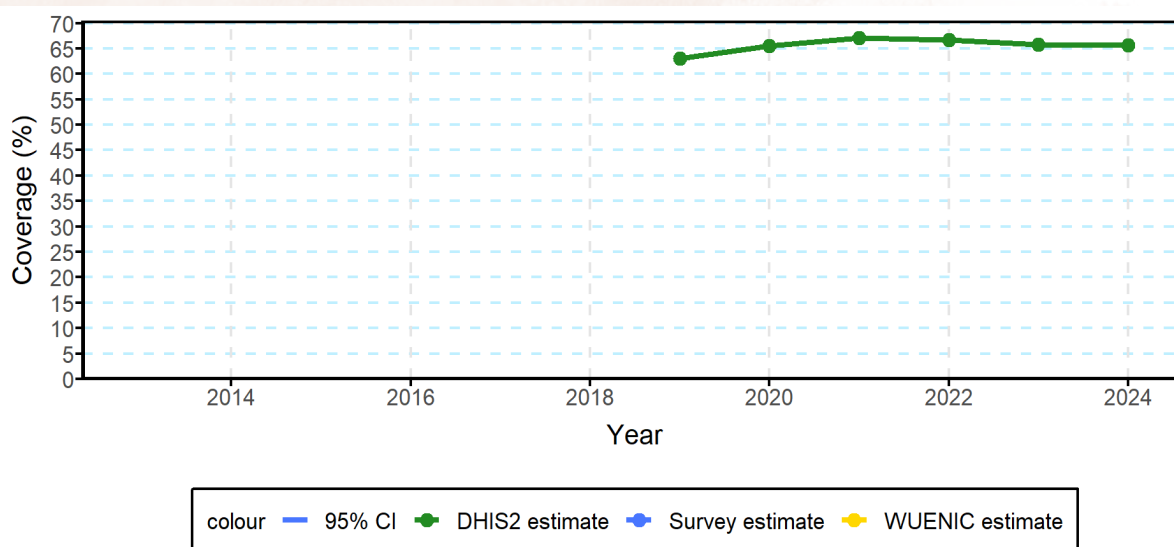
##### Coverage trends for ANC first trimester



### Interpretations

- In 2019, ANC4 coverage for survey estimated was higher the DHIS2 estimate. The DHIS2 projection may underestimated actual pregnancy especially in areas with high growth.
- Conversely, ANC1 coverage was higher for DHIS2 estimate than survey estimate. This may be due to over estimation of the DHIS2 projection or data inflation caused by service providers

## Institutional delivery



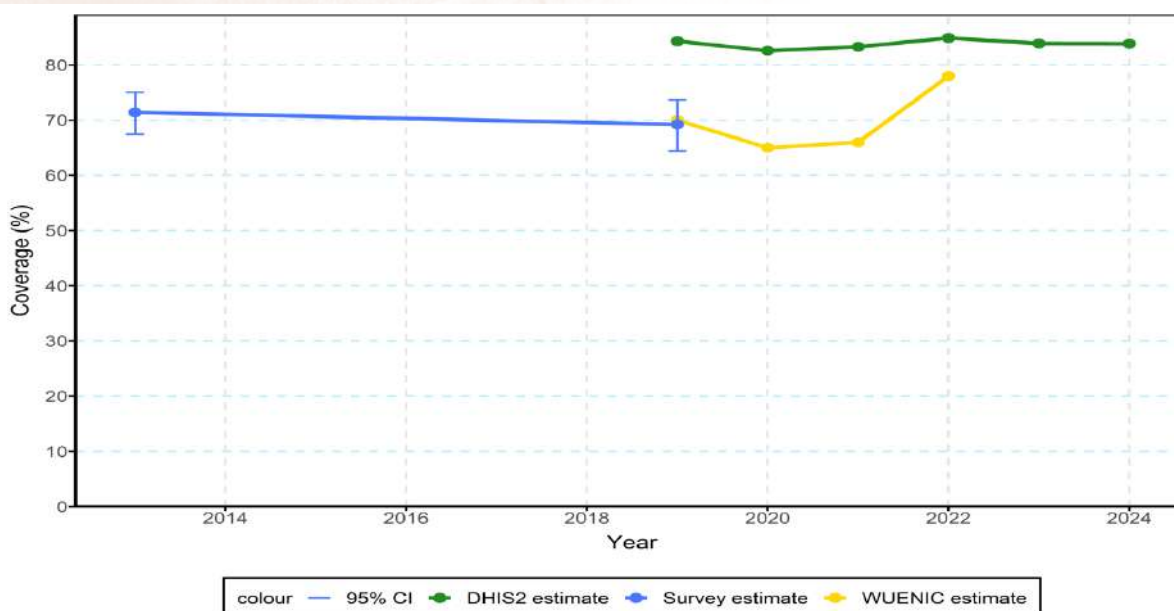
Denominators derived from anc1 estimates

### Interpretations

- Are the levels and trends plausible? Is there good consistency between the facility and survey data?
- How does the coverage perform compared to the targets? Is this a positive trend?

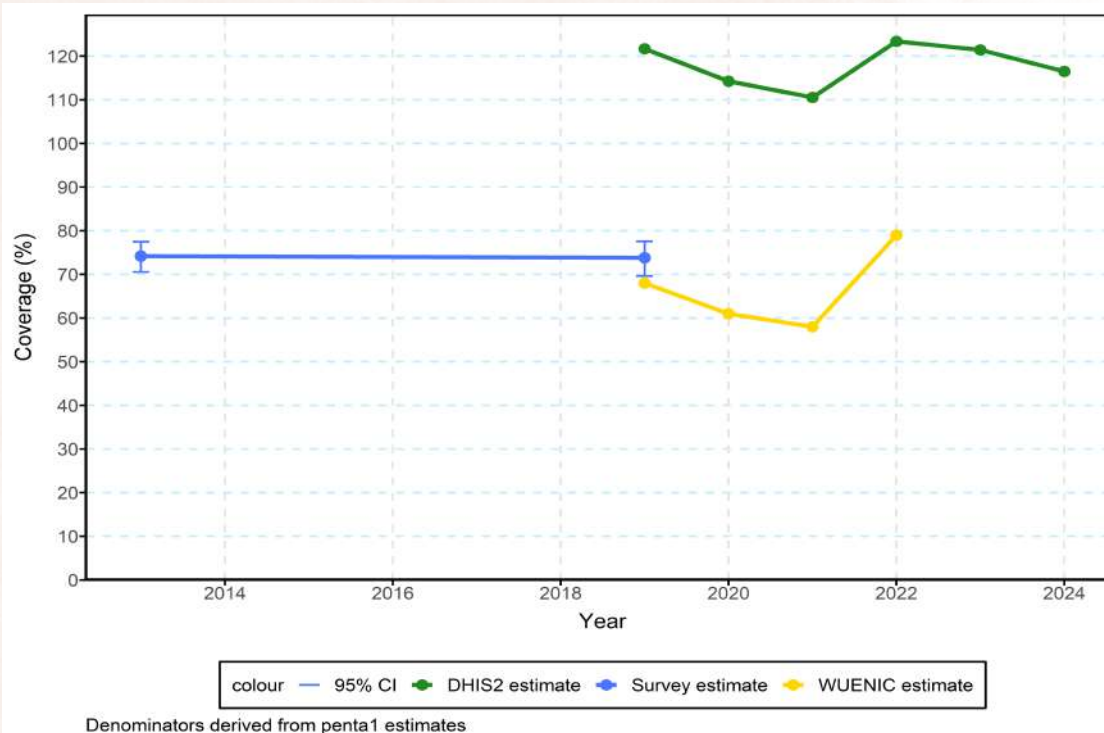
## Immunization : Penta 3, Measles 1

### Pentavalent 3<sup>rd</sup> dose



Denominators derived from penta1 estimates

## Measles 1

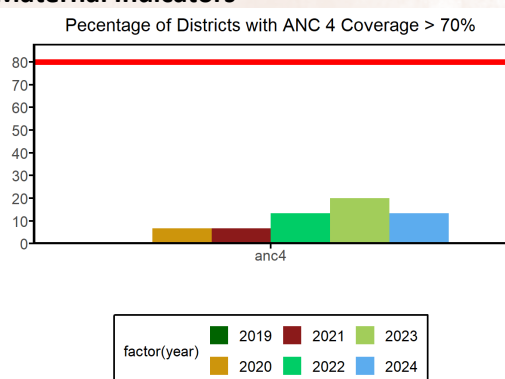


### Interpretations

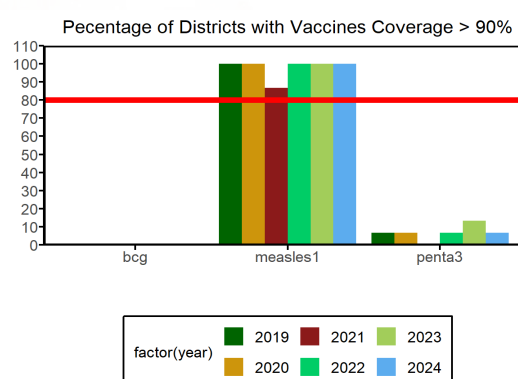
- The levels and trends of the data was not plausible.
- The DHIS2 estimate shows higher coverage of as compared to Survey and WUENIC. The DHIS2 estimate above 100% indicators over estimation of denominator or over reporting.

## Percent of districts achieving high coverage targets

### Maternal Indicators



### Child Health Indicators



### Interpretations

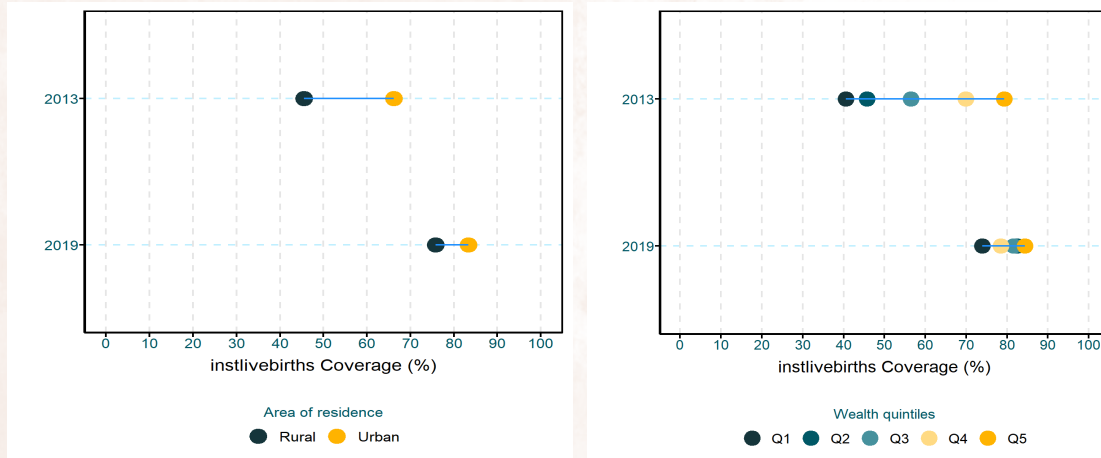
- For ANC4, BCG and penta3, no district achieved the target. However, there is a consistency with the proportion of districts the achieved the measles1 target over time.

# 3

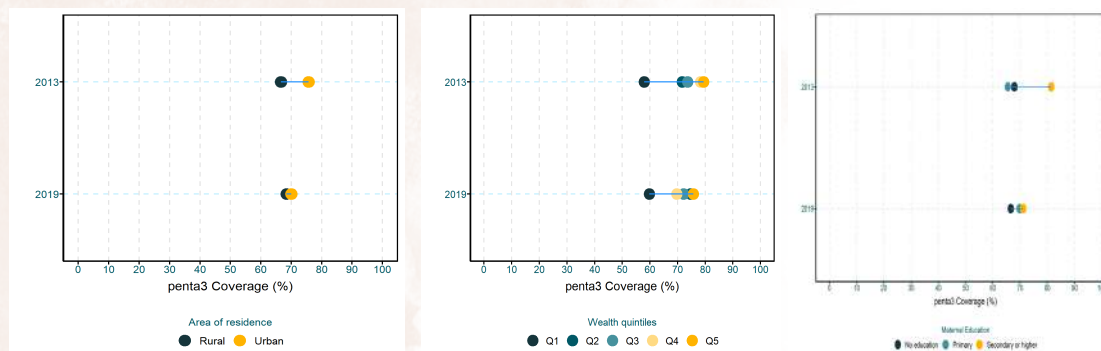
## 3. Coverage Inequalities

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

#### Institutional deliveries



#### Pentavalent 3<sup>rd</sup> dose

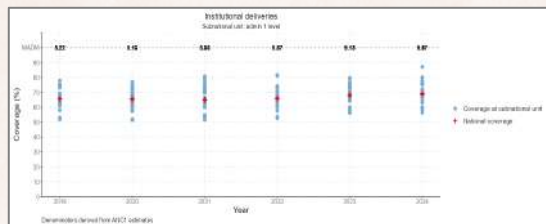


#### Interpretations

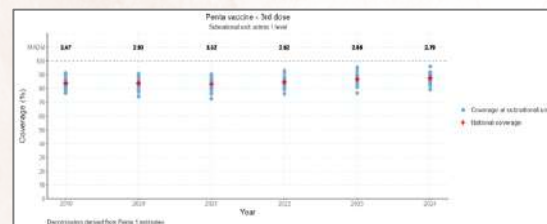
- For institutional delivery, the gap between the rural and urban as well as the poorest and the richest in 2019 is narrowing.
- Similar pattern is observed with penta3 where the gaps between various subgroups gradually closing in 2019
- All subgroups are experiencing increases in coverage nearly at the same pace
- The increase in coverage for all subgroups suggest significant improvement in service delivery

## Geographical inequalities: Health facility data

### Institutional deliveries



### Pentavalent 3<sup>rd</sup> dose



### Interpretations

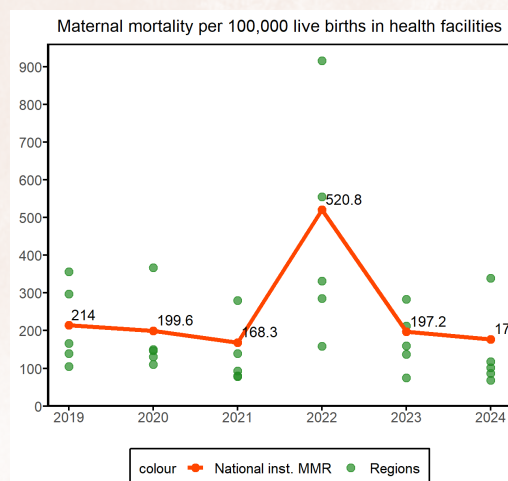
- There was no significant difference between national and subnational coverage over time.
- This pattern suggests that inequality remains relatively constant across the years. The MADM (Mean Absolute Deviation from the Median) estimates slightly fluctuate with no major impact on the coverage.

## 4

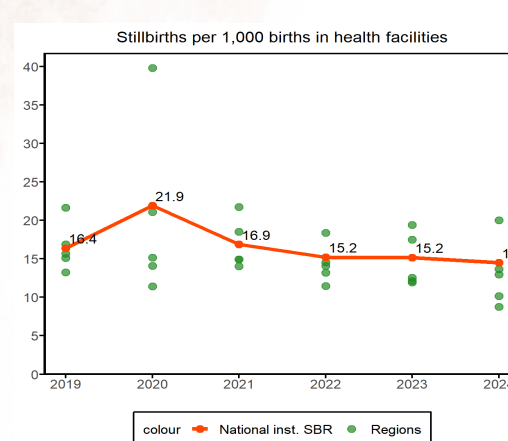
## Institutional mortality

### Institutional Mortality trends (iMMR, iSBR)

#### iMMR



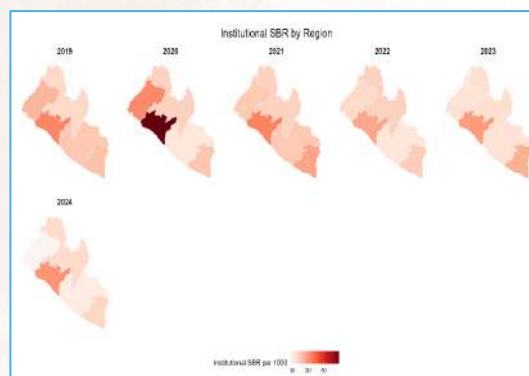
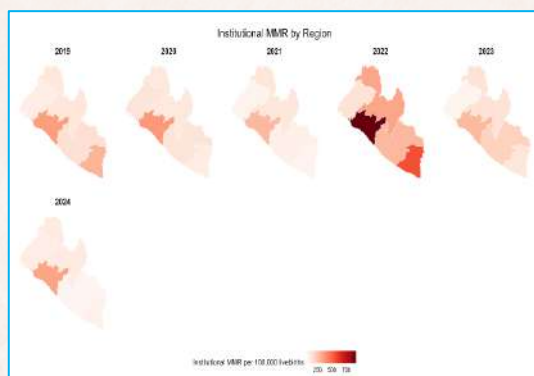
#### iSBR



### Interpretations

- The iMMR and iSBR below and above the national average for the regions indicates variation in health system performance such as access to care and data quality.
- Most service providers see reporting on maternal death as way of in trapping themselves because a case of Maternal death raises serious concerns which can lead to detailed investigation.

## Institutional Mortality by admin1 units

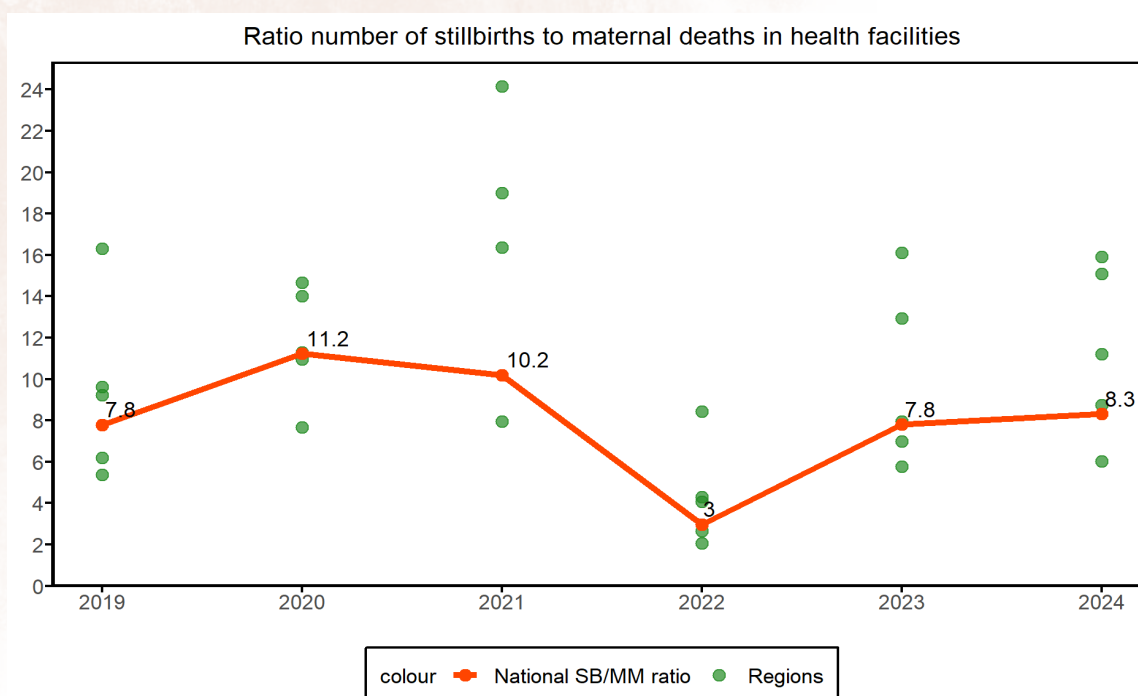


### Interpretations

- South Central and South Eastern B are the 2 highest iMMR regions while northwestern, North Central and Southeastern A are the lowest regions for iMMR
- South Central and northwestern are the best regions for iSBR while north central, Southeastern A and Southeastern B are the lowest. These performances also highlight data quality issues across the regions.

## Data Quality Metrics

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

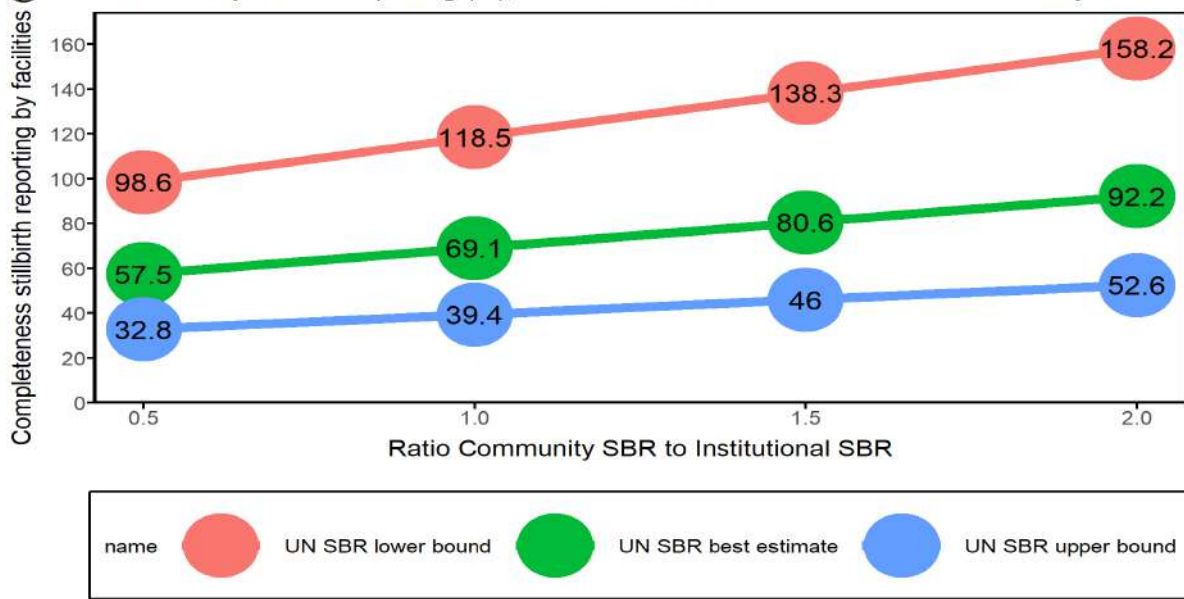


### Interpretations

- On the average, the national ratio falls within the expected range except for one year (2022), indicating underreported of stillbirths (3) in 2022
- Majority of the regions fall above the national ratios
- On the overall, the ratio for both national and regions are within the acceptable range (5-25) which means that the reporting for maternal death and stillbirths are good.

### Estimated completeness of facility maternal death and stillbirth reporting

Completeness of facility stillbirth reporting (%), based on UN stillbirth estimates and community to institutional



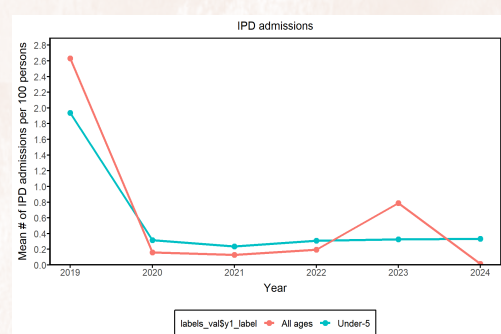
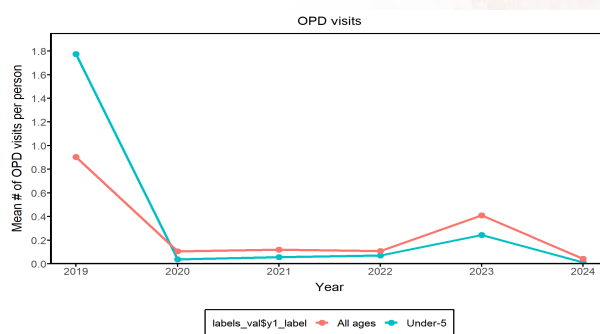
#### Interpretations

- Community to institutional SBR ratio for Liberia is estimated at 0.8 which is between the acceptable range of 0.5 and 1.0.
- The estimated completeness of reporting of institutional MMR and SBR based on the population MMR and the Community to Institutional ratio falls between the best UN estimate of 57.5 and 69.1.

## 5

### Curative health service utilization for sick children

#### Outpatient and inpatient service utilization

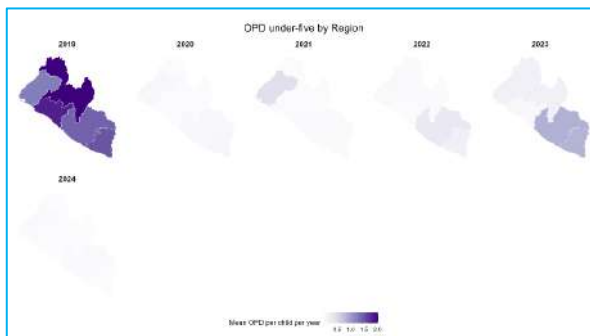


#### Interpretations

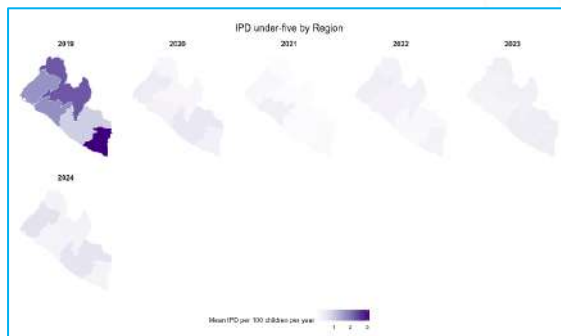
- On average, the OPD (1.8 per 100 persons) and IPD (0.9 per 100p persons) visits for under 5 children is higher than for all ages across the reporting years even though in 2024 the gap is observed to be narrowed for OPV visit.
- Miss recording and reporting of ages by service providers are some potential reasons for the What is the number of OPD visits per child per year during in 2024 and the trend over time? Is it lower than 1 visit per year, which suggests low access?
- Under 5 OPD/IPD visit is a major indicator for the Liberia health system. Therefore, most service provider turn to mainly focus on reporting under 5 indicator to achieve their indicator performance.

## Regional/provincial service utilization

### OPD



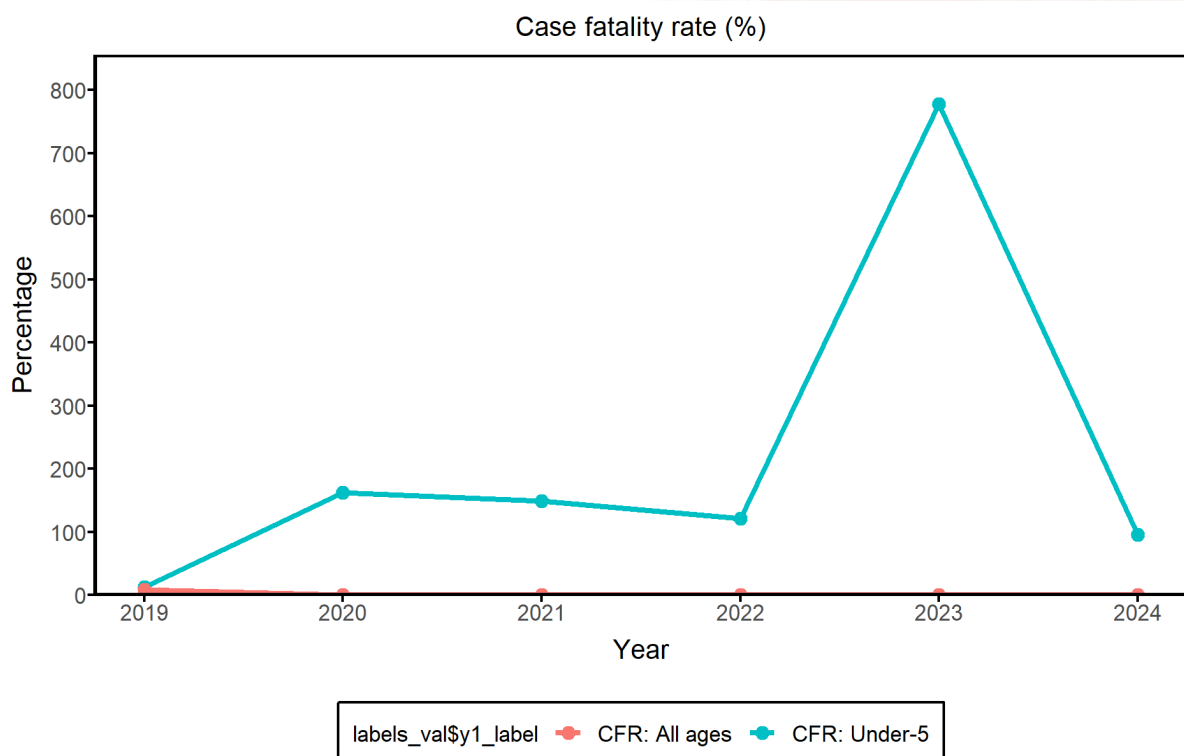
### IPD



#### Interpretations

- North Central and South Central are the only two regions with the highest OPD rate while North West and Southeastern A are had lowest OPD
- For IPD, North Central, Southeastern B, and North Western regions had the high rates while the lowest rates for IPD are found in Southeastern A and South-Central Regions.
- These variations in OPD and IPD visit speak to differences in health system performance across regions.

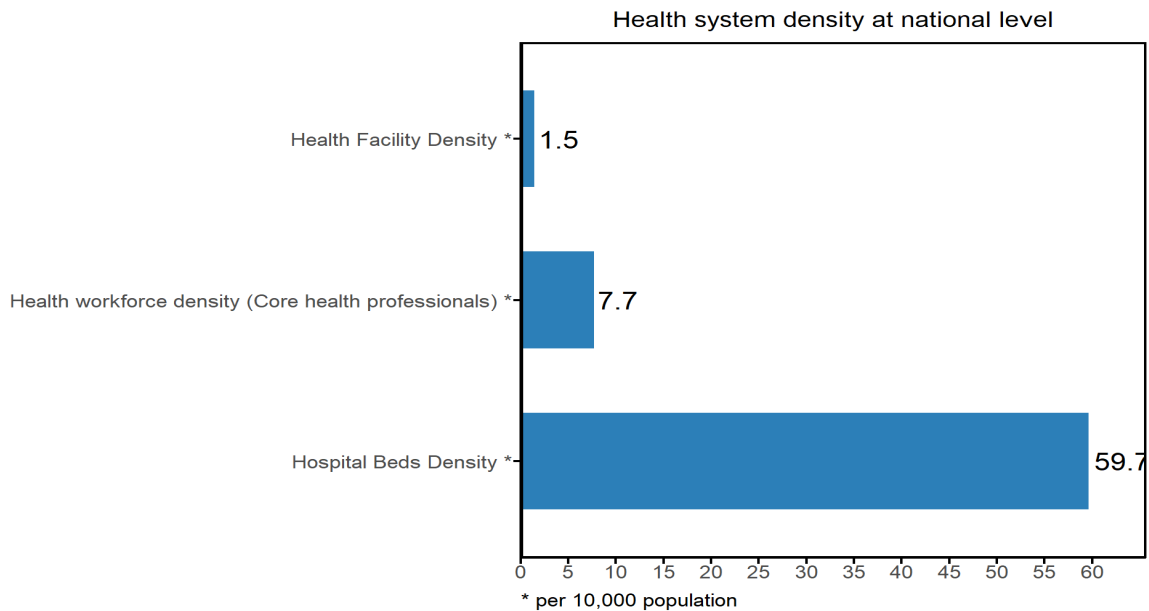
## Case fatality rate among admissions under-fives



#### Interpretations

- In 2019, the Case fatality rate among admissions under and all ages started nearly on the same level.
- Noticeable gap was observed between under 5 and ages death beginning 2020 up to 2022. In 2023 a drastic increase occurred which suggest serious data quality issue
- The decline in 2024 shows improvement in quality of care.

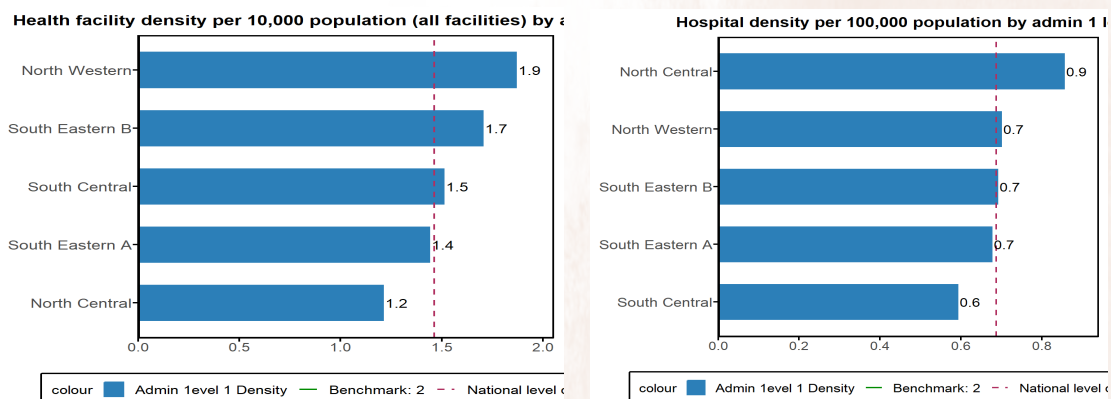
### Health System Inputs



#### Interpretations

- Health Facility Density is below the benchmark (2).
- Bed density is far above the benchmark (25), indicating that on the overall there are more beds than the population. Most of these beds are mainly found in the urban than rural areas
- Health workforce density is low below the benchmark (23)
- Even though, bed density at national level is high, the low health facility and workforce density suggests inadequate access to health services.

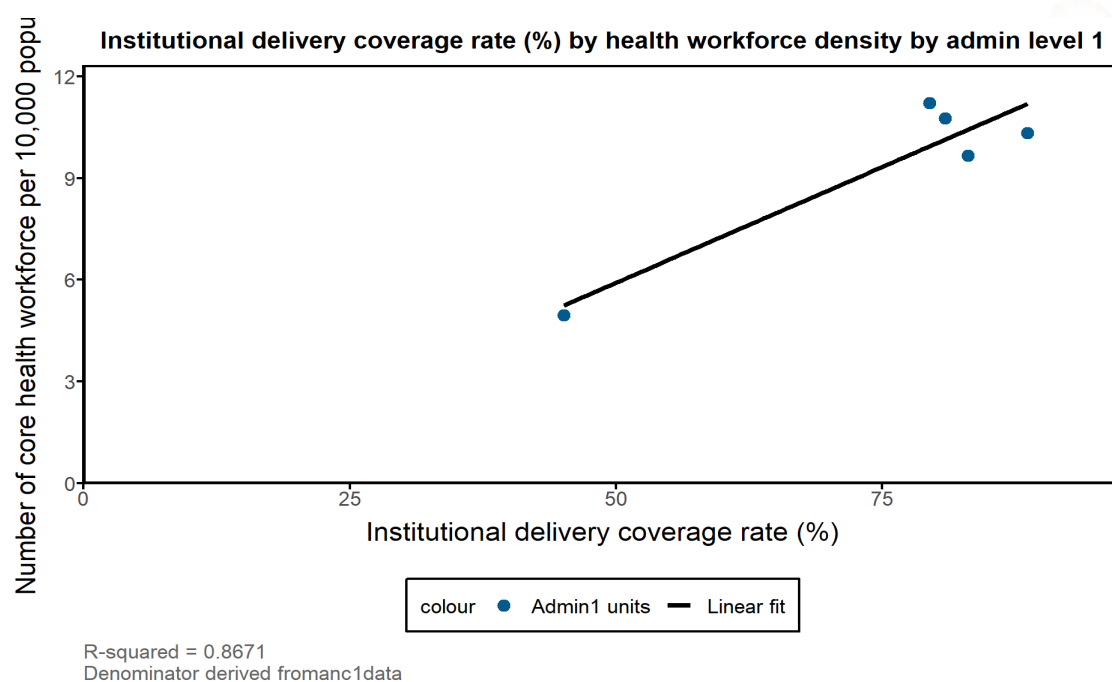
### Health system inputs by region/province



#### Interpretations

- Three regions have the highest facility density above the country average. However, they do not have the highest population.
- Three regions have the highest hospital density above the national average

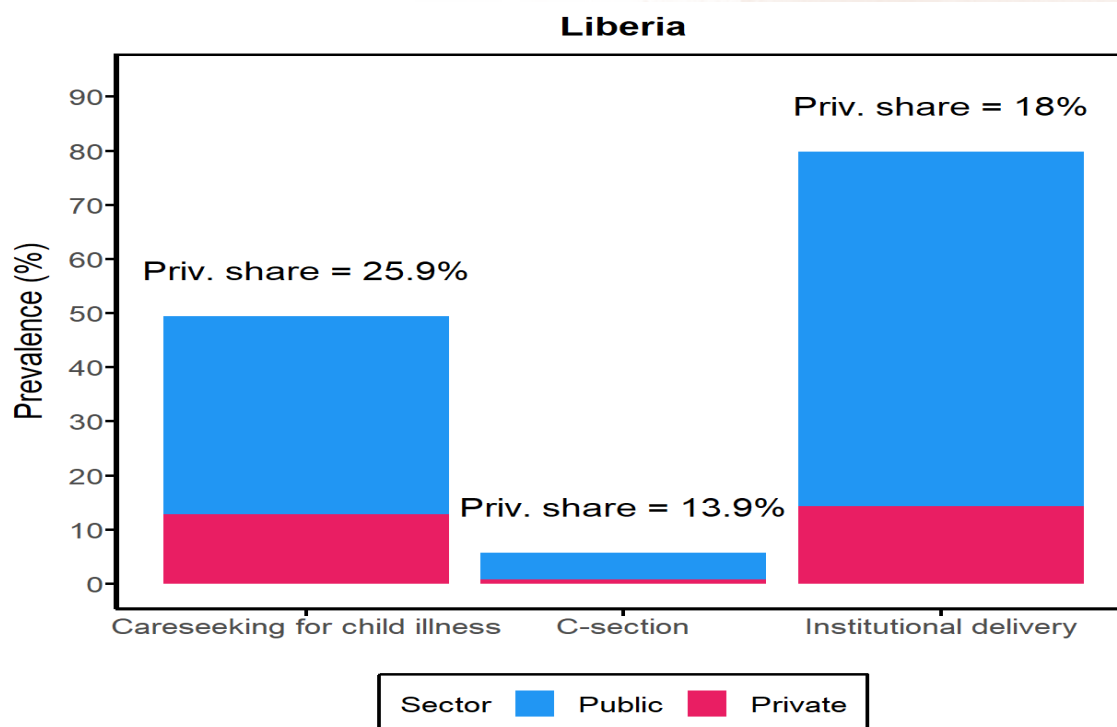
## Health system outputs by inputs at the subnational level



### Interpretations

- Four of the five regions have increase in institutional delivery coverage rate with increase in health workforce density.
- Introducing incentive to increase the health workforce density in the fifth may improve institutional delivery coverage rate in the region.

## Private sector and RMNCAH service



### Interpretations

- The indicators with higher private share is care seeking for child illness.
- Most caregivers believe that private facility provide quality services and reduce waiting time for care than public facility.

**Table of Results (National)**

|                                                                        | 2010 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|------------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| <b>Antenatal Care indicators</b>                                       |      |      |      |      |      |      |      |      |      |      |      |
| <b>ANC early visit, first trimester of pregnancy</b>                   |      |      |      |      |      |      |      |      |      |      |      |
| Survey                                                                 |      |      |      |      |      | 70   |      |      |      |      |      |
| Facility data                                                          |      |      |      |      |      | 87   | 87   | 87   | 87   | 87   | 87   |
| <b>ANC 4 or more visits</b>                                            |      |      |      |      |      |      |      |      |      |      |      |
| Survey                                                                 |      |      |      |      |      | 87   |      |      |      |      |      |
| Facility data                                                          |      |      |      |      |      | 40   | 39   | 39   | 44   | 42   | 42   |
| <b>Intermittent preventive therapy second dose (IPT2)</b>              |      |      |      |      |      |      |      |      |      |      |      |
| Survey                                                                 |      |      |      |      |      | 40   |      |      |      |      |      |
| Facility data                                                          |      |      |      |      |      | 33   | 42   | 47   | 46   | 39   | 40   |
| <b>Maternal and newborn health indicators</b>                          |      |      |      |      |      |      |      |      |      |      |      |
| <b>Institutional delivery</b>                                          |      |      |      |      |      |      |      |      |      |      |      |
| Survey                                                                 |      |      |      |      |      | 80   |      |      |      |      |      |
| Facility data                                                          |      |      |      |      |      | 56   | 58   | 60   | 59   | 58   | 58   |
| <b>Caesarean section rate among all live births</b>                    |      |      |      |      |      |      |      |      |      |      |      |
| Survey                                                                 |      |      |      |      |      | 6    |      |      |      |      |      |
| Facility data                                                          |      |      |      |      |      | 4    | 3    | 2    | 3    | 8    | 1    |
| <b>Postnatal care within 48 hours</b>                                  |      |      |      |      |      |      |      |      |      |      |      |
| Survey                                                                 |      |      |      |      |      |      |      |      |      |      |      |
| Facility data                                                          |      |      |      |      |      |      |      |      |      |      |      |
| <b>Low birth weight (&lt; 2500 g) among institutional live births</b>  |      |      |      |      |      |      |      |      |      |      |      |
| Survey                                                                 |      |      |      |      |      | 10   |      |      |      |      |      |
| Facility data                                                          |      |      |      |      |      | 2    | 2    | 2    | 1    | 2    | 1    |
| <b>Child Health Indicators - Immunization</b>                          |      |      |      |      |      |      |      |      |      |      |      |
| <b>Immunization: three doses of DTP / pentavalent vaccine coverage</b> |      |      |      |      |      |      |      |      |      |      |      |
| Surveys                                                                |      |      |      |      |      | 69   |      |      |      |      |      |
| Facility data                                                          |      |      |      |      |      | 84   | 83   | 83   | 85   | 84   | 84   |
| UN estimates                                                           |      |      |      |      |      | 70   | 65   | 66   | 78   |      |      |

| Measles vaccination (MCV1) coverage                           |  |  |  |  |  |      |      |      |      |      |      |
|---------------------------------------------------------------|--|--|--|--|--|------|------|------|------|------|------|
| Surveys                                                       |  |  |  |  |  | 74   |      |      |      |      |      |
| Facility data                                                 |  |  |  |  |  | 122  | 114  | 111  | 123  | 121  | 116  |
| UN estimates                                                  |  |  |  |  |  | 68   | 61   | 58   | 79   |      |      |
| Measles vaccination (MCV2) coverage                           |  |  |  |  |  |      |      |      |      |      |      |
| Surveys                                                       |  |  |  |  |  |      |      |      |      |      |      |
| Facility data                                                 |  |  |  |  |  | 32   | 44   | 52   | 68   | 68   | 63   |
| UN estimates                                                  |  |  |  |  |  | 13   | 30   | 35   | 59   |      |      |
| Family Planning                                               |  |  |  |  |  |      |      |      |      |      |      |
| Demand for modern methods satisfied                           |  |  |  |  |  |      |      |      |      |      |      |
| Surveys                                                       |  |  |  |  |  |      |      |      |      |      |      |
| FPET estimate                                                 |  |  |  |  |  | 48   | 49   | 50   | 50   | 50   | 51   |
| Institutional Mortality                                       |  |  |  |  |  |      |      |      |      |      |      |
| MMR                                                           |  |  |  |  |  | 414  | 200  | 168  | 521  | 197  | 177  |
| SBR                                                           |  |  |  |  |  | 16   | 22   | 17   | 15   | 15   | 15   |
| NMR                                                           |  |  |  |  |  | 6    | 5    | 6    | 2    | 5    | 5    |
| Curative Health service utilization for children under-five * |  |  |  |  |  |      |      |      |      |      |      |
| N OPD visits per child per year                               |  |  |  |  |  | 1.78 | 0.04 | 0.05 | 0.07 | 0.24 | 0.01 |
| N admissions per 100 children per year                        |  |  |  |  |  | 1.93 | 0.32 | 0.24 | 0.31 | 0.33 | 0.33 |

**Selected denominator (Health facility data):**

Maternal indicators: **ANC1**

Child health indicators: **Penta1**