

ASSESSMENT OF INDICATORS FOR
REPRODUCTIVE, MATERNAL, NEWBORN,
CHILD, AND ADOLESCENT HEALTH
(RMNCAH) 1980–2021



MINISTRY OF HEALTH
Republic of Liberia

University
of Liberia



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



African Population and
Health Research Center

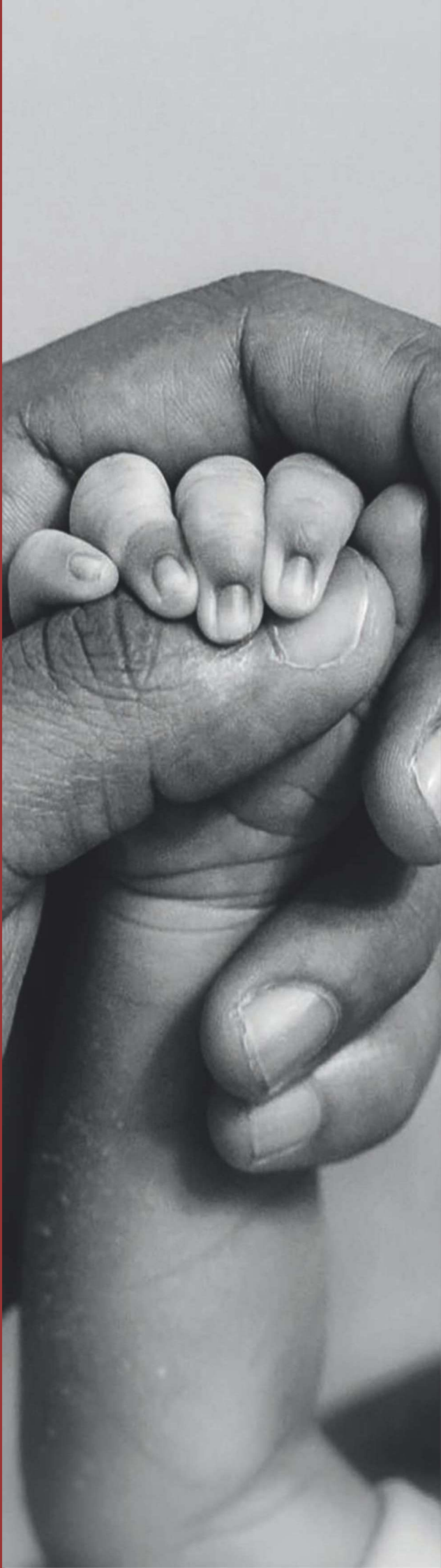
REPORT

LIBERIA COUNTDOWN TO 2030 COUNTRY
COLLABORATION



FEBRUARY 2026





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ASSESSMENT OF INDICATORS FOR
REPRODUCTIVE, MATERNAL, NEWBORN,
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(1980–2021) RMNCAH

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It is with great honour that I present the Liberia Countdown 2030 Research Report 2024. This report comes at a critical moment in Liberia's national development journey, as Liberia continues to consolidate progress toward the Sustainable Development Goals (SDGs) and the African Union's Agenda 2063. The findings and insights captured herein provide both a reflection of where we stand today and a roadmap of where we must go in the remaining years to 2030.

FOREWORD

The report is an assessment of indicators for Reproductive, Maternal, Newborn, Child, and Adolescent Health (1980–2021) that provides an in-depth analysis of the trends and patterns of RMNCAH indicators in Liberia. The study, conducted by the Institute for Population Studies, University of Liberia (IPS-UL), and the African Population and Health Research Center (APHRC), aims to inform the review and revision of National Health Policies and Strategies.

Liberia's commitment to improving the lives of its people has been tested by numerous challenges, from economic shocks to public health crises. Yet, the resilience of the people, the communities, and the dedication of communities, and the support of development partners continue to keep Liberia on a path of hope and transformation. The Countdown to 2030 is more than a benchmark—it is a call to action, reminding us that the urgency to accelerate progress has never been greater.

The report recommends strengthening adolescent reproductive health programs, improving the quality of ANC services, and addressing the unmet need for contraception. It also emphasizes prioritizing investments in underserved counties to close equity gaps and improving infrastructure and human resources, especially in hard-to-reach areas. It also suggests that the government should enhance poverty reduction strategies to address early motherhood and increase access to family planning services.

As we look ahead, the insights from this report must serve as a guide for policymakers, civil society, the private sector, and international partners. The path to 2030 will demand innovation, accountability, and collaboration across all levels of society. Together, we must harness data, amplify voices from all communities, and implement evidence-based solutions that will secure a healthier, more prosperous, and more equitable future for Liberia.

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LIST OF ACRONYMS

ANC4	Antenatal Care with 4 or more visits
BPHS	Basic Package of Health Services
CD2030	Countdown 2030
CHAs	Community Health Assistants
DHS	Demographic and Health Survey
EmONC	Emergency Obstetric and Newborn Care
EVD	Ebola Virus Disease
GFF	Global Financing Facility
GOL	Government of Liberia
HIS	Health Information System
HSRP	Health Sector Recovery Plan
IC	Investment case
Indelv	Institutional Delivery
LARCs	Long-Acting Reversible Contraceptives
LISGIS	Liberia Institute for Statistics and Geo-Information Services
LSHTM	London School of Hygiene and Tropical Medicine
MDGS	Millennium Development Goals
MoH	Ministry of Health
NHPP	National Health Policy and Plan
OLS	Ordinary Least Squares
OPD	Outpatient Department
PAPD	Pro-poor Agenda for Development and Prosperity
PHC	Primary Health Care
PRS	Poverty Reduction Strategy
RMNCAH	Reproductive, Maternal, Newborn, Child, and Adolescent Health
SARA	Service Availability and Readiness Assessment
SBA	Skilled Birth Attendants
SDGs	Sustainable Development Goals
SRMNCAH	Sexual, Reproductive, Maternal, New-Born, Child and Adolescent Health

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EXECUTIVE SUMMARY

Introduction

Following the end of the 15-year conflict in Liberia in 2003, the major objectives of the successive governments of Liberia embarked upon a campaign to consolidate the peace, reduce poverty, and enhance the entire livelihood of its population through the expansion of economic growth and improved health services. To sustain these objectives, past and current governments considered improved health services as part of Liberia's current and past development paradigm, including the ARREST¹ and PAPD² agenda. The government considers the availability and quality of health services a major development issue.

The 2016-2022 investment case (IC) for Liberia targeted some fully inaccessible counties of Grand Kru, River Gee, Sinoe, Rivercess, Grand Bassa, and Gbarpolu because of the inadequacy of maternal and neonatal health (MNH) and other services that seem to affect the safe motherhood regime in these counties. For example, the 2016-2022 investment case (IC) for Liberia targeted Grand Kru, River Gee, Sinoe, Rivercess, Grand Bassa, and Gbarpolu because of the inadequacy of maternal and neonatal health (MNH) and other services that seem to affect the safe motherhood regime in these counties. This seems to have serious implications for services intended to address the problems affecting Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCAH).

1. In this report, we present findings from the review of the state of RMNCAH in Liberia from 1980 to 2021, with a particular focus on tracking the levels of progress in RMNCAH indicators from 2007 to 2020. The specific objectives of the review were to; evaluate the trends and patterns in key RMNCAH indicators, including maternal health service utilization (ANC coverage, skilled birth attendance), adolescent reproductive health (early childbearing, contraceptive use), child health (immunization, nutrition, and careseeking), and newborn outcomes (neonatal mortality, immediate postnatal care).
2. Examine disparities across geographic regions, wealth quintiles, educational levels, age groups (particularly adolescents), and rural-urban divides to identify populations that are underserved or at higher risk of poor health outcomes.

Objective, methods, and scope

The purpose of this report was to conduct an in-depth analysis of routine RMNCAH data and any other relevant evidence (from 1980-2021) to inform the review and revision of national health policies, strategies, and plans.

The methods were mainly based on secondary data from Demographic and Health Surveys prior to (1980) and after the 15-year civil conflict (1999/2000, 2007, 2013, and 2019). The study also used relevant data from the health information system (HIS) and annual reports. COVID data

¹ Agriculture & Infrastructure, Roads and Rule of Law, Reconciliation, Education and Energy, Sanitation & Security, and Technology and Tourism

² Pro-poor Agenda for Development and Prosperity



from the DHIS2 and HIS was analyzed using an Ordinary Least Squares (OLS) regression model to show its impact on health services. The 2008 census data (from LISGIS) was used to estimate fertility information during the study. Some basic qualitative information on the proximate determinants (e.g., traditional beliefs, religious services, road network, electricity, etc.) of RMNCAH indicators was obtained from workshop participants during the national and county-level disseminations.

Although the scope of the study focused on RMNCAH in the fifteen counties of Liberia, it prioritizes the six most vulnerable and hard-to-reach counties (in terms of low RMNCAH indicators), namely Grand Kru, River Gee, Sinoe, Grand Bassa, Rivercess, and Gbarpolu.

Results

1. Over time, there was a decline in national under-5 mortality rates, which was mainly influenced by reduced mortality in the population aged 1-4 or in the post-neonatal period (1-11 months). By contrast, neonatal mortality increased from 26 per 1,000 live births in 2013 to 37 per 1,000 live births in 2019/20, mainly owing to increased mortality on days 0 and 1 of life.
2. Maternal mortality increased by 8 per 100,000 between 2007 and 2013. Later, the indicator declined by 15 per 100,000 from 2013 to 2019/20, with 913 deaths per 100,000 live births. However, these changes were not statistically significant.
3. Adolescents (15-19 yrs.) who had begun childbearing declined minimally from 32% in 2007 to 30% in 2019/20;
4. The prevalence of modern contraceptives increased from 10% to 24% in the period under review (2007, 2013, and 2019/20). while the unmet need for contraception slightly decreased and then increased from 36% in 2007 to 33% in 2019/2020.
5. ANC first attendance was at least 94% between 2007 and 2019, with an enormous increase in 4+ ANC 4 times attendance (66% in 2007, 87% in 2019/20)
6. Institutional delivery increased from 37% in 2007 to 80% in 2019/20, with most of the increase in lower-level (clinics) public health facilities (27% in 2007, 66% in 2019/20) observed and home deliveries reducing from 61% in 2007 to 19% in 2019/20.
7. Nearly all facilities (99.6%) employed at least one SBA; 94.7% employed at least one nurse; 77.6% employed at least one midwife; and 35.0% employed at least one doctor in 2018. However, surprisingly, 48.5% of all facilities could provide at least BEmONC-1, and 29% of births were in facilities that can provide CEmOC in 2018.

Regarding newborn care immediately after birth, only 60% of births practice immediate breastfeeding, with no change observed between 2007 and 2019.

- The percentage of age-appropriate vaccinations decreased from 50% in 2013 to 39% in 2019/20. Trends in under-5 stunted children improved by 9 percent from 2007 to 2019/20, with most of the improvement (7 percentage points) taking place from 2007 to 2013.
- Children with anemia increased from 63% in 2009 to 77% in 2016 and later declined to 71% in the 2019/20 DHS



Conclusion and Policy Recommendations

Liberia has made notable progress in maternal health service utilization, particularly in ANC attendance and skilled birth attendance. However, persistent challenges, including high adolescent fertility, unmet contraceptive needs, and suboptimal malaria prevention in pregnancy, underscore the need for targeted interventions.

Key policy recommendations include:

- a) Strengthen adolescent reproductive health programs by scaling up comprehensive sexuality education, youth-friendly services, and school/community outreach to reduce early childbearing.
- b) Enhance ANC quality and completeness through consistent supply chains, health worker training, and improved monitoring of IPTp coverage and service integration.
- c) Address contraceptive unmet need by expanding community-based distribution, reducing stigma, involving men, and supporting informed reproductive decision-making.
- d) Prioritize investments in underserved counties, focusing on infrastructure, health workforce deployment, and tailored service delivery approaches to close equity gaps.

Sustained, multisectoral action is required to consolidate gains, address entrenched inequities, and accelerate progress toward universal access to quality RMNCAH services by 2030.



INTRODUCTION CONTEXT AND BACKGROUND

1.1 Introduction, Context, and Background

Following the end of the 15-year conflict in Liberia in 2003, and the conduct of two successive terms of democratic elections since 2005, the successive governments of Liberia embarked upon a campaign to consolidate the peace, reduce poverty and enhance the entire livelihood of its population through the stimulation of economic growth, underpinned by enhanced health services, transparency and good governance.

Hence, good governance, the expansion of economic growth and improved health services became the major objectives of the Government of Liberia (GOL). To sustain these objectives, past and current governments considered improved health services as part of Liberia's development paradigm. For example, the Pro-poor Agenda for Development and Prosperity (PAPD) considers the availability and quality of health services as a major and critical development issue.

1.2 Context

It has been revealed that one of the key issues affecting Liberia prior to and after the 15-year civil conflict is the low level of health service delivery, which is influenced by the lack of a health coverage package for its population. Although some of these indicators have improved over the years, the lack of a sustained health stimulus package could have implications for the high and unfavorable level of mortality indicators, such as low expectation of life at birth, high maternal and infant, child, and the entire under-five mortality levels. Other unfavorable health indicators include, but are not limited to, youth reproductive health services (including low family planning services) among the adolescent population and the resultant high teenage pregnancy; low male rate of commitment to family planning services, etc. There also seems to be low services for the entire safe motherhood regime, particularly in hard-to-reach areas like Grand Kru, River Gee, Sinoe, Rivercess, Grand Bassa and Gbarpolu. Safe motherhood is a situation where access to all services are ensured for delivery of the mother, including the safety of the child after birth. This situation could have serious implications for services intended to address the problems affecting maternal, new-born, child, and adolescent health (RMNCAH).

There are issues of the inadequacy and lop-sidedness or maldistribution of health services for the population, particularly in hard-to-reach areas. This situation could have consequences for reducing access to health services (personnel and facilities), particularly in hard-to-reach counties/regions of the country. There is generally a lack of appropriate infrastructure (i.e., equipment, accessible road network, electricity, etc.) to provide the already inadequate health services wherever they exist, especially in hard-to-reach areas. This situation also seems to affect referral facilities (hospitals and health centers) in the country.

In addition to the challenges of poor access and low coverage, there are also problems relating to the quality of maternal and newborn services (antenatal care, labor and delivery care, postpartum care and newborn care). The lack of infrastructure, particularly roads, seems to hamper the delivery of emergency obstetric and newborn care (EmONC) and the resultant attended neonatal and maternal death, particularly where the facilities for caesarean sections are limited or non-existent. The problems that are also hindering child health care include, but are not limited to, the level and

quality of services provided for the expanded program on immunization; integrated management of childhood illnesses, and infant and young child feeding. A review of the situation of RMNCAH from 2016 to 2020 is essential for achieving the Sustainable Development Goals (SDGs) by 2030 in Liberia. Hence, determining the state of RMNCAH and how it can be improved to inform current and future national development policy is the principal objective of the assessment report.

1.3 Background

The assessment of major indicators of access, availability and readiness of Reproductive, Maternal, New-Born, Child, and Adolescent Health (RMNCAH) services in Liberia will help to determine progress made by Liberia's health sector policies and plans to achieve the Millennium Development Goals (MDGs) in the past (up to 2015), and towards the Sustainable Development Goals (SDGs) related to RMNCAH by 2030. The multi-year (1980-2021) RMNCAH indicators assessment, however, obtained most of the data from Demographic and Health Survey datasets from 2007 to 2021.

There are several documents that outlined plans for improving RMNCAH (RMNCAH IC) outcomes in support of Liberia achieving the Sustainable Development Goals by 2030. Some of these reports include but are not limited to the National Safe Motherhood needs assessment (1999); the Civil Registration and Vital Statistics Improvement Plan; the 2017 Health Sector Evaluation; the 2019/20 Liberia Demographic and Health Survey; and the COVID-19 Intra Action Review process (2020). Other documents are the Health Policy and Plan of 2011–2021; the Investment Plan for Building a Resilient Health System of 2015–2021; the National Sexual, Reproductive, Maternal, Neonatal, Child and Adolescent Health (SRMNCAH) Policy and Plan, and other relevant national health policies; and the Investment Case (IC) of 2016-2020.

In collaboration with a multi-disciplinary team of national and international partners, the Ministry of Health conducted an analysis of the key bottlenecks inhibiting progress in RMNCAH IC outcomes and agreed on six priority intervention areas for accelerating progress over a five-year period. As Liberia will soon begin the process of reviewing and revising several key health policies and strategies, it is essential to critically examine progress made in improving RMNCAH indicators for a multi-year period beginning from 1980. Meanwhile, the analysis of levels and trends in RMNCAH indicators in this policy brief will focus particularly on 2007-2020.

The Countdown to 2030 (CD2030) country team, which is headed by the Institute for Population Studies at the University of Liberia (IPS-UL), with support from the London School of Hygiene and Tropical Medicine (LSHTM), provided technical support to Liberia and 14 other countries supported by the Global Financing Facility (GFF) to strengthen in-country reviews and accountability processes. In Liberia, this support focused on conducting a situational analysis of RMNCAH indicators for a multi-year period, with most of the data focusing mainly on the period 2007-2020. The data provided in the review will inform national health sector strategies to improve RMNCAH indicators.

The Institute for Population Studies at the University of Liberia (IPS-UL), along with the London School of Hygiene and Tropical Medicine (LSHTM) was identified by the MoH to be part of the Countdown country team supported by the Ministry of Health and partners to conduct in-depth trend analysis and triangulation of data from DHS, SARA, and other available routine health information on RMNCAH.



Analyses were conducted at the national and sub-national levels to estimate coverage and effective coverage of essential RMNCAH services and assess equity in the geographic distribution of health service availability and quality of care, coverage, and outcomes. Focusing on the 15 counties, including those with the poorest maternal and child health outcomes, this study will help to improve understanding of the distribution of quality RMNCAH services and identify opportunities for improving access to quality services. The outputs from this project include this report with recommendations for ensuring that the government's future health policies and programmes will facilitate progress towards achieving equitable coverage of quality essential RMNCAH health services.

1.4 Country Collaboration and Analytic Team

The University of Liberia's Institute for Population Studies has been selected as the local lead partner to collaborate with the Ministry of Health, LSHTM, and GFF to form the core analytic team for the CD2030 partnership in Liberia. Formerly known as the Demographic Unit, the Institute for Population Studies, University of Liberia (IPS-UL) was established in 1973 and trains demographers and statisticians to conduct evidence-based research related to population and development. A senior researcher and faculty member from the Institute served as the lead of the core analytic team and coordinated with all relevant RMNCAH partners in-country to assess RMNCAH progress in Liberia.

Table 1 Summary of Institutions and Partners Proposed for Collaboration

s/ n	Type of collaboration	Collaborating Institution
1	In-country institution (<i>prime</i>)	Institute for Population Studies, University of Liberia
2	Government agencies	Ministry of Health (FHP, NPHIL, M&E Unit, HMIS, Research Unit, and Vital Statistics Unit)
3	In-country development partners	GFF, UNFPA, UNICEF, USAID, WHO, World Bank
4	International institution (<i>prime</i>)	London School of Health and Tropical Medicine (LSHTM)
5	Regional institution (<i>secondary - to facilitate logistics</i>)	African Population and Health Research Center (APHRC)

1.5 Factors influencing the trends and levels of RMNCAH indicators

The 14 years of conflict (1989-2003) had severely affected the health sector, as well as other sectors that influence RMNCAH services in the country because many facilities were destroyed, abandoned or neglected [7, 8]. For example, mostly NGO operated 550 functional health facilities in Liberia, which were reduced [1,6,8,9]. Primary health care (PHC) service-oriented health facilities were accessible to only 41 percent of the population while more than two-thirds of the population had no access to referral hospitals, including EmONC services [1, 6].

As a consequence of the conflict, Liberia lost a good number of skilled health workers and other professionals. The health workforce, at the time, was less than 400 urban-skewed health workers [1]. Nine out of 10 doctors migrated out of Liberia during the 14-year civil war [2,8]. All of these factors may have influenced some of the most unpleasant health indicators (especially RMNCAH

indicators) indicators in the World at the time. A review of RMNCAH indicators in 2005 shows that infant mortality was 157/1000 live births, while the maternal mortality ratio (MMR) recorded 580/100,000 live births. The percentage of stunted children under five was 39 percent; and anaemia among children of six to 23 months was reported at 86 percent [1,6]. By 2013, the indicators changed with MMR increasing to 1072/100,000 live births; and the percentage of stunted children under five years reducing to 32.

In its commitment to reform and improve the health system, the GOL began a rebuilding process aimed at improving coverage and access to basic health services for all Liberians. Henceforth, the first five-year National Health Policy and Plan (NHPP) was developed and adopted in 2005 as part of the GoL's Poverty Reduction Strategy (PRS) and health sector recovery plan (HSRP) [6]. It helped restore basic health services that were destroyed during the civil conflict and laid the foundations for providing accessible and affordable quality health care services to all Liberians by introducing the Basic Package of Health Services (BPHS). In 2011, the Ministry of Health released a detailed 10-year national health policy and plan [3]. The 2011–2021 period reflected Liberia's commitment to ensuring a healthy country where every citizen can enjoy social protection.

As Liberia began making significant strides in terms of health sector reconstruction, the Ebola Virus Disease (EVD) erupted in 2014, claiming about 5000 lives, including 192 health workers [1,10]. Research shows that the outbreak significantly affected health service delivery, undermining community confidence in the health system, and causing a decline in the demand for services [8]. For instance, from August to December 2014, antenatal visits dropped by 25% as compared to 16,000 in the same period in 2012 and 2013[1]. Research further shows that basic health services were interrupted as most of the remaining available health workers were mobilized to respond to the Ebola epidemic. This situation left many health facilities without staff and subsequently shut down [8].

Moreover, there were pre-existing vulnerabilities or weaknesses that accelerated the transmission of the EVD in Liberia [8]. Some of these exposures to risky health situations included but were not limited to, an inadequate and overstressed service delivery system; significant shortages of health workers and essential medical supplies; poor infrastructure, and inadequate investments available to respond to the EVD. In addition, there were challenges with service providers adhering to quality-of-care standards; the lack of past experience in dealing with infectious health crises of such magnitude was another threat to the system because Liberia had no prior experience of infectious disease management.

Henceforth, the need for a post-Ebola health recovery and health system capacity- and resilience building plan became urgent. This situation stimulated the idea of developing a sustainable health sector to strengthen RMNCAH services.

1.6 Main objectives

The purpose of this report was to conduct an in-depth analysis of routine RMNCAH data and any other relevant evidence (from 1980-2021) to inform the review and revision of national health policies, strategies, and plans.

1.6.1 Specific objectives

The specific objectives include:

1. Provide a 41year (1980-2021) situational analysis of RMNCAH in Liberia
2. Conduct comprehensive analyses of routine health information system data, Demographic Health Survey (DHS) and other relevant population surveys, and Service Availability and Readiness Assessment (SARA) data to examine equity of key RMNCAH indicators over time.
3. Inform Liberia's upcoming policy review and revision processes with data-driven recommendations for improving RMNCAH outcomes.
4. Strengthen local capacity required for tracking progress, assessing performance, and interpreting and communicating results.



METHODS OF DATA COLLECTION AND ANALYSIS

2.1 Methodology and Sources of Data

The overall Liberia Countdown to 2030 collaboration study analyses are mainly based on secondary data from Demographic and Health Surveys prior to (1980) and after the 15-year civil conflict (1999/2000, 2007, 2013 and 2019). The study also uses data from the health information system in the country, including annual reports that have data on RMNCAH since 1980. The secondary data extraction and analysis processes extend to and cover data from malaria studies. The study also assessed the impact of COVID RMNCAH service utilization during March – December 2020. The data used in the COVID analysis were obtained from DHIS2 from the Health Information System (HIS) of the Ministry of Health (MoH).

During the research, the Service Availability and Readiness Assessment (SARA) was used to determine the readiness of health facilities to provide services to support basic and comprehensive emergencies to reduce under-5 and maternal-related mortalities. Some data were collected from the Liberia Institute for Statistics and Geo-Information Services (LISGIS).

Most of the data analyzed covered the period 2007 – 2019/20. The study also used primary data to fill gaps that are not covered by the available secondary information for the study. However, donors did not support the conduct of primary data collection because there were inadequate funds for qualitative research. Hence, the study was mainly based on the extraction of available secondary data from the MoH and LISGIS, which are the major suppliers of the data used in the analysis. In addition, during a 5-day validation workshop, participants made several recommendations in response to questions provided in the group breakout section.

The recommendations provided address some of the proximate determinants influencing RMNCAH indicators in Liberia. The participants who were invited from the 15 counties comprised health professionals, beneficiaries', government officials, the UN system and local and international non-governmental organizations (NGOs and INGOs)³. Although recommendations from workshops may not be as reliable as survey data, they addressed some of the qualitative questions and overarching issues affecting maternal health care delivery. The data analysis techniques included rates, ratios, percentages, measures of central tendency, quantiles and graphical presentations.

2.2 Scope of analysis of RMNCAH Indicators

The overall scope of the study is to analyze the RMNCAH indicators in the fifteen counties of Liberia. However, the principal targeted areas of the analysis are the six most vulnerable counties in Liberia, in terms of the low level of maternal and other health indicators. The six localities with

the lowest health indicators that are considered as hard-to-reach counties (HRCs) are as follows: Grand Kru, River Gee, Sinoe, Grand Bassa, Rivercess and Gbarpolu. The selection of these counties is important principally because improving their RMNCAH indicators has implications for enhancing the reduction of maternal and under-5 mortality overall in Liberia.

³ The recommendations of the participants during the 5-day dissemination are indicated in the appendix.

RESULTS AND DISCUSSIONS

3.1 Family Planning coverage services

The percentage of adolescent women (age 15-19) who had begun childbearing has declined slowly from 32% in 2007 to 30% in 2019/20. Across all married women, utilization of modern contraceptive services increased in the period under review (2007, 2013, and 2019/20); with the modern contraceptive prevalence increasing by 14% in absolute terms (10% in 2007, 24% in 2019/2020). Complementing this trend, the unmet need for contraception was high in 2007 (36%) but decreased to 33% in 2019/2020, with an even lower percentage recorded in 2013 (31%). The analysis shows that a small but consistent decline in adolescent childbearing coincided with a steady increase in modern contraceptive prevalence and a decrease (and subsequent increase) in unmet need. Normally, unmet need is a complex indicator that should ideally decrease, but often increases because of changes in women's perceptions around control of fertility.

There was an upward trend in the uptake of long-acting reversible contraceptives (LARCs) among married women. Specifically, implants were not used in 2007, but their use increased to 2.1% in 2013 and to 4.6% in 2019/20. However, the percentage of married women reporting the use of female sterilization declined from 0.6% in 2007 to 0.1% in 2019/20. Similarly, the use of intrauterine contraceptives dropped from 0.2% in 2007 to 0.1% in 2019/20. To summarize, use of LARCs and permanent methods among women was low, with increased implant use and a decline in female sterilization. The positive trend in use of LARCs amongst Liberian women shows that implants seem to be the preferred option for contraceptives as shown in Figure 1

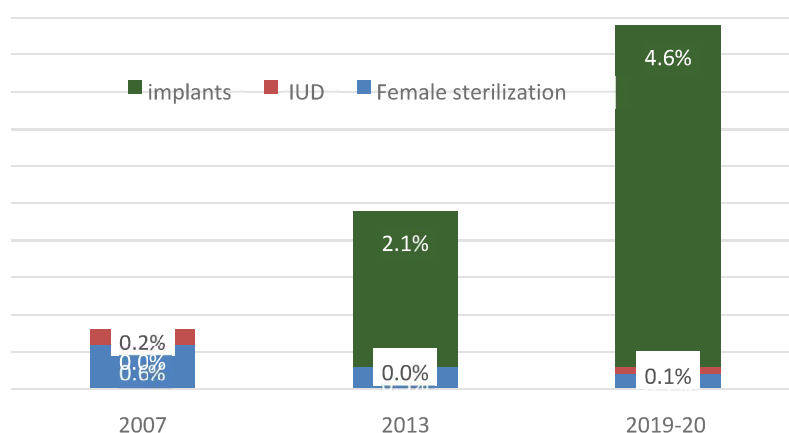


Figure 1 - Trend of long-acting reversible contraceptives use

3.2 Quality and content of utilizing maternity and newborn health care services

The trends in utilization of antenatal care (ANC) services revealed consistent improvements in the percentage of women with 1+ ANC visits (94% in 2007, 98% in 2019/2020) and 4+ ANC visits (66% in 2007, 87% in 2019/20); and the percentage of ANC women that were treated by skilled providers/skilled birth attendants (SBAs) (79% in 2007, 98% in 2019/20). Furthermore, the assessment showed an increase between 2013 and 2019/20 in the percentage of women with IPT3 in pregnancy (18% to 40%); deworming (58% to 64%); and use of SP/fansidar (68% to 90%). However, there was an undulating trend in the percentage of women who received Tetanus (TT)

with 77% in 2007, 88% in 2013, and 83% in 2019/20. TT protection is difficult to measure because of changes in its definition. Nevertheless, the decline in the latest survey could potentially reflect detrimental developments affecting women's health. Similarly, the percentage of women with iron supplementation during pregnancy increased from 87% in 2007 to 97% in 2013, and later dropped by 3 percentage points to 94% in 2019/20.

The trends in ANC service use by health facility ownership from 2007-2019/20 revealed the following:

- There was a steady increase in public-sector facility-based ANC from 57% to 74%, with most of the growth in lower-level facilities (government clinics);
- There was a steady decline in home ANC from 17% to 2%;
- The private sector makes up a fairly constant proportion of ANC service use (15-17%);
- ANC service use offered by mixed sources (public/private) of health facilities increased slightly from 5% to 8%; and
- ANC service use offered by health facilities with no identified ownership (NONE) declined from 5% to 1%.

Trends in deliveries by type of facilities providing delivery services from 2007-2019/20 revealed that health-facility delivery increased from 37% in 2007 to 80% in 2019/20, with most of the growth taking place in public health facilities (27% in 2007, 66% in 2019/20). During the period under review, the percentage of deliveries in private sector facilities initially increased from 10% in 2007 to 16% in 2016, and later declined to 14% in 2019/20. The assessment revealed a huge decline in home births from 61% in 2007 to 19% in 2019/20. It was revealed that most of the deliveries occurred in lower-level public facilities (clinics), which sometimes struggled to afford basic emergency services.

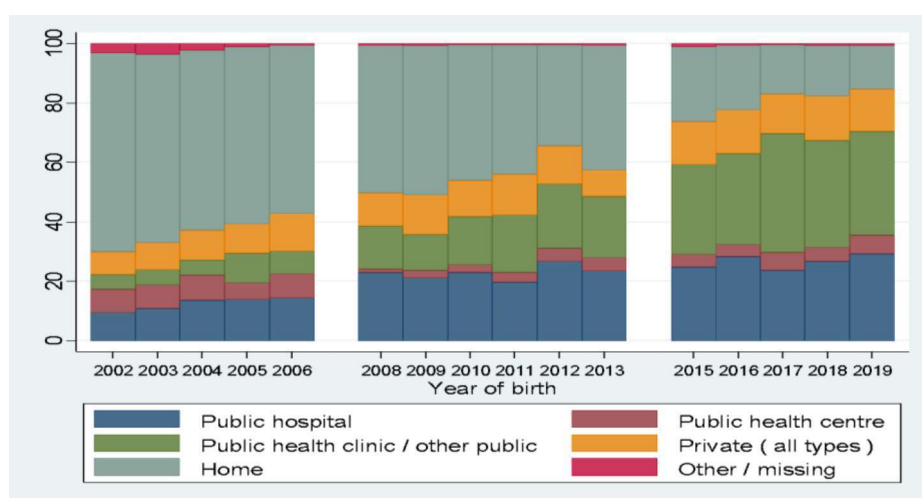


Figure 2 Place of delivery by type of health facility and home

Analyses comparing place of delivery/birth in urban and rural areas stratified by maternal education showed that the differences appear to be driven by access, not necessarily the education of women. Women in urban areas are more likely to deliver in hospitals and private facilities than women in rural areas, regardless of their educational background. In rural areas, women may have a more limited choice in terms of places to deliver.

The trends in deliveries by type of health personnel from 2007-2019/20 indicated that nearly 50% of deliveries were handled by skilled birth attendants/ personnel (45% in 2007, 84% in 2019/20).



The percentage of deliveries assisted by a nurse increased by 31 percentage points from 41% in 2007 to 72% in 2019/20. During the same time period, the percentage of deliveries assisted by a doctor only increased by 8 percentage points (4% in 2007 and 12% in 2019/20) as shown in Figure3.

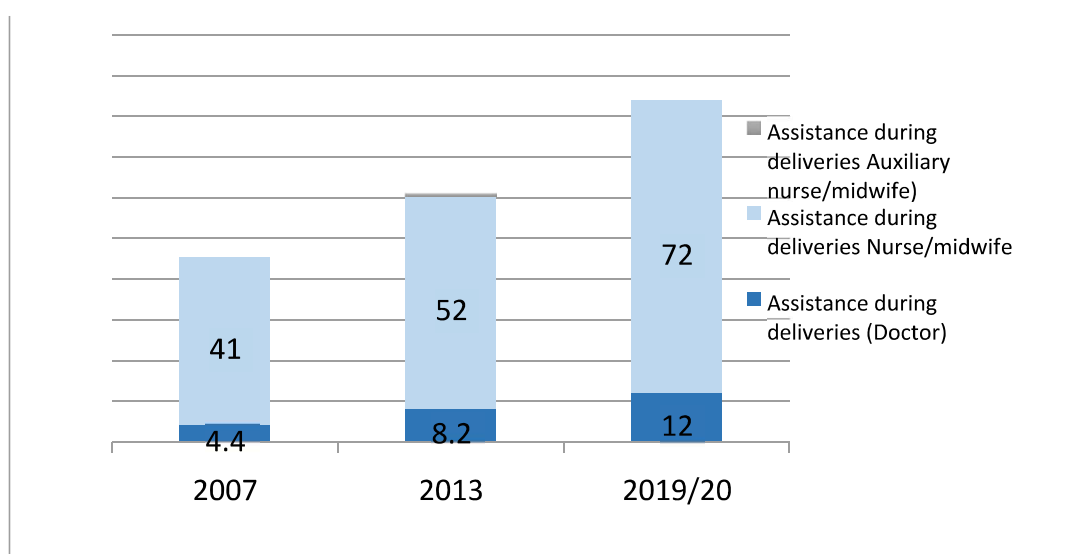


Figure3. Trends in deliveries by type of health personnel, 2007

The percentage increase in the overall facility delivery was 43% from 2007 to 2019/20. The level of public health facility delivery moved from 27% in 2007 to 66% for the same period, while that of the private sector grew from 10% in 2007 to 14% in 2019/20. Furthermore, home deliveries experienced a huge decline (61% in 2007 to 19%), which has positive implications for safe childbearing. Although the increase in facilities delivery, the outcome of deliveries and maternal-related morbidity and mortality is still high, which could be attributed to the quality of health services.

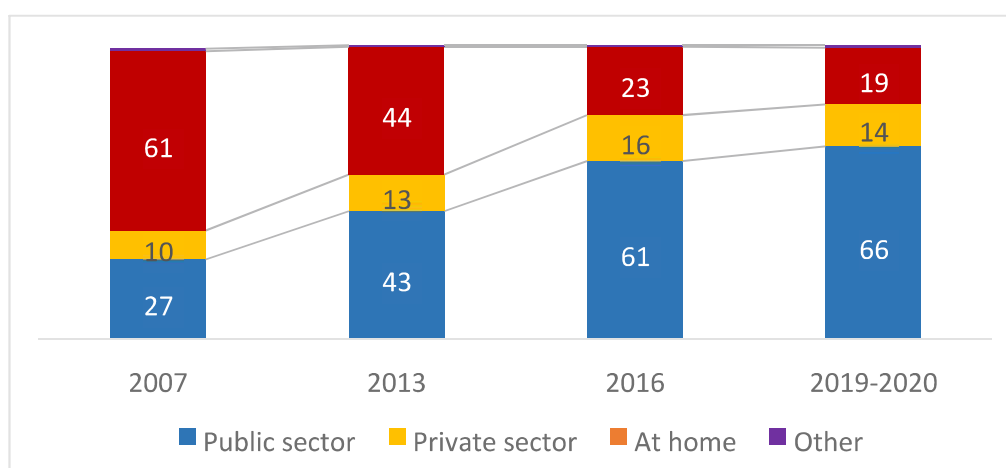


Figure 4. Trends in deliveries by type of facilities providing delivery services, 2007-2019/20 - 2019/20

The percentage of caesarean section deliveries for the period 2007 to 2019/20 continued to be low compared to levels generally associated with the lowest levels of mortality (10-15%

caesarean section deliveries). The percentage of deliveries via caesarean section in Liberia was 4% in 2007 and 5% in 2019/20, only 1 percentage point increase in nearly 13 years. C-section rates were consistently higher among the rich than the poor: among women in the richest quintile. The percentage of caesarean section deliveries was 8% in both 2007 and 2019/20, compared to only 1% in 2007 and 3% in 2019/20 among women in the poorest quintile.

The highest quantile of C-section was among the richer quantiles. This means that over 75% of women who received C-section were rich; while the lowest quantile among poorer women means around 25% of the C-section women were poor. However, this shows a small but consistent increase in the percentage of caesarean deliveries in the poorest quintile, while in the richest quintile, there was first an increase (8% in 2007 to 10% in 2013) followed by a decline back to 8% in 2019/20. The DHS results further revealed that caesarean section rates in urban and rural areas by level of education reveal higher caesarean rates among urban educated women, with urban women using private facilities more often than rural women. Otherwise, there is little variation in caesarean rates in terms of literacy.

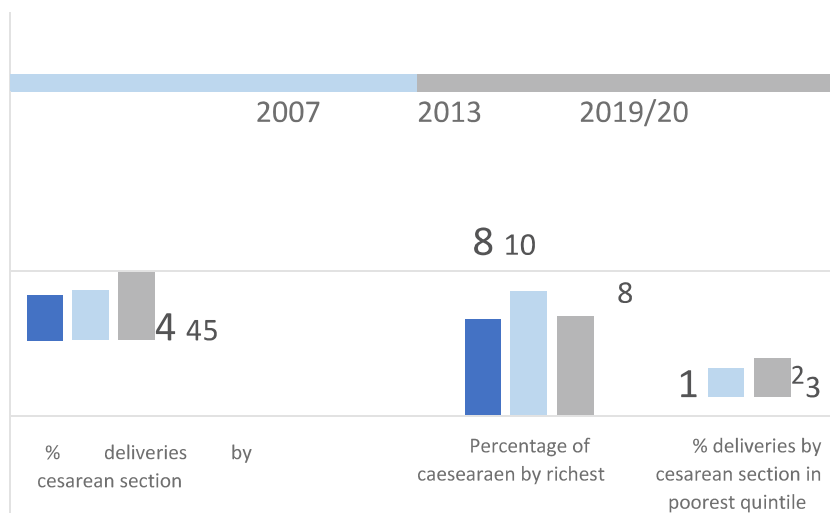


Figure 5. Trends in cesarean section deliveries overall and among poorest & richest quintiles, 2007-2019/20

The DHS results further revealed that caesarean section rates in urban public facilities and rural areas by level of education reveals higher caesarean rates among urban educated women, with urban women using private facilities more often than rural women. The use of private facilities by educated women is associated with wealth level of finance, which is more favorable for urban educated women than their rural counterparts. Otherwise, there is little variation of caesarean rates in terms of literacy as shown in Figure 6.

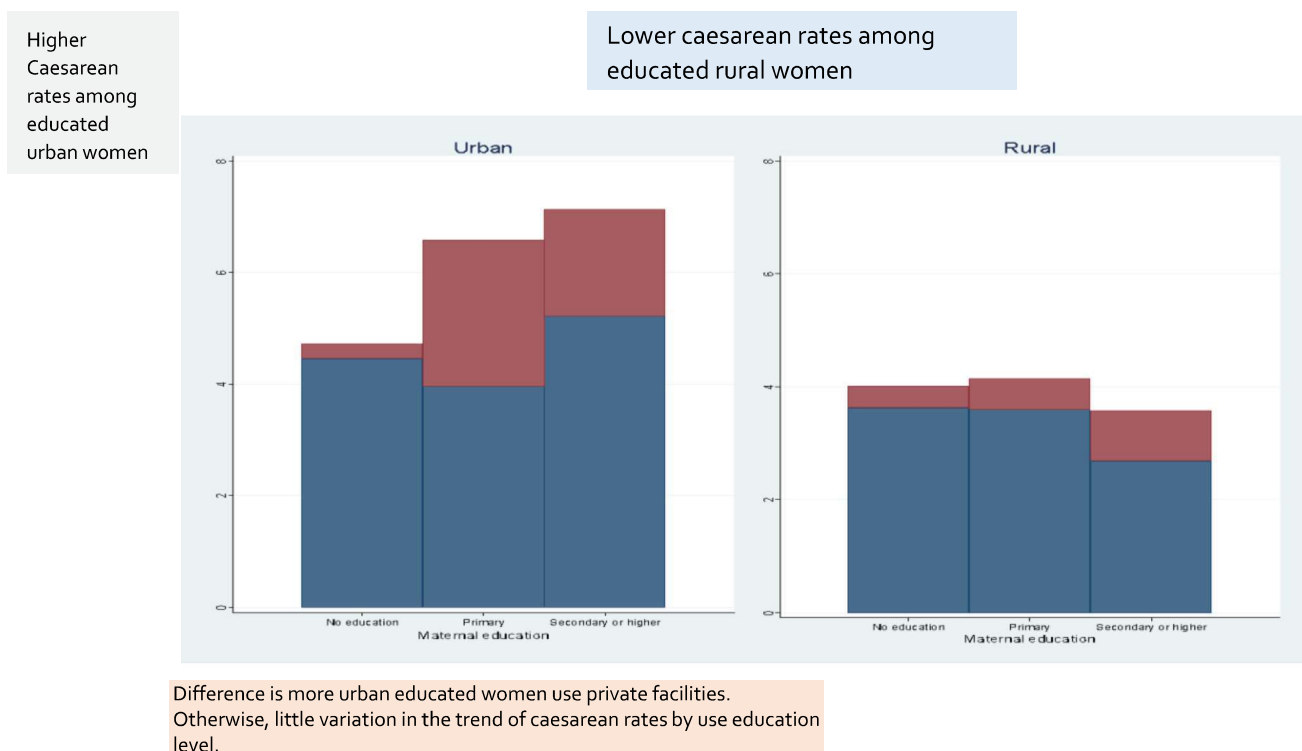


Figure 6: Caesarean section rates in urban and rural areas, by level of education (2019-2020 DHS)

There was a decline in the percentage of pregnant women being referred by a CHA for facility ANC and facility delivery in the period 2017-2021. For CHA referral for facility ANC, the percentage declined slowly: it was 62% in 2017, 61% in 2018, and 59% in 2019. Thereafter, it increased to 64% in 2020. However, this was followed by a steep decline in 2021 (47%). For CHA referral for facility delivery, there was a decrease over time (32% in 2017, 28% in 2021). Furthermore, the percentage of women receiving uterotonic drugs increased from 10% in 2017 to 52% in 2021. The trends in CHA referrals for facility ANC and facility delivery and in coverage of AMSTL (routine uterotonic post-delivery) from 2017-2021 are shown in Figure 4.

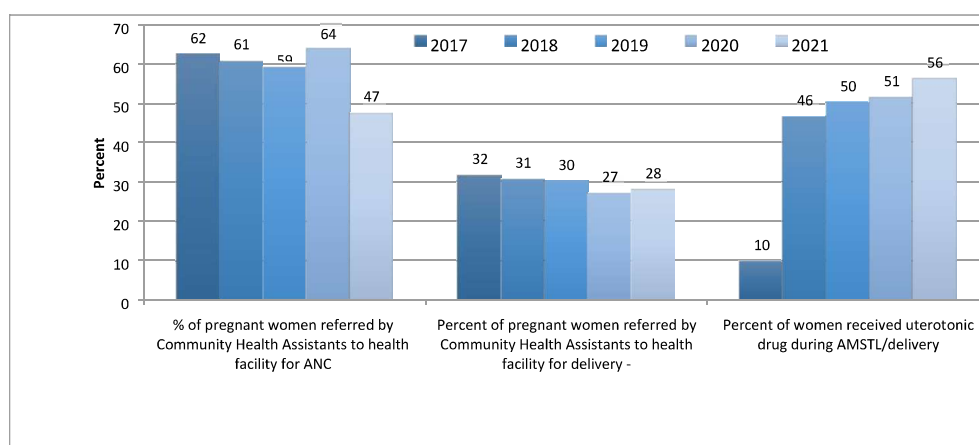


Figure 7 - Trends of CHA referrals for facility ANC, delivery and in coverage of AMSTL, 2017-2021



Overall, breastfeeding was initiated immediately after only 60% of births between 2007 and 2019/20. Stratified by place of birth, there was a decline in the percentage of women that carried out immediate breastfeeding after home birth from 72% in 2007 to 66% in 2019/20. In facilities, immediate breastfeeding was initially less common but increased to 67% in 2019/20. Compared to other facility types, immediate breastfeeding was most common in government clinics.

Considering other aspects of pre-natal care, it was found that nearly all mothers received a pre-discharge check during the period under study (87% in 2007, 91% in 2019/20). Again, government hospitals performed slightly higher than other facility types in 2007 and 2019/20. There was a break-even point type of performance between government hospitals and other facilities.

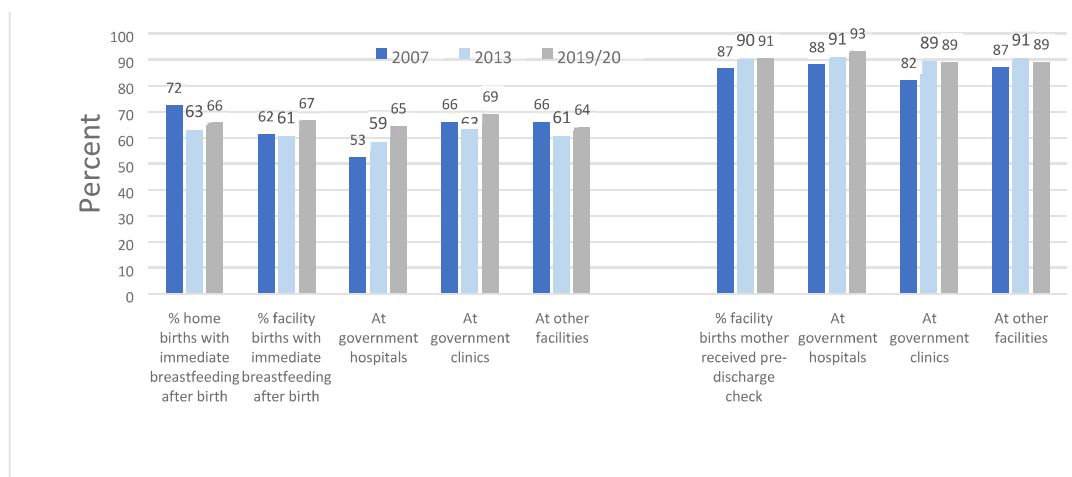


Figure 8 Trends in post-natal care by place of birth, 2007-2019/20

Trends in certificate and birth registration revealed that both birth registration and birth certificate issuing (for children 0-4 years) increased from 2017 to 2019/20. However, the births of only 4% of the children aged 0-4 years were registered in 2017 compared to 66% in 2019/20. While the percentage with a birth certificate also increased by 26% percent points (from 2007 to 2019/20), the percentage of 0-4 years old that registered grew by 62%. It is therefore important to know the proximate factors that prevent the certification of under5 children.

3.3 Readiness for emergency obstetric and newborn Care (EmONC)

To look at readiness for safe childbirth care, focus was placed on emergency obstetric and newborn care (EmONC) indicators. The study analyzed health facilities' readiness for emergency referral using data from the 2018 SARA survey. The analysis was linked to HMIS data to look at the availability of infrastructure and staff, and the volume of births and caesarean sections.

To measure the readiness of facilities to carry out EmONC functions, facilities included in the SARA were asked if they had administered certain functions in the past 12 months. The SARA survey also conducted observations of the availability of commodities and equipment. For example, facilities were asked as to whether they had conducted parenteral administration of antibiotics (IV or IM) for mothers in the previous 12 months and this was coupled with the observation that various types of non-expired antibiotics in the form of injection or powder were present.

Table 2. The state of utilizing 9 Emergency Obstetric and Newborn Care (EmONC) indicators in facilities

Indicator	How is it measured? Self-report by facility that they did it in last 12 months	Observation
Antibiotics	Parenteral administration of antibiotics (IV or IM) for mothers was carried out	Non-expired injection or powder for injection of: gentamicin, ampicillin, metronidazole, benzathine benzylpenicillin, ceftriaxone
Oxytocin	Parenteral administration of oxytocin for treatment of post-partum haemorrhage (IV or IM) is carried out, or routine administration of oxytocin injection immediately after birth to all women for prevention of post-partum haemorrhage	Non-expired oxytocin injection
Anticonvulsant	Parenteral administration of magnesium sulphate for the management of preeclampsia and eclampsia (IV or IM) was carried out	Non-expired magnesium sulphate injectable
Manual removal of the placenta	Manual removal of the placenta was carried out	-
Removal of retained products	One of the following was carried out: removal of retained products of conception (MVA, vacuum aspiration), or dilation and curettage	Vacuum aspirator or D&C kit
Assisted vaginal delivery	Assisted vaginal delivery (vacuum extraction or forceps) was carried out	Manual vacuum extractor (if only vacuum extraction assisted delivery reported)
Neonatal resuscitation	Neonatal resuscitation with a bag and mask was carried out	Newborn bag and mask size 0 or 1
C-section	Caesarean section carried out	-
Blood transfusion	Blood transfusion carried out	-

Criteria used for measuring the usage of the seven BmONC (antibiotics, uterotonics, anticonvulsants, manual removal of placenta, removal of retained products, assisted vaginal delivery, neonatal resuscitation) and the additional two CEmONC functions (caesarean section and blood transfusion) were based on the availability of certain conditions, equipment and personnel. Some of the criteria used to measure readiness included observation method as shown in Figure6.



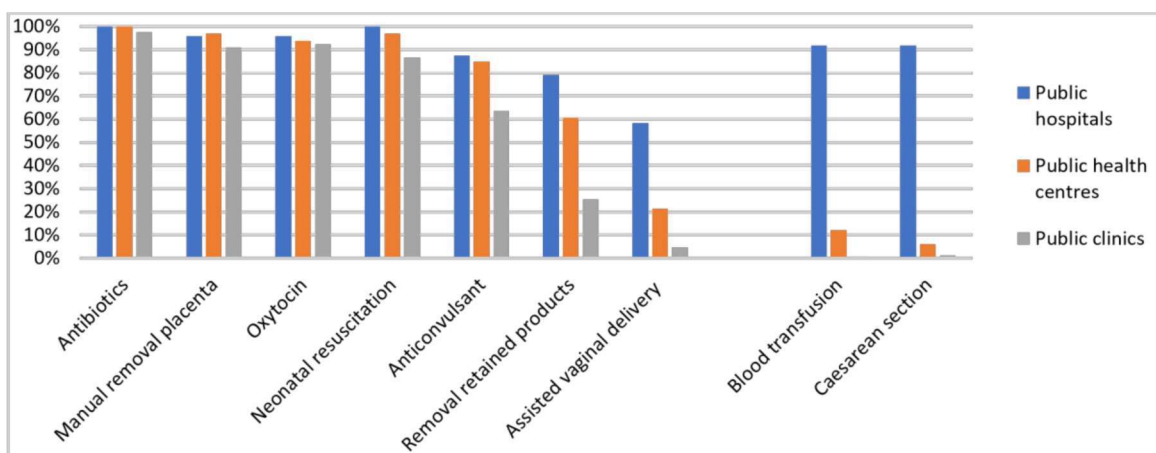


Figure 9 Readiness of facilities for safe childbirth care

The observation component of readiness to provide individual signal functions for mother and newborn by level of public sector facility shows that hospitals performed better than centers, which performed better than clinics. There were high levels of use of antibiotics, manual removal, oxytocin, and neonatal resuscitation in all types of facilities (more than 85%). However, anticonvulsants, removal of retained products and assisted vaginal delivery were lower, even in hospitals, where blood transfusion and caesarean delivery were above 90%.

When all signal functions were put together, 58% of hospitals and 18% of health centers could provide all basic BEmONC. If assisted vaginal delivery is excluded from EmONC requirements (BEmONC-1), then 71% of hospitals and 52% of health centers could do basic EmONC. Moreover, 72% of hospitals and 7% of health centers could also do CEmONC without assisted vaginal delivery. The study further shows that most births happen in clinics with poor readiness; 52% of all facility births are in locations without BEmONC-1 readiness; 29% of births are in facilities that can provide CEmONC; and 48% can provide at least BEmONC-1.

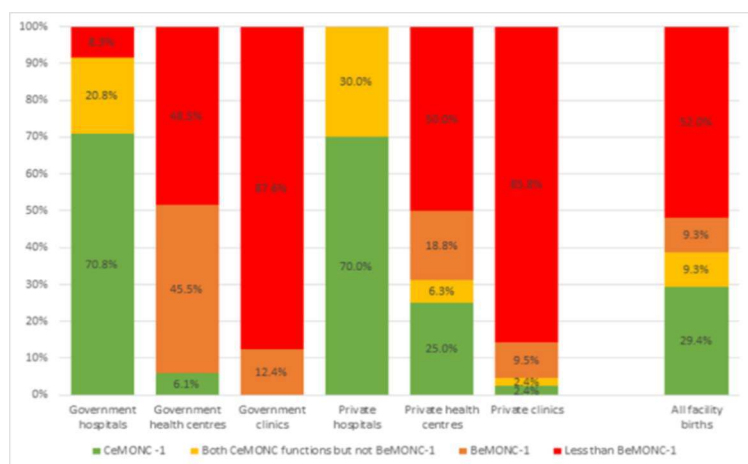


Figure 10 Signal functions readiness for mother and newborn

Further analysis on the ability of public facilities to provide emergency referral, by level of public sector facility, indicates that 75% of hospitals, 48% of health centers and 33% of clinics had access to a phone for referral purposes, while the presence of an ambulance/vehicle on site was 88%, 42%, and 6%, respectively. Overall readiness to provide referral services was 92%, 69%, and 32%

for hospitals, health centers, and clinics, respectively. The average readiness to provide referral services for all facilities was 64% based on the 2018 SARA data.

Most hospitals and health centers (over 90%) were available 24/7 to provide emergency care. However, less than 20% of health clinics were available. More than 80% of facilities could monitor routine labor using a partograph. The percentage of facilities with either central electricity or a functioning generator was 92% for hospitals, 54% for health centers, and 14% for clinics. Availability of running water, soap, and disposable gloves was high in all health facilities, but combining these to look at all indicators of infection prevention and control showed that hospitals performed better (98%) than health centers (78%), which performed better than clinics (52%).

The distribution of births by yearly volume, from the DHIS2 database across health facilities, revealed that 8% of births were delivered in the 30% of health facilities that had the lowest volume. By contrast, the 8% of the highest volume facilities deliveries, 32% of births. Some public hospitals did very few deliveries while some health centers and clinics handled a large volume of deliveries. Further work is needed to understand why hospitals are not providing much care while additional support and resources should be given to health centers and clinics that perform many deliveries. However, no public clinic (and very few health centers) can provide EmONC care. Doing low volumes of deliveries has implications for the loss of skills.

There is an urgent need to align the volume of births with staffing levels and facility capability to make sure that facilities providing a lot of care are equipped to do so. Nevertheless, it must be acknowledged that facilities in sparsely populated areas are important for ensuring physical access to rural populations despite having potentially very low levels of births.

Public hospitals had the largest number of staff per facility (median number of skilled birth attendants: 46.5), followed by private hospitals (36), public health centers (10), private health centers (7), public clinics (3), and private clinics (4). Public health centers and clinics tended not to have any doctors while private health centers and clinics did. Most public health centers and clinics were staffed with midwives and nurses. The bigger the volume of births in a facility, the more nurses, midwives, and doctors it employs. However, nearly all facilities (99.6%) employed at least one SBA. It was further revealed that 94.7% employed at least one nurse; 77.6% employed at least one midwife; and 35.0% employed at least one doctor. Facilities doing larger volumes of births employed more SBAs. It was found that 60% of births were performed by 46% of midwives, which could affect the quality of service delivery in Liberia.

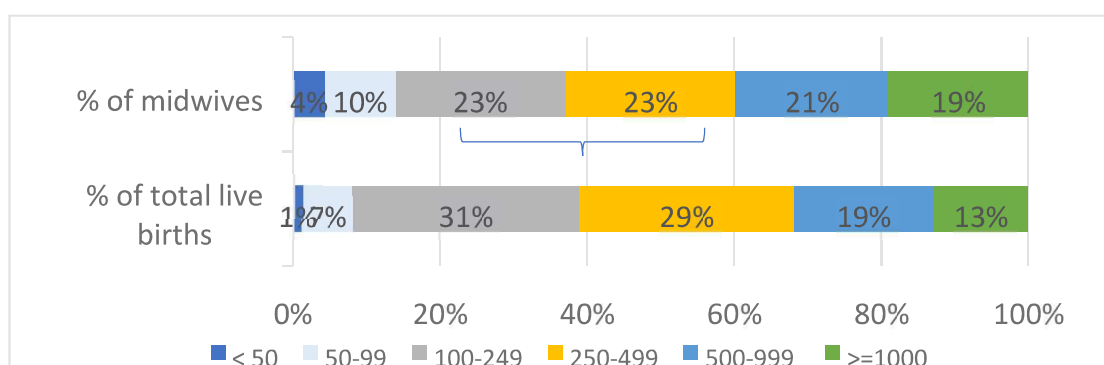


Figure 11 Readiness of public facilities to provide emergency referral

Although the coverage of caesarean-sections in Liberia is below the WHO recommendations of 10-15, the unequal distribution of its volume among facilities is of greater concern. By contrast, 26% of facilities are doing 63% of caesarean deliveries. About half of the facilities with c-section capacity have very low volumes, and only provide 10% of c-sections nationally. About (46%) of facilities with caesarean capability are conducting very low volumes of caesareans and only provide 9% of caesarean sections nationally, as shown in Figure 9. It may be beneficial to understand why some facilities are conducting so few caesarean deliveries. The large facilities delivering fewer births could affect the skills of health cadres that perform delivery services. The situation could be due to a lack of interest among women to attend small volume facilities which could have implications for the availability of EmONC in Liberia.

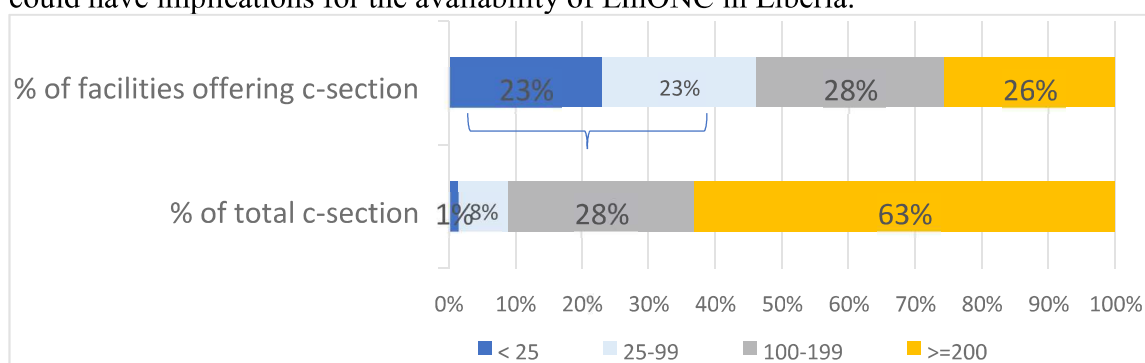


Figure 12 Distribution of caesarean sections by volume Liberia (2019 HMIS)

3.4 Child health and trends of Maternal and Under-5 Mortality

Trends in early childhood vaccination from DHS data indicate that, although there is growth in vaccination from 2007 to 2019/20, only half of the children (51%) are receiving all eight basic vaccinations, a decrease from 2013 when this was 55%. Moreover, the percentage receiving age-appropriate vaccinations decreased from 50% in 2013 to 39% in 2019/20. In 2019/20, 6% received no vaccinations, up from 2% in 2013. Trends in the percentage of children who received vaccination within the first year of life from DHS and MIS data revealed that except for polio 1, 2, and 3, which decreased in recent surveys, the proportion of children vaccinated in the first year of life has increased since 2007.

Trends in the proportion of children under 5 years old who were stunted presented some improvements, with an absolute decline of 9 percentage points from 39% 2007 to 30% in 2019/20. Trends in DHS and MIS data on children with anemia showed an increase from 63% in 2009 to 77% in 2016, before declining by 6 percentage points to 71% in 2019/20. This is a signal that more work needs to be done in this area, including perhaps via malaria prevention.

Further exploring neonatal, infant, and child mortality rates, there is an overall decline in under-5 mortality. This was mostly due to declines in mortality in those aged 1-4 or in the post-neonatal period (1-11 months). By contrast, there was a rise in neonatal mortality driven by an increase from 26 per 1000 in 2013 to 37 per 1000 in 2019/20 (after a fall between 2007 and 2013). The increase in neonatal mortality seems to be mainly due to an increase in mortality in days 0 and 1 of life, which nearly doubled between 2013 and 2019/2020. The increased neonatal level underscores the importance of improving EmONC care in Liberia as mentioned in Figure 13.

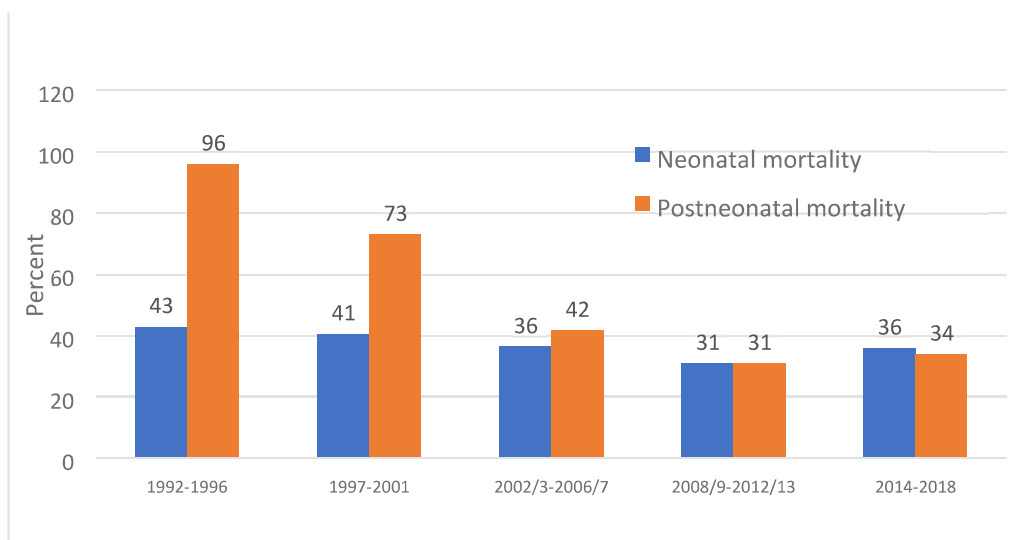


Figure 13 - Trends of Liberia's Neonatal & post-neonatal mortality

The high level of newborn deaths in Liberia could be attributed to birth asphyxia, among other reasons. The trend of maternal, child and other mortality since 2007 shows the following: 1) under5 mortality declined steadily overall, with a reduction from 112 per 1000 in 2007 to 95 per 1000 in 2019 /20; 2) Maternal mortality increased by 8 per 100,000 (0.00785%) between 2007 and 2013 (from 994 per 100000 to 1072 per 100000); later, the indicator declined by 15 per 100,000 from 2013 to 2019/20; with 742 deaths per 100,000 live births. These changes are not statistically significantly different.

3.5 Impact of COVID-19 on RMNCAH services

The impact of COVID-19 on RMNCAH services was measured using records of outpatient admission during 2020 by month: comparing the expected to the observed trends. In further assessing whether there were changes in service utilization during March – December 2020, an Ordinary Least Squares (OLS) regression model at national, regional, and district/ county levels was applied, comparing the observed monthly values with expected levels of service use. The focus was placed on the data for March 2018 – December 2020.⁴

The study investigated service utilization during the period of March to December 2020, considering four major indicators: ANC4, institutional delivery (Indelv), C-Section, and OPD. Across these four indicators, the overall decline in service utilization was -1.5% compared to the expected levels of service utilization. The small effect of COVID-19 on service usage could be

⁴ The outcome (e.g. monthly number of service utilization) on independent variables was developed including (1) time for long-term trend: months from January 2017 to December 2020 (1-48, i) (2) calendar month (Jan, Feb, ...) to control for seasonality (Month) (3) district population (j) (4) area of residence: urban, rural, mixed (Area) (5) first administrative level (region /provinces) (Region) (6) Covid period: individual starting from March 2020 to December 2020 (Covidmonth) (7) Random effects to control for multiple measurements within districts and heterogeneity across districts (8) Random intercept and random slope on time.

Due to lessons learned from the experience with Ebola. Detailed analysis showed that there was an absolute decline of 2% in the uptake of four antenatal care visits compared to the levels expected based on the levels and trends of previous years. Compared to ANC4, the decline in utilization associated with the COVID-19 pandemic was similarly pronounced for OPD services (-2%), but

slightly smaller for institutional delivery (-1%) and caesarean section (-1%). Figure 4 presents the changes in services from March to December 2020. The percentage change in the use of selected services during March – December 2020, compared to expected utilization based on the preceding three years, is indicated in Figure 14.

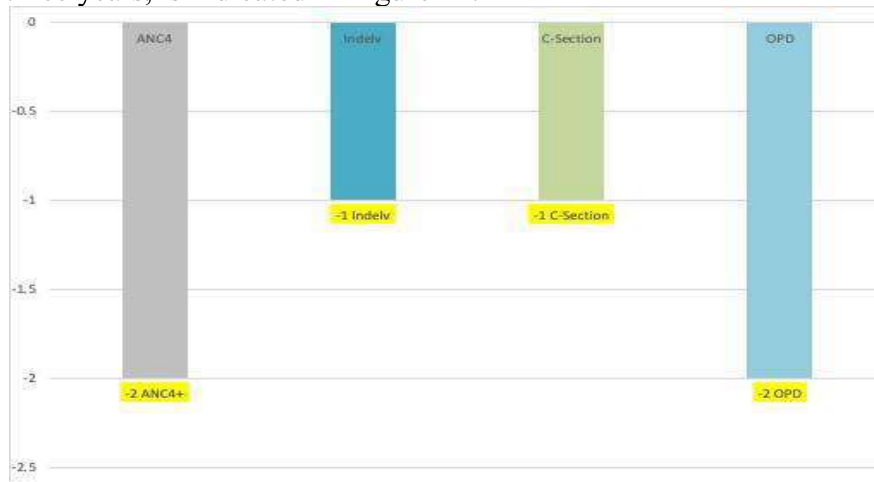


Figure 14 - Comparison of the use of selected services during and prior to COVID19



RECOMMENDATIONS

4.1 Summary key findings

The key findings from the study are summarized below.

- a) Adolescent (15-19) motherhood has declined slowly from 2007 to 2019/20, by 2 percentage points
- b) Modern contraceptive prevalence increased in the period under review (2007, 2013 and 2019/20), with an overall growth of 14%.
- c) Unmet need for contraception was high in 2007 but dropped slightly by 2019/20.
- d) Coverage of health services improved in most areas, and appeared to be equitable. Nevertheless, improvements in some key areas are minimal, and coverage of some elements remains very low. Also, some important areas, such as immunization saw a small deterioration since 2013.
- e) COVID did not have much impact on coverage of antenatal care, delivery care, caesarean delivery, and outpatient care in 2021.
- f) Contact with services and coverage increased but health outcomes have not significantly improved. For example, DHS & HMIS analyses showed dramatic increases in percentages of births in a health facility in Liberia. But the improved coverage has not translated into drastic reductions in maternal & neonatal mortality;
- g) Most births happened in clinics with poor readiness; with 52% of all facility births in locations without BEmONC-1 readiness; 29% of births in facilities that can provide CEmONC; and 48% in facilities that can do at least BEmONC-1;
- h) Maternal health services (ante and post-natal services, and facilities for deliveries) increased over the past decades. However, the level of mortality has not improved to commensurate with the growth in health services, which is a paradox that needs to be addressed;
- i) Liberia's Maternal Mortality ratios have been reducing gradually but have not made much progress in terms of meeting planned benchmarks, especially from 2013 to 2019/20;
- j) Facilities are relatively well-staffed with midwives and doctors. However, many facilities are not able to deliver lifesaving interventions, as shown by the low levels of facility readiness for emergency interventions;
- k) Most high-volume facilities are catering to a smaller volume of births while low-volume facilities are attending to a high volume of births. Similarly, most caesarean sections are performed in facilities with a small volume of births, while facilities that receive the highest number of births have little or no access to caesarean sections;
- l) Caesarean sections are predominantly urban-based, and are mainly high amongst women in the richer quantiles.
- m) Most facilities have small numbers of deliveries, making it hard for providers to maintain skills and making it difficult to provide cost-effective services;
- n) Caesarean section rates lower than WHO recommends, and there are low volumes in many facilities with caesarean section capacity

4.2 Recommendations

The following recommendations are made to improve outcomes of RMNCAH indicators and enhance the achievement of the requisite MDGs indicators for Liberia, particularly in terms of reducing maternal and under-5 mortality:

- a. Stimulate and enhance the level of improved coverage of antenatal, post-natal and other delivery care services, and revive declining RMNCAH indicators
- b. Continue the commitment to improve community engagement to improve safe motherhood through an increase in budgetary support
- c. Reactivate physical infrastructure (roads, electricity, water, etc.,) and provide additional health facilities to increase access to health services in hard-to-reach and non-motorized areas.
- d. Build human capacity through short- and long-term training of all cadres of health workers; and recruitment of additional health workers;
- e. Establish suitable working environments by providing incentives (e.g. housing, transportation) improved salary, and rural-based oriented allowances.
- f. Stabilize the provision and adequacy of regular essential drugs/medicine and supply
- g. Enhance coordination of all partners, the government, and the community in service delivery and operation

Programme level

Based on the fact that adolescent fertility and early motherhood did not reduce significantly, there is a need for government and partners to take the following affirmative actions through programmes and policies: reduce adolescent fertility/motherhood; discourage parental encouragement for early childbearing; create awareness to discourage myths against FP products; increase school/community adolescent clubs; and increase access to FP. It is also important for government and stakeholders to address other proximate determinants that affect adolescent fertility by discouraging taboos and African cultures that prevent parents from discussing sex education with adolescents; restricting social media platforms movies (pornography and other abnormal scenes that influence their behaviors); and empowering parents to reduce poverty-related early sexual activities.

The overall level of contraceptive prevalence is low. This has implications for access to family planning services in terms of money and distance. Therefore, there is a need for government and partners to increase access (money and distance) to family planning (FP) by stimulating counselling, adolescent / youth / adult-friendly-services, and parent-adolescent sex communication relationship. These activities have implications for reducing the level of stigmatization of clients by service providers; increase PF product intake; and reducing the existing natural regime type of fertility in Liberia. Government should enhance its poverty reduction strategies to strengthen household-level income because it has implications for early motherhood.

There is a low-level use of some contraception, which could be influenced by some proximate behavioural factors. Hence, there is a need to improve the FP market strategy and reduce the traditional and religious beliefs, and myths that sterilization and IUDs permanently end reproduction if progress is to be made. There is also a need to continue the use of implants because of the following: it is popularly used by most people; less burdensome; it reduces frequent visits to the facilities, and it lasts for a longer time.



GOL should improve maternal and child health care by training at least two mid-level health practitioners in obstetric & newborn care at every secondary and tertiary health facility, and equipping and incentivizing health workers. There is a need to enhance maternal and child health by increasing the availability of iron supplements, IPTP3 and TT vaccines. The GoL should also discourage myths about breast milk and promote consistent breastfeeding advocacy/choices to stimulate improved infant health. There is a need to provide constant/regular electricity to support health service delivery. It is important to make free and decentralize the production/issuance of birth certificate in all facilities in the country.

Government should enhance the functionality of the health sector by: ensuring that manufacturers modify BCG into a single dose or increase the lifespan of the vaccine; increase in intake of vitamin supplements for age-appropriate children and mothers; increasing the distribution and usage of mosquito nets; train more staff and increase time for vaccination outreach; and improve health education for nutrition during perinatal, ANC & postpartum visitations.

There have been increased ante and post-natal care services since 2007. However, the mortality situation has not improved much. Hence, there is a need to address the following at the primary health care level to reduce maternal and under5 mortality rates: inadequate health human resources; inaccessibility of health facilities; poor network and bad road connectivity; inadequate preparedness (lack of essential drugs, medical supplies and equipment); poor referral system; harmful traditional and cultural beliefs mothers and new born; poor monitoring and awareness against home delivery; poor response to disease outbreak; and inadequate skills of all health care service providers in caesarean sections in lower level facilities that receives most deliveries. Table 3 List of indicators (to be attached later)



Annex: indicators, definitions

Indicator	Numerator (N)/Denominator (D)
1. Total Fertility Rate	N: The total of all births in the period to all women aged 15-49, irrespective of their age at the time of birth. D: The sum of the women-years of exposure over the five-year age groups from 15-19 to 40-44 tabulated as for the age-specific fertility rates.
2. Proportion of teenage girls who have begun childbearing	N: Number of teenage girls (15-19) who have not had a birth but are pregnant at the time of the interview D: All teenage girls aged 15-19 including those without a birth
3. Contraceptive Prevalence Rate	N: Number of women aged 15-49 years who use any method of contraception D: Total number of women aged 15-49 years
4. Unmet Need Coverage	N: Number of women with an unmet need for family planning for spacing or limiting D: Total number of women aged 15-49 years
5. Demand Satisfied with Modern Method	N: Number of women who are using any modern contraceptive method D: Total number of women aged 15-49 years
6. Pregnancy Related Mortality Rate (per 1,000 women)	N: Number of female siblings of respondents who died during pregnancy, delivery or within 2 months of delivery or termination of their pregnancy by their age group at the time of death D: Number of years of exposure of female siblings of respondents during the period 0-6 years prior to the survey by five-year age group
7. Proportion of pregnant Women who had at least 4 antenatal care visits	N: Number of women who received at least 4 antenatal care visits for their last birth D: Number of women with a birth in the last 5 years
8. Proportion of deliveries by a skilled birth attendant coverage	N: Number of live births delivered by a skilled provider D: Number of live births in the 5 years preceding the survey
9. Health facility delivery	N: Number of births that took place in a health facility D: Number of live births in the 5 years preceding the survey
10. Proportion of women receiving Postnatal care (PNC) within 2-3 days after birth	N: Number of women with a live birth in the 2 years preceding the survey who had a postnatal check by a health provider during the first 2 days after giving birth D: Number of women with a live birth in the 2 years preceding the survey
11. Postnatal care for newborn	N: The number of the most recent birth in the 2 years preceding the survey with a postnatal check during the first 2 days after birth D: Number of women with a live birth in the 2 years preceding the survey
12. Proportion of children aged 12-23 months who received pentavalent-3 vaccine	N: Number of living children between the ages of 12 and 23 months at the time of the survey who received the pentavalent-3 vaccine D: Total number of living children between the ages of 12 and 23 months
13. Proportion of stunted children aged below five years	N: Number of children whose height-for-age z-score is below minus 2 (-2.0) standard deviations (SD) below the mean on the WHO Child Growth Standards D: Number of de facto living children between ages 0 and 59 months before the survey
14. Proportion of children aged below Five years treated for diarrhea	N: Number of living children under age 5 with diarrhea at any time during the 2 weeks preceding the interview who were given ORS D: Number of children under age 5 with diarrhea in the 2 weeks preceding the interview

15. Antibiotic treatment for pneumonia	N: Number of living children under the age of 5 with symptoms of Acute Respiratory Infection (ARI) in the 2 weeks preceding the survey treated with antibiotics D: Number of children under age 5 with symptoms of Acute Respiratory Infection (ARI) in the 2 weeks preceding the survey
16. Neonatal mortality rate (number of deaths per 1,000 live births)	N: Deaths at ages 0 to 30 days, including deaths reported at age zero months D: Number of surviving children at the beginning of the specified age range for 5 years preceding the survey

17. Infant mortality rate	N: Deaths at ages 0 to 11 months, including deaths reported at ages 0 to 99 days D: Number of surviving children at the beginning of the specified age range for 5 years preceding the survey
18. Under-five Mortality Rate	N: Deaths at ages 0 to 4 years, including deaths reported at ages 0 to 59 months and 0 to 99 days D: Number of surviving children at the beginning of the specified age range for 5 years preceding the survey
19. Percentage of children aged below five years whose birth has been registered with the Bureau of Vital Statistics	N: Number of de jure children under the age of 5 whose births are registered D: Number of de jure children under the age of 5
20. Percentage of births in a given year registered with the Bureau of Vital Statistics	N: The total number of births that have been registered in the vital registration system for a country-year D: Total estimated births for that year for the national population
21. Percentage of deaths in a given year registered with the Bureau of Vital Statistics	N: The total number of deaths that have been registered in the vital registration system for a country-year D: Total estimated deaths for that year for the national population
22. Antiretroviral combination therapy treatment coverage among underfive within 24 hours	HIV-AIDS-related indicators were addressed due to the lack of end-line data
23. Population 15–49 years infected with HIV	HIV-AIDS-related indicators were addressed due to the lack of end-line data

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THANK YOU

This assessment was made possible through the collective efforts of dedicated researchers, health professionals, community partners, and families across Liberia.

**TOGETHER, WE CAN BUILD
A HEALTHIER LIBERIA BY 2030.**



FOR THE PEOPLE

Evidence to guide policies that improve reproductive, maternal, newborn, child, and adolescent health.



FOR THE FUTURE

Data to track progress, close gaps, and accelerate action toward 2030.



FOR STRONGER PARTNERSHIPS

Stronger collaboration for lasting impact and healthier communities.



OUR MISSION

To generate reliable data and insights that inform decisions, strengthen health systems, and ensure every woman, child, and adolescent in Liberia has the opportunity to survive, thrive, and reach their full potential.

“

Better data. Stronger systems. Healthier futures.
LIBERIA COUNTDOWN TO 2030.

”



MINISTRY OF HEALTH
Republic of Liberia



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