Service Availability and Readiness Assessment (SARA)

&

Quality of Care (QOC)

2018 Final Report

November 2018

The Global Fund GAVI ALLIANCE World Health Organization

Foreword

The Liberia Service Availability and Readiness Assessment (SARA+) and Quality of Care (QoC) is the first comprehensive assessment aimed at providing information on the capacity for service provision by health facilities in Liberia. It provides a mapping of information on a set of tracer indicators of service availability, and readiness and the progress of those interventions. Further, it provides reliable information on service delivery (such as the availability of key human and infrastructural resources), availability of basic equipment, basic amenities, essential medicines and diagnostic capacities, and on the readiness of health facilities to provide basic healthcare relating to family planning, child health services, basic and comprehensive emergency obstetric care, HIV, tuberculosis, malaria, non-communicable diseases and Neglected Tropical Diseases (NTDs).

This documentation of performance reviews of health care services including QoC and subsequent reports will contribute favourably to monitoring service availability and readiness of the health sector, and to generate evidence to support planning as Liberia strives in building a resilient health system after being fragmented by the Ebola outbreak and civil conflict.

The publication of this report is timely, filling the important information gaps in the areas of measuring and tracking progress in health systems strengthening in its transformative stage for Liberia Rising 2030 to reach middle-income status. With enhanced awareness on accountability and the need to demonstrate results at the country and global levels, SARA survey will help track how health systems respond to increased inputs and improved processes over time, as well as the impact such inputs and processes have on improved health outcomes and better health status.

The Ministry of Health, therefore, appeals that we use the information in this document for planning, monitoring and evaluation of our health programmes as we build a resilient health system. Since no situation is static, the figures shown here are expected to change with time and we urge all counties to continuously update this information annually to track the changes. Consequently, we intend to institutionalise these indicators by reporting progress on an annual basis during the health sector review conference.

Finally, on behalf of the Ministry of Health, I express our appreciation to the World Health Organization, the Global Fund, the Global Alliance for Vaccines and Immunization for providing the much needed financial and technical support for the conduct of SARA 2018.

Hon. Wilhemina Jallah, MD
Minister of Health

Acknowledgements

The Service Availability and Readiness Assessment (SARA) and Quality of Care (QoC) 2018 reports are a situational review of progress and performance of the Liberian health sector, which has been undertaken by the MoH. However, the Ministry could not have successfully undertaken and completed this assignment alone without the invaluable contribution of various individuals, institutions and organisations – public or private, national or international.

I wish to recognise experts from health programmes in the MoH, national institutes, private sector and health collaborative partners like WHO, UNICEF, UNFPA, LISGIS, Global Fund, GAVI, LMDC, USAID/CSH and etc who participated in this project by providing technical and financial assistance. To all those who contributed in one-way or the other in this endeavour, please accept the sincere appreciation of the leadership of the Ministry for a job well done.

However, kindly allow me to single out a few individuals and institutions to highlight the collective effort that went into producing this report. At the Ministry, I would like to recognise the efforts of Assistant Minister Chea Sanford Wesseh and his team comprising Nelson K. Dunbar, Luke L. Bawo, Beatrice Lah-Reeves, Dr. Lekilay Tehmeh and Dikena Jackson and at LISGIS; Mr. Joseph Nyan for the vision, leadership, management and support from the team made this possible.

I would also like to recognise and congratulate Global Fund, WHO and GAVI for accepting our proposal and providing the technical, financial and moral support for this assignment.

Once again, on the behalf of the MoH, I thank you all.

Hon. A. Vaifee Tulay
Deputy Minister for Policy, Planning & M&E

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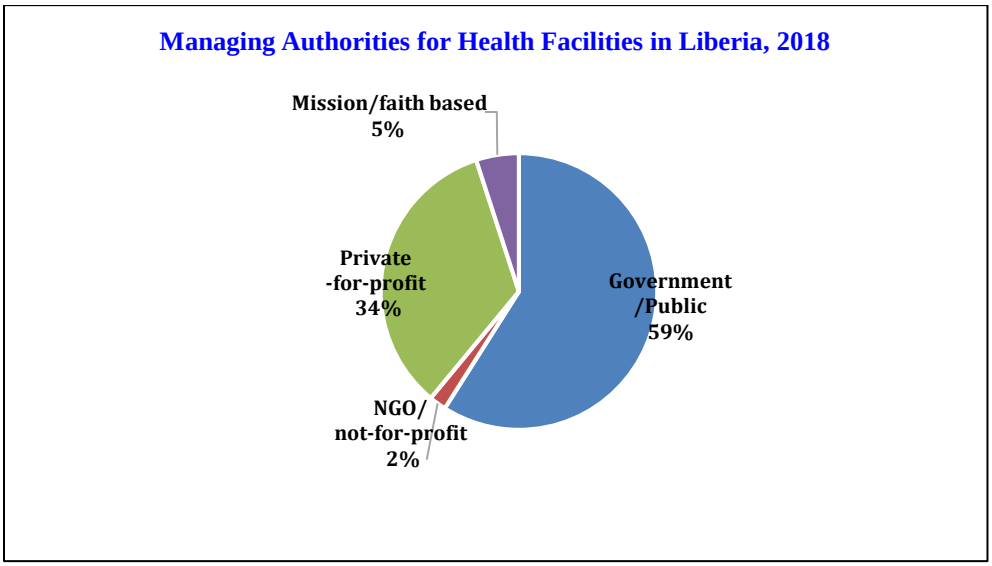
Abbreviation & Acronyms

ACT	Artemisinin combination therapy
AIDS	Acquired immune deficiency syndrome
ANC	Ante-natal care
ART	Anti-retroviral Therapy
ARV	Anti-retroviral
BCG	Bacillus Calmette-Guérin
BEmOC	Basic emergency obstetric care
CBC	Complete blood count
CD4	Cluster of differentiation 4
CEmOC	Comprehensive emergency obstetric care
D&C	Dilation and curettage
DBS	Dried blood spot
DHIS2	District health information software/system version 2
DTP	Diphtheria tetanus pertussis
GoL	Government of Liberia
GPS	Global positioning system
HepB	Hepatitis B
HiB	Haemophilus influenza type B
HIV	Human immunodeficiency virus
HIV+	HIV positive
HMIS	Health management information system
IMCI	Integrated management of childhood illness
IMEESC I	ntegrated management of emergency and essential surgical care
IPT	Intermittent preventive therapy
ITN	Insecticide treated net
IV	Intravenous
M&E	Monitoring and evaluation
MDR-TB	Multiple drug resistant tuberculosis
MNCAH	Maternal, neo-natal, child and adolescent health
MoH	Ministry of Health
NCD	Non-communicable disease
ORS	Oral rehydration solution
PMTCT	Prevention of mother-to-child transmission
RDT	Rapid diagnostic test
SARA	Service availability and readiness assessment
SDG	Sustainable development goal
SP	Sufadoxine pyrimethamine
STI	Sexually transmitted infection
TB	Tuberculosis
UNFPA	United Nations Population Fund
UNICEF	United Nations Children’s Fund
WHO	World Health Organization

Executive summary

Service availability

Access to health services: The 2018 service availability assessment conducted in Liberia covered 765 health facilities as compared to 701 in 2016, with Montserrado County having the highest number of facilities (268), representing 35% of the total health facilities; with the Grand Kru and Gbarpolu Counties having least number each of them had 17 health facilities (both counties constituted 4.8% of the total health facilities). Based on the SARA, the Public health facilities are majority (59%), followed by private for-profit (34%), private not-for-profit (2%) and Faith based (5%).



As expected the majority of health facilities in Liberia were Clinic constituting 87.7%, Health Centres 7.5% and Hospitals 4.9%; and a little over half (56.7%) of the facilities are located in the rural areas.

The 2018 SARA determined the country's health facility density (facilities per 10,000 persons) as 1.95 (as compared to 1.7 in 2016, thou lower than the recommended WHO average of 2 per 10,000 population, there has been an increase compared to 2016. The following six (6) counties had health facility density of above 2 per 10,000: Bomi-2.17, Grand Cape Mount – 2.09, Grand Kru – 2.43, River Cess – 2.20, Sinoe – 2.75, and Rivergee – 2.36). The rest (9 counties out 15) had below the recommended health facility density with least being Bong – 1.29 and Grand Bassa – 1.25 respectively.

Utilization of health services is critical in prevention of communicable and non-communicable conditions, reverse the rising burden of chronic diseases, increase life expectancy with improved disability adjusted life lived. In Liberia, overall, the number of outpatient visits per person per year is approximately 1 visit per person per year compared to 0.7 in 2016. This is below the WHO recommended 5 visits per person per year. The county with the highest visits per person per year was Grand Kru – 1.65 (as compared to Bomi - 1.06 in 2016) and Gbapolu and Cape Mount

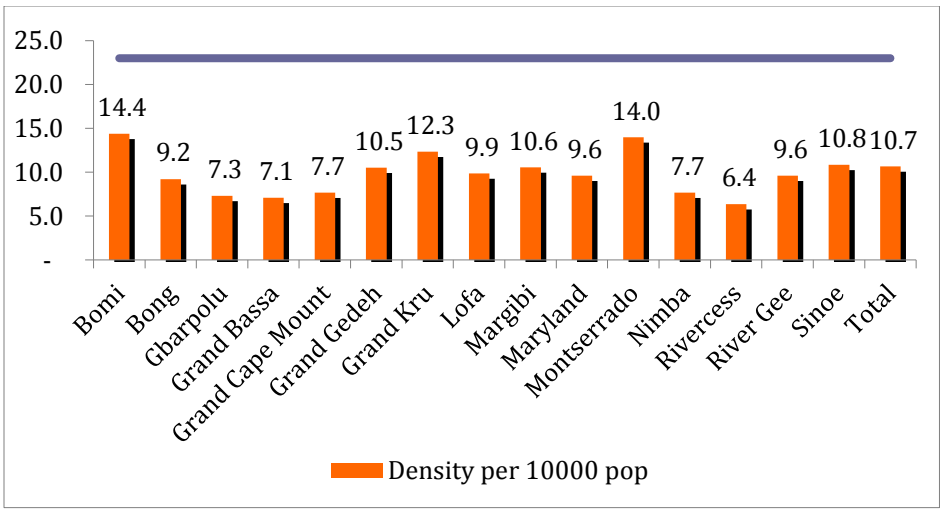
recorded below 1 visit per person per year. This finding is a clear indication of how low the accessibility to health services is, and this is a challenge to achieving services coverage in Liberia.

Bed Density: Facility beds are used to indicate the availability of inpatient services. Liberia has an inpatient bed density of 16.4 per 10,000 population compared to 6.3 in 2016. Thou SARA 2018 shows as increase in Bed Density, this is still below the WHO recommendation of 30 per 10,000 population per county. The inpatient bed density ranged from 5.6 in Grand Cape Mount to 24.9 in Grand Kru County.

Emergency transport availability: In Liberia the transport availability across the counties is not evenly distributed especially with emergency transport. Availability of transport to health facilities is as follows: Motorcycles are the most common form of emergency and general transport (75%), followed by utility vehicles (16%), and the least is ambulances (9%). The assessment determined 79 (11%) out of the surveyed 765 health facilities had a functional ambulance or any other vehicle for emergency stationed at the facility/operates from the facility; this translates to 2.4 functional emergency ambulance/vehicle per 100,000 population compared to 1 in 2016. During the 2018 survey period, almost all of the counties had at least 3 functional ambulance, as compared to 2016 SARA survey where 6 of the 15 counties namely: Bong, Gbarpolu, Grand Bassa, Grand Cape Mount, Lofa, River Gee and Rivercess, had no ambulance.

Availability of core health workforce: The Core health workers in Liberia as per SARA collected data were 11 health workers per 10,000 population as opposed to 11.4 in 2016.

Two (2) counties had very high work force density above the WHO recommended Core workforce density: Bomi 14.4 per 10,000 population and Montserrado 14.0 per 10,000 population. Three (3) counties had extremely low workforce density are: Cape Mount 7.7, Nimba 7.7 andRivercess – 6.4 core health workers per 10,000 population respectively. Three (3) counties had core workforce density of 10 per 10,000 population: Grand Gedeh, Margibi, and Sinoe. The rest of the 10 counties had workforce density below 10: Bong – 9; Cape Mount – 9; River Gee – 7; River Cess – 6; and Sinoe – 8.



Summary of General Service availability by counties, Liberia 2018

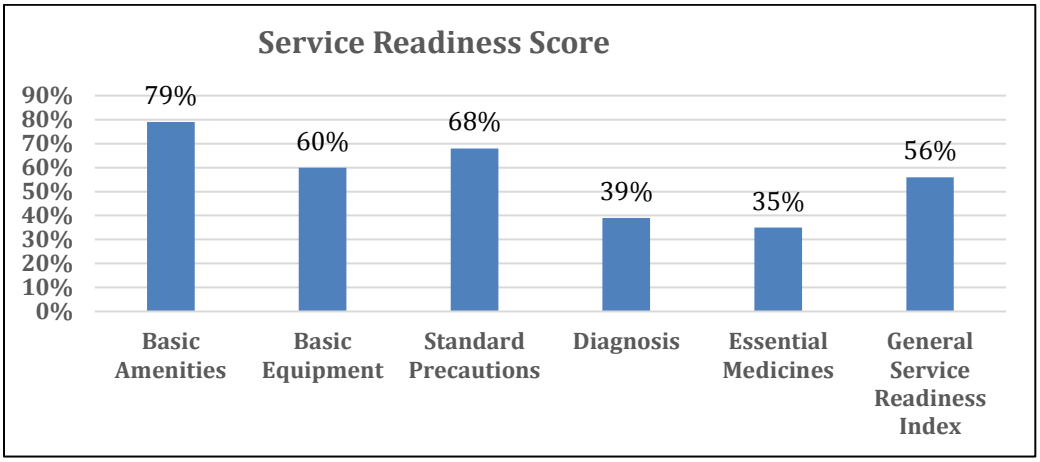
Row Labels	In patient Beds per 10,000 population	Health facility density per 10,000	Health Work force density per 10,000	Out patient Utilization per 10,000
Bomi	18.2	2.2	14.4	1.1
Bong	16.5	1.3	9.9	1.1
Gbarpolu	11.6	1.5	7.3	0.68
Grand Bassa	12.6	1.3	7.1	1.1
Grand Cape Mt	5.6	2.2	7.7	0.84
Grand Gedeh	14.9	1.6	10.5	1.1
Grand Kru	25.0	2.7	12.3	1.7
Lofa	22.6	1.7	9.9	1.6
Margibi	24.3	2.1	10.6	1.1
Maryland	13.9	1.6	9.6	1.1
Montserrado	18.4	2.4	14.0	1.1
Nimba	20.3	1.3	7.7	1.1
River Gee	10.6	2.4	9.6	1.4
Rivercess	14.5	2.2	6.4	1.1
Sinoe	17.4	3.6	10.8	1.3
Grand Total	16.4	1.95	10.7	1.12

Readiness to provide health services

Readiness or capacity of health facilities to offer required health services was assessed based on the presence and functionality of equipment and supplies necessary to provide services within the following five domains: basic amenities, basic equipment, standard precautions, diagnostic testing, and essential medicines. A list of the tracer items is detailed under each domain.

Overall, the capacity for health facilities to provide health services in Liberia measured by General service readiness index is 56 % compared 53 in 2016, meaning that about 1 out of 2 health facilities is ready to provide health services. Basic amenities such as availability of clean and safe water, power, communication etc. which are essential to provide health services was readily available in 79% of the health facilities. To assure safety of the clients and staff, standard precautions for infection prevention was available in 73% of the health facilities.

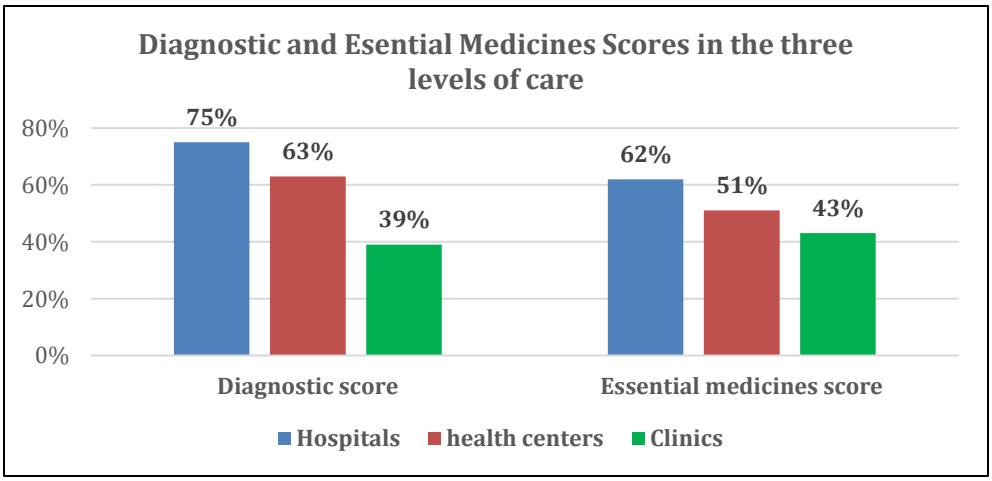
The service readiness index in Liberia of 56% was contributed by the following mean scores: Basic Amenities – 79% as compared to 57% in 2016; Basic Equipment – 60% as opposed to 77% in 2016; Standard Precautions – 68% as opposed to 73%; Diagnostics – 39% as opposed to 42%; Essential Medicines – 35% as opposed to 44% in 2016. It is notable the diagnostics and essential medicines readiness mean scores were comparatively lower.



Only two (2) counties had a diagnostic mean score of 50% and above: Grand Gedeh – 68% and Grand kru 50% (as compared to Grand Gedeh 53% and. Rivercess – 56% in 2016). Two counties had a diagnostics mean score of less than 30%: Lofa – 27% and Gbarpolu 20% (as opposed to three counties Maryland – 24%; Grand Bassa – 29%; and Sinoe – 27% in 2016).

Only three (3) counties had a mean score of Essential medicines of 41%: Grand Kru 41, Lofa 41%, and Rivercess 41%, as opposed to 50% and above: Bomi – 50% and Grand Gedeh – 50%; and Rivercess – 51% in 2016. The rest of the counties had a score below 40% as opposed to 50% in 2016, with one (1) having a score below 30%, Sinoe- 23% as opposed to 40%, Nimba – 38%.

The above findings are an indication of the low accessibility of diagnostics and essential medicines for patients seeking health care in Liberian health facilities. Hospitals had a diagnostic score of 81% as compared to 75% in 2016 and Essential medicines score of 63% compared to 62% in 2016; the health centers and clinics are the most affected with a Diagnostics Score of: health centers – 64% as compared to 63% in 2016 and Clinics – 36 compared to 39%; and an Essential Medicines Score of: health centers – 43% (as opposed to 51% and 43% for health centers and clinics in 2016 respectively).



Specific services availability and readiness

The assessment of specific services focused on availability and readiness to provide the following twenty specific health services: Family planning, Antenatal care, Delivery (normal delivery and basic emergency obstetric care), Routine child immunization, Preventive and curative services for children under five years of age, Adolescent health services, Malaria, Tuberculosis diagnosis and treatment, HIV counseling and testing, HIV/AIDS care and support, Antiretroviral prescription and client management, Prevention of mother-to-child transmission of HIV (PMTCT), Sexually-transmitted infections services, Diabetes, Cardiovascular disease, Chronic respiratory disease management, Basic surgical services, advanced surgical services, high-level diagnostics and Blood transfusion services.

Reproductive, maternal, neonatal, child, and adolescent health (RMNCAH)*:* Liberia is one of the countries with highest maternal mortality ratio at 1072/100,000 live births. The SARA+ 2018 assessment established the following findings on services availability, readiness and quality of care:

- ***Family Planning***: Overall in Liberia, 83% (N=765) of health facilities provide family planning services compared 88% in 2016. Out of the 596 health facilities assessed for readiness, the following was established: 62% (as compared to 48% in 2016) had family planning guidelines available; 17% (as compared to 14% in 2016) had at least one trained staff in family planning during the last two years; and readiness of contraceptives including male condoms was over 89% (as opposed to 90% in 2016) except for progestin whose readiness score was 87% (as opposed to 85% in 2016). However, some auxiliary indicators had low readiness score: combined estrogen progesterone injectable contraceptive – 85% (as compared to 10%); emergency contraceptive – 11%; inter-uterine device (IUCD) – 43%; Female condoms – 68%.

- ***Antenatal Care Services (ANC)***: In Liberia 87% (765) as compared to 90% (631)) of health facilities that offer ANC services in 2016. The following was established from the 638 health facilities assessed for readiness: 75% (as compared to 48% in 2016) health facilities had guidelines available for antenatal care; 90% (as opposed to 91% in 2016) had blood pressure apparatus; 84% (as opposed to 87% in 2016) had Folic Acid tablets and 78% had Iron tablets; 79% (as opposed to 83% in 2016) had Tetanus toxoid vaccine and 85% for IPT drug as compared to 83% in 2016. .

- ***Basic Obstetric Care (BOC):*** In Liberia, 85% (N=765) (as opposed to 89% (630) in 2016) health facilities offered delivery services. The readiness score for health facilities with Guidelines for essential childbirth care was 62% as compared to 52% in 2016. 82% as compared to 79% in 2016 had emergency transport; 18% as opposed to 23% had sterilization of equipment; 33% compared to 31% in 2016 had vacuum aspirator or D&C kit; 23% as opposed to 13% in 2016 had a Manual vacuum extractor; 89% had blood pressure apparatus. In contrast, medicines and commodities for these services indicated a higher readiness score: Delivery pack – 95% as compared to 92% in 2016; Gloves – 94% as opposed 95% in 2016; injectable antibiotic – 76% as opposed to 91% in 2016, among others.

- ***Comprehensive Obstetric Care (CEmOc):*** Comprehensive emergency obstetric care was available in 60% of hospitals as compared to 51% in 2016. Caesarean section was provided in 89% of the hospitals and 12% of the health centers in 2018 compared to 80% and 2% in Hospitals and Health centers in 2016. Blood transfusion services were available in 89% of the hospitals and in 18% of the health centers in 2018 than noticed with 84% and 4% hospitals and health centers in 2016.
  Readiness of health facilities to offer CEmOc is greatly compromised by the following health facilities readiness scores: On average 44% of the health facilities (N=58) had at least 1 tracer item to provide CEmONC services as compared to 57% in 2016 (N=48) with only 2% facilities having all items compared to none in 2016.

  Guidelines of CEmOc available – 36% as compared to 18% in 2016; at least one (1) trained – 15% as compared to 6%; anaesthesia equipment – 16% compared to 13% in 2016; incubator – 37% as compared to 33% in 2016; Cross match testing – 29% as compared to 28% in 2016; and Halothane (inhalation) – 22% as opposed to 27% in 2016. Notable low readiness scores for drugs consumables critical for Caesarean sections to be undertaken were: Halothane (inhalation – 22% as compared to 27% in 2016; Thiopental – 34% as compared to 49% in 2016; and Suxamethonium – 27% compared to 50% in 2016.

- ***Child Immunization:*** Routine child immunization is provided in 81% (N=765) of the health facilities as compared to 82% (N=701) in 2016, not all of these facilities had the required vaccines doses, availability was as follows: birth doses – 71% (N=765) as compared to 70% (N= 403) in 2016; infant doses – 77% (N=765) as compared to 77% (N=443) in 2016 and Adolescent doses – 69% (N=765) as compared to 73% (N=420) in 2016. Child immunization was offered daily in only 77% (N=765) as compared to 78% (N=449) facilities in 2016.

  The 586 health facilities assessed for readiness to offer immunization services, as compared to 534 in 2016 had a readiness score (mean availability of tracer items) of 80% as compared to 76% in 2016. The readiness score was good for the following: at least one staff trained – 79% as opposed to 88% in 2016; cold box with ice packs – 95% compared to 94% in 2016, immunization cards – 95% as compared to 93% in 2016. However, the immunization services are seriously compromised by the following readiness scores for key tracer items: child immunization guidelines availability – 85% as compared to 77% in 2016; Refrigerator – 79%; temperature monitoring device in refrigerator – 65%; measles vaccine – 84% compared to 86% in 2016; DPT-HiB+HepB vaccine – 88% as opposed to 90% in 2016; 0ral polio vaccine – 88% as opposed to 97% in 2016; BCG vaccine – 76% as opposed to 82% in 2016, pneumococcal vaccine - 88%; IPV (inactivated poliovirus vaccine) – 64% as compared to 7% in 2016; HPV Human Papillomavirus) vaccine – 13% as compared to 5% in 2016.

  The assessment determined there were stock outs of the following vaccines among the 586 health facilities: measles vaccines in 37% as compared to 10% (N= 53) facilities in 2016; DPT-HiP+HepB in 15% as compared to 8% (N= 43) in 2016; Oral Polio vaccine in 13% as opposed to 10% (N= 53) in 2016; BCG vaccine in 60% as compared to 14%, Rotavirus vaccine – 27% as compared to 13% (N=69) in 2016; Pneumococcal – 15% as compared to 9% (N= 48) in 2016; IPV – 79% () as opposed to 3% (N= 16) in 2016; and HPV – 31% compared to 4% in 2016 (N=21).

- ***Child preventive and curative care:***
  Preventive and curative care services for children under five years of age were provided in 87% (N=765) of the health facilities in Liberia. Treatment of malaria in children was available in 87% of the health facilities while the administration of amoxicillin and treatment of pneumonia was provided in 85% and 86% of the health facilities respectively. ORS and Zinc supplementation to children with diarrhea was available in 78% of the health facilities. Iron and Vitamin A supplementations were offered in 84% and 75% of the health facilities in Liberia. Child growth monitoring service, and Diagnosis and treatment of malnutrition were also available in 53% and 67% of the health facilities.

  The survey established that 53% (N=641) of the health facilities had at least one tracer item (readiness score) to provide preventive and curative services to under five years children and none had all items.

  Tracer items that had a readiness score of 90% and above were two (2): Thermometer – 91% and stethoscope – 94%. Majority had poor readiness scores for example the following: guidelines for growth monitoring – 41%; staff trained in IMCI – 15%; staff trained in growth monitoring – 11%; growth chart – 38%; Haemoglobin – 18%; test parasite in stool – 22%.

- ***Adolescent Health:*** Adolescent health services are available in 86% (N=765). Services that are most available are: family planning services to adolescents – 76%; provision of combined oral contraceptive pills to adolescents – 78% and provision of condoms to adolescents – 79%. Availability of the following services was low but have increased when compare to 2016: HIV testing and counselling services to adolescents – 56%; provision of emergency contraceptive pills to adolescents – 20%; provision of IUCD to adolescents – 38% and provision of ART to adolescents – 33%.

  The Readiness means score on average was 38% of the health facilities (N=639) and had at least 1 tracer item to provide adolescent health service compared to 34% facilities (N=569) in 2016. None of the health facility had all tracer items in both 2016 and 2018 findings.
  Only condom availability and HIV diagnostic capacity were good at 84% and 70% respectively; the readiness score was very low at the time of the assessment for the following: Guidelines for service provision to adolescents – 36%; staff trained in provision of adolescent health services – 7%; staff providing family planning services trained in adolescent sexual and reproductive health – 13%; Staff providing HIV testing and counselling services trained in HIV/AIDS, prevention, care, and management for adolescents – 20%.

  The above findings are clear indication of the limited access and coverage of adolescent health services in Liberia.

- ***Essential medicines for mothers***: at the time of assessment availability of essential medicines for mothers was at 42%; Most tracer items availability in the health facilities ranged between 37% to 81% with the most stocked drug being, Oxytocin injectable (81%) and gentamicin injectable (70%) compared to 81% and 70% in 2016.
  Forty percent (40%) of health facilities have Betamethasome injectable and 59% magnesium sulphate injectable compared to 71% each in 2016.
  The least available tracer medicine was Cefixime capsules/tablets (11%) compared to Nifedipine 18% in 2016.

- ***Essential medicines for children***: Overall, 53% of the health facilities (N=765) have at least 1 tracer item that is essential medicines for treatment of children compared to 66% in 2016.
  The most available tracer items were oral rehydration salts sachets (72%), artemisinin combination therapy (ACT) (76%) and Zinc sulphate tablets or syrups (48%) compared to 94%, 92% and 82% in 2016.
  Vitamin A capsules were available but in 48% of the health facilities.
  The least available medicine for children in health facilities was morphine granule, injectable/ Capsules/tablets (1%) and procaine benzyl penicillin powder for injection (32%) compared to 1%, 38% in 2016.

- ***HIV/AIDS Counselling and Testing***: In Liberia 74%% of the surveyed health facilities (448) had at least one tracer item for provision of HIV counseling and Testing services as compared to 66% in 2016 and 20 per cent of them had all tracer items required as compared to 5 % in 2016. Diagnostic capacity to check for HIV was available in 91% of the 448 surveyed facilities and 91% of them had room with visual and auditory privacy. These findings were not statistically different from 2016 SARA conducted. Condoms were issued in 83% of the health facilities surveyed. The result showed no change between 2016 and 2018. Availability of Guidelines for HIV counseling and testing improved from 52% in 2016 to 75% 2016. At least available tracer item; at least 1 trained staff in HIV counseling and testing in the past two years preceding the survey increased from 12% to 32% in facilities surveyed in 2016.

- ***HIV/AIDS Care and Support Services***: Generally HIV care and support services were provided in 32% facilities (N=765) compared to 20% of the health facilities (N=701). Palliative care, treatment for Kaposi's sarcoma and nutritional rehabilitation was available in 31%, 9% and 24% in 2018 compared to 12%, 5% and 9% of the health facilities in 2016. Treatment of opportunistic infections was available in 30% compared to 15% of the health facilities in 2016.

  Readiness to provide HIV/AIDs care and support was provided in 58% of surveyed health facilities (N=231) as provided in 55%, 2016 (N=115), however, none of these facilities had all tracer items. Guidelines for management of HIV/AIDS and palliative care were available in 83% down from 54% in 2016 and 58% down from 36% in 2016 respectively. Systems for diagnosis

of Tuberculosis among HIV clients increased from 46% in 2016 to 63% in 2018. Additionally, availability of medicines and commodities reduced from 80% in 2016 to 55% in 2018 of health facilities with the least available item being First line Tuberculosis medicines reducing from 30% in 2016 to 28% in 2018, and Intravenous treatment for fungal infections show no significant difference with (11%). At least one trained staff in clinical management of HIV/AIDS in the past two years preceding the survey was available in 42% of the health facilities down from 12% in 2016.

- ***Antiretroviral therapy (ART) availability:*** Anti-retroviral prescriptions and ARV treatment follow-up services were available in 36% of the health facilities (N=765) as compared to 12% in 2016 (N=701). Treatment follow-ups for Anti-retroviral therapy was available in 32% of the health facilities down from 9% in 2016 while Antiretroviral prescriptions availability improved from 10% in 2016 to 34% in 2018 of the health facilities.

  Health facilities readiness to offer ART services has improved with guidelines for ART available in 83% of the health facilities (N=254) representing an increased from 56% in 2016 (N=94). Viral load or CD4 checking is done in 4% of the health facilities than 3% in 2016 while Complete blood count (CBC) is done in 5% (1% decreased from 2016) of the health facilities surveyed.

- ***Prevention of mother to child transmission (PMTCT):*** PMTCT services were provided in 65% of the surveyed health facilities (N=765) compared to 61% in 2016 (N=701). ARV prophylaxis to HIV+ women was available in 45% of the surveyed health facilities than 42% in 2016
  Family planning counselling to HIV+ women was available in 62% of the surveyed health facilities than 53% in 2016, while HIV counseling and testing to HIV+ pregnant women was available in 55% (decrease by 5% from 2016) of the surveyed health facilities and to infants born to HIV+ pregnant women in 58% (increased by 9% from 2016) of the surveyed health facilities.

  The 445 health facilities assessed for PMTCT readiness had the following scores: At least one of the tracer items to provide PMTCT services in Liberia was available in 43% (N=445) of the surveyed health facilities than 37% in 2016 (N=371). Capacity to check for HIV in Adult was available in 87% of the surveyed health facilities, similar in 2016 while DBS for diagnosing newborn HIV were available in 3% of the surveyed health facilities compared 1% in 2016.
  Room with visual and auditory privacy was available in 91% of the surveyed health facilities than 88% in 2016.
  Guideline for PMTCT (76%) and infant and young feeding (61%) were available in health facilities compared to 65% and 46% in 2016, while Maternal antiretroviral prophylaxis was available in 35% of the surveyed health facilities, while nevirapine and Zidovudine syrups were available in 31% and 3% of the health facilities respectively compared to 21%, 26% and 3% in 2016.

- ***Sexually transmitted infections (STIs):*** Services for STIs were provided in 91% of the health facilities (N=765) in Liberia representing a decrease of 3% from 2016 (N=701)
  Diagnosis for STIs was available in 91% of the surveyed health facilities representing a decrease of 2% from 2016.

Readiness assessment of the surveyed health facilities (N=686) was 52% in 2018 with 2% having all tracer items than 55% and 1% in 2016. Guidelines for diagnosis and treatment for STIs was available in 64% down from 48% in 2016 while rapid test for Syphilis was provided in 23% of the surveyed health facilities compared to 21% in 2016.

- ***Tuberculosis (TB) services***: Tuberculosis services in Liberia are provided in 25% of the surveyed health facilities (N=765) as compared to 21% in 2016 (N=701).
  Tuberculosis diagnosis was available in 19 % of the surveyed health facilities with 16% of them able to provide prescription of drugs for tuberculosis to patients and 17% providing drugs to TB patients. This is higher compared to 2016 with 16%, 14% and 15% respectively.
  On average, Tuberculosis diagnostic testing was done in 16% of the surveyed health facilities.

  Health facilities (N=184) readiness to provide Tuberculosis services was 42% on average and 2% of the surveyed health facility had all tracer items as compared to 34% facilities the provided TB services with none having all tracer items in 2016.
  All first line tuberculosis medicines were available in 42% of the surveyed health facilities with decreased of 5% from 47% in 2016. Tuberculosis microscopy was provided in 36% (decreased from 41% in 2016) of the health facilities while, 90% (increased from 84% in 2016) of the facilities had HIV diagnostic capacity and 67% (decreased from 84% in 2016) of them having systems for diagnosis of HIV among tuberculosis patients.
  Guidelines for TB/HIV services were available in more than 30% of the health facilities.
  Health facilities with tuberculosis medicines and commodities available decreased from 47% to 42% in 2018.

- ***Malaria services***: Diagnosis and treatment of Malaria is provided in 94% of the surveyed health facilities (N=765) thus representing a decreased of 3% from 2016.
  Malaria diagnosis is available in 94% of the health facilities with 93% of them accounting for malaria diagnosis and testing compared to 96% in 2016 while 93% of the health facilities surveyed provided treatment than 96% in 2016.
  Malaria Rapid Diagnosis testing kits was available and used in 92 % of surveyed facilities compared to 96% in 2016, while diagnosis by microscopy was done in 37% of surveyed service delivery points compared 38% in 2016.

  Assessment of 714 health facilities determined readiness to provide malaria services as follows: 58% of the surveyed health facilities (N=714) had at least one tracer item to provide malaria services with none of the facility having all items available compared to 60% and 1% in 2016. Diagnostic capacity to check for malaria in the surveyed health facilities was said to be 70% which show a down ward trend from 88% in 2016, while first-line antimalarial drug availability shows a decline from 93% in 2016 to 88%. Paracetamol tablets and IPTp was available in 65% and 81% of health facilities.
  Long Lasting Insecticide treated Nets were available in 71% of the surveyed health facilities
  Guidelines for diagnosis and treatment of Malaria and intermittent presumptive treatment in pregnancy were (56%) and 81% respectively in 2018.

Non-communicable diseases were the other major conditions for which services were assessed. Non-communicable disease services were available in less than 50% of the health facilities (N=765) similarly in 2016.The most available service was diagnosis and management of cardio vascular disease (49 %) compared to 43% in 2016 while the least available service was cervical cancer diagnosis in 5% of the health facilities than 4% in 2016.

The readiness to provide NCDs in health facilities are shown below:
Diabetes diagnosis and management was provided in 44% of the health facilities (N=259) compared to 49% in 2016, while Cardiovascular diseases diagnosis and management was provided in 40% of the health facilities (N=381) than 43% in 2016
Chronic respiratory disease diagnosis and management was provided in 31% of the health facilities (N=307) compared to 37% in 2016, while Cervical cancer diagnosis was provided in 40% of the health facilities (N=54) compared 31% in 2016.

On Neglected Tropical Diseases (NTD), In Liberia 31% of health facilities provide NTDs services compared 51% in 2016. Leprosy diagnosis and management services is available in 27.1% of the health facilities compared to 38% in 2016, while Lymphatic Filariasis, Soil Transmitted Helminths and diagnosis and management services are available in 33.6% of the health facilities compared 53% in 2016.
Schistosomiasis diagnosis and management services is available in 30.4% of the health facilities, while Onchocerciasis diagnosis and management services is provided in 32.8% of the health facilities compared to 62% in 2016.

On average, the readiness score was 31% in the health facilities (N=407) assessed with none having all tracer items. Additionally, Ivermectin and Multi Drug therapy were the most stocked and available medicine for the management of NTDs in 34% of the health facilities respectively, while the least available drug was Streptomycin found in 27% of the facilities followed by clarithromycin (28%) in the health facilities.

- **Advance diagnostics** on average 37% of the hospitals (N=36) provided advanced diagnostic services compared to 28% in 2016, while Urine dipstick with microscopy available in 82% of the hospitals compared to 80% in 2016. Finally, Grain stain investigation is provided in 54% of the hospitals compared to 48% in 2016.

Quality of Care summary of Findings

The assessment of quality and safety of services delivered by 32 hospitals and 48 health centres within the four priority programs, namely, TB, Malaria, ART and PMTCT is fairly low as indicated by the following key findings:

Quality and safety of ART care assessed reveal that the Mean percent of all criteria fulfilled as per the standard for quality and safety of care for ART was 40% compared to 35% in 2016.
The number of patients with ART eligibility documented in patients' record by county amounted to 96% compared to 81% in 2016 while the number of patients whose CD4 count was documented once in the record by county and facility was said to be 12% with 4% of patient load documented at least once in record by county and facility respectively

Quality and safety of TB services: The TB QOC survey covered 58 health facilities (Hospitals and Health Centers) providing TB care services. The mean percentage of all items across facilities assessed was 42% compared to 36% in 2016. Patients eligible for cotrim preventive was 14% while patients tested for HIV and had results recorded were 71%.

Quality and safety of PMCTC services: Assessment of quality and safety of PMCT care offered to patients had a mean percentage of 36% (N=218 clients) at the time of the survey, this reflects increased from 24% in 2016 as shown in Figure 60 below.

- Testing of infant within 8 weeks of birth was 32% than 8% of all deliveries in 2016;

Quality and safety of Malaria services: The mean percentage for health facilities providing quality of care was 59%, an indication of relatively strong quality of malaria interventions as compared to 30% in 2016, which indicated a weak quality of care interventions for malaria. On the overall, the number of patients' clinically diagnosed of Malaria amounted to 23.3% where as the number of patients' whose malaria blood test were taken either by mRDT or MS was 79.9% indicating progress toward achieving national target.

In conclusion, service availability in Liberia is moderately available, however, the capacity for health facilities to provide essential health care services was limited with health facilities not having the adequate staff to provide the requisite services, at the same time infrastructural standards for health facility levels have been compromised for instance hospitals not providing the required services for their level. There are major gaps among counties with some without certain services. Health facility service utilisation was also very low challenging both health promotions to the populace as well as strategies to address demand of health services in Liberia, thus the need to conduct client satisfaction survey that will provide clearer reasons behind the low utilization of health care. Major milestones achieved are in areas of some medicines and commodities that ensure access to healthcare medication, and availability of standard precautions for infections preventions but there are still major need for improvement. Moreover, general service availability was quite low; hence the need for clear strategic plan to address human resource for health, investments in health infrastructure, investments in equipment and diagnostics as well creates demand for service utilisation across.

CHAPTER ONE: Background and Introduction

1.1 Geography, Population and Demography

Liberia is on the west coast of Africa, occupying a land surface area of 110,080 sq km and a coastline of 560 km that stretches along the Atlantic Ocean. The country is bordered by Sierra Leone to the west, Guinea to the northwest, and Côte d'Ivoire to the northeast and the east and Atlantic Ocean to the south. The country is divided into 15 counties that are further subdivided into 92 districts and 5 regions with a national population projection of 4.2 million people in 2018[1]. Despite the economic growth of the country, more than half of the population (50.9 percent) lives below the poverty line on less than US$1.30 per day (Liberia Household Income And Expenditure Survey, 2016) with Human Development Index (HDI), composite score as measured by the United Nations Development Program (UNDP), at 0.427 (UNDP), 2015[1].

1.2 Overview of the Health Sector, and System

The Ebola virus disease (EVD) exposed the weaknesses in the health system and implementation of the ten (10) years National Health Policy (2011-2021) including the formulation of a health sector recovery and investment plan (2011-2021) that serves as a roadmap for future implementation of the health sector. The Investment Plan for Building a Resilient Health System complements the National Health Policy and Plan which has nine investment areas (fit for purpose health workforce, community engagement, leadership and governance, health information system, quality health service delivery, medicines and technology, emergency preparedness and response, health financing and health infrastructure) that enable the health sector to become responsive and proactive in dealing with future outbreaks and public health emergencies.

There are 831 health facilities in Liberia, across the 15 counties. Public health facilities are majority (55%), followed by private (45%). There are few Hospitals (5%), and Health Centers (7%) but clinics are majority (88%) with almost equal distribution between rural (49.6%) and Urban (50.4%) Malaria remains the major cause of outpatients as well as hospitalization in the health sector. For the past three years, malaria remains the leading cause for in patient admission (33% on average), anemia (7.5% on average), STIs, ARI and injuries (MOH Annual Report 2015).

[1] Liberia Institute of Statistics and Geo-Information Services (LISGIS): Liberia Households Income and Expenditure Survey 2014 Statistical Abstract, March 2016.

The Demographic survey of 2013 provides for the under-5 mortality rate in Liberia of 94 deaths per 1,000 live births. The infant mortality rate, or deaths before the first birthday, is 54 deaths per 1,000 live births, and newborn mortality rate is 26 per 1,000 live births, while maternal mortality ratio is 1072 per 100,000 live births (DHS 2013)

The proportions of health facilities in Liberia consist of 5% hospitals, 7% health centers and 88% are clinics offering a range of services across the health sector. According to the Health Workforce Census Report 2016, there are at least 18 health-training institutions in Liberia with over 44% in Montserrado.

1.3 Overview of the Service Availability and Readiness Assessment

1.3.1 Why Liberian SARA and QOC?

The Liberian SARA including Quality of Care (QOC) aimed at providing critical data and information to enable MOH and partners fill data gaps and verify the quality of routinely reported data that informs progress and performance in the health sector. The SARA provides a snapshot about the types of Health services offered in various Health Facilities by type (i.e. Clinics, Health Centers and Hospitals) and whether those services are being well offered in line with the national protocol as Liberia strives in building a resilient Health System in post Ebola period.

Liberia Agenda for Transformation for 2013-17, the first step towards the long-term national vision, “Liberia Rising 2030” to reach middle-income status implementation calls for a comprehensive understanding of SARA. To support progressive realization of the Fragile States Facility (FSF), Medicine, operations of healthcare in terms of capacity building and diagnostics: Knowledge of which health and related services are being provided, where they are provided is critical.

In order for the government of Liberia and partners be informed on kind of support healthcare services efficiently and cost-effectively require, knowledge of which investments, programs existed, and what their state of functionality and readiness to provide care are also critical ingredients in cost of healthcare service interventions. Currently Liberian government and partners prior to the SARA & QOC exercise have massive investment in healthcare as result of the recovery from the fragile state and post Ebola crisis; thus;

- Increasing numbers of services, programs and interventions being provided in Liberia, but little understanding of whether these were being provided;

- Little knowledge of scope and availability of inputs needed to deliver these increasing interventions;
- Liberian Health programs, with a description of services and interventions needed to be implemented, but no information in the current levels of implementation in line with National protocols/guidelines;
- Liberia strives in building a resilient Health System after being fragmented by the persistent occurrence of Ebola.

1.3.2 Elements of Liberia SARA

The World Health Organization (Ref) indicates "SARA" as a health facility assessment tool designed to assess and monitor the service availability and readiness of the health sector and to generate evidence to support the planning and managing of a health system. The Liberian SARA is designed as a systematic survey to generate a set of tracer indicators of service availability and readiness as well as determining the Quality Of Care (QOC) of the health interventions.

The SARA generates reliable and regular information on service delivery, the availability of basic equipment, basic amenities, essential medicines, and diagnostic capacities, and on the readiness of health facilities to provide basic health-care interventions relating to family planning, child health services, basic and comprehensive emergency obstetric and newborn care, HIV, TB, malaria, non- communicable and Neglected Tropical diseases. It also provides a systematic review of the health facility documents on performance and service quality of the health interventions.

With the increased demand for accountability and the need to demonstrate results at country and county levels, information is needed to track how health systems would respond to increased inputs and improved processes over time and the impact such inputs and processes have on improved health outcomes and better health status. The provision of the defined Health and related services is a function of:

i. Availability of the inputs needed to provide the service
ii. Health Worker Knowledge on the methods of provision of the service,
iii. The ability to appropriately mix the required inputs to deliver the service and
iv. The review of the documentations to establish the performance and service quality.

The capacity and readiness to offer specific interventions and the performance of the programmes in terms of improved Quality of care. It provides:

SARA and QOC focus on providing comprehensive information on Health Access (availability,

- Status of service provision across the Country/county (health outcomes),

- Capacity to provide services, looking at

  - ❖ Availability of critical inputs needed for provision of services
  - ❖ Functionality of critical inputs needed for provision of services and
- Readiness of critical inputs needed for provision of services
  - ❖ Readiness service index
  - ❖ Quality of care for such critical interventions.

It therefore will be able to provide information to decision makers and managers on the existing capacity for Service Provision. Availability of inputs is assessed through a mapping of existing Human Resources (numbers, and basic skills), Infrastructure availability (including physical infrastructure, equipment, transport, and ICT), and Health Products. Health worker knowledge and ability to fusion inputs is assessed through mapping of service readiness (leadership, and organizational capacity) and the performance of interventions through quality of care (QOC).

1.3.3 Objectives of SARA and QOC Assessment

The objective of the survey was to generate *reliable* and *regular* information on service delivery including service availability, such as the availability of key human and infrastructure resources, and on the readiness of health facilities to provide basic health-care interventions that relates to:

- Family planning,
- Child health services,
- Basic and comprehensive obstetric and newborn care,
- HIV/AIDS,
- Tuberculosis,
- Malaria
- Non-communicable diseases and Neglected Tropical Diseases and show progress in performance of health care service interventions in facilities.

1.3.4 Specific Objectives of the process of SARA+ and QOC in Liberia

The specific objectives of the survey were to:

1. To detect change and measure progress in health system strengthening over time in realization of Liberia Agenda for Transformation for 2013-17 the first step towards the long term national vision, **"Liberia Rising 2030**" to reach middle income status implementation;

2. To plan and monitor the scale-up of interventions that are key to achieving the SDGs such as:

   - Implementing interventions to reduce child and maternal mortality,
   - HIV/AIDS, tuberculosis and malaria, and
   - To respond to the increasing burden of non-communicable and neglected diseases

3. To generate evidence base to feed into country annual health reviews, to better inform the development of annual operational plans and to guide more effective country and partner investments as Liberia strive in building a resilient Health System after being fragmented by the persistent occurrence of Ebola.

4. To support national planners in planning and managing health systems (e.g. assessing equitable and appropriate distribution of services, human resources and availability of medicines and supplies);

5. To ensure that key outputs from SARA form the basis for national and subnational monitoring systems of general service availability and readiness, and service-specific readiness and

6. To ensure that SARA products include a regularly updated national database of public and private facilities, and an analytical report of core indicators to assess and monitor availability of health services and readiness to provide services.

CHAPTER TWO: Methodology and Data Collection

2.1 Selection of Areas and Sectors Surveyed

The second round of the Liberian SARA+ 2018 was a National Census intended to assess all Health Facilities of public and private sector. A total of 765 health facilities (Clinics, health centers and hospitals levels) were assessed out of a total of an estimated 831 health facilities in Liberia. A total of 671 Clinics, 58 Health Centers and 36 Hospitals were assessed during the SARA 2018 assessment in the fifteen counties of Liberia.

Seven Hundred and Sixty Five (765) health facilities were assessed during SARA 2018, the disaggregation by type are as follows:

- Hospital – 36
- Health Center – 58
- Clinic - 671

Health Facilities by ownership are as follows:

- Government/Public – 449
- NGO/not for profit – 19
- Private for profit – 261
- Mission/faith based - 36

The Quality of Care (QOC) assessment was undertaken for 32 hospitals and 48 health centers in all of the fifteen counties.

Survey Areas covered:

a) Cross Cutting Areas

- Service availability;
- Service readiness;
- Quality of Care: ART Record review, EMTCT Record review, TB Record review, Malaria Record review

b) Programme Areas

Health infrastructure; Health workforce; Service Utilization; Basic readiness; Family Planning; Maternal and Newborn Health; ANC; Basic Obstetric and Newborn Care; Comprehensive Obstetric and Newborn Care; Immunization; Child Health; Adolescent Reproductive Health and HIV Services; Priority medicines and commodities; Pediatric HIV Services; Voluntary Male Medical Circumcision Services; Gender-based Violence Services; Malaria; Tuberculosis; EMTCT; HIV

Testing Services; HIV Care & Support Services; Antiretroviral Therapy; Sexually Transmitted Infections (STIs); Diabetes; Cardiovascular Disease; Chronic Respiratory Disease; Cervical Cancer Screening; Surgery; Blood transfusion; Outpatient Emergency Services; Mental Health; Laboratory; Pharmaceutical Management; and Neglected Tropical Diseases.

2.2 Survey Planning Process

In September 2017, the planning process of the round two Liberia SARA+ survey started with a high-level consultative meeting coordinated by Ministry of Health (MOH) and attended by partners and stakeholders, an in-country SARA coordinating team constituted was led by Ministry of Health (and its major Units: M&E, Research, Health Management Information System, ICT, Quality Unit, etc) and comprising partners including WHO, LISGIS, etc).

The following was included in the process:

- Adaptation of the SARA 2018 questionnaires was undertaken through consultative process to ensure country-specific needs were included;
- Pilot testing of the survey was undertaken in selected facilities (James N. Davis, Jr. Memorial and TB Annex hospitals, Duport Road and Family Health Center) and used to evaluate results and making amendments into the final tool prior to rolling out field survey to the remaining counties
- A paper-based questionnaire was used along with handheld devices concurrently for data collection to cross check responses and quality of information collected.
- Recruitment and training of survey personnel that included survey manager, field supervisors, data collectors, data entry/processing personnel, data analysts was concluded, and field data collection was undertaken commenced.
- Procuring logistics including equipment and transport, taking into consideration the number of sites to be visited, the number of data collection teams, drivers, vehicles, fuel/petrol, etc.

2.3 Data Collection, data entry and quality Assurance

Field data collection took 5 weeks from 4th week of December 2017 to 4th week of January 2018). The data collection process coincided with the second round of the electoral process in the country thus movement from one facility to another was a huge challenge. Approximately, each team took 2 days each to complete a hospital and took 1.5 days for health centers while clinics took approximately three to four hours each to complete i.e. 2-3 clinics per day. At the end of the day supervisors checked completeness of questionnaire, resolve missing/unreliable information, returning completed forms and/or transferring data to electronic files.

Unlike the first round of SARA 2016, data verification and cleaning of the second round of SARA 2018 was carried out, but not by an independent quality assurance team. However, the overall quality of the data was ensured by the technical team comprising of members from MOH, WHO, LISGIS, Global Fund, GAVI, LMDC, Quality Unit, etc. Data was collected using handheld devices and processed using the CSPro. The validation and cleaning data set for checking consistency and accuracy was undertaken simultaneously prior to exporting the data set for analysis. Data analysis was conducted using both CSPro and Excel using the standard core indicators as well as

any country-specific indicators of interest.

An automated analysis pre-prepared SARA data analysis tool in MS excels was used to generate the tables and graphs. A technical team comprising of programs heads and selected partners formed part of a seven-day session to write up the 2018 SARA report in Buchanan City, Grand Bassa County.

2.4 Assessment of Quality of Care (QOC)

In 2018, Liberia, as part of its census based health facility assessment that used the WHO standard assessment tools, namely, services availability and readiness assessment plus, conducted service delivery quality and safety of care provision. Quality of health care entails the receipt of appropriate, effective and timely care by patients and includes provider knowledge and practice while giving care, patient and family engagement, patient care outcomes and patient satisfaction.

2.4.1 Brief description of the QOC Methodology

The quality of care assessment involved hospitals (32) and health centers (48) from all the 15 counties in the country.

2.4.2 Data collection approach

Data collection involved four select priority programs, namely, TB, Malaria, ART and EMTCT. The design involved completing a sampling list for each of the quality of care (QOC) service sites. This followed identification of eligible patients. In each of the service sites, a total of 10-12 clients were selected for inclusion for the record review. Five of the records were reviewed.

Main data sources varied along the four select diseases, the following appeared common to all;

- **ART***:* Appointment Book: i). HCT Book: The HCT register lists all HIV tested patients (positives and negatives) but some are not admitted to ART, missing patient Identifying number; ii). Patient chart; iii). Patient care and treatment record (patient card), usually found inside the patient chart: This is a printed card with specific data areas and; Medication Book: This tells when patients pick up their medicines.
- **EMTCT:** On EMTCT the assessment focused the following parameters; (i). ANC Register: This included the gestational age for calculating when the baby should be delivered; ii). HIV C&T register: This focused on the HIV test result; iii). EMTCT Labour and Delivery Register: This provided the ARV regimen and whether the baby received nevirapine or not; iv). HIV Exposed Infant Register: this register provided information on whether the baby received nevirapine, co-trimoxazole, and whether the blood was drawn for HIV test, and results; v). Patient care and treatment record (patient card).
  ART**,** usually found inside the patient chart: This is a printed card with specific data areas. Mother's chart/record; and; vii). Baby's chart/record respectively.
- **TB:** i). TB treatment register; ii). TB treatment card (individual patient) and; iii). Individual patient TB chart/record.
- **Malaria**: i). Outpatient register for over 5 years old; ii). Individual patient chart/record and; iii). Possibly, laboratory register for malaria tests.

2.4.3 Data analysis:

Key indicators selected for the present quality and safety of care assessment analysis for Liberia.

ART; i). Adherence to standards of care for HTS services;

ii). Adherence to standards of care for ART;

iii). Adherence to standards of care for paediatric ART patients;

iv). Cotrimoxazole prophylaxis among HIV-positives who are eligible and;

v). Male partner testing for HIV among women attending ANC

Vi). Adherence to standards of care for malaria diagnosis and treatment for children and for adults.

EMTCT: i). QOC EMTCT for HIV Positive women

Vii), Adherence to standards of care for drug-susceptible TB treatment and

Viii). Adherence to standards of care for initiating treatment respectively.

2.5 SARA + Ethical issues

The Liberia SARA+ round two design and processes observed the international and national ethical issues such as confidentiality and conflict of interest by all entities involved in the development process. For example, during training of research assistants and other stages of SARA processes all teams involved were taken through various documented core ethical principles including the WHO guidelines on governance and ethics among others. The focus was to ensure the design and conduct of SARA+ was ethically sound and the responsibility of all involved was binding. Additionally, the research protocol was reviewed by the Ministry of Health ethical approval.

Chapter Three: Service availability

3.1 Introduction

Mapping out of the available inputs for Health Service delivery that exists across the Country is critical to ensure that the populace accessibility is increased, quality of care is enhanced and improved as well as clients' satisfaction and demand for service delivery is cultured. These include but not limited to information on the Health Workforce, Health Infrastructure (physical infrastructure, equipment, transport, ICT), and Health Products and technologies.

The health services must be physically accessible for the population to benefit from the services offered. In Liberia Counties have different numbers of health facilities and cadres of staff hence the variability of service provision. The total numbers of facilities in each County are shown in table 3.1a in the Annex.

This section provides an overview of the composition of the final population of health facilities, stratified by facility type (level), managing authority, ownership and residence (urban/rural). It also provides the health workforce density for the core health workers, the utilisation of OPD, inpatient bed density as well as essential emergency transport necessary for critical referral services.

Health facility utilisation is critical and important measure for access in implementation of health services. Overall, the number of outpatient visits per person per year in Liberia is 1 visit per person per year and this was across in all counties denoting challenge in healthcare access. While the inpatient bed density per 10,000 population was in more than 75% of the counties below WHO recommendation of 30 per 10,000 population. The inpatient bed density ranged from 1.8 in Montserrado to 12.9 in Bomi.

3.2 Health facilities density

Health services must be physically accessible for the population to benefit from them. The Liberia SARA+ 2018 covered 765 facilities as compared to 701 health facilities in 2016 SARA+. According to the Liberia health facility registry, there is a total of 831- functional facilities in Liberia, of this number, 765 health facilities were assessed. Thirty-Six (36) was hospitals, while 58 & 671 were health centers and clinics respectively. By ownership, the distribution of health facilities in Liberia shows 58.6% public compared to private facilities. Table 1 below shows further distribution.

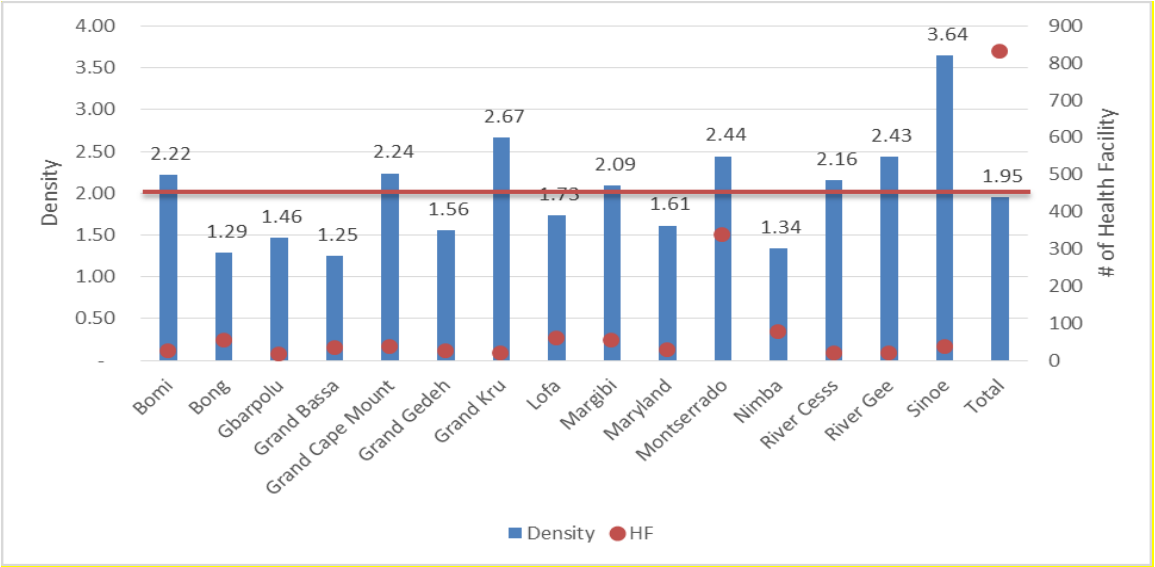
Table 1: Characteristics of health facilities by type and managing authority: SARA 2018

Facility type	Public	Private for-profit	Private not-for-profit	Grand total	%
Clinic	390	239	42	671	87.7
Health centre	34	18	6	58	7.5
Hospital	25	4	7	36	4.7
Total	**449**	**261**	**55**	**765**	**100.0**
Percent	**58.6%**	**34.1%**	**7.1%**	**100%**	

Source: SARA+ 2018 questionnaire

Figure 1 below demonstrates health facility density per 10,000 populations by County. The overall, health facility density per 10,000 persons, has increased to (1.95 per 10,000 persons) as compared to (1.7) in 2016. Though we are yet to meet the recommended WHO average of 2 per 10,000. More than half of the counties were below the recommended average and these are Grand Bassa 1.25 as compared to (1.07 in 2016), Bong 1.29 as compared to 2016 (1.07), Nimba 1.34 as compared to 2016 (1.3), Maryland 1.61 as opposed to (1.6) in 2016, Grand Gedeh 1.56 as compared to (1.6) in 2016 and Lofa 1.73 as compared to (1.7) in 2016 per 10,000 persons, while Bomi, Margibi, Grand Cape Mount, River Gee, River Cess Montserrado and Sinoe had more than 2 facilities per 10,000 population respectively.

Figure 1: Density of health facilities per 10,000 persons per county



On average, Liberia has a fair distribution and density of health facilities per 10,000 persons, which means that majority of Liberians have reasonable access to health services within proximity. However, given that other assessments have cited geographical location of health facilities, compounded by deplorable road conditions, limited referral facilities and the unavailability of an efficient public transport system as major obstacles of access to a health facility, there is need to put more investments in improving infrastructure.

3.3 Transport availability and distribution

Transport availability was assessed using different forms of transport across the country. In Liberia, motor cycles are the most commonly used means of transport constituting 75%, followed; by public utility vehicles (16%), and ambulances at 9%. The survey established that transport availability across the counties was unevenly distributed, and some counties have more emergency transport than other counties, notably ambulance services.

According to the Ministry of Health Transport Unit survey report, 2017 (See table 1.2 below), that there are more than two functional ambulances/emergency vehicles per 100,000 persons in 14 of the fifteen Counties with the exception of Grand Bassa County that has one ambulance. Almost all of the counties have at least one or more ambulance (s) per 100,000 persons.

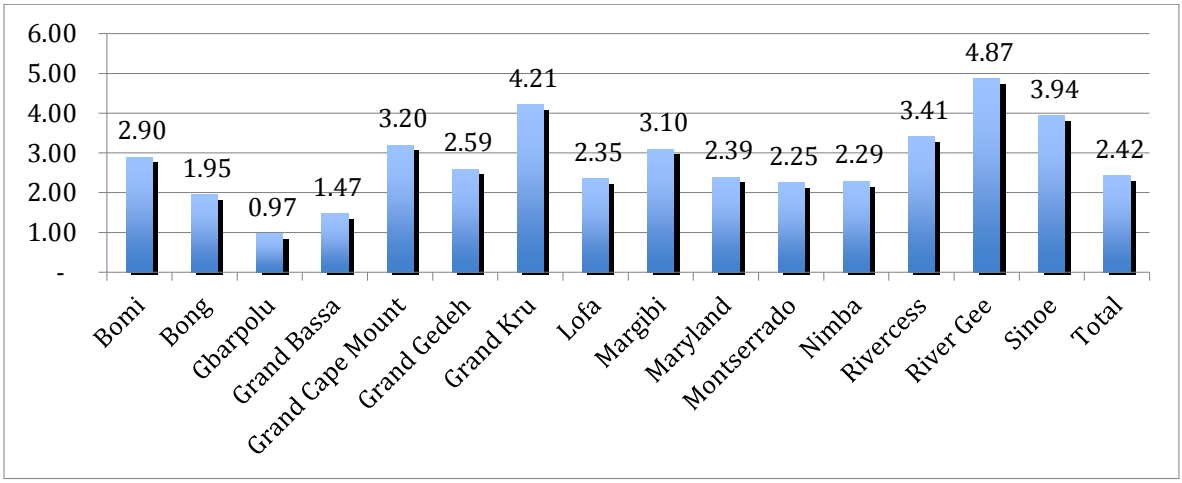
Table 2: shows the distribution of transport availability per county

County	**Number of functional ambulances per county**	**Number of utility vehicles (%)**
Bomi	3	18
Bong	8	28
Gbarpolu	1	9
Grand Bassa	4	10
Grand Cape Mount	5	16
Grand Gedeh	4	16
Grand Kru	3	11
Lofa	8	31
Margibi	8	13
Maryland	4	11
Montserrado	31	36
Nimba	13	39
River Gee	3	12
River Cess	4	9
Sinoe	4	10
Total	103	**369**

3.4 Emergency transport

According to (Macintye and Hotchikiss, 1999), poor availability of service quality, inadequate availability of trained health personnel, inadequate supplies of medicines, commodities and medical diagnostic equipment and inadequate communication infrastructure are key challenges faced with emergency transport in most rural countries in Africa (*Macintyre, and Hotchkiss, 1999*). If available, most of them are not having a complete system to move the patient safely. Figure 2 below shows the disparities by counties in Liberia with the availability of functional emergency transport (ambulance) services. Two out of fifteen counties had 4 ambulances per 100,000 population while four of the fifteen counties have 3 ambulances per 100,000 population and seven of the counties have 2 ambulances per 100,000. While Bong, Gbarpolu and Grand Bassa have 1.95, 0.97 and 1.47 ambulances per 100,000 population respectively.

Figure 2: Density of emergency transport (ambulance) per 100,000 populations per county



3.5 Human resources for health density

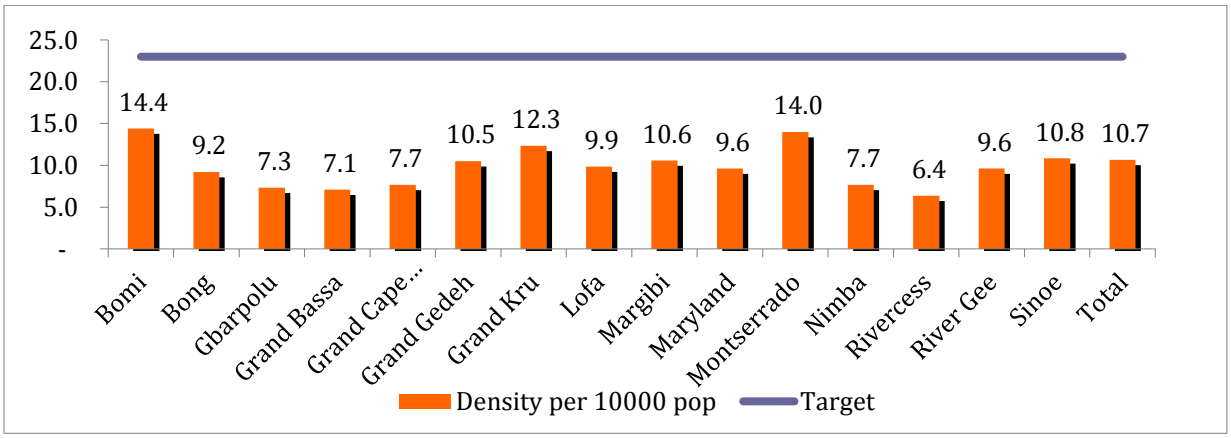
The human resource for health is one of the key health sector components for service delivery and health investment inputs. Different health workforce cadres existed across the Counties but in working out the core health workforce density four specific cadres were considered as a proxy. The four cadres are; Physicians/ doctors, Physician assistants, Nurse and midwives

The density target for this core health workforce is 23 per 10,000 populations which is the recommended minimum WHO workforce density. Liberia core health worker density is 11 similar to 11.4 in 2016 health workers per 10,000 population which is less than half of WHO recommendation.

Figure 3 indicates major disparities between counties with none of the counties achieving the target of 23. The counties with the highest number of core health workers density are Bomi and Montserrado having 14.4 and 14.0 core health workers per 10,000 population respectively, as compared to 16 core health workers per 10,000 population in 2016. Three counties had 10 core health workers per 10,000 population and were; Grand Gedeh, Margibi, and Sinoe. Others counties are Bong 9.2, Lofa 9.9, Maryland 9.6, and River Gee 9.6 with core health workers per 10,000 population. The rest of the counties are below 9 they include (Gbarpolu 7.3, Grand Bassa 7.1, Grand Cape Mount 7.7 and Nimba 7.7), with River Cess being the least with 6.4 core health workers per 10,000 population.

The low densities per county mean the few staffs available are prone to burnout and this could greatly impact negatively on quality of care of services in Liberia. The Liberia Health Workforce Census 2016 was done and draft report is available to comprehensively characterise the Health Workforce in the Country, and to guide future Human Resource for Health (HRH) strategic planning for Liberia.

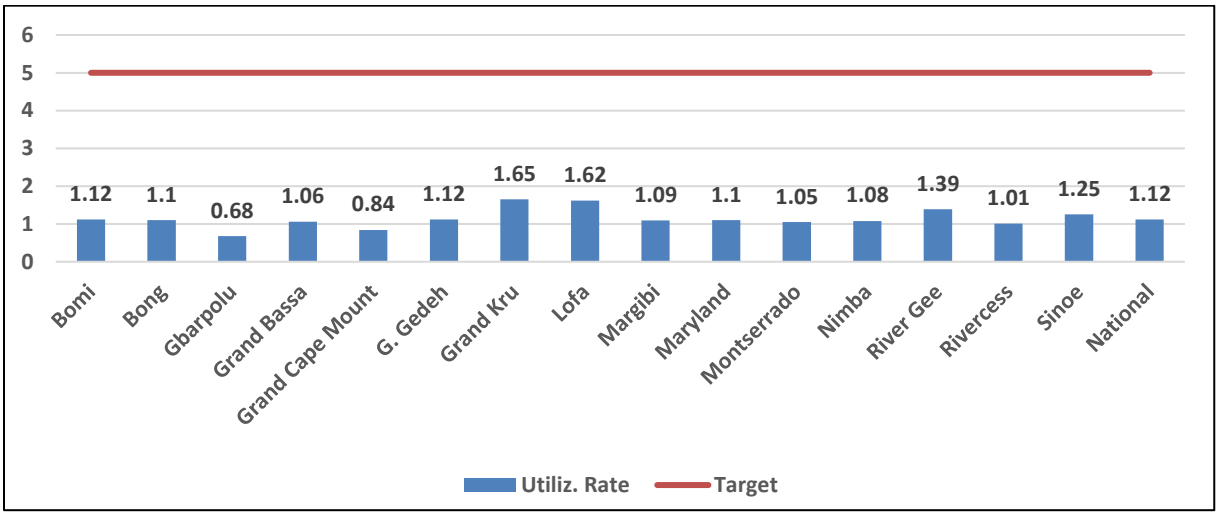
Figure 3: Core health workers' density per 10 000 pop by county, Liberia 2018



3.6 Outpatient per capita utilization

It is important to note that number of outpatients' visits per 10,000 population per year is the critical measure for the levels of utilization of outpatient healthcare services and can be employed to examine trends and variations in use of services by type of facility and healthcare service, urban/rural locations, and will allow comparisons between counties, countries and programs. The WHO target is 5 visits per person per year. Available data from DHIS2 for 2017/18 fiscal year was used to calculate the outpatient visits density per person per year by county in Liberia in this SARA report. Overall, the number of outpatient visits per person per year in Liberia is 1 visit per person per year (see figure 4 below) and this was across in all counties which are quite very low portraying that access is the biggest challenge in the country. The result could be in this case attributed to the inadequacy of the human resources for health identified in figure 4 below across counties or lack of proper mechanisms for capturing the data from the service provision points in outpatient units or the DHIS2.

Figure 4: Outpatient visits density per person per year by county Liberia



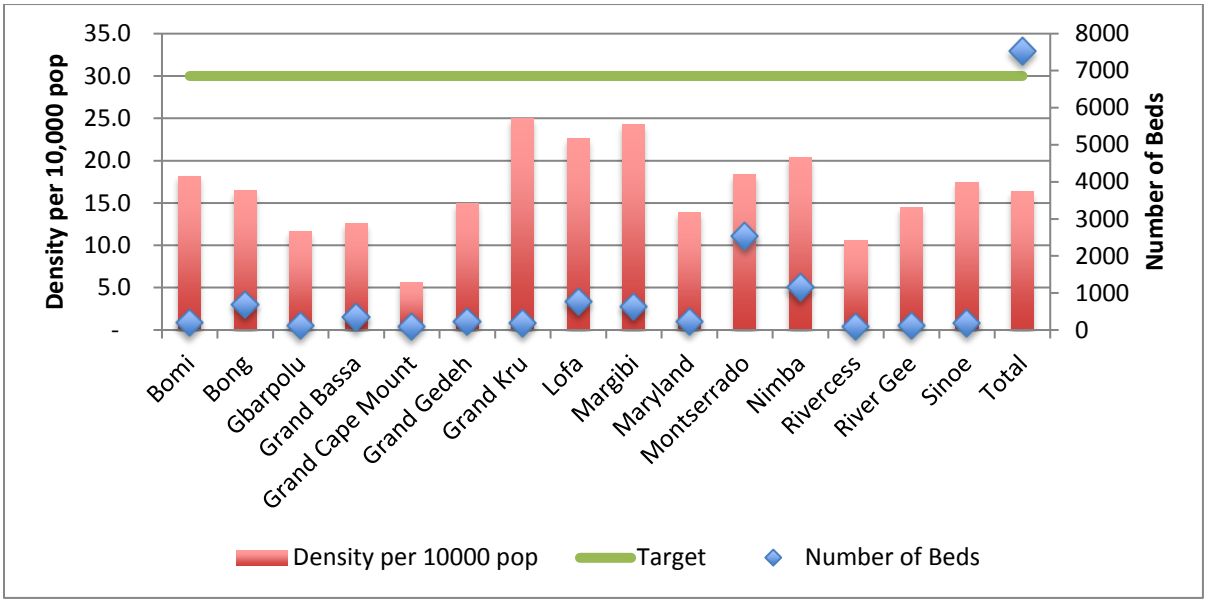
3.7 Inpatient utilization

Timely access to safe hospital care remains a major concern in Liberia. Target bed-occupancy rates have been proposed as a measure of the ability of a hospital to function safely and effectively. At the same time High bed-occupancy rates have shown to be associated with greater risks of hospital-associated infection, access block due to free services and to have a negative impact on staff health (Ref). Hospital bed-occupancy rates have been proposed as a measure that reflects the ability of a hospital to properly care for patients. Bed-occupancy rates do seem to influence expected performance for inpatient care and therefore is an important measure in hospital management statistics as an operational target and measure of quality. The need for timely admission to an appropriate ward of patients presenting to emergency departments or for booked surgery or cannot be over emphasised.

The inpatient bed density per 10,000 population was assessed in all counties across the country. The result shows an increase in the national inpatient density from 6.3 to 16.4 per 10,000 population, which is still below the WHO recommendation of 30 per 10,000 population per county. The inpatient bed density ranged from 5.6 in Grand Cape Mount to 24.9 in Grand Kru County as compared to 1.8 in Montserrado to 12.9 in Bomi in 2016. Figure 5 below shows detail distribution.

The summary of general services availability density by county is indicated in Annex 1, Table 3 in this report.

Figure 5: Inpatient density per 10 000 pop by county, Liberia 2018



CHAPTER FOUR: General Service Readiness

4.1 Introduction

Service readiness is critical to measuring access, quality of health care, and utilization of services offered by health facilities in a country. The 2018 Liberia SARA+, assessed the readiness to offer required services among all health facilities in the country. The proportion of functional health facilities not assessed during the 2018 SARA was 7.9% (n=66) with majority of these facilities located in Montserrado and Margibi Counties. The survey team could not find these facilities.

The readiness assessment focused on the presence and functionality of the tracer items that are deemed crucial for providing the required quality of health care services. These tracer items are grouped into various domains, namely; infrastructure, amenities, basic equipment, standard precautions for infection control, diagnostic tests, medicines and health commodities. A list of the tracer items is detailed in each domain **(Annex 1 table 4 shows the percentage of general service readiness index by county).**

Physical access to health services can only be guaranteed, if the above inputs or tracer items per domain are made available, are functional, and the facility is ready to offer quality service to those seeking health care. For instance, substantial investments may be made available for improving physical infrastructure such as building facilities, hiring staff, buying equipment and health commodities. However, if these facilities are not made 'ready' by ensuring these items are both functional and efficient for maximum use, then utilization of the services would not result to the desired health outputs or outcomes.

This section presents general characteristics of health facilities that signify their "general readiness" to provide health care services. These are broken down into five major categories by a combined score "readiness" arrived at by taking the arithmetic mean of the percentage of health facilities having each of the component variables examined in the five domains;

(i) Examining general amenities such as electricity supply, clean water and sanitation;
(ii) Discussing the availability of basic medical equipment;
(iii) Looking at equipment and procedures for standard precautions to prevent infections;
(iv) Examining diagnostic capabilities for common tests; and
(v) Describing the availability of key essential medicines.

4.2 General Service readiness

The general service readiness was determined by assessing the overall capacity to provide expected health services according to the type and level of health facility. This involved analysis of service items under each of the following five domains:

- Basic amenities
- Basic equipment
- Standard precautions for infection prevention
- Diagnostic capacity
- Essential medicines

a) Availability of basic amenities: The survey assessed all the seven tracer indicators/items to determine the availability and readiness score. This included room with privacy, power supply, communication equipment, improved water source, adequate sanitation facilities, computer with internet access, and emergency transportation.

b) Availability of basic equipment: Data was collected in all of the six tracer indicators/items and analysis undertaken to determine availability and readiness score of the following: adult weighing scale, child/infant weighing scale, thermometer, stethoscope, blood pressure machines and light source.

c) Availability of standard precautions: This was determined by an assessment of all the ten tracer indicators/items to establish the availability and readiness score as follows: safe disposal of sharps, safe final disposal of infectious waste, appropriate storage of sharps waste, appropriate storage of infectious waste, disinfectant, disposable or auto-disable syringes, soap and water or alcohol based hand rub, latex gloves, and guidelines on standard precautions. This is a critical indicator on the safety of health care service and work environment. As a basic requirement, health care workers must be able to work within a safe working environment and provide services in a manner safest to their clients.

d) Availability of diagnostic capacity: The survey collected data on all the eight tracer indicators/items and analysis undertaken to determine the availability and readiness score as follows: hemoglobin, blood glucose, malaria diagnostic capacity (RDT or smear), urine dipstick (protein, urine dipstick) glucose, HIV diagnostic capacity (RDT or Elisa), syphilis RDT, and urine pregnancy test.

e) Availability of essential medicines: The survey collected data on all the fourteen tracer indicators/items and analysis undertaken to determine availability and readiness score as follows: Amitriptyline, Amoxicillin, Atenolol, Captopril, Ceftriaxone injection, Ciprofloxacin, Cotrimoxazole suspension, Diazepam, Diclofenac, Glibenclamide, Omeprazole, Paracetamol suspension, Salbutamol inhaler, and Simvastatin. The assessment considered only medicines that were observed at the

facility with valid expiration dates. Availability of essential medicines is a major determinant of health care quality.

The assessment considered only medicines that were observed at the facility with valid expiration date.

To establish the various capacities needed and the readiness of health facilities to offer general health services, the following domains were assessed;

a) Availability and readiness of the tracer items for basic amenities
b) Availability and readiness of the tracer items for basic equipment
c) Availability and readiness of the tracer items for standard precautions for infection prevention
d) Availability and readiness of the tracer items for diagnostics
e) Availability and readiness of the tracer items for essential medicines

Key findings

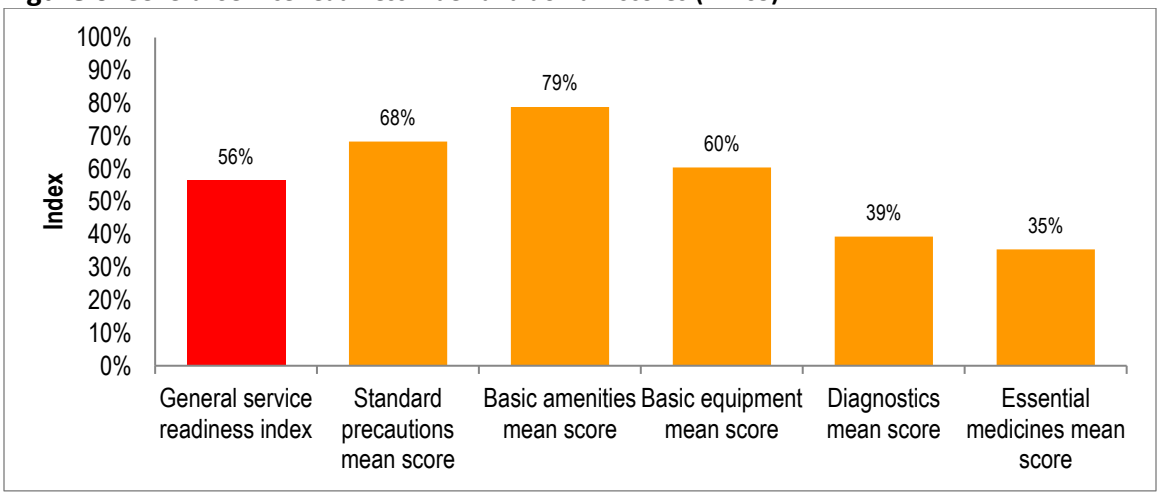
- The capacity for health facilities in Liberia to provide health services is 56% as compared to 59% in 2016
- 79% of health facilities have essential basic amenities to provide health services such as availability of clean and safe water, power, communication etc compared 77% in 2016
- On assurance of clients' and staff safety, 68% of health facilities have standard precautions for infection prevention and control including safe working environment compared to 73% in 2016.
- On average 60% of the health facilities have basic equipment to provide health services, for example diagnostic equipment, etc. compared to 57% in 2016
- Less than half (39%) of the health facilities have diagnostic capacity to check for various tests essential in general service provision to clients compared to 42% in 2016
- Forty-four percent (35%) of health facilities have essential medicines in stock for treatment of illnesses, which implies that access to essential medicine by patients is a critical challenge compared to 44% in 2016.

4.2.1 National General Service Readiness

The general service readiness index for Liberia is 56%. This means about one out of every two-health facilities is ready to provide quality health care services. However, less than one per cent of health facilities in Liberia have all the basic items essential for the provision of quality health care across the five domains.

As illustrated in 6 below, on average 79% of the health facilities have basic amenities required to provide general health services, while 68% have standard precautions facilities for infection prevention and control. Sixty per cent (60%) of health facilities have basic equipment to provide health services, while 35% of facilities have essential medicines required for treatment. Thirty-nine per cent of health facilities have diagnostic capacity to conduct various tests essential in general service provision.

Figure 6: General Service readiness index and domain scores (n=765)

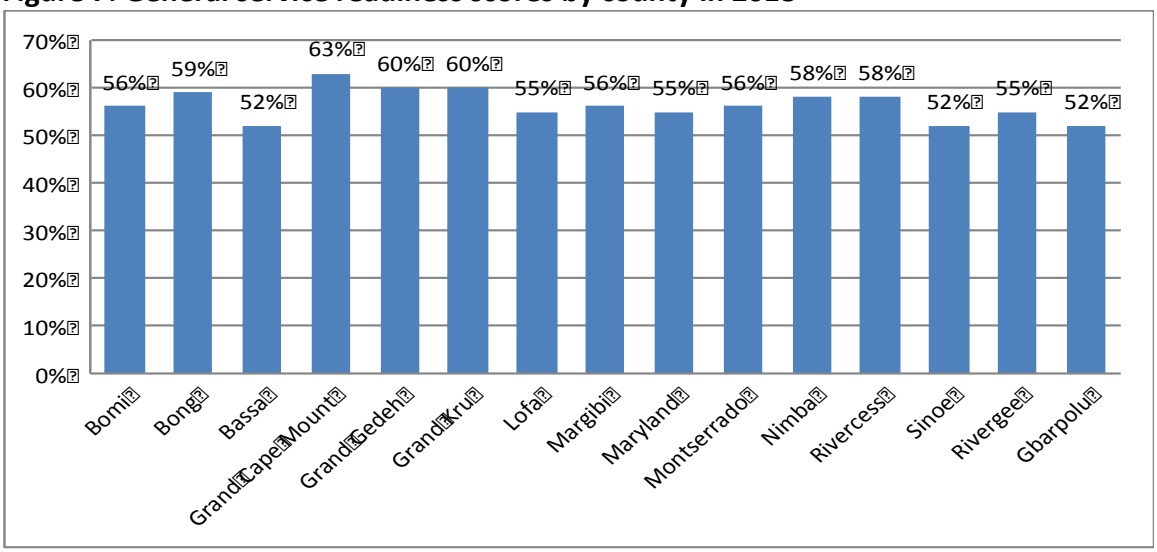


4.2.2 County level general service readiness

The general service readiness index scores ranged from 52% in three of the fifteen counties to 63% in Grand Cape Mt County.

The average general service readiness scores across counties is an indication that the quality of health services is fairly good, with room for improvement. Figure 7 presents general service readiness by county in 2018.

Figure 7: General service readiness scores by county in 2018



4.2.3 Health facility general service readiness

The general service readiness scores were higher for secondary health facilities than primary. The 2018 SARA result shows 80% readiness score for hospitals, 67% for health centers and 55% for clinics. This indicates that the quality of health care services in Liberia is severely compromised at the primary (clinic) level than the secondary.

On the other hand, a comparison of public and private health facilities show a better readiness score for mission or faith based (66%), private for profit (58%) than public (56%) and NGOs owned (55%) health facilities.

4.2.4 General service readiness by domains

Basic amenities general readiness

Results from the SARA revealed that basic amenities were mostly available in hospitals (90%) and health centers (74%) than at clinics (59%). Almost half (40%) of the functional clinics in Liberia lacks the required basic amenities. On the other hand, the was minute difference between urban (62%) and rural (60%) health facilities and 60% of public health facilities have basic amenities compared to 59% NGO owned facilities, 60% private for profit and 69% mission or faith based health facilities.

Basic equipment general readiness

Basic equipment is essential for diagnosis and the quality of patient care. Data from the 2018 SARA shows that hospitals (86%) and health centers (82%) general readiness index is relatively high compared to clinics (78%). There is less variances between urban (76%) and rural (80%) health facilities and among public (80%), NGOs (70%), private for private

(76%) and mission or faith based (84%) facilities. However, sustainability and further improvement of the basic equipment readiness scores is crucial.

Standard precautions general readiness

The availability of standard precaution facilities and materials for the prevention and control of infection and waste management is essential for the delivery of quality healthcare services. The SARA result indicates a high proportion of health facilities with standard precaution general readiness across facility levels, location and ownership with minute differentials. However, 19% of hospitals, 28% of health centers and 32% of clinics were not IPC ready. About one-third (31%) of public NGOs, private for profit (34%) and 23% of mission or faith based facilities were not IPC ready.

Diagnostics of general service readiness

Generally, the hospital diagnostic scores were better than health centers and clinics while private health facilities score were higher that public. Also, urban (47%) health facilities had a higher score than rural (36%). Nineteen (19%) per cent of hospitals, 26% of health centers and 64% of clinics are not ready (equipped) to provide diagnostic services. The differential in diagnostic service readiness score between public and private institutions was huge as 65% of public health facilities are not ready to provide diagnostics services compared to 50% of private for profit, 47% of mission or faith based and 60% of NGOs owned and managed facilities. The low diagnostic service readiness score partly explained the undesirable quality of health care services offered by health facilities partly public clinics in Liberia.

Essential medicines general readiness

The survey assessed the availability of essential medicines by facility levels, ownership and location (urban/rural). The readiness score for hospitals (63%), health centers (43%) and clinics (34%) were undesirable. Also, the disparities between public and private health facilities were substantial. Sixty-six per cent (66%) of public facilities, 62% of NGOs and private for profit and 56% of mission or faith based owned facilities did not have the required essential medicines. Also, there was no difference between rural (35%) and urban (36%) facilities. The absence of essential medicines at over half of the functional health facilities in Liberia is a manifestation of poor quality of health services in the country.

Key Findings

- The health services readiness index of Liberia is 56% compared to 59% in 2016, implying that about half of the health facilities are not ready to provide quality health services.
- The low readiness scores of diagnostics and essential medicines cut across all health facilities despite their level (hospital, health center or clinic), ownership

(public or private) and location (urban or rural). It is noteworthy that diagnostic and essential medicines scores are lower for public facilities than private health facilities.

- Rural populations have relatively lower access to quality health care. This is evidenced by the diagnostic (36%) and essential medicines (35%) scores of rural health facilities.

4.3 General service readiness scores by domains and tracer Items

4.3.1 Basic amenities

An enabling work environment is critical for effective and quality health care delivery. This includes the physical infrastructure, the availability of improved source of water, electricity, sanitation facilities, consultation room and emergency transportation for referral purpose. This section describes the basic amenities that were assessed during the 2018 SARA (Figure 8 below).

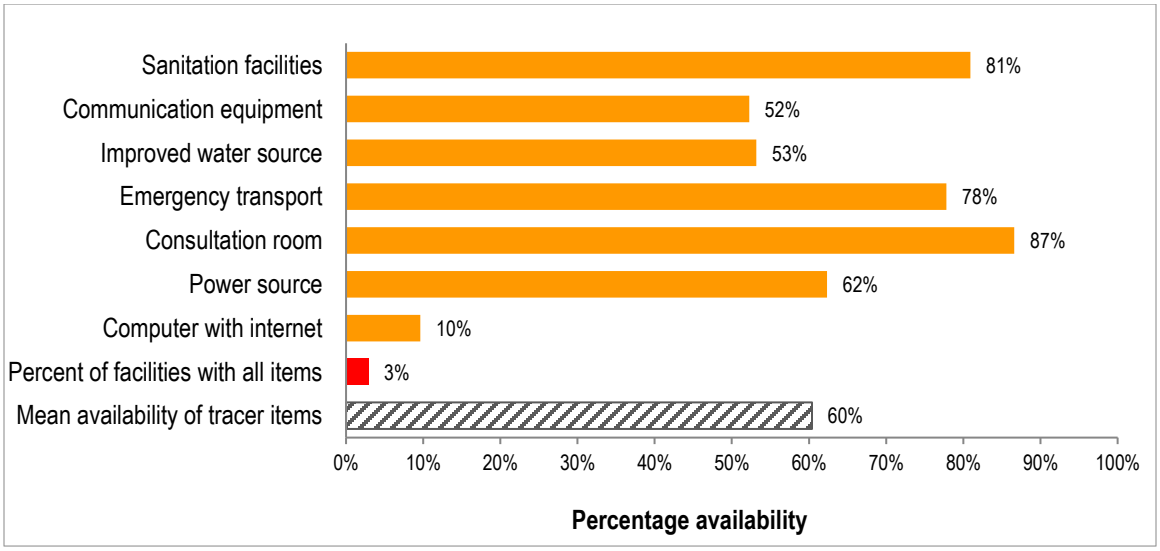
In Liberia, the basic amenities necessary for delivering quality health services were found either not available or limited. The mean availability of tracer items is 60% and only 3% of health facilities have all necessary amenity items. Figure 8 below provides the availability scores of tracer items **(Table 5 in Annex 1 presents detailed basic amenities readiness score)**.

1. A room with privacy
2. Power supply
3. Communication equipment
4. Improved water source
5. Sanitation facilities
6. A computer with internet access
7. An emergency transportation

Key findings

- On average 60% of health facilities have basic amenities necessary to facilitate service provision compared to 57% in 2016
- 87% of health facilities have consultation room with privacy to ensure that patients confidentiality the same as in 2016
- 78% of facilities have emergency transport compare to 77% in 2016.
- Less than 10% of the facilities have computer with Internet, and 52% of facilities with communication equipment compare to 49% in 2016 for communication equipment only.
- 81% have available safe disposal of human wastes, sanitation facilities and 53% of with an improved source of water and 62% with reliable source of power compared to 81% 45% and 54% respectively in 2016.

Figure 8: **Percentage of health facilities with basic amenities (n=765)**



The readiness scores for improved source of water (53%) and power supply (62%) is a manifestation of the poor quality of health services, especially during the night hours and in the context of infection prevention and control (IPC).

4.3.2 Basic equipment

The survey assessed heath facilities readiness based on the availability of basic equipment required for the delivery of quality and comprehensive health services.

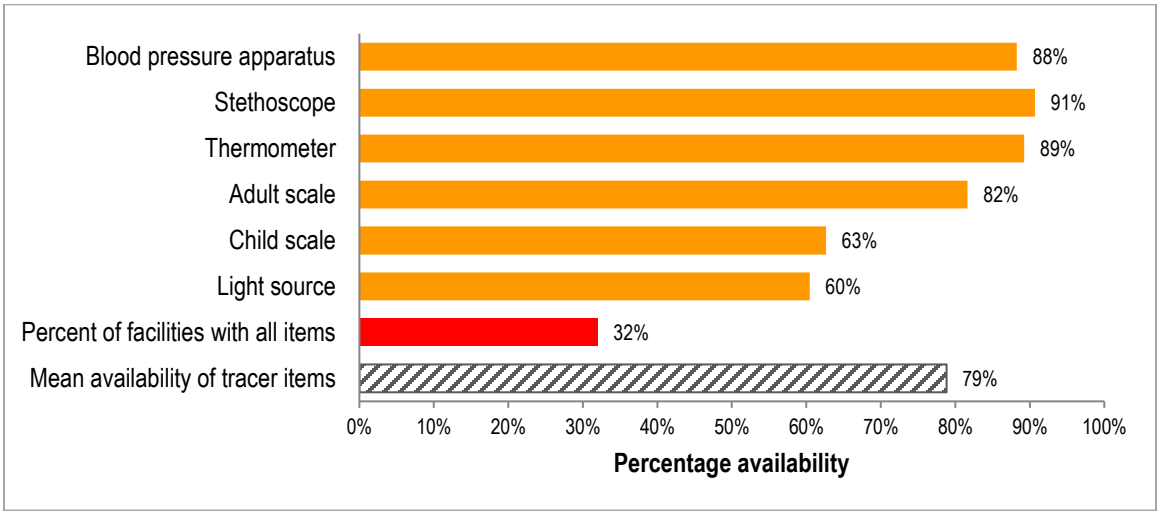
1. Adult weighing scale
2. Child/infant weighing scale,
3. Thermometer,
4. Stethoscope,
5. Blood pressure machines and
6. Lighting source

Key findings

- On average 79% of the health facilities in Liberia have basic equipment for patient care compared to 77% in 2016.
- 91% of facilities have stethoscopes, 89% with thermometers, while 81% have adults weighing machines and 62% have weighing machine for children compared to 94%, 95%, 81% and 62% in 2016.
- 60% of facilities have power supply compared to 38% in 2016.

It was found that high proportion of health facilities has blood pressure apparatus (88%), stethoscope (91%), thermometer (89%) and adult scale (82%). The mean availability of all six-tracer items is 79% while 32% of health facilities have all six-tracer items. Figure 9 presents the percentage of health facilities with basic equipment.

Figure 9: Percentage of facilities with basic equipment items available (n=765)



The absence of adult scale in 18% of health facilities is expected to compromised HIV services provided to patients in care monitoring, antenatal services and the administration of certain medicines and drugs. On the other hand, the lack of infant/child scale in 37% of health facilities will affect nutrition services especially growth monitoring. Detailed data on basic equipment availability at the county level and by type and ownership of health facilities are provided in **table 6 in annex 1.**

4.3.3 Standard precautions

Infection prevention and control is an essential aspect of basic health care, as well as specialized services. The safety of patients and health workers is a fundamental part of the health service delivery system. Therefore, all health facilities are expected to have in place the necessary standard precautions items which are listed below;

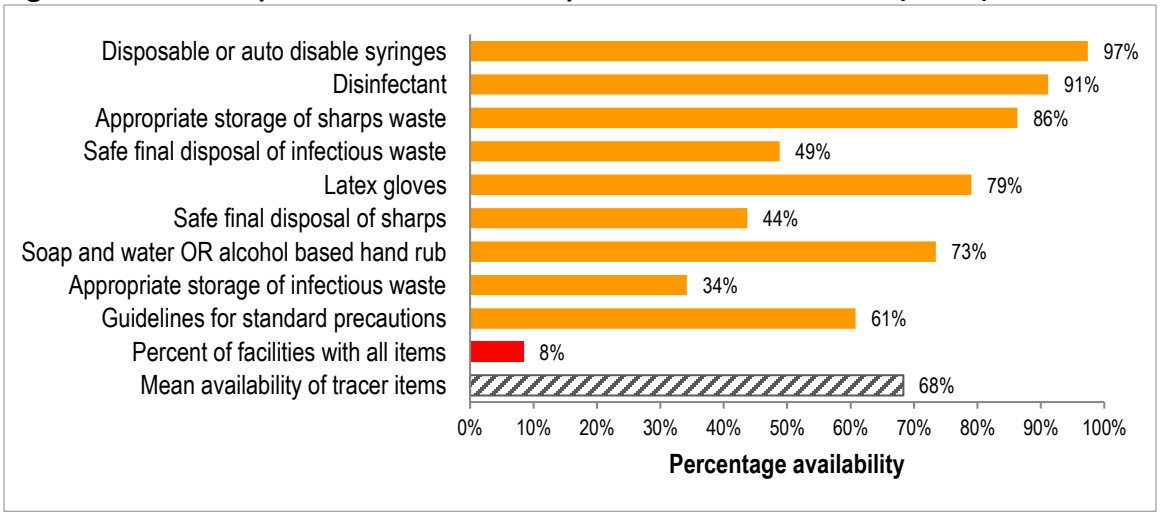
1. Safe disposal of sharps,
2. Safe final disposal of infectious wastes,
3. Appropriate storage of sharps wastes,
4. Appropriate storage of infectious wastes,
5. Disinfectant,
6. Disposable or auto-disable syringes,
7. Soap and water or alcohol based hand rub,
8. Latex gloves, and
9. Guidelines on standard precautions

Key Findings

- On average 68% of the health facilities (N=765) have standard precautions for infection prevention and control while 61% have available guidelines for standard precautions compared to 73% and 67% in 2016.
- 97% of health facilities have disposable or auto disposable syringes available, while 91% have disinfectants compared 99% and 97% in 2016
- 86% of facilities have appropriate storage for sharp wastes compared 88% in 2016.
- 79% of the health facilities have latex gloves and on average 73% have soap and water or alcohol based hand rub than 88% and 83% in 2016
- 34% of the health facilities have proper waste disposal for infectious wastes and 49% of facilities have safe final disposal of infectious wastes compared to 27% and 55% in 2016.

The survey results revealed that 68% of health facilities have standard precautions facilities and items in place for infection prevention and control, while 61% have available guidelines for standard precautions. Almost all health facilities (97%) have disposable or auto disposable syringes and disinfectants (91%). However, only 44% of health facilities have safe final disposal of sharps and 34% with the appropriate storage facilities for infectious waste. Figure 10 below presents the percentages of health facilities with standard precautions for infection prevention.

Figure 10: Standard precautions for infection prevention items available (n=765)



4.3.4 Diagnostic capacity

The readiness of health facilities diagnostic capacity was assessed by the presence of selected diagnostic tests. The readiness of a health facility to perform certain test was also evaluated based on the level of health care (e.g.: hospital, health center and clinic). To determine the capacity of health facilities to offer critical diagnostic services, eight tracer service indicators were assessed;

1. Carry out test for Malaria
2. Carry out tests for HIV
3. Check for Blood glucose
4. Check for Haemoglobin
5. Check for syphilis using rapid test
6. Check urine dipstick for glucose
7. Check urine dipstick for protein
8. Carry out urine test for pregnancy

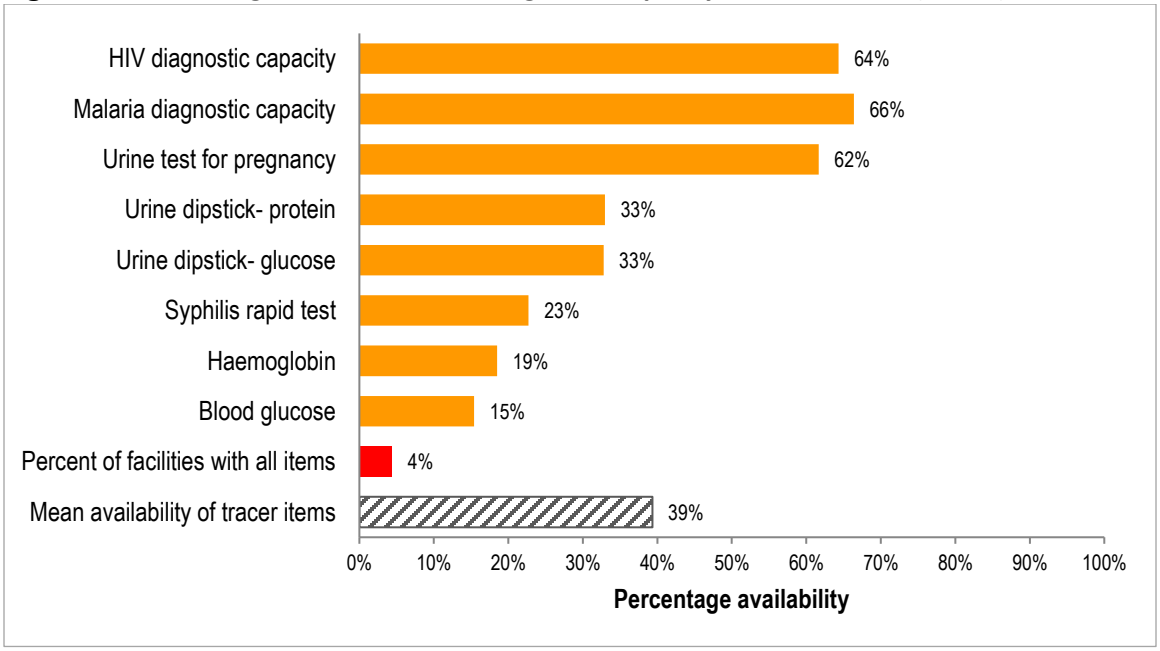
Key findings:

- On the above diagnostic items, the capacity for the health facilities to conduct tests for Malaria was 66% compared to 87% in 2016.
- The capacity to check for HIV was available in about two thirds (64%) of the health facilities. Moreover, the capacity of health facilities to conduct urine test for pregnancy was 62%, while urine dipstick for protein was 33% and check for glucose was 33% compared to 64%, 53%, 41% and 40% in 2016.
- The capacity for health facilities to conduct syphilis rapid test was 23% compared to 21% in 2016.
- The survey also established that the least available diagnostic services were check for haemoglobin (19%), and blood glucose (15%) respectively compared to 13% and 18% in 2016 as well.

The readiness result scores show low diagnostic capacity for haemoglobin test (19%), blood glucose (15%), syphilis rapid test (23%) and urine dipstick for protein (33%) and glucose (33%). Also, only 4% of health facilities have all tracer items.

The survey found that health facilities under the management of private for profit and mission or faith based have higher diagnostics readiness score compared to the public and NGOs owned and manage health facilities. Figure 11 presents the percentage of health facilities with diagnostic facilities **(see further detailed in table 7 annex 1).**

Figure 11: Percentage of facilities with diagnostic capacity items available (n=765)



4.3.5 Essential medicines

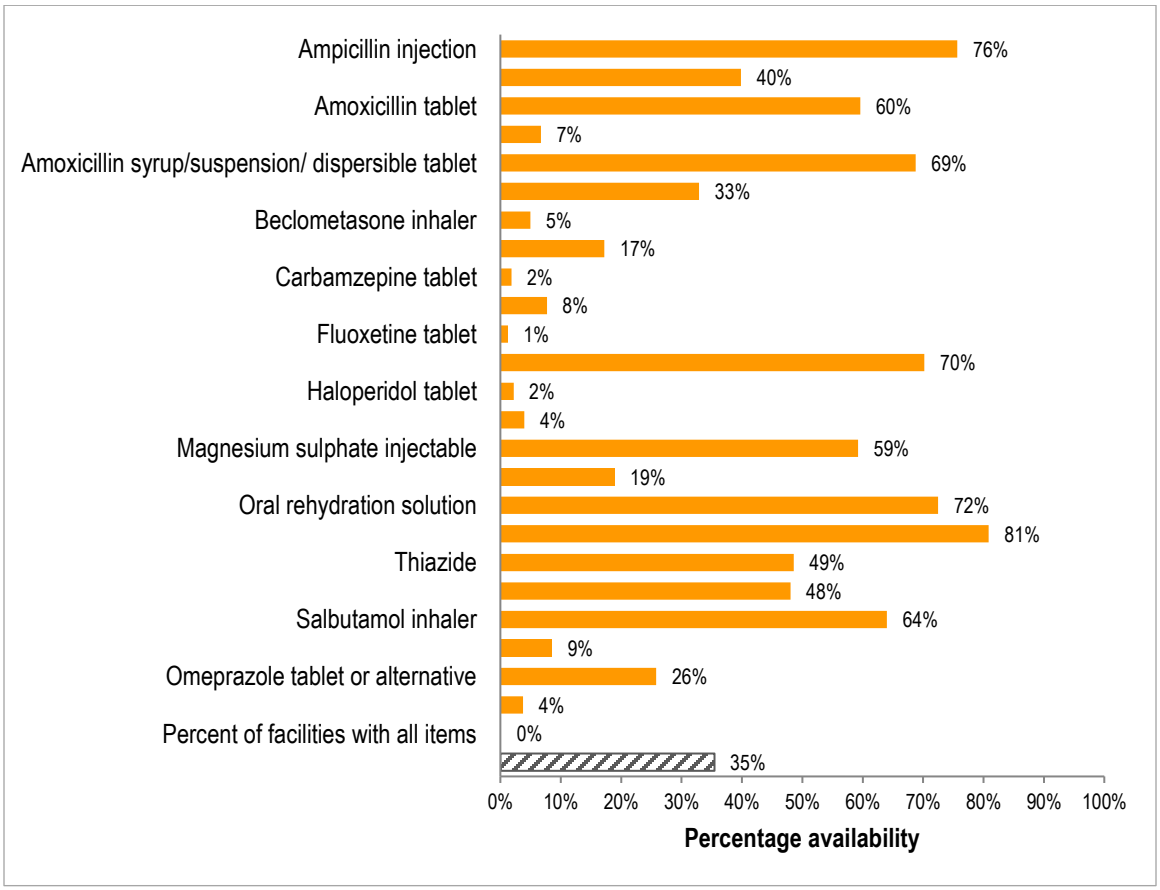
The availability of essential medicines is key for the delivery of quality health care services. It increased demand for health services and build patients' trust in the health system. The investigation considered 24 tracer items enshrined in the National Essential Drugs and Medicine List.

Key findings

- The survey established that overall, 35% of the health facilities (N=738) have at least one essential tracer medicines, while 60% of the health facilities have ampicillin and 40% Ceftriaxone injections available in stock. About three quarters of health facilities had amoxicillin syrup/suspension (69%) and Gentamicin injection in stock (70%) compared to 44%, 66%, 78%, 72% and 78% respectively in 2016.
- 72% of health facilities have oral rehydration salts sachets while Zinc sulphate tablets or syrups registered 48%. These were the most essential medicines available in health facilities compared to 94% and 82% in 2016.
- In the management of labour, Oxytocin injection was available in 81% of health facilities while Salbutamol inhaler (64%) and Insulin regular injection (4%) were available in stock compared to 87%, 58% and 4% in 2016.

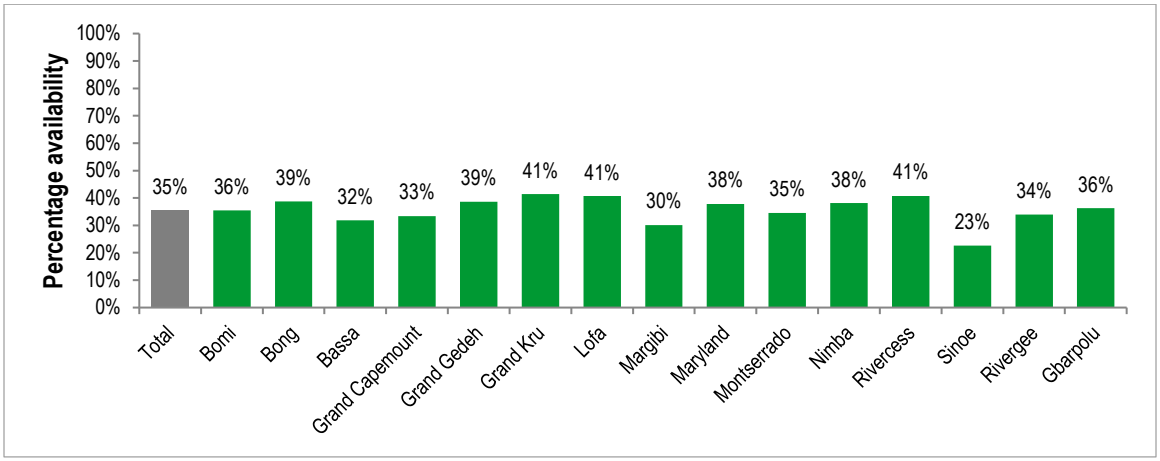
The results revealed high essential medicines scores for oral rehydration solution, treatment of infections, and food supplements compared to essential medicines for managing diabetes, hypertension, heart diseases, and cholesterol. Overall, 35% of the health facilities have at least one essential tracer medicines. Figure 12 below presents the percentage of health facility by essential medicines scores.

Figure 12: Percentage of facilities with essential medicines items available (n=738)



Data from the SARA show minimum variation in essential medicines scores across counties. For instance, only three counties achieved a score of 41%. This situation is expected to affect the quality of health services in the country. Figure 13 presents health facility essential medicines scores by county.

Figure 13: Mean availability of essential medicine tracer items, by county (n=765)



4.3.6 Essential medicines for mothers

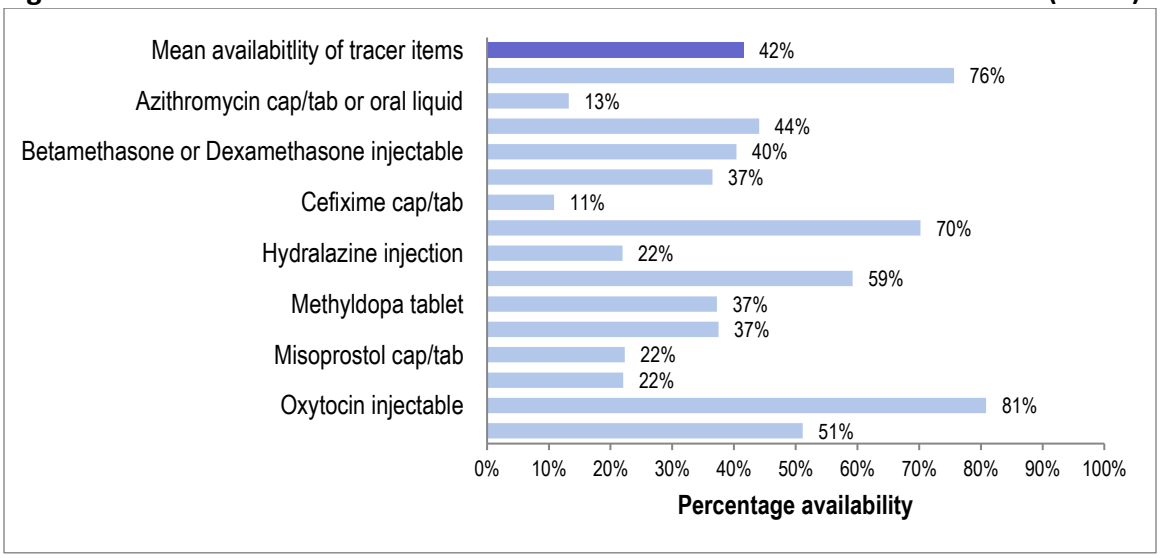
Mother's health is important to the rest of the family and saving the life of a mother requires quick and sound judgment by providing the right medicine at the right time. The survey assessed fifteen tracer items to establish health facility readiness to provide maternal health services, mostly those required during labour and delivery.

Key findings

- As illustrated in Figure below, 42% of the health facilities (N=765) have tracer medicines' for mothers.
- Most tracer items availability in the health facilities ranged between 37% to 81% with the most stocked drug being, Oxytocin injectable (81%) and gentamicin injectable (70%) compared to 81% and 70% in 2016.
- 40% of health facilities have Betamethasome injectable and 59% magnesium sulphate injectable compared to 71% each in 2016.
- The least available tracer medicine was Cefixime capsules/tablets (11%) compared to Nifedipine 18% in 2016.

As illustrated in **Error! Reference source not found.**14 below, 42% of assessed health facilities have tracer medicines for mothers. The most available medicines and drugs are Oxytocin injectable (81%) and gentamicin injectable (70%) while the most unavailable tracer medicines was Cefixime cap/tab (11%).

Figure 14: Facilities with essential medicines for mothers observed in stock and valid (n=765)



4.2.7 Essential medicines for children

Children are vulnerable to diseases and are most likely to access health services than adults. Therefore, it is important to have essential medicines available for their treatment. Twelve (12) tracer medicines were assess determine health facilities readiness to provide childhood preventive and curative services.

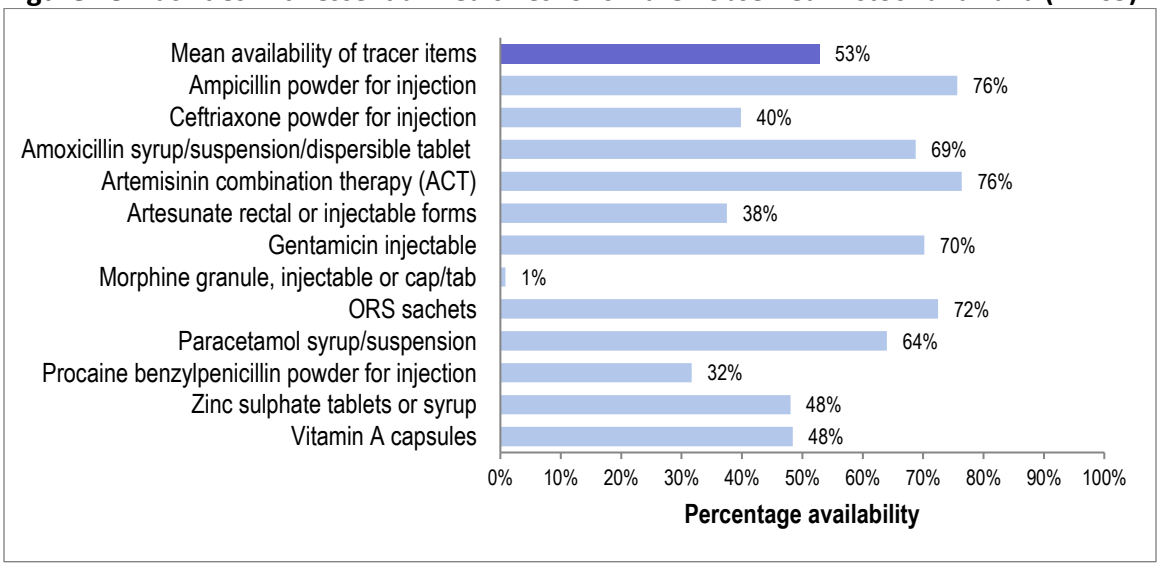
Key findings:

- Overall, 53% of the health facilities (N=765) have at least 1 tracer item that is essential medicines for treatment of children compared to 66% in 2016.
- The most available tracer items were oral rehydration salts sachets (72%), artemisinin combination therapy (ACT) (76%) and Zinc sulphate tablets or syrups (48%) compared to 94%, 92% and 82% in 2016.
- Vitamin A capsules were available but in 48% of the health facilities.
- The least available medicine for children in health facilities was morphine granule, injectable/ Capsules/tablets (1%) and procaine benzyl penicillin powder for injection (32%) compared to 1% , 38% in 2016.

The SARA found that overall, 53% of the health facilities have at least 1 tracer essential medicines for the treatment of children. The most available tracer items were ampicillin powder for injection (76%) and artemisinin combination therapy (ACT) (76%).

The least available medicine for children in was morphine granule, injectable/ Capsules/tablets (1%) and procaine benzyl penicillin powder for injection (32%). Figure 15 below presents the percentage of health facilities that have essential medicines for children that were observed in stock and valid.

Figure 15: Facilities with essential medicines for children observed in stock and valid (n=765)



4.4 General service readiness score card

The general service readiness score card is a summary of the quality of health services in the country. It provides a snapshot of health facility readiness to provide basic and comprehensive services to the Liberian people. The score card covers; general service readiness index score, basic amenities mean score, standard precautions mean score, basic equipment mean score, essential medicine mean score and diagnostic mean score. Table 9 Annex 1 presents the SARA general service readiness score card.

4.5 Conclusion

The general readiness index score is a reflection of the health system. Therefore, a low index score is a manifestation of poor quality of health care services. Liberia index score is below sixty percent which is a three per cent drop from the 2016 SARA. Other readiness mean scores such as basic amenities increased by two per cent, diagnostic mean score declined by three per cent, essential medicine score decreased by nine per cent, standard precautions mean score drop by five per cent and basic equipment mean score increased twenty per cent in 2018. The declined in most of these general readiness indicators is a sign of a deteriorating quality of health services. The Ministry of Health has to invest in the general service readiness indicators in order to improve the quality of healthcare in the country.

CHAPTER FIVE: SPECIFIC SERVICE READINESS

5.0 Service Specific availability and readiness

5.1 Introduction

Besides assessing the readiness of health facilities to provide general health services, the SARA 2018 for Liberia also measured the availability and readiness of health facilities to offer the following key specific health services:

a) Maternal and reproductive health: Antenatal care, Family planning, Basic and comprehensive obstetric care, Adolescent health and lifesaving medicines for maternal and child health,
b) Child health: Curative and preventive care and growth monitoring, Routine child immunization, Essential medicines for child health
c) HIV/AIDS services: HIV counseling and testing, HIV/AIDS care and support services, Antiretroviral therapy (ART), Prevention mother-to-child transmission (PMTCT), Sexually transmitted infections (STIs)
d) Tuberculosis services
e) Malaria services
f) Non-communicable disease (NCD) services: cardiovascular conditions, chronic respiratory disease, diabetes
g) Neglected tropical diseases (NCDs)
h) Surgery: Basic surgery and comprehensive surgery
i) Highly diagnostic services
j) Blood transfusion

The percentage of each of the service for the facilities offering the service was computed as a measure of the availability of the service. In addition, for facilities offering the service, readiness to provide the service was assessed based on the presence of a number of tracer items for trained staff, guidelines, equipment, diagnostic capacity, and medicines and commodities.

The tracer items are considered to be a minimum set of items that are a prerequisite for the facility to be able to offer an adequate level of care. Service readiness is a key indicator for assessing and monitoring improvements and investments in service delivery. An overall score summarizing service readiness was computed for each health service by taking the mean of the availabilities of the tracer items for that service.

In each of the specific services arrange of tracer indicators and items have been used to measure the readiness index. The indicator measurements considered for the index of the indices were:

1. Availability of tracer trained staff and guidelines
2. Availability of tracer equipment
3. Availability of tracer diagnostics and
4. Availability of Medicines and commodities.

5.2 Maternal, new born, child, and adolescent health (MNCAH) Summary

Maternal Mortality Ratio (MMR) in Liberia stands at 1,072/100,000 live births and considered as one of the highest in the world[2]. The main causes of maternal deaths are haemorrhage, hypertension, and infection[3], while the main causes of newborn deaths is prematurity, intrapartum related events (Asphyxia) and Sepsis[4]. One of the strategies to reduce maternal and newborn mortality is to improve the access to emergency obstetric and newborn care, in which complication during pregnancy and childbirth are identified and referred to higher level if necessary. Basic emergency obstetric and newborn care (BEmONC) includes capacity to provide the following seven signal functions: (1) parenteral administration of antibiotics, (2) parenteral administration of oxytocic drugs, (3) parenteral administration of anticonvulsants, (4) assisted vaginal delivery, (5) manual removal of placenta, (6) manual removal of retained products, and (7) neonatal resuscitation

Comprehensive obstetric and newborn care consists of all functions of basic emergency obstetric and newborn care plus Caesarean section and blood transfusion. The evidence-based show that the improvement of emergency obstetric and newborn care will reduce maternal and newborn mortality.

Guidelines jointly issued by WHO, UNICEF, and UNFPA recommend four facilities offering basic and one facility offering comprehensive care for every 500,000 people. However, in Liberia, due to difficult geographical access among others challenges, the country recommended to have at least one CEmONC for every county, even though the population does not reach 500,000 people.

[2] Liberia DHS 2013
[3] Causes of maternal deaths, 2013
[4] Situation Analysis of the Newborn Health in Liberia, April 2013.

The service availability and readiness in Liberia had the following specific services considered in provision of Maternal, newborn, child and adolescent health services (MNCAH) with a range of tracer indicators for each to measure availability and readiness for the facilities to provide services;

- Provision of antenatal care services
- Provision of basic obstetric and newborn care
- Family planning services
- Adolescent health services
- Child Preventive and curative care services for children under five years
- Routine child immunization
- Comprehensive obstetric and newborn care services.

5.2.1 Availability of MNCAH services

Key findings

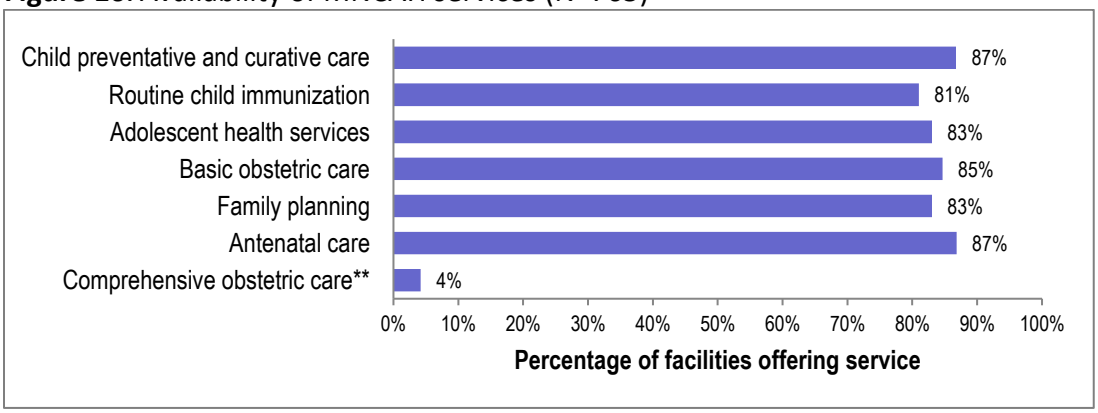
- In Liberia, child preventive and curative care services are available 87% of the health facilities, a decreased by (7.4%) of the total health facilities compared to 2016
- Antenatal care services are available in 87% of the health facilities surveyed, a decreased seen by (3.3%) as compared to 2016(90%)
- Obstetric and care services was 85% and maintained 4% of the health facilities offering BEmONC and Comprehensive Emergency Obstetric and Newborn Care services (CEmONC) respectively;
- Eighty three percent of the health facilities in Liberia offered family planning services
- Adolescent health care services were available in 86% health facilities in Liberia and showed a decreased by (5%) from 2016 to 2018
- Routine child immunization was provided in 81% of the health facilities

Figure 16 below, shows that in Liberia none of the MNCAH services were available in all (100%) of the existing facilities. A good proportion, over 80% had 6 out of 7 essential services for reproductive Maternal Neonatal, Child and adolescent health (MNCAH). Child preventive and curative care services decrease by (74%), ANC were available in 87% of the health facilities but decreased by (3.3%).
As noted earlier in the area of obstetric care services, 85% of the health facilities offered the service and 4% had BEmONC and CEmONC services available respectively.

In order to meet the family planning needs of the nations about eight out of ten health facilities (83%) provided family planning services, 83% of the health facilities offered adolescent health care services but had a decrease from 2016 by (5%) and finally routine child immunization was available in 81% of the health facilities.

These decreases in service availability for MNCAH could be attributed to stock out of basic commodities and staff attrition.

Figure 16: Availability of MNCAH services (N=765)



5.2.2 Lifesaving commodities for women and children

Mothers and children are vulnerable to many diseases because of the nature of work, environment, activity and morphologies. When their life is threatened, preventions and live saving is important and critical commodities are essential and should always be available. The key tracer items in various service areas to determining availability of the lifesaving commodities were observed in stock as shown in Figure 17 below.

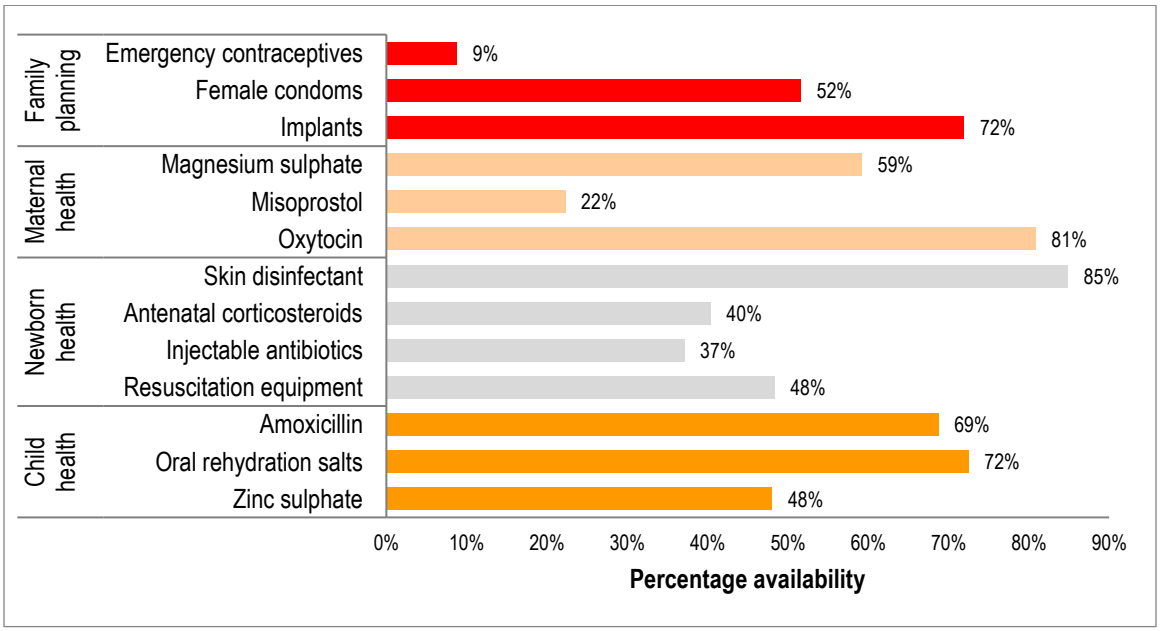
- Availability of Family planning commodities
- Availability of maternal health medicines and commodities
- Availability of newborn health medicines and commodities
- Availability of child health medicines and commodities

Key findings

- In family planning, emergency contraceptives were available and observed in 9% of the health facilities in Liberia and this is due to lack of additional one stop center since 2016. There was no significant changes in the number of facilities that provided emergency contraceptives (2016) (10%). Female condoms were available in 52% of the health facilities. Long-term family planning method specifically implants were the most available stocked in 72% of the health facilities a decrease shown by 6% compared to 2016 (78%). The stock of implants was due to the availability of the commodity at all levels of the health system.
- Maternal health Oxytocin was the medicine that was mostly available in (81 %) of the health facilities with 6% reduction as compared to 2016 (87%) and remain the first choice of treatment for post-partum hemorrhage as compare to misoprostol. Misoprostol was available at (22 %) of the health facilities with a reduction of 7% in comparison with 2016 (29%) while Magnesium sulphate was available in 59 % of the health facilities with a decrease by 12% compared to 2016 (71%). .

- For newborn health, skin disinfectant for newborns were available in (85 %) of the health facilities, a decrease by 5% in comparison with 2016(90%) and antenatal corticosteroids is available in (40 %) of the health facilities assessed in 2018 as compared to 2016(71%) with a 31% decrease. Newborn injectable antibiotics were also available in 37 % of the health facilities with 31% reduction from 68% in 2016 while resuscitation equipment is at 48 % of the health facilities, one percent increment from 2016(47%).
- In provision of child health services, Oral rehydration salts and zinc sulphate for the management of diarrhea were available in 72 % and 48 % of the health facilities with a reduction of 22% and 34% respectively while amoxicillin was available for children in 69 % of the health facilities with a 3% decrease compared to 2016(72%).

Figure 17: Facilities that have lifesaving and valid commodities observed in stock



5.2.3 MNCAH readiness index

As illustrated in Figure 18 below, overall, in Liberia 83% of the health facilities provided family planning services, an increased by 10% while 49% of the health facilities have at least one staff trained in the past two years preceding the survey and guidelines, an increase of 8% was experienced in 2018. Majority of the health facilities (90%) had equipment, medicines and family planning commodities.

Overall the readiness of health facilities to provide antenatal care services in Liberia was 55% with an increased by 15% in comparison to 2016 (40%). Equipment to provide services were available in 90% of the health facilities while the availability of guidelines, medicines and commodities for antenatal care is 55% with 15% increment from 2016.

Though most of the health facilities have basic obstetric care services available, the readiness index for service provision remained at only 3%. The assessment established that equipment and staff were major items that were barely available in Liberia, essential medicines and commodities for these services are available in 81% of the health facilities with a decrease of 8% in 2016(89%).

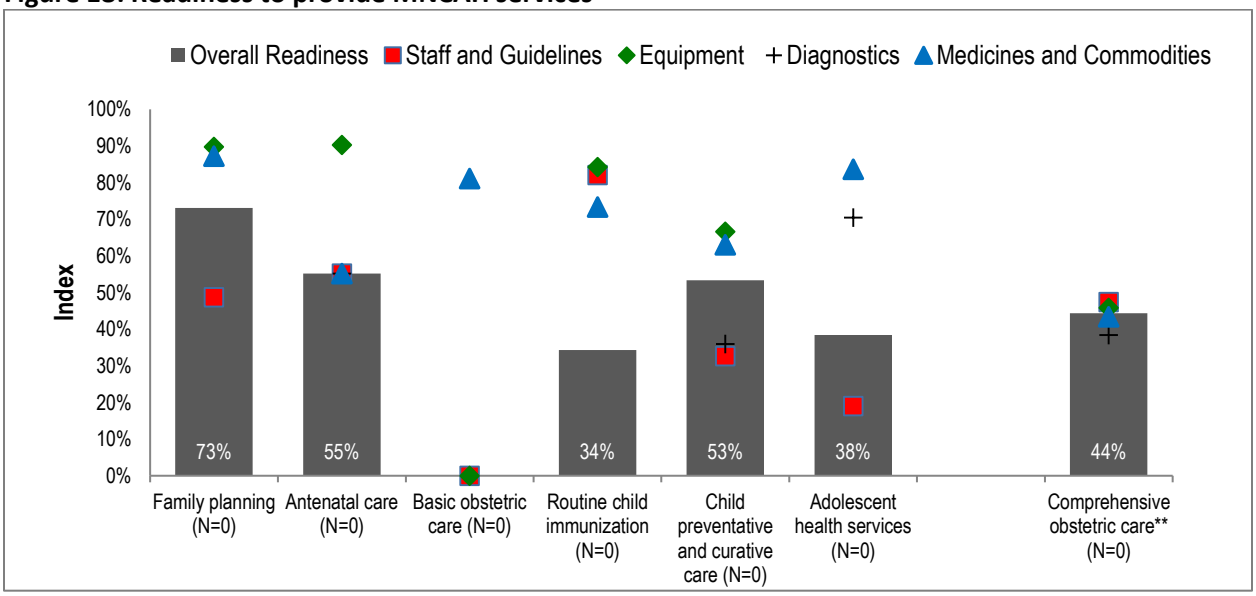
The survey further established that on average, there was 4% of health facilities that provided comprehensive obstetric care services, a significant decreased shown by 53% compared to 2016(57%). Guidelines and updated staff were available in 47% of the health facilities, this show a 2% decrease while medicines and health commodities at the health facilities were readily available in 43% health facilities, a decrease by 22%.

With regards to protection of the child from immunizable diseases, routine immunisation was provided in over 81% health facilities. The overall readiness index for routine immunisation is 34% a 2% decrease shown in comparison with 2016(36%). Functional equipment, guideline and staff for routine immunisation was available in over 82% of the health facilities, 2% increment compared to 2016(80%) however, comparatively, availability of commodities and medical supplies was 73% and was found to be higher by 13%.

Over 87% of facilities offer preventive and curative care for U-5s child however, preventive and curative care services had a readiness index of 53%, a reduction by 14%. Essential equipment was available in (67%) with one percent reduction but major challenge for these services is guidelines and staff.

Eighty three percent of health facilities in Liberia offer adolescence health services, 2% reduction in the services offered, 38% of these facilities were ready to provide adolescent health services, 4% difference between 2018 and 2016 (42%).

Figure 18: Readiness to provide MNCAH services



5.2.4 Family planning

5.2.4.1 Family planning service availability

Key findings

- In Liberia 83% of health facilities have family planning services available, though a 5% decrease shown, the most common available modern method of family planning was progestin only- injectable contraceptive provided in 79% of the health facilities in Liberia, a decreased by 7% compared to 2016.
- Progestin only contraceptive and combined oral contraceptives were available in 79% health facilities, a decrease by 5% in comparison with 2016(84%).
- Male condoms were available in 77% of the health facilities assessed, a (8 %) decrease and female condoms was 59% with a 3% decrease.
- The most preferred and provided long-term method was implants in 75% of the health facilities with a 4% increment from 2016(79%) while the short-term method was progestin-only injectable and use of condoms in Liberia.
- Male and female sterilization was available in 2% and 3% of the health facilities respectively.

To ensure people in Liberia are able to control the timing of pregnancy and to space and or limit the number of children to the number they desire, family planning is a key service. Figure 19 illustrates the availability of family planning services in Liberia and shows that FP was available in the majority of the facilities (83%) of the facilities reporting that they offered family planning services. However, services for some family planning methods were available in more than 75% of the facilities while services for others were found to be quite rare.

Provision of progestin-only injectable contraceptives was the most available, with 79% of the facilities indicating that they offered progestin-only injectable contraceptives which is 7% different from 2016(86%), followed by provision of male condoms (77%) which have a decrease of 8% and provision of combined oral contraceptives (79%). Availability of services for male and female sterilisation was the least available, with 2% and 3% respectively as reported by the health facilities in Liberia. Amongst the long term contraceptive methods, 75% of the health facilities assessed provided implant as the most preferred and common method used, a decrease shown by 4% from 2016(79%).

Figure 19: **Percentage of facilities that offer family planning services (N=765)**

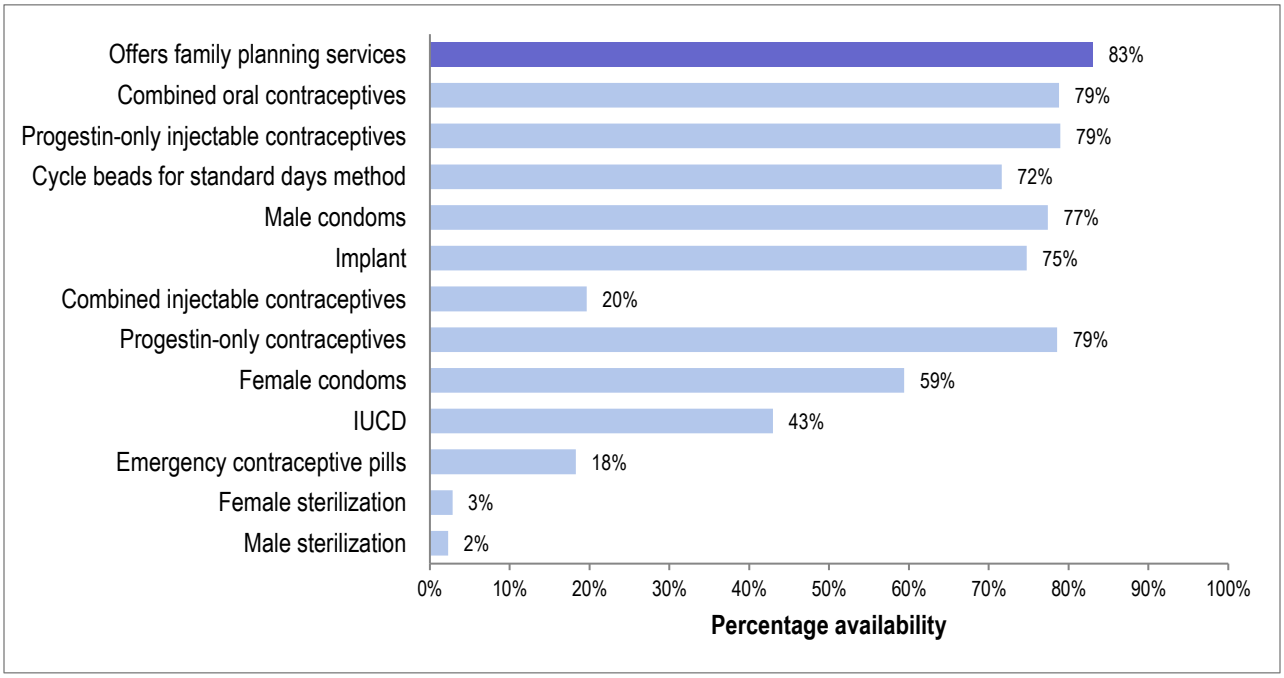


Table 9 Annex 1 survey established that 83% of the clinics, 84% of the health centres and 84% of the hospitals provided family planning services using modern methods by regions. However, the assessment established that 95% of Public health facilities provided these essential services while the Mission/faith based provided the least type of same services (41%), NGO (58%) and Private for profit (55%) facilities respectively. The survey, further established that majority of the facilities that provided this type of service were in rural areas (95%) while 60% of the facilities were in urban areas.

Over 83% of the facilities in 14 Counties provided family planning services. The County that need to expand this service is Montserrado with 59% coverage of the services in facilities. The most preferred and provided long-term method is implants in 75% of the health facilities, while short-term method was progestin-only injectable and use of condoms. On the overall, there was a decrease by (2%) at all health facilities providing family planning methods. This could be as a result of stock out of commodities at national and county levels. Notwithstanding, implant and progestin injectable remained the most preferred and widely used methods.

5.2.4.2 Family planning service readiness

In readiness for FP, seven tracer items were considered for the facilities that had FP services available.

Key findings

- On average 73% of the health facilities in Liberia had at least one tracer item for provision of family planning services and only 8% of the health facilities had all items needed to provide family planning services.
- Condoms were available in 89% of the health facilities in Liberia
- Injectable contraceptives was available in 88% of the health facilities
- On basic equipment for provision of family planning, 90% of the health facilities had blood pressure machine.
- Guidelines for family planning were available in 62% of the health facilities an increase by 29% while job aids was available in 68% of the health facilities
- At least one trained staff in family planning two years preceding the survey was in 17% of the health facilities
- Progestin only contraceptives were available in 87% of the health facilities

The figure below displays the seven tracer items that were assessed to establish the readiness to offer FP services based on their availability during the survey period. On average, 73% of the health facilities had at least one tracer item necessary to provide FP. Condoms, Injectable contraceptives, basic equipment (blood pressure machine) and Progestin only contraceptives were rated between 87-90%. Though guidelines for family planning, job aids and trained staff in FP was rated low but there is an increased in these tracer items compare to 2016 survey report.

Figure 20: **Family planning services among facilities that provide this service (N=596)**

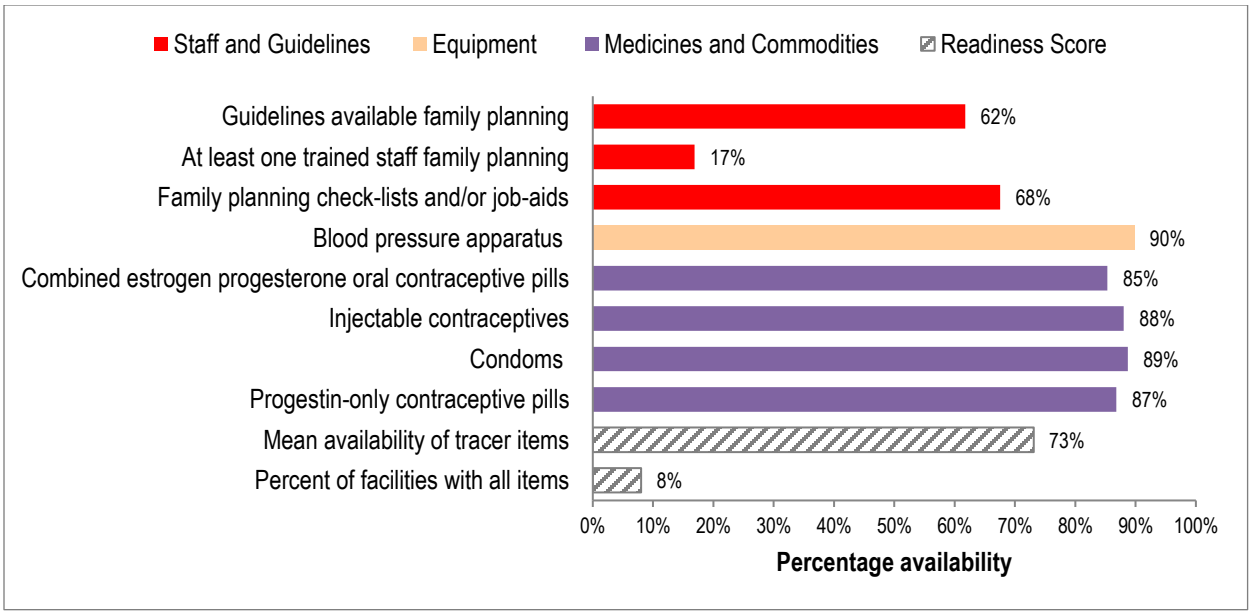
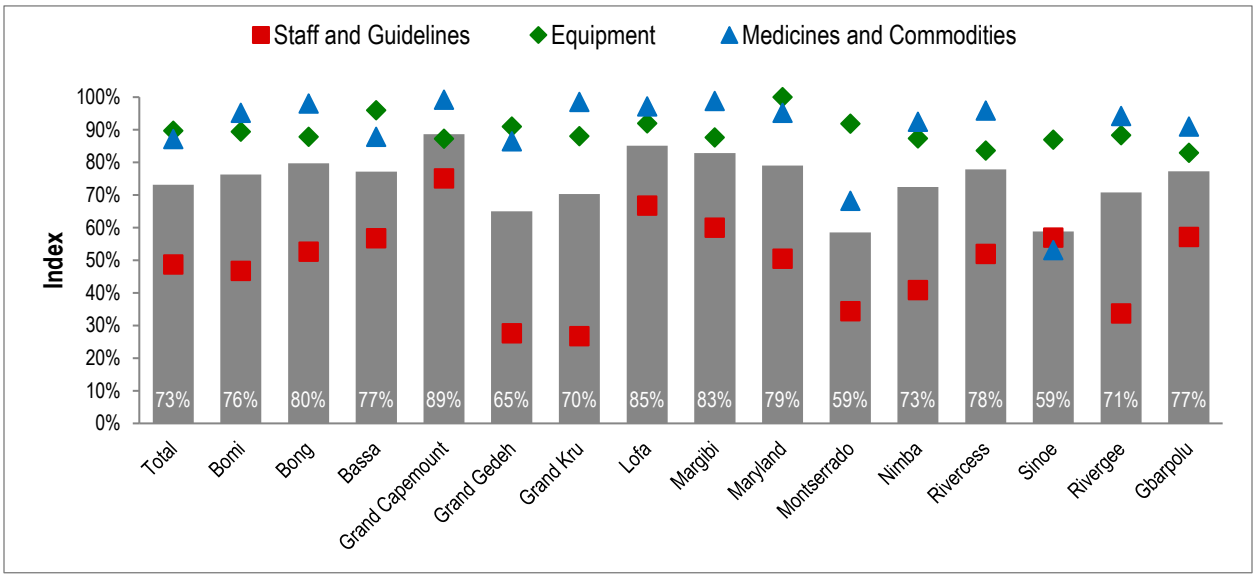


Figure 21 below, shows the number of facilities that were assessed for the readiness to provide family planning services. There were little variations among counties with regard to availability/readiness of equipment, medicines and commodities (85%) in 13 out of 15 counties.

The general readiness index for health facilities to provide the family services presented in Table 10 Annex 1 was 73%(N=586) with 8% of them with all the required tracer items. The counties with the lowest readiness score were Montserrado and Sinoe with an index score of 59% while Grand Cape Mount had the highest score (89%). Proportion of facilities with at least one staff trained in FP in the past two years preceding the survey was 17%, 8% of items were at least available in all counties, with Grand Cape Mount having the highest percentage of 89%. Two counties, Bomi and River Gee had no staff trained in family planning in the past two years preceding the survey.

Private for profit and mission/faith based facilities were the least providers of family planning services (60%). Almost all (95%) public health facilities offered family planning services (See annex 1, table 10).

Figure 21: Percentage of facilities that have tracer items for FP, by County



5.2.5 Child health preventive and curative care service availability and readiness

5.2.5.1 Child health preventive and curative care service availability

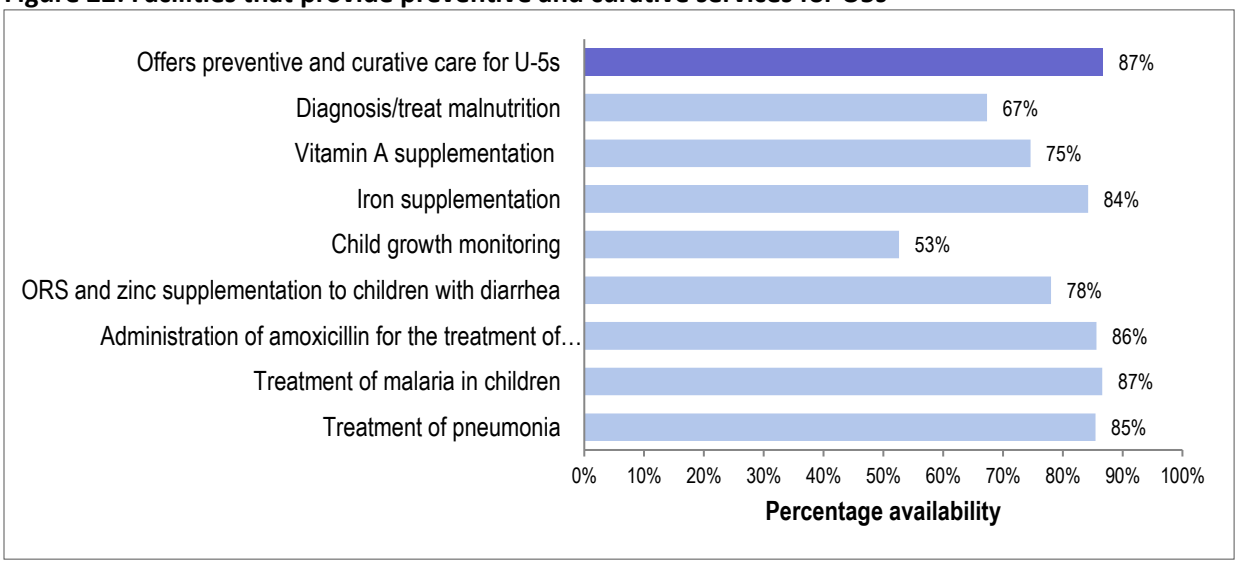
Preventive and curative child health services encompass curative services for children, vitamin and trace elements supplementation, immunisation and nutritional services.

Key findings

- Preventive and curative care services for children under five years of age were provided in 87% of the health facilities in Liberia.
- Treatment of malaria in children was available in 87% of the health facilities.
- Treatment of pneumonia and administration of amoxicillin for the treatment of pneumonia was provided in 85% and 86% of the health facilities respectively.
- ORS and Zinc supplementation to children with diarrhea was available in 78% of the health facilities.
- Iron supplementations was offered in 84% of the health facilities in Liberia
- Vitamin A supplementations was available in 75% of the health facilities.
- Child growth monitoring service was available in 53% of the health facilities.
- Diagnosis and treatment of malnutrition in 67% of the health facilities.

During the census, child health preventive and curative care services were assessed and the findings are presented in Figure 22. On average 87% of the health facilities had child health preventive and curative care services for children under five available in Liberia. Treatment of malaria, treatment of pneumonia and administration of Amoxicillin for the treatment of pneumonia were majorly available in 85% of the health facilities respectively. Growth monitoring (53%) and diagnosis/treatment of malnutrition (67%) was least available to be offered in health facilities.

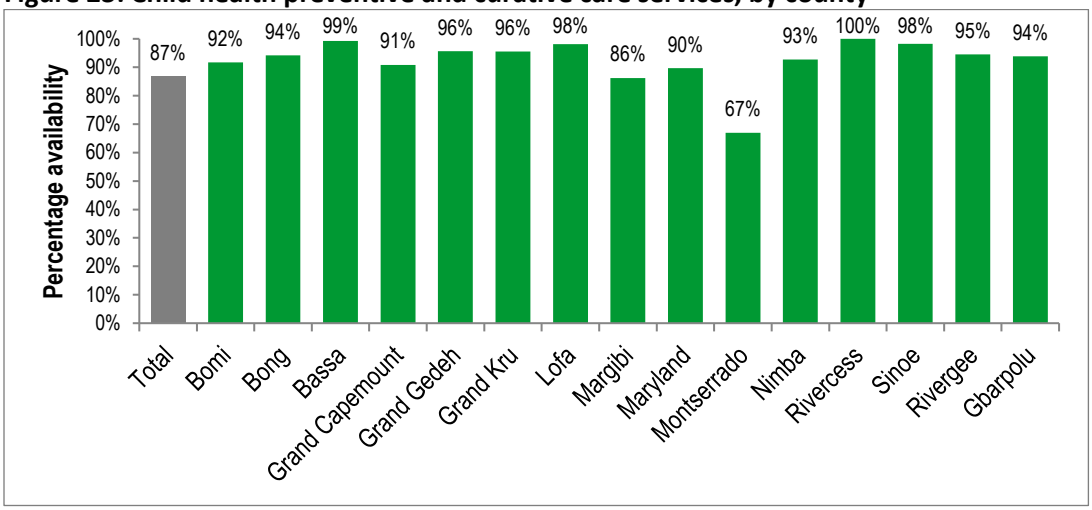
Figure 22: Facilities that provide preventive and curative services for U5s



In seven out of 15 counties, the services were available in 87% of the facilities in the county. Only Montserrado (67%) had less than 86% of the health facilities offering the services. Preventive and curative care services to under five years children was mainly offered in health centers (94%), and clinics (86%), but less in hospitals (93%). Majority of the health facilities offering these services were public (94%), mission/faith based (85%) and NGO/not-for-profit (84%).

Growth monitoring was least offered in clinics (50%) followed by health center (73%). Consequently, the service was mostly available in rural areas with 63% of the health facilities providing the services. Comparatively with 2016 survey, there is a (35%) decrease in child growth monitoring service provided mostly in the rural area**. See Table 11 Annex 1** and Figure below for details by county.

Figure 23: Child health preventive and curative care services, by county



5.2.5.2 Child health preventive and curative service readiness

Availability of 19 tracer items was used in the assessment of the readiness of the child health preventive and curative care services in facilities that provided the services.

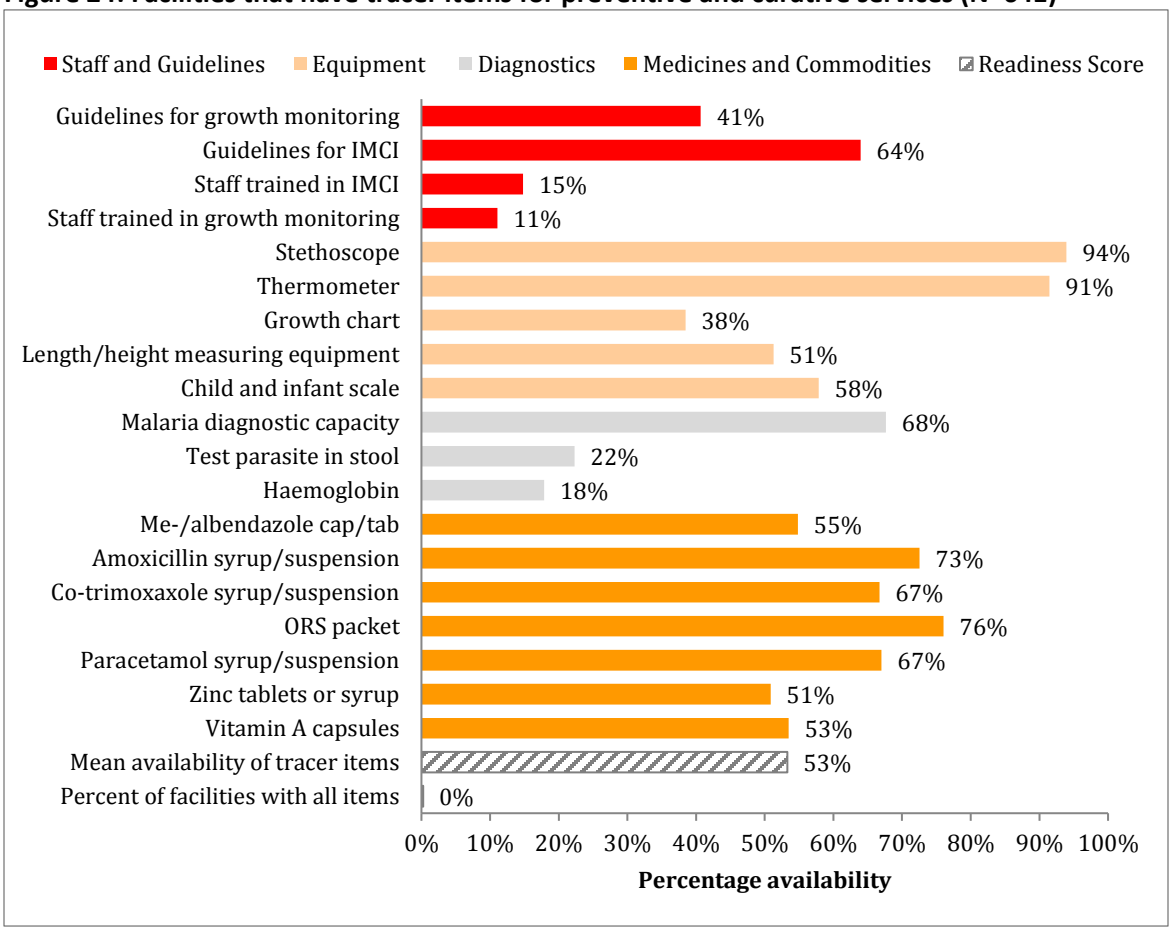
Key findings:

- The survey established that 53% of the health facilities had at least one tracer item to provide preventive and curative services to under five years children and none had all items.
- Majority of the health facilities had stethoscopes (94%) and Thermometers (91%).
- Child and infant weighing scale was available in 58% of the health facilities
- Capacity to check for malaria was available in 68 %of the health facilities
- Amoxicillin syrup/suspension were available in 86% 72% of the health facilities
- ORS sachets 76% and Zinc tablets/syrup (51%) were available for treatment of diarrhea.
- Vitamin A capsules were available in 53% of the health facilities
- Diagnostic capacity for checking hemoglobin was provided in 18%of the health facilities, while 22% had capacity to test parasites in stool.
- Albendazole cap/tabs were available in 55% of the health facilities.

- Guidelines for growth monitoring (26%) 41% and guidelines for integrated management of childhood illnesses (IMCI) were also recorded to be available in 64% of the health facilities
- Staff trained in growth monitoring and IMCI at least in the past two years preceding the survey was in 11% and 15% of the health facilities.

Figure 24 below, shows the general availability index for tracer items for child health preventive and curative care services in Liberia. Overall, 53% of the facilities had at least one tracer item to provide the services with 15 counties approximately 60% of their facilities with the essential tracer items**.** None of the health facilities had all tracer items. Most of the essential equipment available in health facilities was stethoscope (94%) and thermometers (91%) indicating 4% reduction. Generally drugs were available in over 63% of the health facilities. The most available medicines in health facilities were oral rehydration solution sachets (76%), a decrease by (20%), while amoxicillin (73%), co-trimoxazole syrup and paracetamol syrup suspension was available in 67% of the health facilities. The least available item was zinc tables/syrup with 51% availability with a decrease by (34%). Capacity for diagnostics for haemoglobin and testing parasites in stool was not commonly available as was found in 18% and 22% of the health facilities respectively. Guidelines for growth monitoring 41% of facilities while guidelines for integrated management of childhood illnesses (IMCI) were also noted to be available in 64% of the same. Staff trained in growth monitoring at least in the past two years preceding the survey were in 15% of the health facilities (Figure 24 below).

Figure 24: Facilities that have tracer items for preventive and curative services (N=641)

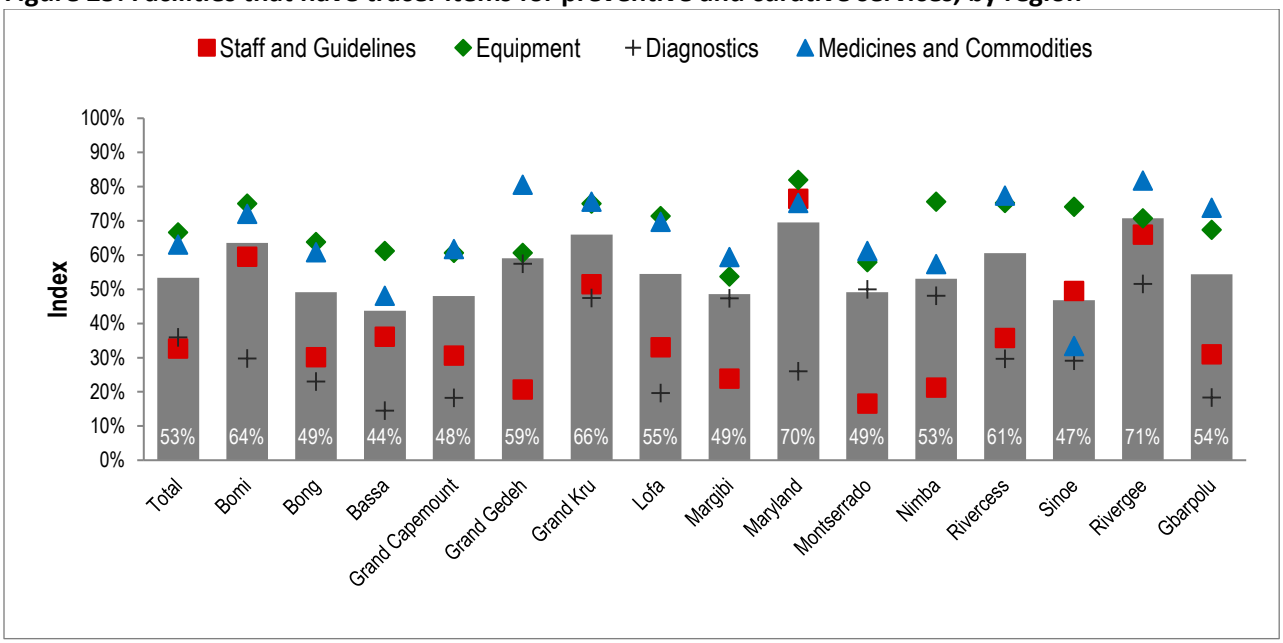


The county with the most available tracer items was River Gee (71%), followed by Maryland (70%) and Grand Kru (66%). Availability of trained staff in the past two years preceding the survey, guidelines and diagnostic equipment were major challenge identified across all counties but majorly in Bomi, Grand Bassa, Grand Cape Mount and Sinoe counties.

Readiness index for preventive and curative care services for children under five years was high among hospitals (69%) followed by health centers (63%) and clinics (52%). Guidelines and availability of a trained staff in the past two year preceding the survey was in 33% of the health facilities across all levels of care. **(Table 12 Annex 1).**

Mission/faith based facilities had the highest readiness score (55%) followed closely with the Public health facilities (54%) with the availability of a staff trained and guidelines to offer this essential service while Private for profit had the least readiness score (49%). There was no significant difference in readiness among the rural and urban facilities with 54% and 53% respectively. One major challenge in urban was availability of a staff trained in the past two years preceding the survey in preventive and curative care services and availability of guidelines while in rural facilities they lacked diagnostics in 29% of the health facilities.

Figure 25: Facilities that have tracer items for preventive and curative services, by region



5.2.5.3 Child Immunization Service

5.2.5.3.1 Child immunization service availability

Childhood immunization is an important component in healthcare as it prevents children from contracting some life threatening diseases. The aim is to build a healthy population by ensuring that all children are reached with all essential vaccinations before they celebrate their first birth day.

Key findings

- In Liberia 81% of the health facilities provide immunization services.
- Child immunization was provided daily in 77% of the health facilities, while 77% of the health facilities had vaccines available for immunization.
- Vaccines for both adolescents and adults were available in 69% of the health facilities.
- Birth dose vaccines were available in 71% of the health facilities.
- Immunization as outreach service was provided by health facilities weekly (63%), monthly (11%) and as other basis (2%).

On average, 81% of the health facilities provided immunization services (Figure 26 below). Child immunization was provided daily in 77% of the health facilities. Seventy seven per cent of health facilities had children's vaccines while 69% of the health facilities had vaccines for adolescent and adult vaccinations. On average, birth dose vaccines was offered in 71% of health facilities and immunization services conducted as outreach service provided by health facilities included weekly (63%), monthly (11%) and on other basis (2%).

Figure 26: **Percentage of facilities that offer child immunization services (N=765)**

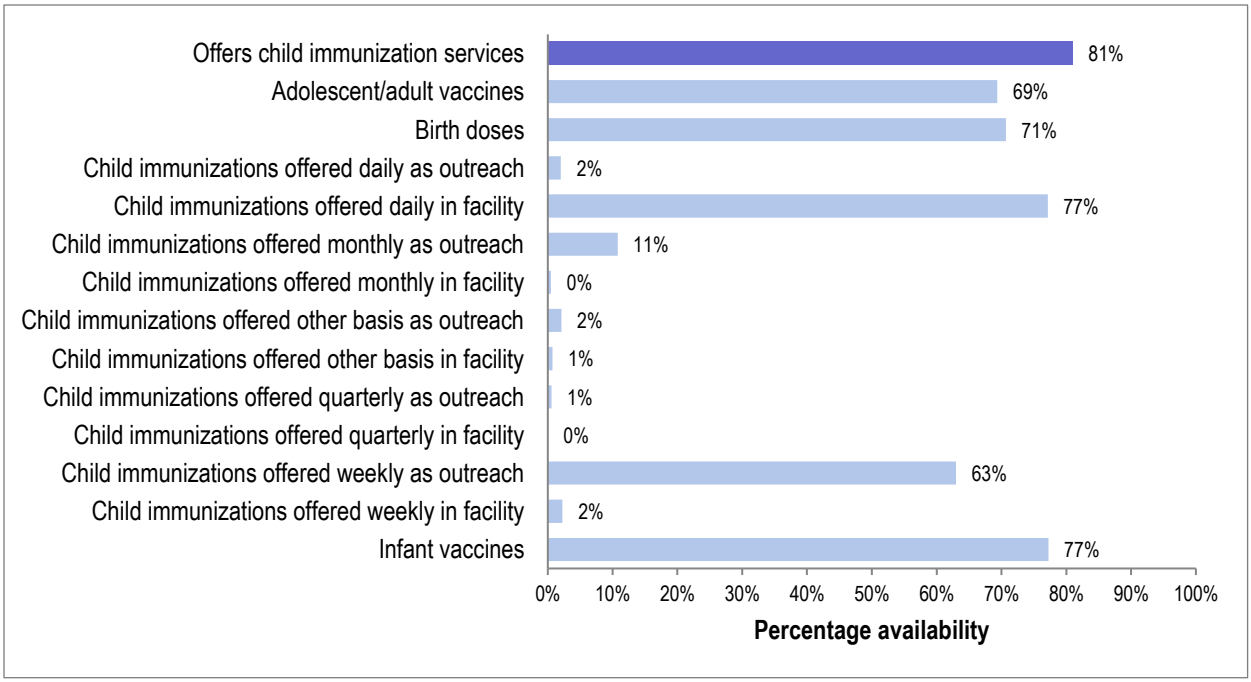


Table 13 Annex 1 illustrates the frequency of availability of tracer items for immunisation service in health facilities in Liberia. Two out of fifteen counties provided immunisation in 100% of their existing health facilities i.e. River Cess and River Gee. Majority of the counties (92%) had at least 85% of the health facilities providing immunisation services apart from Montserrado (60%).

Overall, by level, immunisation was provided in 90 % of health centres, 85% of hospitals (93%) and 81% of clinics (80%) with at least 77% of them on daily basis. Majority of the health facilities providing immunisation services were located in rural (91%) and majorly of these providers were Public (91%), followed by Mission/faith based (82%) and least were private for profit (51%).

5.2.5.3.2 Child immunization service readiness

The readiness of health facility to provide immunization services was assessed using 18 tracer items.

Key findings

- The mean availability of tracer items was at 80% (N=586)
- Nine per cent of the health facilities had refrigerators and 95% of them had cold boxes with ice packs.
- Temperature monitoring devices for vaccines were available in 65% of the health facilities, while 51% of them had adequate refrigerator temperature.
- Auto disposable syringes were available in 96% of health facilities.
- Sharps containers were available in 98% of health facilities.
- Guidelines for immunization were available in 85% of health facilities, and at least one staff trained in childhood immunization for the past two years preceding the survey were in 79% of the health facilities.
- Majority of the health facilities (95%) had immunization cards. The following percentage of facilities had the following vaccines:
    - BCG vaccines (76%)
    - DPT-Hib+HepB vaccine (88%)
    - Oral Polio Vaccine (88%)
    - Pneumococcal vaccine (88%)
    - Rota virus vaccine (85%)
    - Measles vaccine (84%)
    - Inactivated poliovirus vaccine in (64%)
    - Human papillomavirus vaccine in 13% of the health facilities.

Commodity security for vaccination is essential to keep the clients on schedule and avoid defaulters. Majority of the health facilities in Liberia had immunization cards, refrigerators, cold boxes, guidelines for immunization, daily immunization offered, sharp containers, disposable syringes. The BCG vaccines reported a decrease by (8%), Rota virus vaccine increase by 22%, Human papillomavirus vaccine increase by 8% while Inactivated poliovirus vaccine increase by 57% in all health facilities compared to 2016 survey report. Sixty five percent of health facilities showed readiness in Temperature monitoring devices for vaccines and 51% for adequate refrigerator temperature. See Figure 27 below for further details.

Figure 27: Facilities that have tracer items for child immunization services

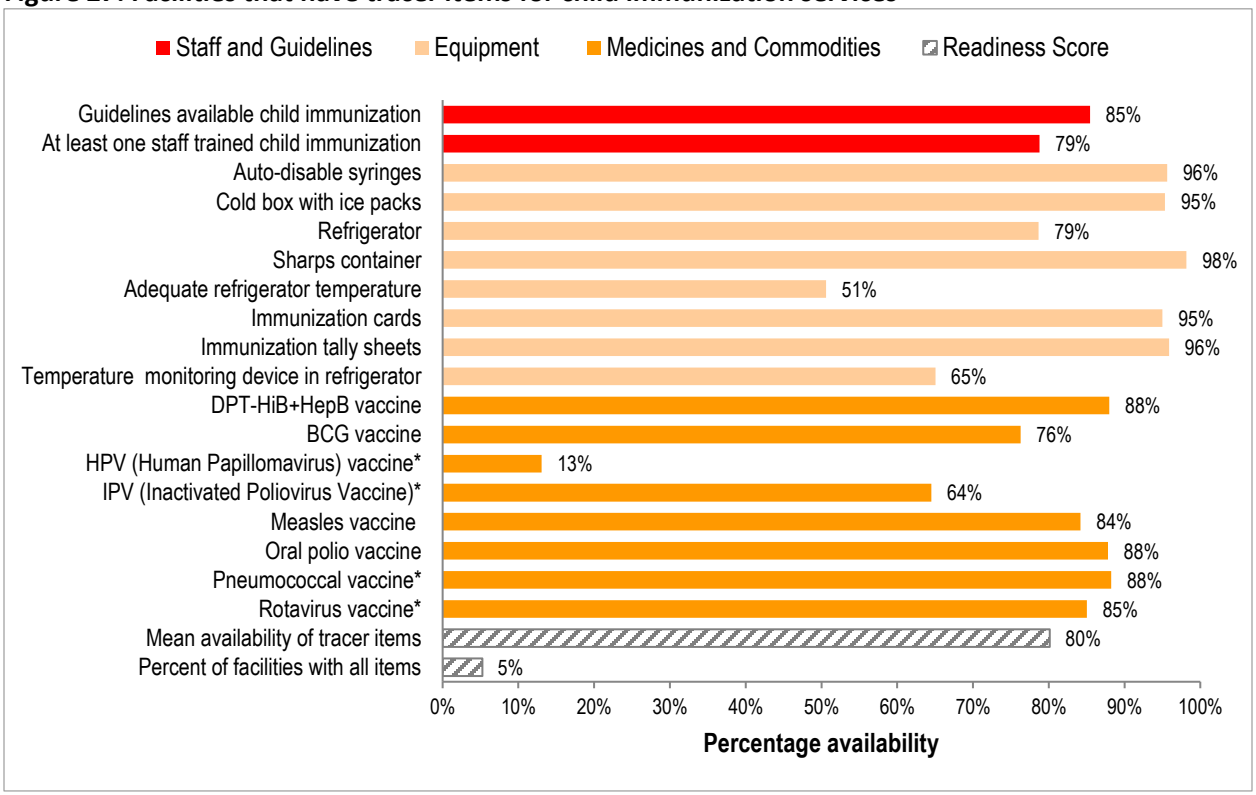


Figure 28 below, shows that some of the vaccines were stock out in the last three months preceding the survey in some facilities with the highest stock out reported in IPV (29%), BCG vaccine (21%), Measles (12%) and HPV (11%) in health facilities.

Figure 28: Vaccine stock-out in the last three months

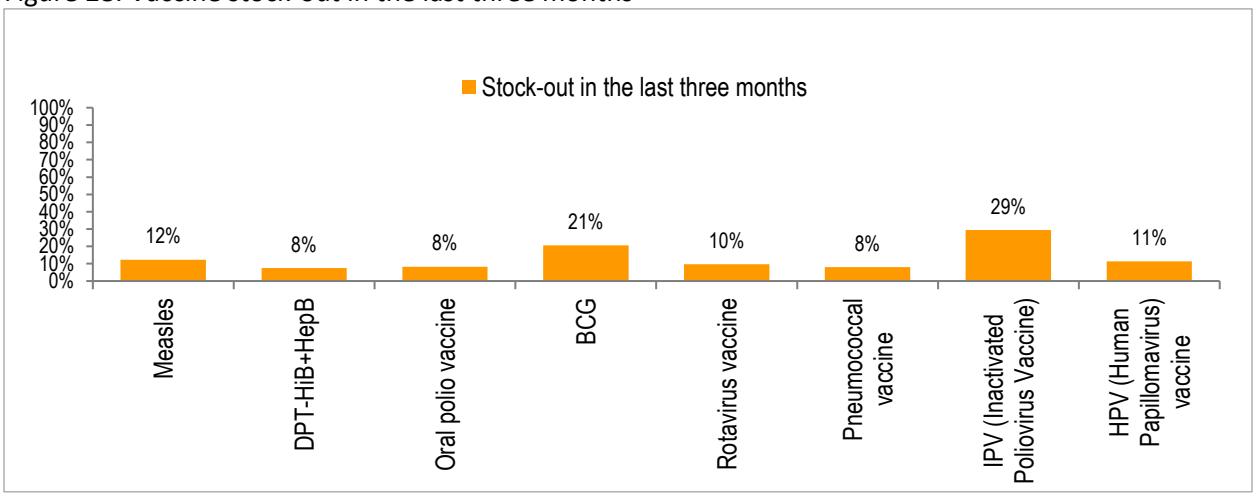
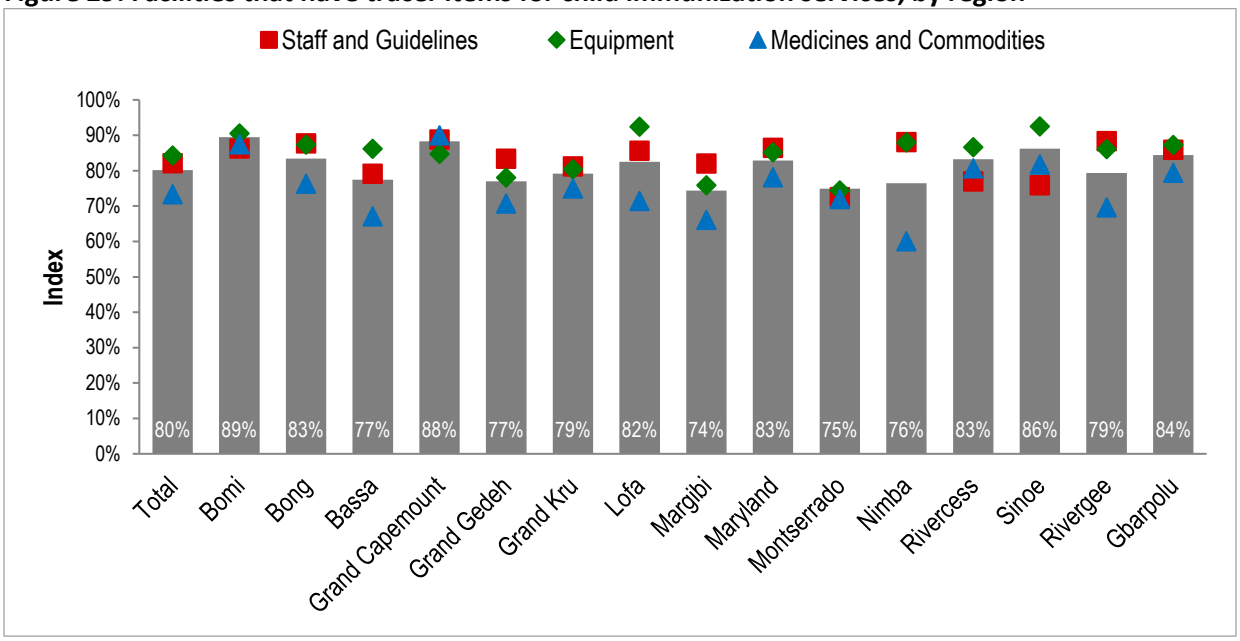


Figure 29 below and Table 14 Annex 1, shows the main tracer categories used to determine the readiness of the facilities in Liberia. The readiness index was 80%. Equipment available in 84% of the health facilities, guidelines and trained staff in 82% and vaccines and commodities in 73% of the health facilities that offer immunization services.

Most counties had the required tracer items apart from Nimba in which 60% of the health facilities had the required vaccines and commodities. There was no major difference of availability of the tracer items between hospital, health centers and clinics but less tracer items were experienced in Private for profit (73%) facilities and mission/faith based (75%). Rural health facilities had most of the tracer items (82%) than their counter part in urban (75%).

Figure 29: Facilities that have tracer items for child immunization services, by region



Immunisation is a key intervention in reducing mortality and morbidity of children. In Liberia, Immunisation services are generally available in 80% of the health facilities providing the service which is commendable. All the immunising facilities have either fridge or cold box, almost all had AD syringes and three quarters of facilities carried out immunisation daily.

Most vaccines at the time of the survey were available except for IPV, BCG, Measles and Human papilloma virus vaccine which was available in less than 27% of facilities. It is recommended that the country must ensure that fridges and cold box are supply with adequate supply of vaccines to health facilities for primary immunisation in order to increase and sustain high immunisation coverage and thereby reduce or eliminate vaccine preventable diseases in children under five.

5.2.6 Antenatal care availability and readiness

One of the most important Basic Package of Essential Health Services (BPEHS) for maternal care is antenatal service provided as a full package/profile.

5.2.6.1 Antenatal Care Availability

In Liberia, the assessment of availability for antenatal care service considered the following six tracer items in equal measure:

- Provision of Antenatal care services
- Provision of Iron supplementation
- Provision of folic acid supplementation
- Provision of Intermittent preventive treatment in pregnancy (IPTP) for malaria
- Provision of Tetanus Toxoid vaccination
- Monitoring for hypertensive disorders in pregnancy and

Key findings

- Antenatal care services were provided in 87% of the health facilities
- Intermittent Preventive Treatment in Pregnancy for malaria was available in 86% of the health facilities
- Iron and folic supplementations were provided in 86% of the health facilities.
- Monitoring for hypertensive disorders in pregnancy was available in 86% of the health facilities.
- Tetanus toxoid vaccination was provided in 82% of the health facilities in Liberia.

The survey showed that in Liberia (Figure 30) on average Antenatal care services was provided in 87% of the health facilities, showing a 3% decrease while; Intermittent Preventive Treatment in Pregnancy for malaria was available in 86% of the health facilities also indicating a 3% decrease. To ensure that mother's haemoglobin levels were maintained, Iron and folic supplementations were provided in 86% of the health facilities in Liberia, a decrease by 2%. Monitoring for hypertensive disorders in pregnancy was available in 86% of the health facilities and Tetanus toxoid vaccination was provided in 82% of the health facilities in Liberia. Majority of the health facilities provided ANC services - health centers (93%), clinics (86%) and hospitals (92%).

Figure 30: Percentage of tracer items available for antenatal care services (N=765)

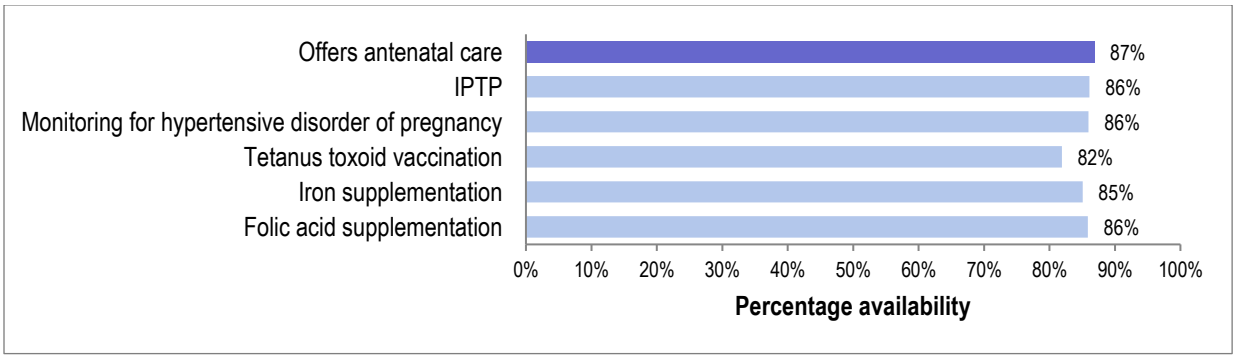
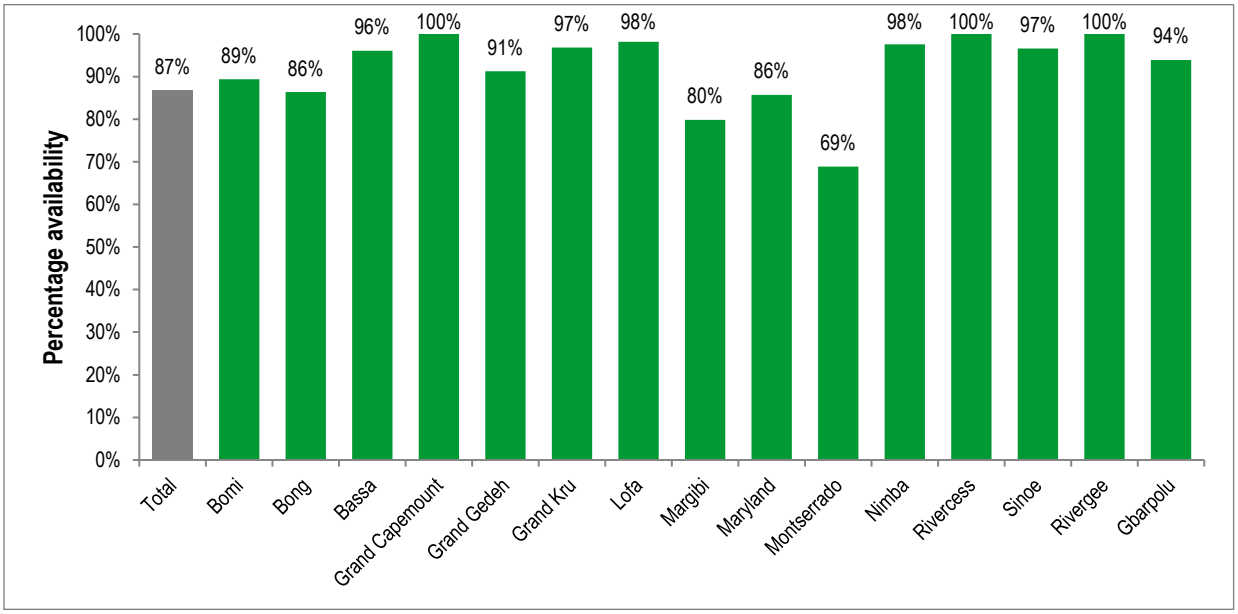


Figure 31: **Percentage of facilities that offer antenatal care services, by region (N=765)**



As presented in Figure 31 above ANC service was available in all counties with the least service available in Montserrado county accounting for 69% of the health facilities.

5.2.6.2 Antenatal Care Service Readiness

The following tracer items were considered during assessing the readiness of facilities to provide antenatal care services among facilities that offered ANC: guidelines on antenatal care services; at least one trained staff in antenatal care in the past two years; availability of blood pressure machine/apparatus; availability of diagnostics for checking hemoglobin levels; availability of diagnostics to check urine dipstick for protein; availability of iron tablets; availability of folic tablets; and availability of tetanus toxoid vaccine.

Key findings

- Mean availability of tracer items was found to be in 64% of the health facilities, with 1% of the health facilities with all tracer items.
- Insecticide treated nets was available in 75% of the health facilities
- Tetanus Toxoid vaccine and Intermittent preventive treatment drug for malaria were available in 79% of the health facilities.
- Folic acid and iron tablets were available in more than 80% of the health facilities
- Capacity to offer Urine dipstick protein tests (34%)
- Least available tracer item was hemoglobin levels test that was available in only 18% of facilities.
- Blood pressure apparatus /machine available 90% of the health facilities.

- At least one staff trained in antenatal care within two years preceding the survey was available in 20% of the health facilities and
- Antenatal guidelines were available in 75% of the health facilities.

The results showed that on average 64% of the health facilities had at least one tracer item to provide ANC services, 2% decrease as compare to 2016(62%) and with 1% of the health facilities with all tracer items available. Tetanus Toxoid vaccine was available in 79% of the health facilities with a 4% decrease from 2016 to 2018 while 80% of the health facilities in Liberia had folic acid and iron tablets with a 7% decrease since 2016.

In order to provide essential diagnostic services in antenatal care, 34% of the health facilities in Liberia had capacity to offer Urine dipstick protein tests which is a decrease by (8%) compared to 2016 while only 18% was able to check haemoglobin levels, an increase from 2016(12%) by 6%. Essential equipment considered was blood pressure apparatus which was available in 90% of the health facilities. Moreover, 20% of the health facilities had at least one staff trained in antenatal care in the past two years preceding the survey, an increase by 5% and Antenatal guidelines were available in 75% of the health facilities as shown in Figure 32 below, a 27% increment compared to 2016.

Figure 32: Facilities that have tracer items for ANC

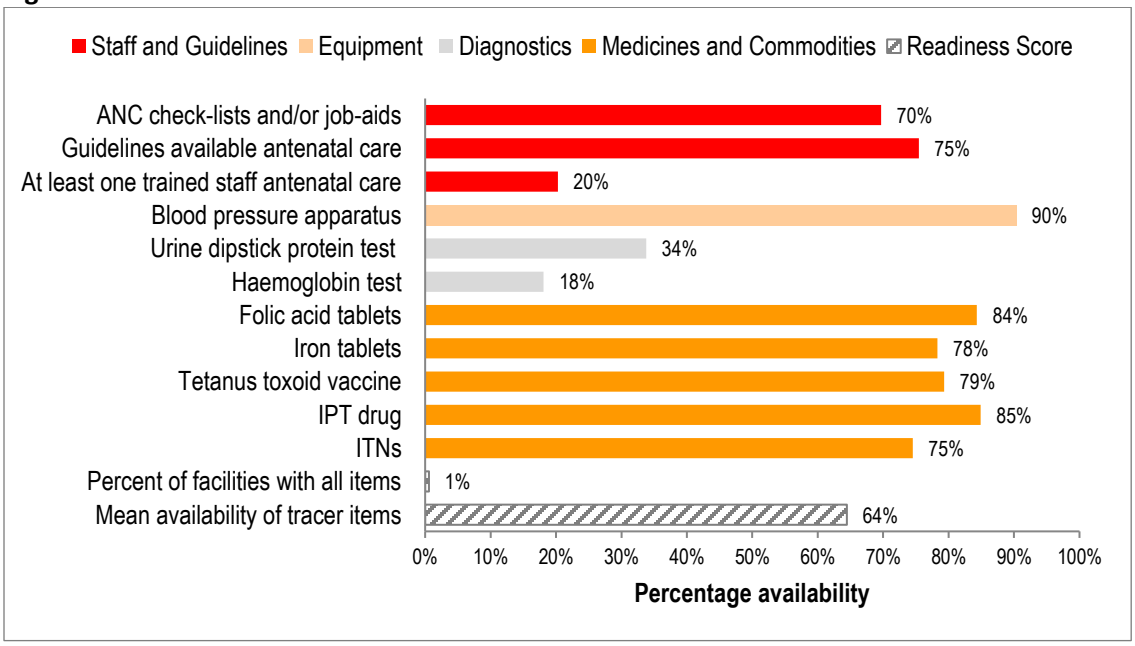
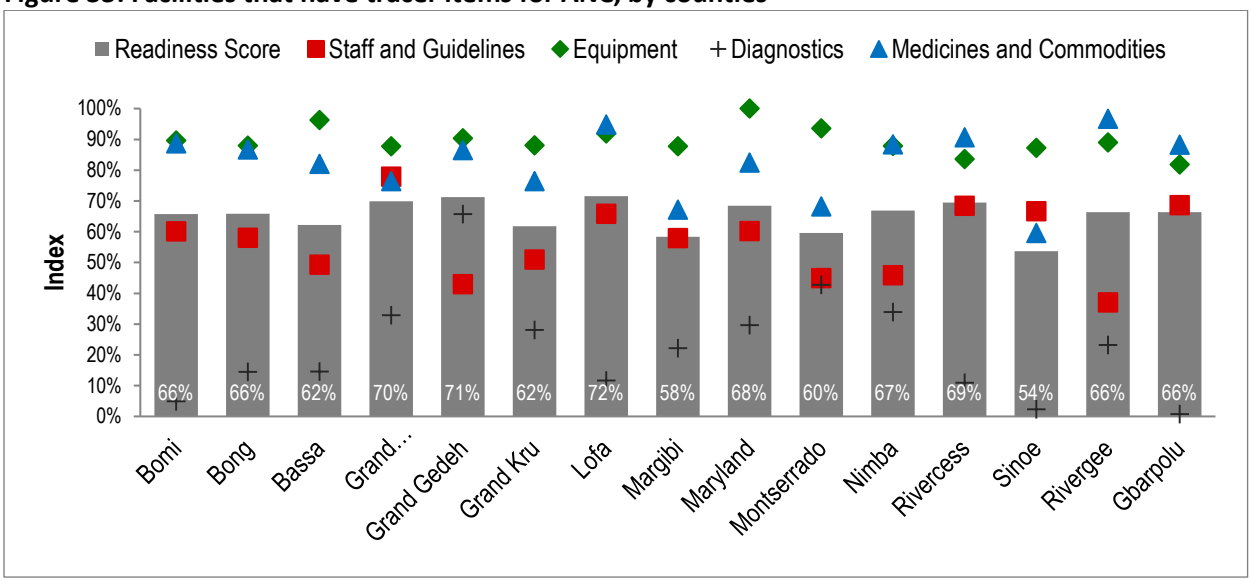


Figure 32 above shows the least available items were in the group of diagnostics (26%) followed by at least one trained staff and guidelines (20%), which shows a decreased, compared to 2016 in healthcare institutions. Essential medicines and commodities such as Tetanus toxoid vaccine, iron tablets and folic acid tablets were available in over 78 and 80% of the health facilities respectively.

As shown in **Figure 33 below and Table 15 Annex 1** counties had some variation in diagnostics with least performing being Gbarpolu (1%), River Cess (11%), Bomi (5%) and Sinoe (2%) in that order. Percentage of facilities that staff had received any ANC training in the last two years and guidelines were low especially River Gee (37%), Nimba (46%) and (43%) in Grand Gedeh and Montserrado counties respectively. Hospitals scored higher than health centers in readiness attaining 75%, and health centers (70%). Readiness score for rural facilities were 66% higher than in facilities located in the urban centers (61%).

Figure 33: Facilities that have tracer items for ANC, by counties



According to WHO, Liberia has one of the highest maternal mortality rates in the world of over 1,000 deaths per 100,000 live births. Many of these deaths are preventable if given adequate care during pregnancy and child birth. High quality ANC accessible to all mothers is a means of detecting problems early during pregnancy and a plan to address them is made and implemented to reduce the risk of complications and death during pregnancy or child birth.

Although 87% of all health facilities in Liberia offer ANC services, a significant proportion of health facilities in some counties do not. From the survey it was also apparent that the test for anaemia and urine protein where the least available services provided in many facilities. It is recommended that ANC services be improved by enhancing the laboratory capacity to detect low haemoglobin levels and urine protein.

5.3 Basic and Ccomprehensive Obstetric and Newborn Care Availability and Readiness,

Obstetric services for normal deliveries and essential care for every newborn are expected at all health centres and general hospitals. In addition, some dispensaries provide service for normal deliveries. All facilities that conduct these services would normally be expected also to provide basic emergency obstetric and newborn care services, while according to WHO guidelines, a facility providing comprehensive emergency obstetric care.

5.3.1 Basic obstetric and new-born care service availability

The following nine (9) tracer items were used as a proxy measure to assess the availability and readiness of health facilities to provide basic obstetric and newborn care services.;

- Availability of delivery services
- Availability of parenteral administration of antibiotics
- Availability of parenteral administration of oxytocic drug
- Availability of parenteral administration of anticonvulsants
- Provision of assisted vaginal delivery
- Provision of manual removal of placenta
- Provision of manual removal of retained products
- Provision of neonatal resuscitation
- Availability and provision of the basic signal obstetric and newborn functions.

Types of services offered

a) Delivery services b) Parenteral administration of antibiotics c) Parenteral administration of oxytocic drug
d) Parenteral administration of anticonvulsants e) Assisted vaginal delivery f) Manual removal of placenta
g) Manual removal of retained products h) Neonatal resuscitation i) Basic emergency obstetric and newborn care

Key findings

- Delivery services were available at 85% of the health facilities compared to 89% in 2016.
- Basic emergency obstetric care was available in 61% of the health facilities and basic emergency newborn care in 57% (N=765) as compared to 62% and 55% in 2016 (N=701)
- Parenteral administration of antibiotics and Parenteral administration of oxytocic were both available in 83% of the health facilities assessed
- On average, parenteral administration of anti-convulsants was provided in 70% of the health facilities.
- Antenatal corticosteroid for pre-term labour is available in 46% of health facilities.
- Only nine percent of health facilities accessed provided assisted vaginal delivery.
- 78% of the health facilities offered manual removal of placenta , while manual removal of retained products in 42% of the health facilities.
- Neo-natal resuscitation is available in 7% of the health facilities.
- Hygienic newborn care is available in 83% health facilities, umbilical cord care is available in 82% of health facilities.
- Kangaroo mother care for premature and/or very small babies available in 70% of health facilities.

Figure 34: Percentage of facilities that offers Basic Obstetric Care Services (N=765)

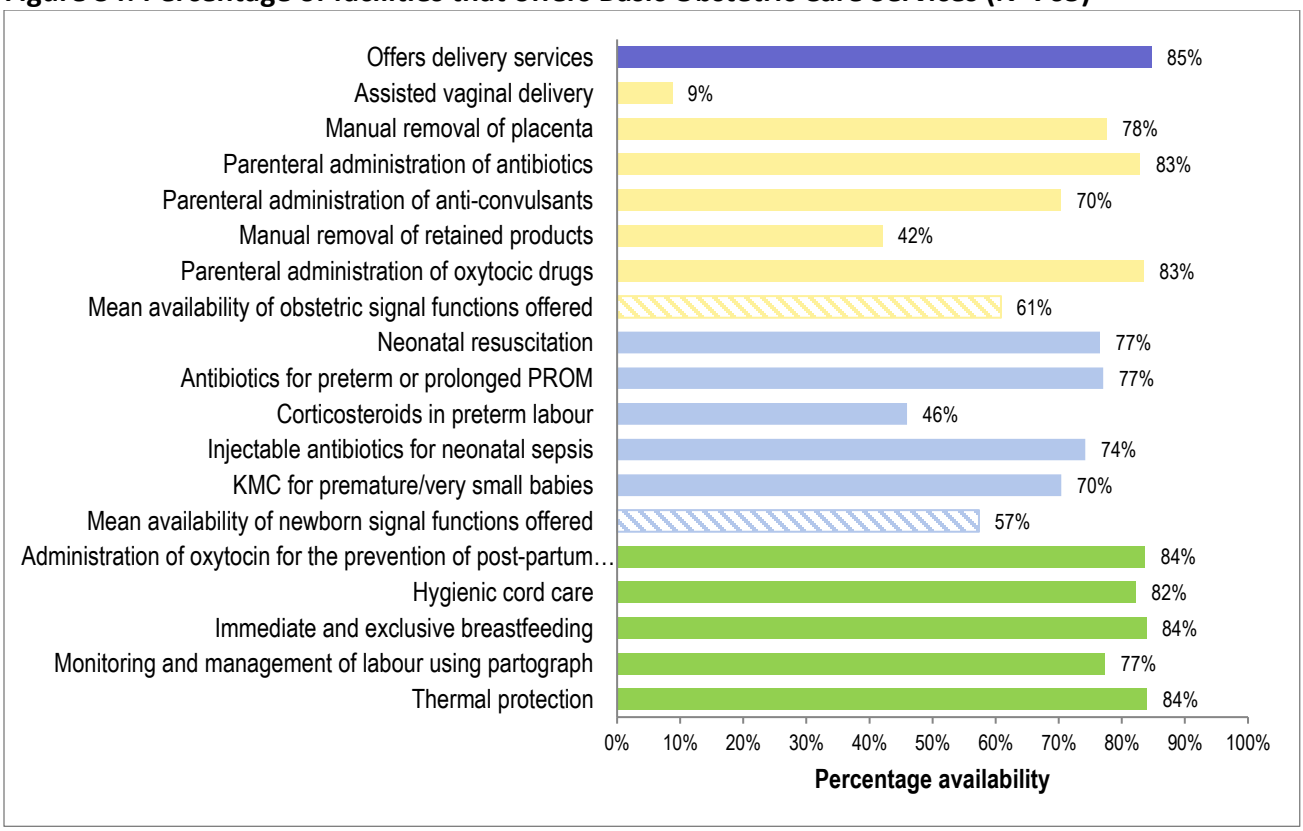


Figure 34 above indicates that on average, basic emergency obstetric care was offered in 61% of the health facilities with 85% of the health facilities available to offer delivery services, 78% with manual removal of placenta and over 82% could administer Oxytocic drugs and antibiotics. Monitoring of labour using partograph was provided in 77% of the health facilities.

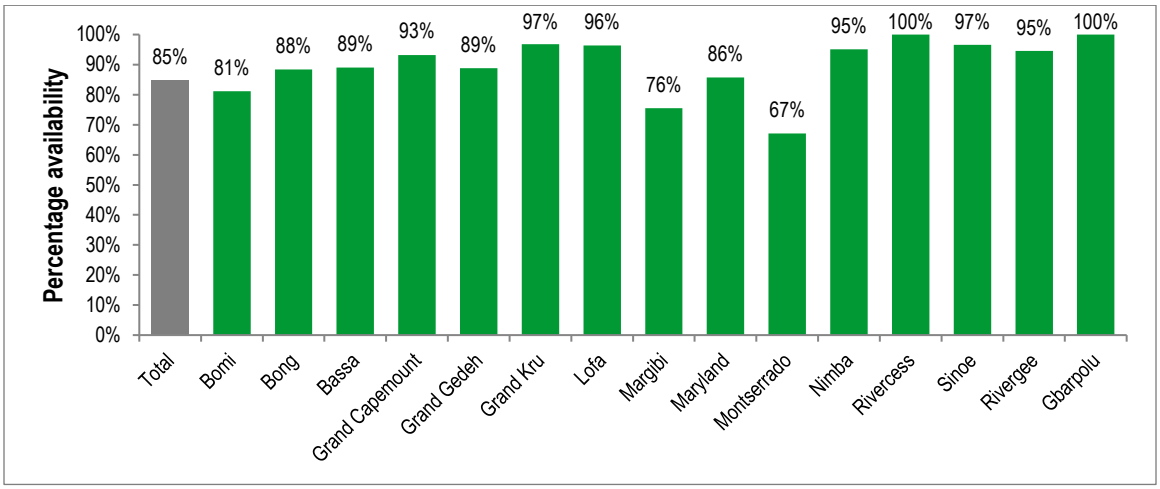
The basic newborn services were available in 57% of the health facilities with 77% of them able to offer neonatal resuscitation as compared to 74% in 2016.

The survey established that 88% of the health centers, 84 of the clinics and 92 of the hospitals offered delivery care services as compared to 96%, 89% and 81% in 2016. This was noted more in public health facilities with 93% and least in private for profit at 68% in 2018, as compared to 96% and 73% respectively in 2016.

Similar trend was observed with 94% of the rural facilities offering the service than 67% in urban areas.

Table 16 and figure 35 show that the availability of basic obstetric services was in 85% of the health facilities compared to 89% in 2016. Most counties apart from Montserrado and Margibi had less than 80% availability.

Figure 35: Percentage of facilities that offer basic obstetric and newborn care services, by region



5.3.2 Basic obstetric and new born care service readiness

To determine the capacity and readiness to offer basic obstetric and newborn care services, Liberia's assessment considered the following twenty six (26) tracer items indicated below;

Tracer items required and considered for service delivery readiness.

Trained staff and guidelines

a) Guidelines for essential childbirth care
b) Guidelines for essential newborn care
c) Staff trained in essential childbirth care in the past two years
d) Staff trained in essential childbirth care in the past two years
e) Staff trained in newborn resuscitation in the past two years
f) Check-lists and/or job-aids for essential childbirth care

Equipment

a) Emergency transport
b) Sterilization equipment
c) Examination light
d) Delivery pack
d) Suction apparatus (mucus extractor)
f) Manual vacuum extractor
g) Vacuum aspirator or D&C kit
h) Neonatal bag and mask
i) Delivery bed
j) Partograph
k) Gloves
l) Infant weighing scale
m) Blood pressure apparatus
n) Soap and running water OR alcohol based hand rub

Medicines and commodities

a) Antibiotic eye ointment for newborn
b) Injectable uterotonic
c) Injectable antibiotic
d) Magnesium sulphate (injectable)
e) Skin disinfectant
f. Chlorhexidine for umbilical cord care
e) g) Intravenous solution with infusion set

Key findings

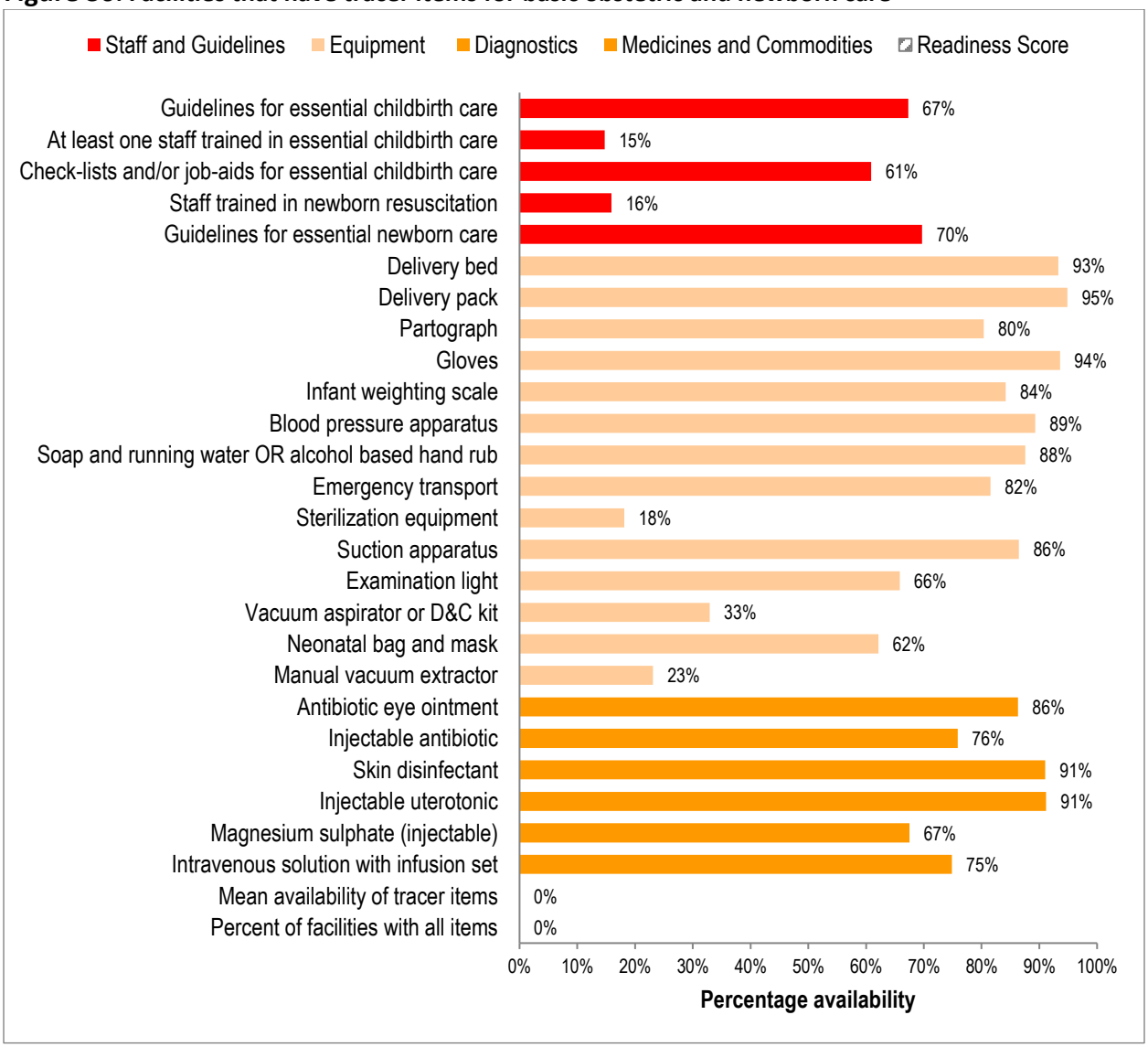
- On average 81% of the health facilities in Liberia (N=622) had at least one tracer item to provide BEmONC services as compared to 65% in 2016.
- While 67% of health facilities had Guidelines for essential childbirth care, guidelines for essential newborn 70 % and 61% with job aids to provide basic obstetric and newborn care services.
- At least a trained staff in newborn resuscitation in the past two years preceding the survey was available in 16% of the health facilities.
- Gloves, delivery beds and delivery packs were available respectively in 94% , 93% and 95% of the health facilities.
- Suction machine (86%) and blood pressure machine (89%) was commonly available in health facilities.
- Partographs were available in 80% of the health facilities.
- Emergency transport was stated to be in 82% of the health facilities.
- Infant weighing scale (84%) was in more than three quarters of the health facilities while neonatal bag and mask was in 62% of the health facilities.
- Examination light was available in 66% of the facilities.
- Vacuum aspirator and Manual vacuum extractor were available in 33% and 23% of the health facilities respectively.
- Sterilization equipment was recorded in 18% of health facilities in Liberia. ,
- Injectable uterotonic was available in 91% and antibiotic eye ointment was available in 86% of the health facilities.
- Skin disinfectant was in 91% of the health facilities.
- Injectable antibiotic 76%), intravenous solution set (75%) and magnesium sulphate injectable (67%) were other major drugs available in most of the health facilities.

Figure 36 below illustrates that guideline for essential new-born care and child care was available in 70% and 67% of the health facilities respectively. Sixty-one percent of the health facilities had job aids to provide basic obstetric and new-born care services. Gloves and delivery packs were available in 94% and 95% health facilities respectively in Liberia. In addition 16% of the health facilities had at least one staff member trained in new-born resuscitation in the past two years preceding the survey.

From all indications it can be seen that most facilities in Liberia that conduct deliveries do have basic equipment for obstetric and new born care services. As indicated by survey data, 86% of the health facilities had suction machine while 89% had blood pressure machine and 93% with delivery bed. Infant weighing scale, neonatal bag and mask and Examination light were available in 84%, 62% and 66% of the health facilities respectively. Partographs were used in 77% in of the health facilities while 82% reported to have emergency transport. Further indications show that Vacuum aspirator and Manual vacuum extractor were available in 33% and 23% of the health facilities respectively with sterilization equipment at 23%.

Availability of drugs in health facilities included uterotonic (91%), antibiotic eye ointment in 95%, skin disinfectant in 91%, injectable antibiotic in 76%, intravenous solution set 75% and magnesium sulphate injectable in 67%.

Figure 36: Facilities that have tracer items for basic obstetric and newborn care



5.4. Comprehensive obstetric and newborn care service availability and readiness

5.4.1 Comprehensive obstetric and newborn care service availability

The assessment for comprehensive obstetric and newborn care service availability was based on 3 services offered in health facilities thus;

- Availability of comprehensive obstetric and newborn care services
- Availability of Caesarean section
- Availability of Blood transfusion

Types of services offered considered

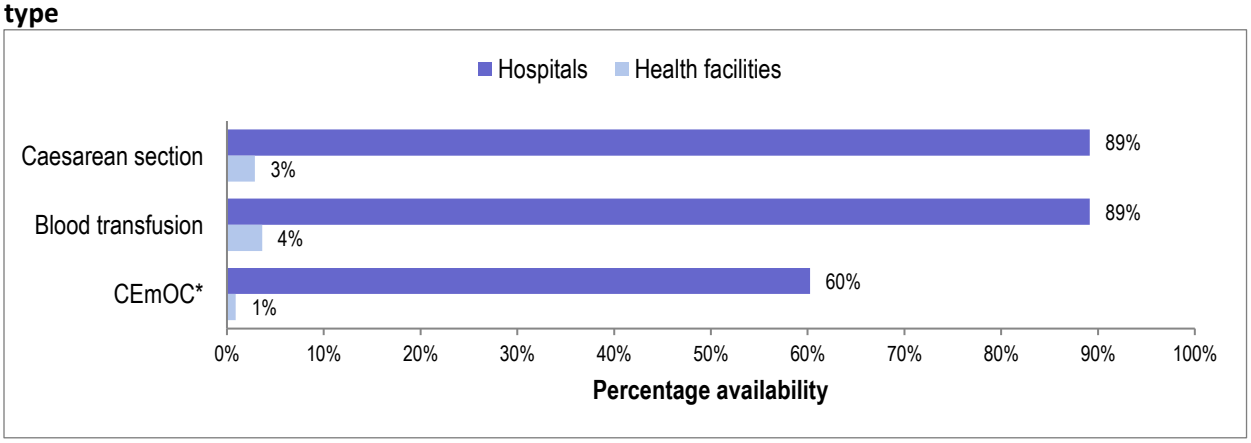
- Caesarean section
- Blood transfusion
- Comprehensive emergency obstetric and newborn care

Key findings

- Comprehensive emergency obstetric care was available in 60% of hospitals as compared to 51% in 2016.
- Caesarean section was provided in 89% of the hospitals and 12% of the health centers in 2018 compared to 80% and 2% in Hospitals and Health centers in 2016.
- Blood transfusion services were available in 89% of the hospitals and in 18% of the health centers in 2018 than noticed with 84% and 4% hospitals and health centers in 2016.

Figure 37 below shows that on average, 60% of hospitals (36) provide CEmOC which suggest an increase from 51% in 2016. Further observations in the 2018 survey data shows additional changes in percentages for provision of Caesarean section in hospitals from 80% to 89%, Health centres from 2% to 4%with Blood transfusion from 84% to 89% for hospitals and 4% to 18% for Health centres in 2018,.

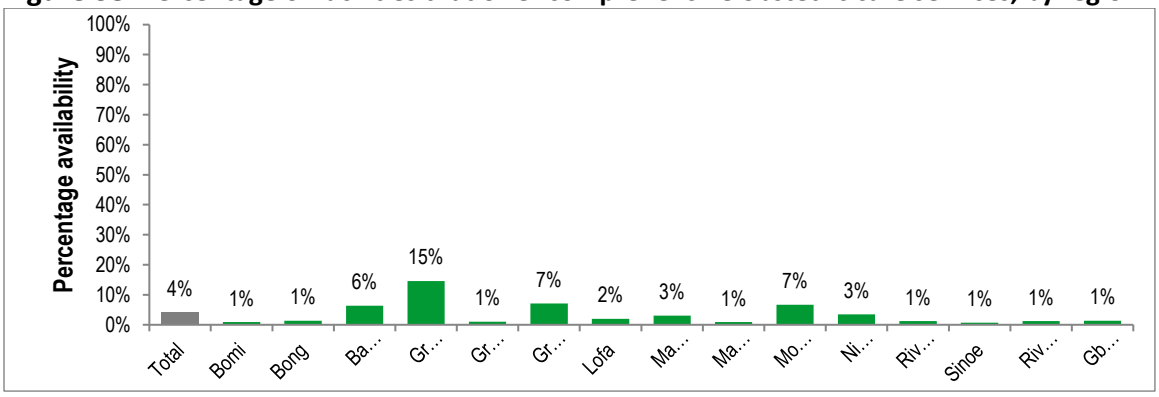
Figure 37: Facilities that offer comprehensive obstetric and newborn care services, by facility type



As expected, very few Clinics provided comprehensive obstetric services with one per cent suggesting a further decline compared to 2016. By providers type, all health facilities have shown below 10% availability of CEmOC with public health facilities being the least at 1%. In rural areas only 1% of facilities provided comprehensive obstetric care services.

Table 17 Annex 1 and figure 38 below demonstrate that across all counties the proportion of health facilities providing CEmOC was minimal at 4% on average with Grand Cape Mount providing the highest at 15%. A higher proportion of counties offered Comprehensive obstetric services at only 1%.

Figure 38: Percentage of facilities that offer comprehensive obstetric care services, by region



5.4.2 Comprehensive obstetric and newborn care service readiness

A total of 17 tracer items was used to assess the CEmOc service readiness in Liberia. The total number of health facilities (N= 58) was based on health facilities providing caesarean section. These were:

Tracer items required for service delivery readiness in CEmONC

Trained staff and guidelines

a) Guidelines for CEmONC b) Staff trained in CEmONC c) Staff trained in surgery
d) Staff trained in anaesthesia

Equipment

a) Anaesthesia equipment b) Incubator c. Phototherapy equipment for jaundice in newborn

Diagnostics

a) Blood typing b) Cross match testing

Medicines and commodities

a) Blood supply sufficiency b) Blood supply safety c) Lidocaine 5% d) Epinephrine (injectable)
e) Halothane (inhalation) f) Atropine (injectable) g) Thiopental (powder)
h) Suxamethonium bromide (powder) i) Ketamine (injectable)

Key findings

- On average 44% of the health facilities (N=58) had at least 1 tracer item to provide CEmONC services as compared to 57% in 2016 (N=48) with only 2% facilities having all items compared to none in 2016.
- At least 1 staff trained in surgery, for the past two years preceding the survey was in 72% of the health and trained in Anaesthesia in 66% of the health facilities compared to 86% and 74% in 2016.
- Anaesthesia equipment was available in 16% in 2018 than 13% of the heath facilities in 2016.
- Blood supply sufficiency has reduced from 59% to 33% in 2018, cross matching test increased from 28% to 29, incubators increased from 33% to 37%, guidelines for CEmONC same with 18% while trained staff in CEMOC increased from 6% to 15% of the health facilities in the past two years preceding the survey in 2018
- Lidocaine 5 was provided reduced 66% to 48% of the health facilities in Liberia
- Epinephrine injectable reduced from 91% to 64% of the health facilities
- Halothane inhaler reduced from 27% to 22% of the health facilities
- Atropine injectable reduced from 88% to 53% of the health facilities.
- Thiopental powder reduced from 49% to 34% of the health facilities in Liberia
- Suxamethonium bromide powder reduced from 50% to 27% of the health facilities while
- Ketamine injectable reduced from 88% to 67% of the health facilities

Figure 39 below, indicates that on average 44% of the health facilities (N=58) had at least 1 tracer item to provide CEmONC services with only 2% facilities having all items.
At least 1 staff trained in surgery, for the past two years preceding the survey was in 72% of the health and trained in Anaesthesia in 66% of the health facilities. Equipment is vital for service delivery; Anaesthesia equipment was available in 16% of the heath facilities while, 37% of the health facilities had an incubator.

On blood safety and supply, Blood typing was provided in 81% of the hospitals while cross match testing was done in 29% of the health facilities in Liberia. Sufficient blood was available in 33% of the health facilities while, blood safety supply was carried out in 43% of the hospitals. The most commonly available tracer medicines provided in CEmONC health facilities were Lidocaine 5 (48%), Ephephrine injectable (64%), Halothane inhaler (22%), Atropine injectable (53%), Thiopental powder (34%), Suxamethonium bromide powder (27%) and Ketamine injectable (67%) in Liberia.

Figure 39: Percentage of facilities that have tracer items for comprehensive obstetric and new born care services

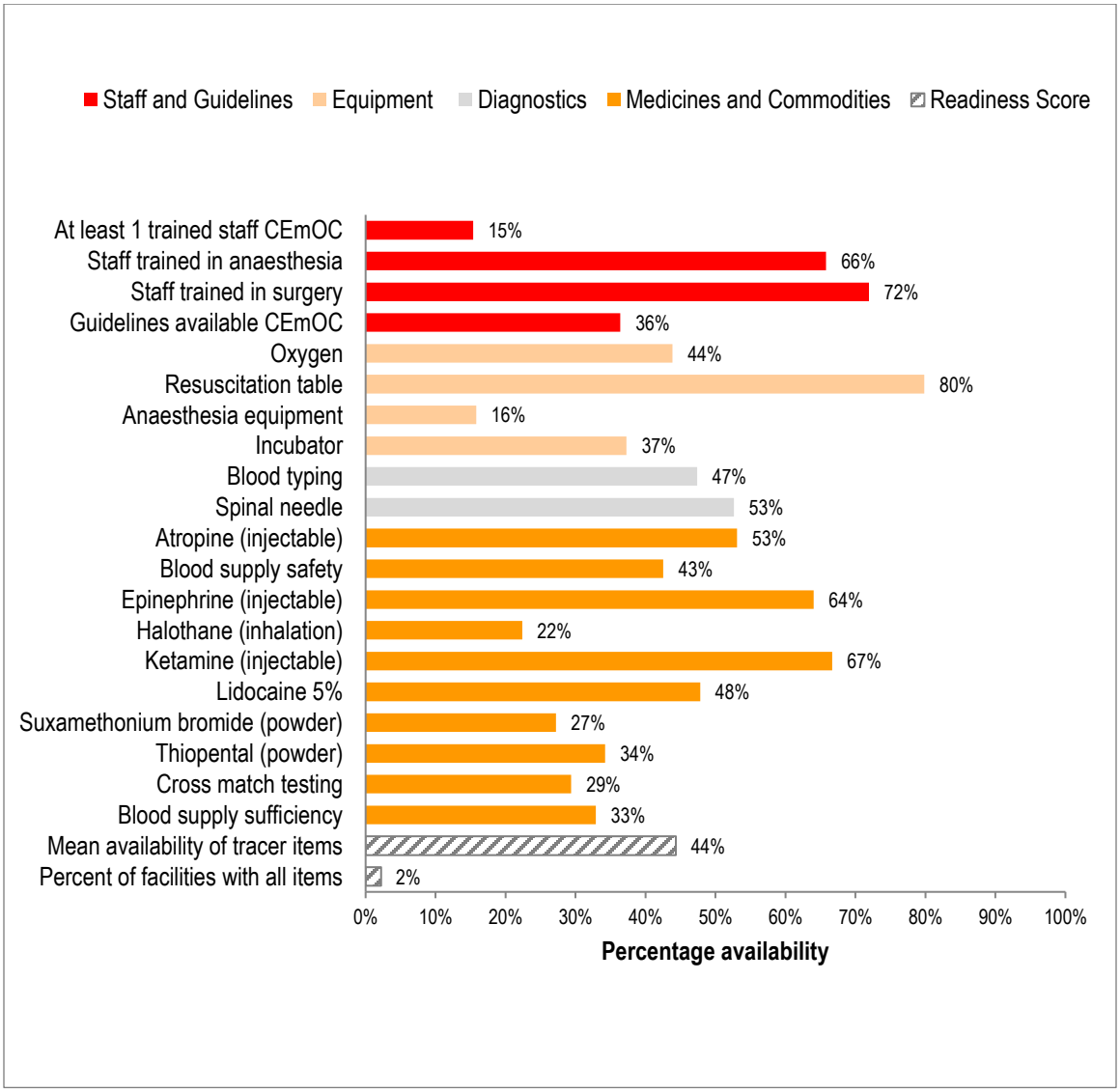
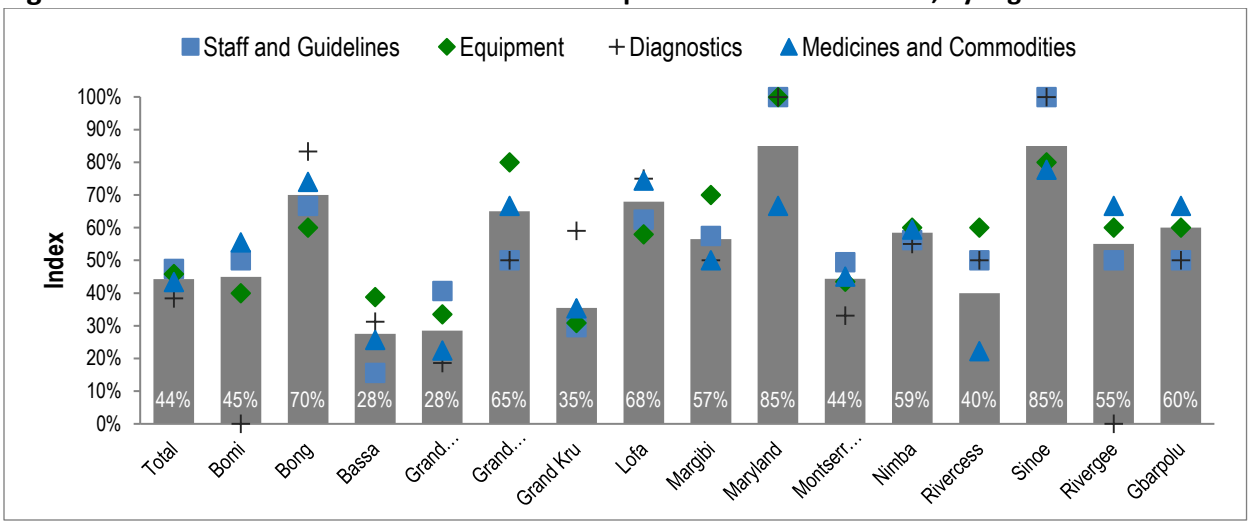


Table 18 Annex 1 and figure 40 below, show the readiness score index for CEmONC score of 44% (N=58) The counties with minimal availability readiness were Grand Bassa (28%), Grand Cape Mount (28%) and Grand Kru (35%).

Rural health facilities had the least CEmONC index score (42%) than urban (46%) with hospitals having 71% compared to health centers with 47%.

Figure 40: Facilities that have tracer items for comprehensive obstetric care, by region



5.5 Adolescent Health service Availability and readiness

5.5.1 Adolescent Health service Availability

Adolescent health services aims at providing services that are friendly to the youth. During the assessment of service availability, the following 8 types of services were used to establish service availability;

Types of services offered/tracer indicators for service availability for adolescent health

a) Adolescent health services
b) HIV testing and counseling services to adolescents
c) Family planning services to adolescents
d) Provision of combined oral contraceptive pills to adolescents
e) Provision of male condoms to adolescents
f) Provision of emergency contraceptive pills to adolescents
f) Provision of intrauterine contraceptive device (IUCD) to adolescents
g) Provision of ART to adolescents

Key findings

- The availability of adolescent service was in 86% of the health facilities (N=765) compared to 85 (N=701) in 2016 in Liberia with provision of ART to adolescents improved to 33% from 10% in 2016.
- Family planning services to adolescents decreased from 82% to 76% of the health facilities in 2018.
- HIV testing and Counseling services to adolescents increased to 56% of the health facilities compared 41% in 2016.
- Provision of Antiretroviral treatment to adolescents increased to 33% from 10% in 2016
- Combined oral contraceptive pills and emergency contraceptives pills to adolescents were available in 78% and 20% of the health facilities respectively.
- IUCD to adolescents were available in 38% of health facilities than 33% in 2016.

- Male condoms were offered to adolescents has reduced to 79% of the health facilities compared to 85% in 2016.
- Overall, Health Ceners offered this service more than both hospitals and clinics in 92% of the facilities similar trend being recorded in 2016

Adolescent health service is one of the services that have not picked up in many countries with few indicators to monitor. The availability of the range of services to this group on average was offered generally in 86% of the health facilities as shown in figure 5.26 below.

Family planning services to adolescents and HIV testing and counseling services was delivered in 76% and 56% of the health facilities respectively.
The 2018 survey shows a 15% increase from 2016 (41% to 56%) in HIV testing and counseling to adolescent and 23% increase in Provision of ART to adolescent from 2016 (10% to 33%) nationally.

Figure 41: Percentage of facilities that offer adolescent health services (N=765)

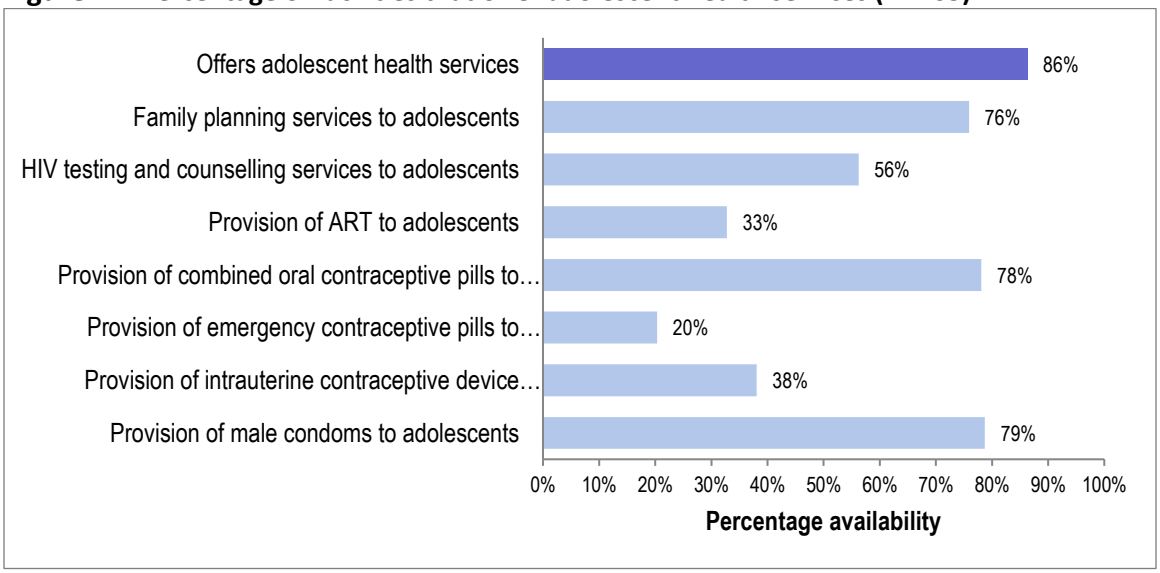
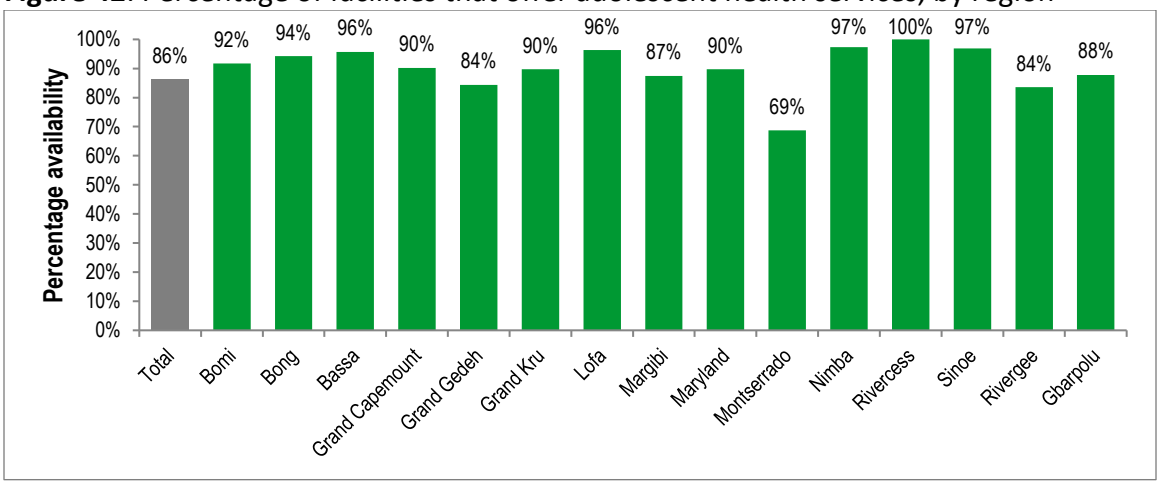


Table 19 Annex 1 and figure 42 below show that of the fifteen counties, Adolescent health services were available in only one county (i.e. River Cess 100%) as compared to four counties in 2016, while the rest of the counties ranged between 80% - 96% and except Montserrado with less than 70% in 2018.

Figure 42: Percentage of facilities that offer adolescent health services, by region



In Table 19 Annex 1, the Provision of emergency contraceptive pills to adolescents (20%) was least provided across all counties mainly by public facilities (24%). Only three (3) out of fifteen (15) counties (i.e. Grand Gedeh, Grand Kru and Maryland) have recorded over 60% Provision of emergency contraceptive pills to adolescents. The counties with very low percentages of their facilities with Provision of emergency contraceptive pills to adolescents were notably; Grand Cape Mount (5%), Bong (11%), Montserrado (13%) while River Cess (0%) and Gbarpolu (0%) were not providing this service at all.

Health facilities distribution by type indicates the provision of adolescent health services at 87% of hospital, 92% of health center and 86% of clinic with more availability in rural facilities than urban. Adolescent health service was offered in 92% public health facilities as compared 82 private facilities on average.

5.5.2 Adolescent health service readiness

To establish service readiness for facilities to provide essential service in adolescent health six (6) tracer items below were used:

Tracer items required for service delivery

Trained staff and guidelines

a) Guidelines for service provision to adolescents
b) Staff trained in provision of adolescent health services
c) Staff providing family planning services trained in adolescent sexual and reproductive health
d) Staff providing HIV testing and counseling services trained in HIV/AIDS prevention, care, and management for adolescents

Diagnostics

a) HIV diagnostic capacity

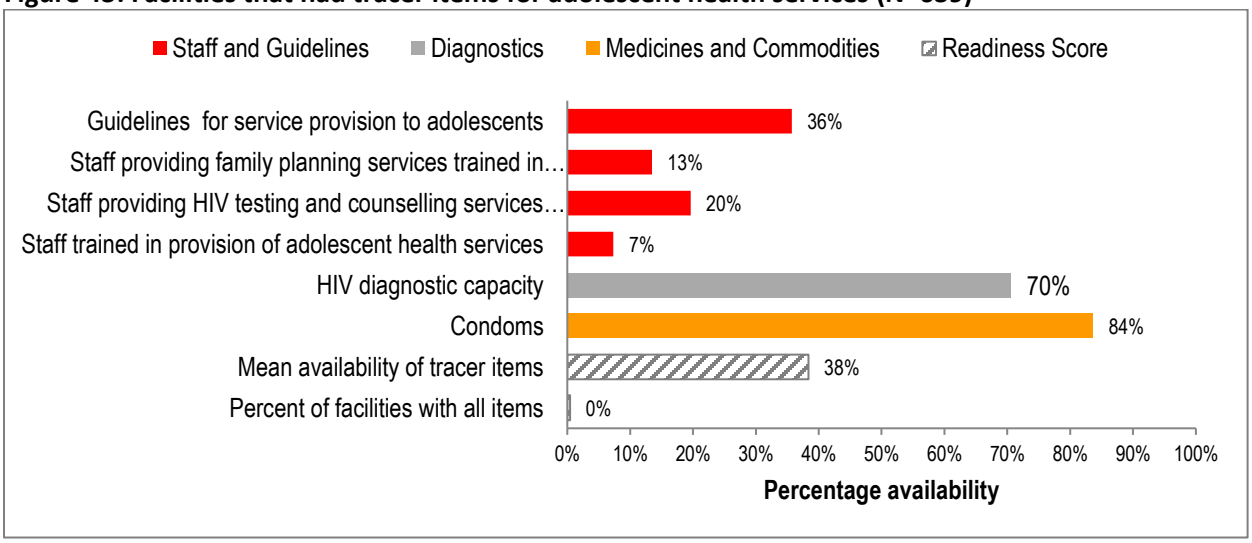
Medicines and commodities

a) Condoms

Key findings

- On average 38% of the health facilities (N=639) had at least 1 tracer item to provide adolescent health service compared to 34% facilities (N=569) in 2016. None of the health facility had all tracer items in both 2016 and 2018 findings.
- Guidelines for service provision to adolescents were available in 80% of the health facilities compared to 20% of the health facilities in 2016
- Staff providing family planning services trained in adolescent sexual and reproductive health were less available (13%), (7%) of facilities with at least a staff trained in provision of adolescent health services while Staff providing HIV Testing and counselling services, HIV/AIDS prevention, care and management for adolescents in the past two years preceding the survey increase to 20% from 5% in 2016
- HIV Diagnostic capacity to test/check for HIV was available 70% of the health facilities with more found in rural areas. This similar to 2016 findings.
- 84% of health facilities had condoms available to adolescent with 92% availability at public health facilities

Figure 43: Facilities that had tracer items for adolescent health services (N=639)



As demonstrated in Figure 43 above and 44 below, on average, at least 1 tracer item for adolescent health services was available in 38% of the facilities that offered this services (N=639) as compared to 34% in 2016. Diagnostic capacity was in 70% of the health facilities offering these services and most preferred tracer item was medicines and commodities provision across all counties.

Figure 44: Facilities that have tracer items for adolescent health services by region

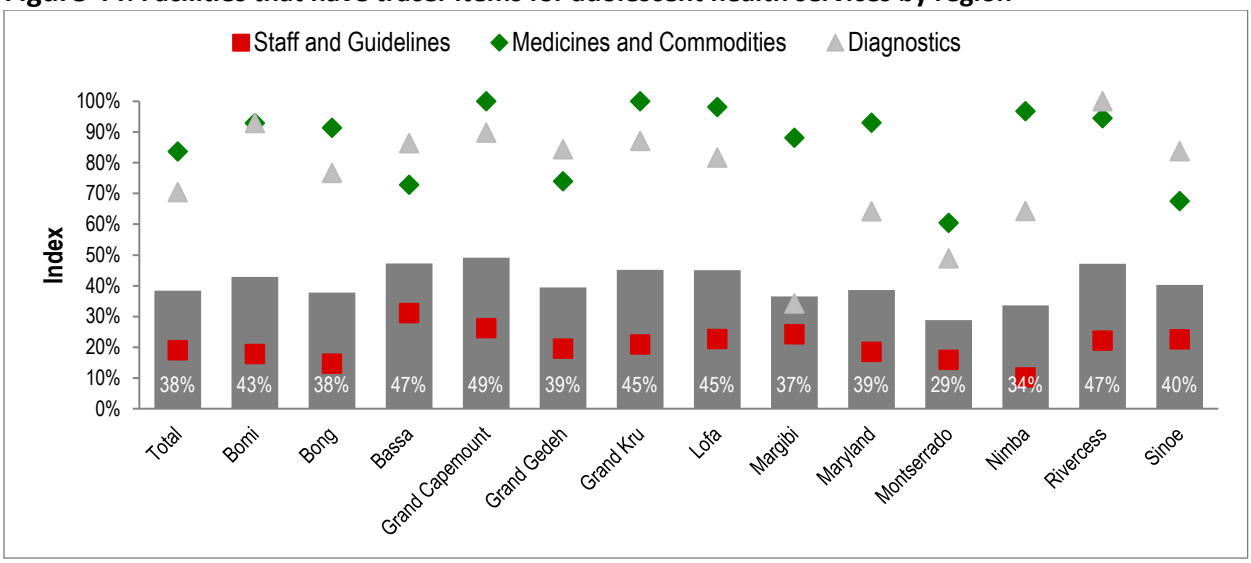


Table 20 Annex 1 shows the tracer items for assessing the capacity of the health facilities to provide adolescent services by county, levels of care, managing authority and geographical locations. The overall readiness score was recorded at 38% indicating less than 50% of health facilities across all counties. Though the medicines and diagnostic facilities were available in all counties, trained staff and guidelines were less available across counties with 36% availability.

The mean availability of the tracer items for hospitals increased by 22%(from 32% in 2016 to 54% in 2018) and health centers by 4% (from 41% in 2016 to 45% in 2018).

5.6 HIV/AIDS Service Availability and Readiness

5.6.1 HIV counselling and testing service availability

In determination of service availability for HIV counselling and Testing 1 tracer service indicator was used for availability of the services. The tracer indicator was;

- Availability of HIV counseling and testing services

Types of services offered used as tracer for availability of the service

a) HIV counseling and testing

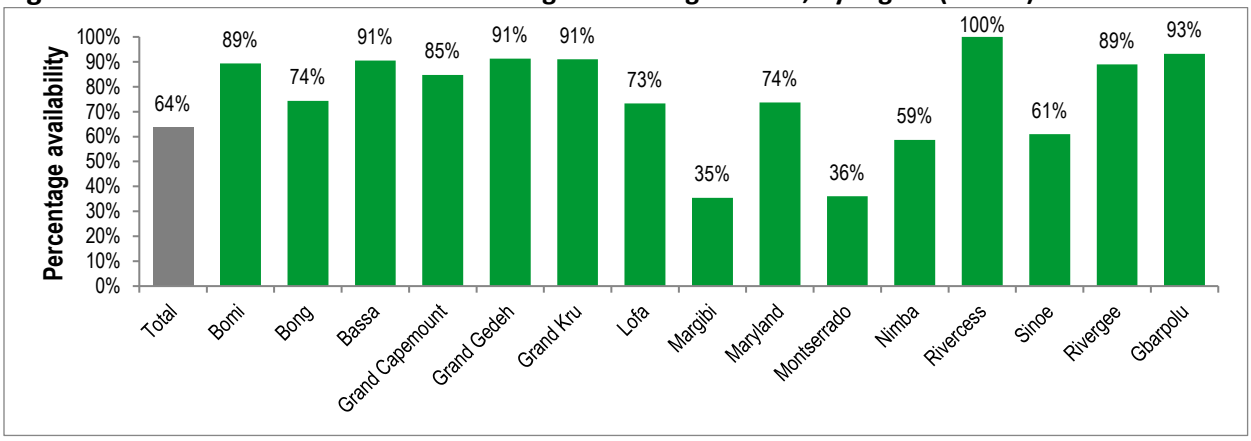
Key findings

- On average, 64% of the health facilities (N=765) provided HIV counseling and testing services as compared to 52% in the 2016 SARA.

As shown in Figure 45 below and **Table 21 Annex 1,** Counseling and testing services was offered in 64%% of the health facilities across the different levels of facilities in Liberia, with major disparities across the counties. Margibi and Montserrado counties reported the lowest at 35% and 36% respectively. This result has shown improvement specifically for Grand Cape Mount down from 26% in 2016 up to 85%. The result shows that River Cess reported 100% counselling and testing services followed by Gbarpolu (93%), Grand Gedeh, Grand Kru, and Grand Bassa Counties at 91% respectively.

Hundred Percent (100%) of Hospitals visited provided HIV C&T services in 2018 down from 88% in 2016 and Health centres increased from 73% in 2016 to 86% in 2018 , while clinics represented 61% down from 49% in 2016. The data showed that 78% of public and 56% NGO facilities offered this service. Rural health facilities reported the highest at 76% to offer these services with Urban representing 41%

Figure 45: Facilities that offer HIV counseling and testing services, by region (N=765)



5.6.2 HIV counselling and testing service readiness

The assessment considered the following 5 tracer items within the 4 domain items for establishing the readiness of the health facility to provide counselling and testing service;

Tracer items required for service delivery readiness for HIV counseling and testing;

Trained staff and guidelines

a) Guidelines on HIV counseling and testing
b) Staff trained in HIV counseling and testing

Equipment

a) Visual and auditory privacy

Diagnostics

a) HIV diagnostic capacity

Medicines and commodities

a) Condoms

Key findings

- In Liberia 74%% of the surveyed health facilities (448) had at least one tracer item for provision of HIV counseling and Testing services as compared to 66% in 2016 and 20 per cent of them had all tracer items required as compared to 5 % in 2016.
- Diagnostic capacity to check for HIV was available in 91% of the 448 surveyed facilities and 91% of them had room with visual and auditory privacy. These findings were not statistically different from 2016 SARA conducted.
- Condoms were issued in 83% of the health facilities surveyed. The result showed no change between 2016 and 2018
- Availability of Guidelines for HIV counseling and testing improved from 52% in 2016 to 75% 2016
- At least available tracer item; at least 1 trained staff in HIV counseling and testing in the past two years preceding the survey increased from 12% to 32% in facilities surveyed in 2016

Tracer items are important in undertaking quality HIV counselling and testing. A total of five tracer items were used to establish the HIV counseling and testing readiness in four major domains. The capacity to diagnose HIV was available in 91% of the health facilities that offer the service (Figure 46). The mean readiness index in these facilities is 74% with only 20%% of these facilities having all tracer items required to provide the services.

Most of them (91%) had room with visual and auditory privacy. The provision of condoms was done in 83% and Guidelines for HIV counselling and testing found in 75% of the surveyed facilities. In only 32% of these facilities had at least 1 staff trained in HIV counselling and testing in the past two years preceding the survey. Counties did not exhibit significant variation in the mean readiness index ranging from 67% in Montserrado to 87% in River Cess.

Figure 46: Facilities that have tracer items for HIV counselling and testing services

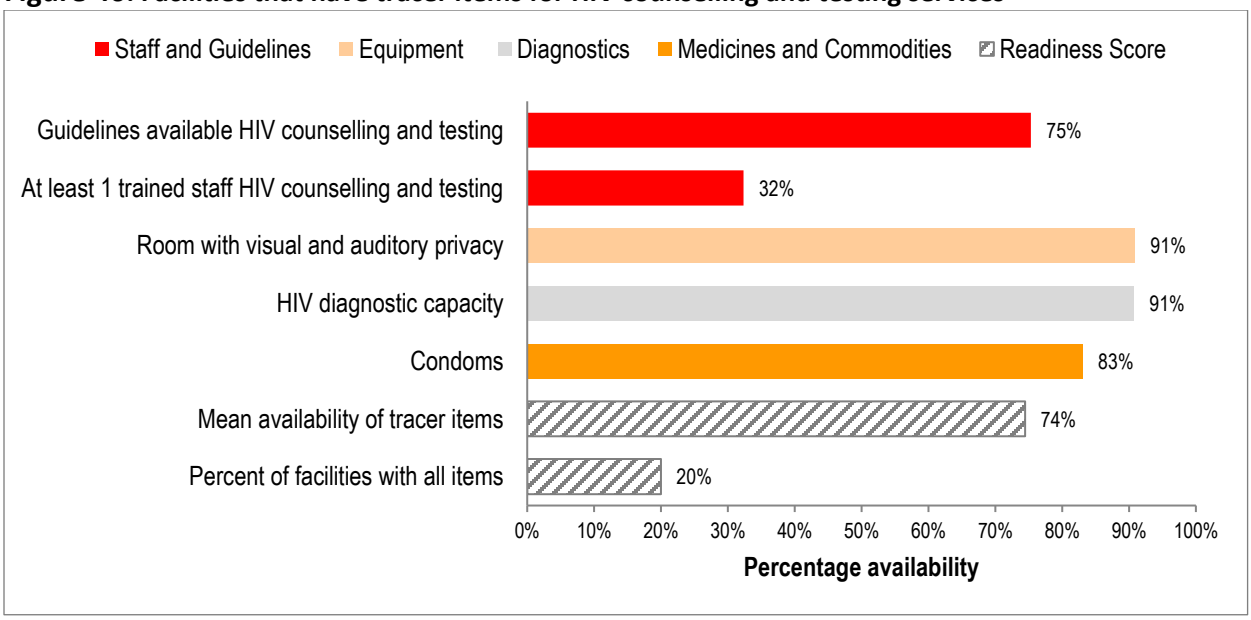


Figure 47: Facilities that have tracer items for HIV counseling and testing services, by region

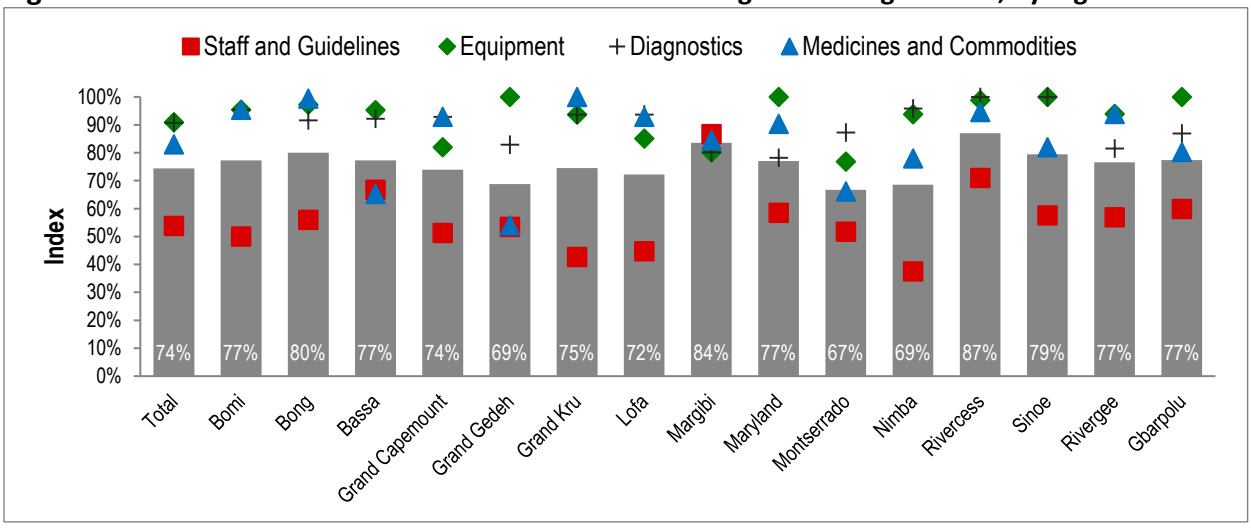


Figure 47 above and **Table 22 Annex 1**, shows that on average, HIV counseling and testing services was provided in 74% (N=448) compared to 66% (N= 334) in 2016.

At least 1 trained staff and guidelines was noted to be less available across all counties. There were significant increases noted in the 2018 SARA. The service has increased in Lofa 72%, Nimba 69%, Margibi 84% compared 21%, 33% and 34% for Lofa, Nimba and Margibi in 2016.
The readiness index was more in government/public (76%), Private for profit (64%), Mission/faith based (61%) with the least observed in NGO/Not-for-profit 57% . There was no major difference between hospitals, health centres and clinics and also urban or rural areas in providing the services.

5.6.3 HIV/AIDS care and support service availability

The following 12 key tracer services were used to assess the availability of HIV/AIDS care and support services;

Types of services offered/ tracer for HIV/AIDS care and support

a) HIV/AIDS care and support services
b) Treatment of opportunistic infections
c) Provision of palliative care
d) Intravenous treatment of fungal infections
e) Treatment for Kaposi's sarcoma
f) Nutritional rehabilitation services
g) Prescribe/provide fortified protein supplementation
h) Care for Paediatric HIV/AIDS patients
i) Provide/prescribe preventative treatment for TB infections
j) Primary preventative treatment for opportunistic
k) Provide/prescribe micronutrient supplementation
l) Family planning counselling
m) Provide condoms

Key findings

The assessment findings are indicated in Figures 5.33 and 5.34 below;

- Generally HIV care and support services were provided in 32% facilities (N=765) compared to 20% of the health facilities (N=701).
- Palliative care, treatment for Kaposi's sarcoma and nutritional rehabilitation was available in
- 31%, 9% and 24% in 2018 compared to 12%, 5% and 9% of the health facilities in 2016.
- Treatment of opportunistic infections was available in 30% compared to 15% of the health facilities in 2016.

Figure 48: Percentage of Facilities that offer HIV/AIDS care and support services

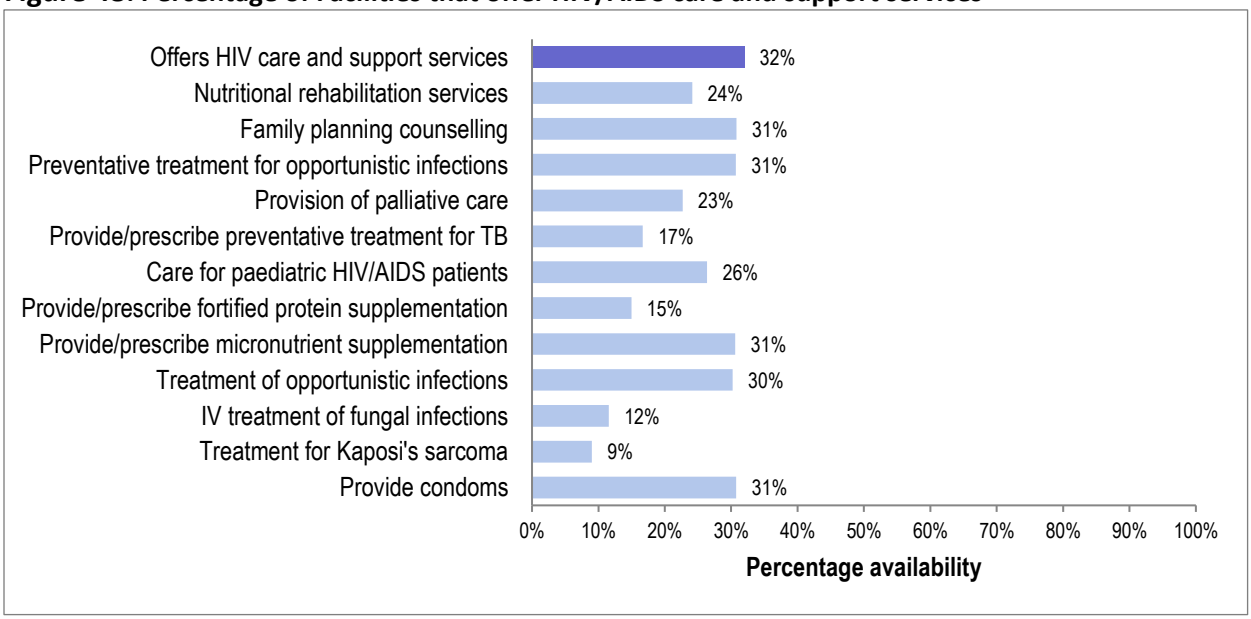


Figure 48 above, shows that HIV care and support services are available in 32% of the surveyed health facilities in Liberia up from 16% in 2016.

Most of the HIV C&S services offered are palliative care (23% and treatment of opportunistic infections (31%) while the least provided service was treatment for Kaposi's sarcoma at (9%).

Figure 49: Facilities that offer HIV/AIDS care and support services, by region (N=765)

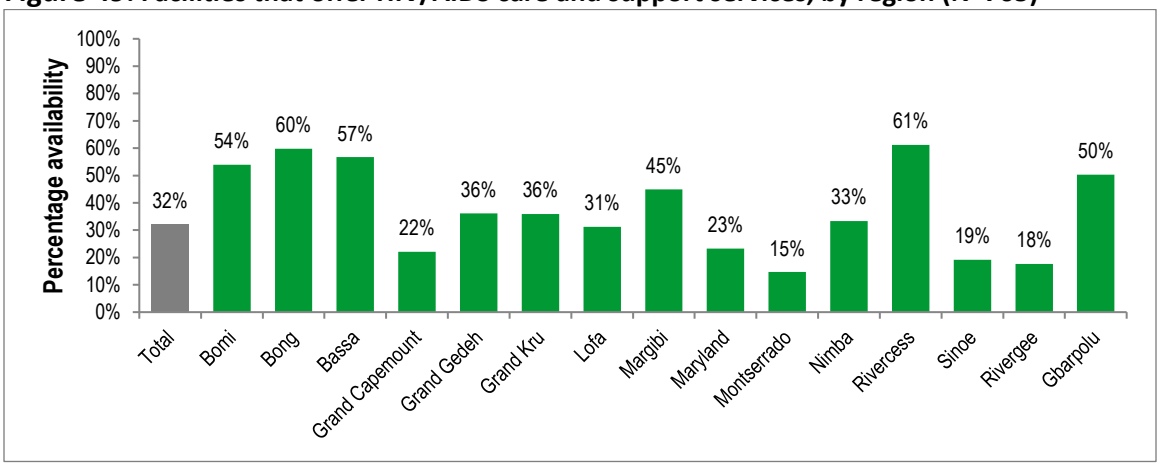


Table 23 Annex 1 shows that HIV/AIDS C&S services were available mainly in Hospitals (94%), followed by Health centres (68%) and clinics (28%) in 2018 compared to 76%, 37% and 13% in 2016.

Countywide disparities emerged among counties observed in Figure 49. The counties with the least health facilities that had HIV care and support services were; River Cess, Gbarpolu, Grand Gdedeh, Grand Kru, Grand Bassa , River Gee and Bomi .

5.6.4 HIV/AIDS care and support service readiness

The following 10 tracer items were used to establish the health facility readiness for HIV care and support services;

Tracer items required for service delivery readiness HIV care and support services

Trained staff and guidelines

a) Guidelines for clinical management of HIV & AIDS b) Guidelines for palliative care

c) Staff trained in clinical management of HIV & AIDS

Diagnostics

a) System for diagnosis of TB among HIV + clients

Medicines and commodities

a) Intravenous solution with infusion set b) IV treatment fungal infections

d) Co-trimoxazole cap/tab c) First-line TB treatment medications

e) Palliative care pain management f) Condoms

Key findings

- Fifty Eight (58%) of surveyed health facilities (N=231) provided HIV care and support services in 2016 compared to 55% (N=115) health facilities in Liberia. All health facilities had at least one tracer item to provide services, however, none of these facilities had all tracer items.
- Guidelines for management of HIV/AIDS and palliative care were available in 83% down from 54% in 2016 and 58% down from 36% in 2016 respectively.

- Systems for diagnosis of Tuberculosis among HIV clients increased from 46% in 2016 to 63% in 2018.
- Availability of medicines and commodities reduced from 80% in 2016 to 55% in 2018 of health facilities with the least available item being First line Tuberculosis medicines reducing 30% in 2016 to (28%) in 2018, and Intravenous treatment for fungal infections show no significant difference with (11%).
- At least one trained staff in clinical management of HIV/AIDS in the past two years preceding the survey was available in 42% of the health facilities down from 12% in 2016.

Figure 50 below, shows the 10 tracer items that were used to assess the service readiness for delivery of HIV care and support services in Liberia. Overall, 55% of health facilities had at least one tracer item to provide HIV care and support services with zero percent of the facilities with all items.

Condoms, Palliative care pain management, Intravenous solution with infusion set and Co-trimoxazole tab/caps, were most available tracer items between 57% to 93%% of the surveyed health facilities (93%, 77%, 68% and 57% respectively). The less likely available items were IV treatment for fungal infection (11%), all first line TB medicines (28%) and at least 1 trained staff clinical management HIV/AIDS (42%).

Guidelines for management of HIV/AIDS and palliative care were available in 83% down from 54% in 2016 representing an increased difference of 54.7% of the health facilities with at least one trained staff in clinical management of HIV/AIDS in the past two years preceding the survey was available (42%) and guidelines for palliative care (68%) of the health facilities surveyed.

Systems for diagnosis of Tuberculosis among HIV clients was in 63% of the health facilities, while availability of medicines and commodities was in more than 74% of the health facilities with the least available item as First line Tuberculosis medicines (28%) and intravenous treatment for fungal infections (11%).

Figure 50: Facilities that have tracer items for HIV care and support services (N=231)

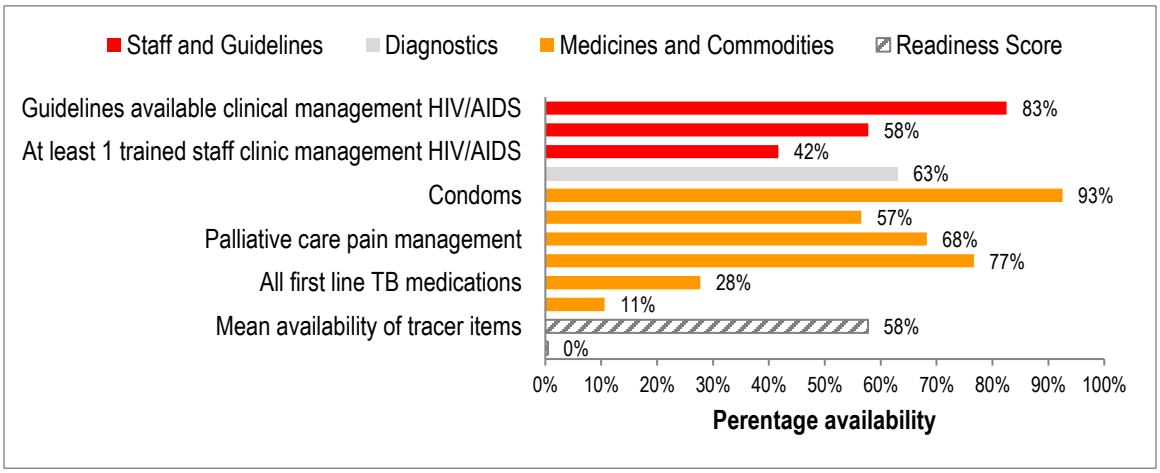
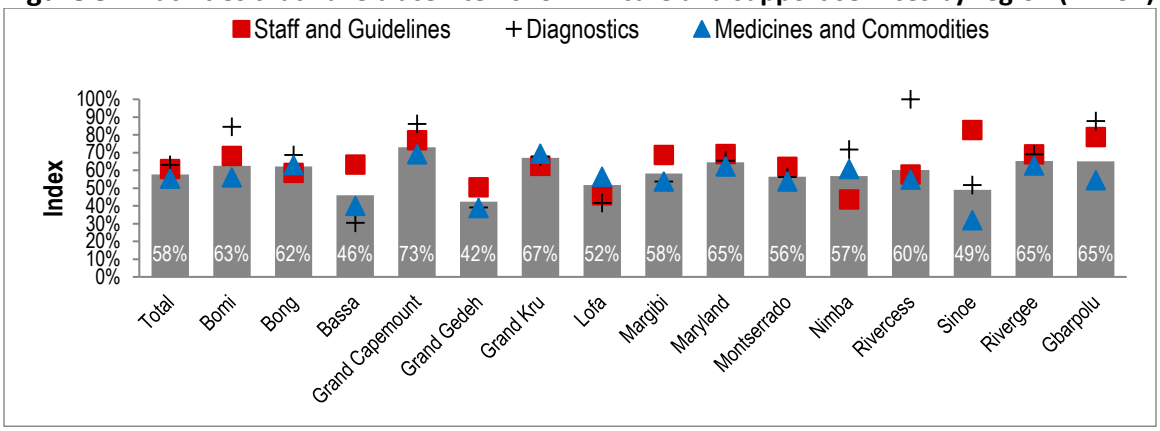


Figure 51 below and **table 24 below,** indicates that a cross all counties medicines and commodities for palliative care were available in 55% of facilities in 2018 as compared to 50% of the health facilities in 2016. The main availability of tracer items offered in health facilities was at 58%.

Figure 51: Facilities that have tracer items for HIV care and support services by region (N=231)



More than half of the clinics offered HIV care and support service on a regular basis which is similar to 2016 SARA findings, while over 60% was noted in Private for profit and 57% public health were observed. Urban was the most preferred (660%) than rural (62%).

5.6.5 HIV/AIDS antiretroviral (ARV) service availability

The introduction of ARVs to HIV patients treatment and care has averted many deaths due HIV. Three services offered in health facilities were used as proxy to measure service availability for ARVs. These were:

Types of services offered / tracer indicators for availability of HIV/AIDS antiretroviral services

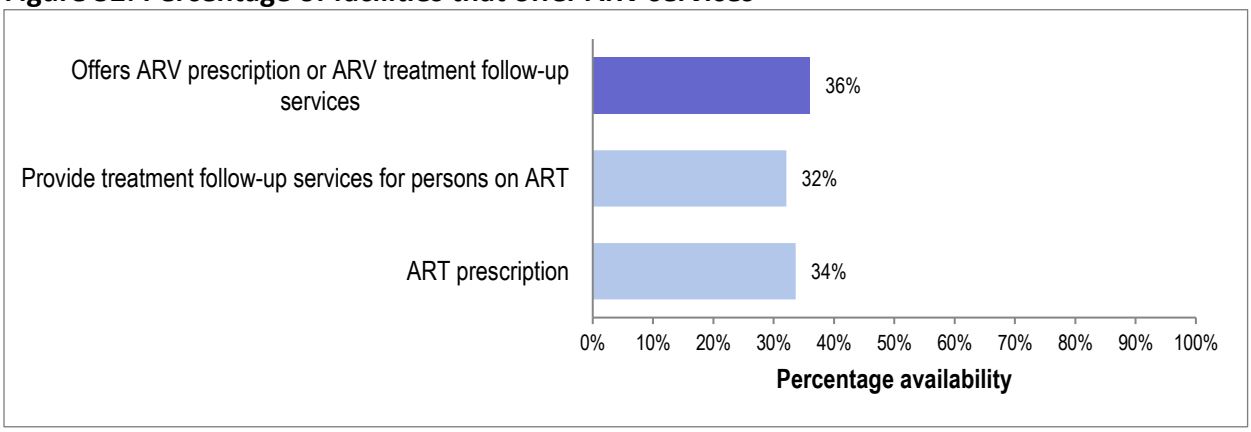
a) ARV prescription or ARV treatment follow-up services
b) Antiretroviral prescription
c) Treatment follow-up services for persons on ART

Key findings

- Anti-retroviral prescriptions and ARV treatment follow-up services were available in 36% of the health facilities (N=765) as compared to 12% in 2016 (N=701).
- Treatment follow-ups for Anti-retroviral therapy was available in 32% of the health facilities down from 9% in 2016
- Antiretroviral prescriptions availability improved from 10% in 2016 to 34% in 2018 of the health facilities.

Figure 52 shows the percentage of facilities providing prescriptions of antiretroviral (ARV) and treatment follow-up services in the country as 36% at the time of the review with 32 % providing treatment follow-up services for persons on antiretroviral therapy/treatment and 34% providing ARV/ART prescriptions which shows an increasing trend compared to 12%, 9% and 10% in 2016.

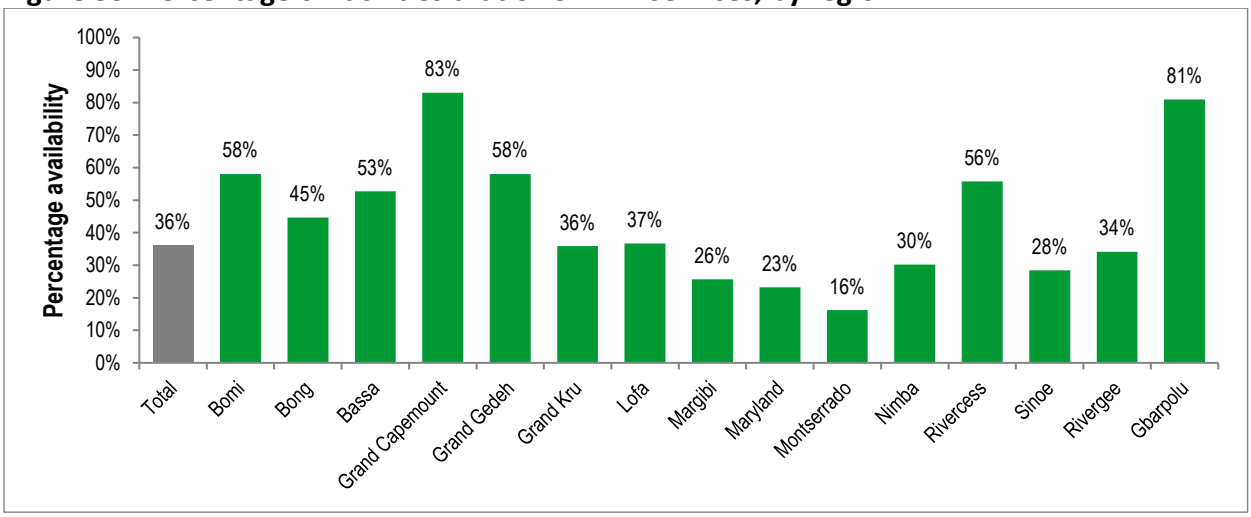
Figure 52: Percentage of facilities that offer ARV services



There were fewer disparities observed for ARV service across six counties (Grand Cape Mount 83%, Gbarpolu (81%), Grand Gedeh and Bomi both at 58% followed by River Cess (56%) and Grand Bassa at 53% in **Figure 53 below**. The least was observed in Montserrado at 16% of their facilities offering the critical service. However, this trend shows an improvement, as 3%, 7%, 8% and 8% were recorded in Maryland, Lofa, Grand Bassa and Montserrado Counties in 2016.

Table 25 in Annex 1 shows that ARTs prescription was 92% across hospitals, 73% health centres while 29% in Clinics compared to 75%, 38% and 9% in 2016 which shows an increasing trend. There were major disparities between the public 44% and NGO/private not for profit at 9%, private for profit 7% and urban 21% and rural 40%.

Figure 53: Percentage of facilities that offer ARV services, by region

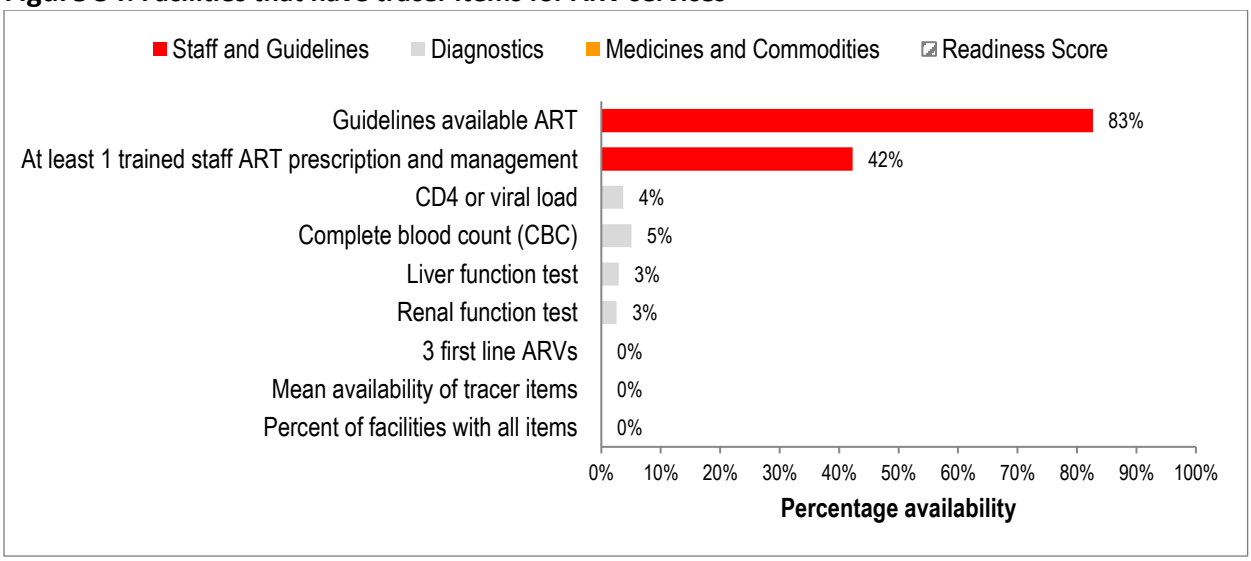


5.6.6 HIV/AIDS ARV service readiness

Key findings

- Guidelines for ART available in 83% of the health facilities (N=254) representing an increased from 56% in 2016 (N=94)
- Viral load or CD4 checking is done in 4% of the health facilities than 3% in 2016
- Complete blood count (CBC) is done in 5% (1% decreased from 2016) of the health facilities surveyed.
- Liver function test is done in 3% (1% decreased from 2016) of the health facilities
- Renal function test is performed in 3% (1% decreased from 2016) of the health facilities.
- At least 1 trained staff in ART prescription and management in the past two years preceding the survey was in 42% of the health facilities that provide HIV treatment down from 20% in 2016.

Figure 54: Facilities that have tracer items for ARV services



Guidelines for ART was available in 83% of the health facilities while Viral load or CD4 checking for HIV patients was done in 4% of the health facilities. Other key important test that could be carried out were Complete blood count (CBC) 5%, Liver function test (3%) and renal function test (3%) of the health facilities as shown in Figure 54 above

Skilled workforce is important and at least 1 trained staff in ART prescription and management in the past two years preceding the survey was available in 42% of the health facilities surveyed.

5.6.7 HIV/AIDS Antiretroviral QOC

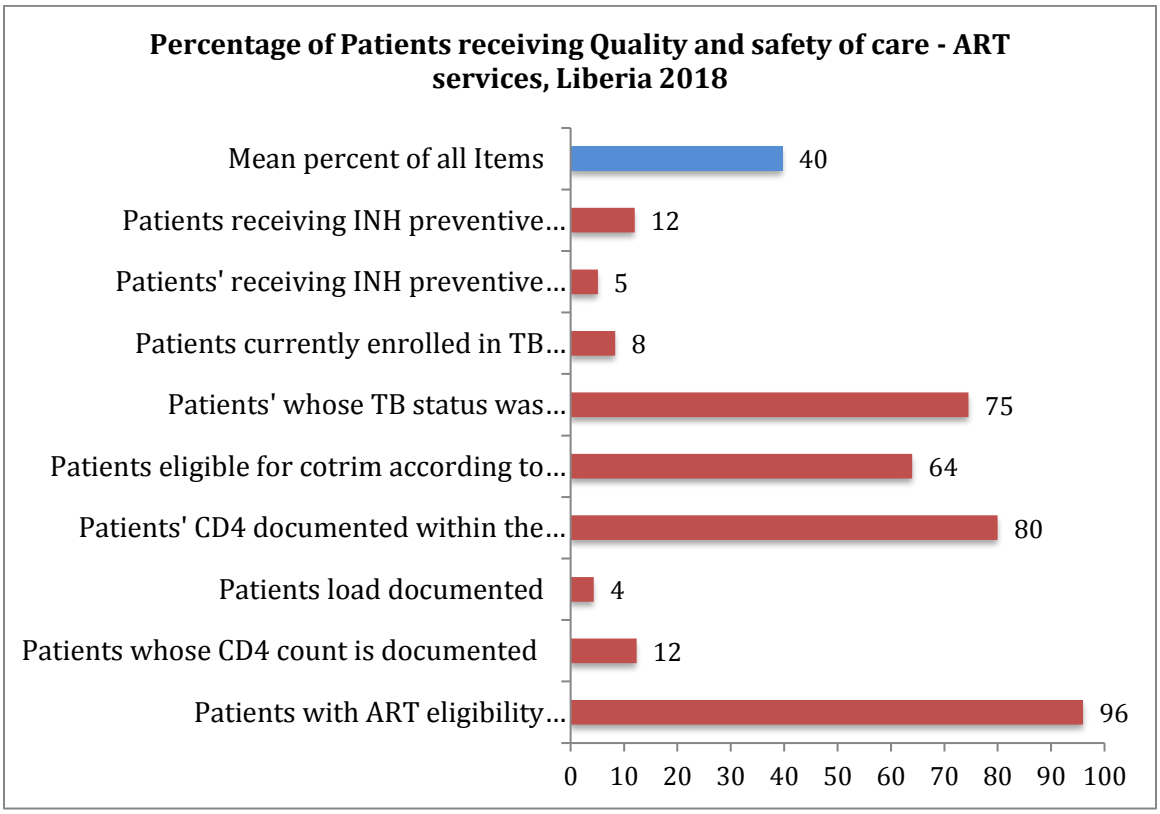
ARV Quality of care services involved assessment of quality and safety of service delivery by hospitals and health centres in Liberia. entails the receipt of appropriate, effective and timely care by patients and includes provider knowledge and practice while giving care, patient and family engagement, patient care outcomes and patient satisfaction.

Key Findings

- Mean percent of all criteria fulfilled as per the standard for quality and safety of care for ART was 40% compared to 35% in 2016.
- Number of patients with ART eligibility documented in patients' record by county amounted to 96% compared to 81% in 2016
- The number of patients whose CD4 count was documented once in the record by county and facility was said to be 12% with 4% of patient load documented at least once in record by county and facility respectively
- Meanwhile, 80% of patients' CD4 or clinical staging documented within the last 6 month by county was reported

Figure 55 below shows further distribution.

Figure 55: ART: quality and safety of care



5.6.8 HIV/AIDS: PMTCT service availability and readiness

5.6.8 HIV/AIDS: PMTCT service availability

In the assessment of PMTCT service availability, the following 8 tracer services were used to establish availability of the health facilities to offer services when needed;

Types of services offered for Tracer PMTCT

a) Preventing mother-to-child transmission (PMTCT) services
b) Counselling and testing for HIV+ pregnant women
c) Counselling and testing for infants born to HIV+ women
d) ARV prophylaxis to HIV+ pregnant women
e) ARV prophylaxis to infants born to HIV+ women
f) Infant and young child feeding counselling
g) Nutritional counselling for HIV+ women and their infants
h) Family planning counselling to HIV+ women

Key findings

- Prevention of Mother to child transmission was provided in 65% of the surveyed health facilities (N=765) compared to 61% in 2016 (N=701)
- ARV prophylaxis to HIV+ women was available in 45% of the surveyed health facilities than 42% in 2016
- Family planning counselling to HIV+ women was available in 62% of the surveyed health facilities than 53% in 2016
- HIV counseling and testing to HIV+ pregnant women was available in 55% (decrease by 5% from 2016) of the surveyed health facilities and to infants born to HIV+ pregnant women in 58% (increased by 9% from 2016) of the surveyed health facilities.
- Infant and young child feeding counselling was provided in 58% (increased by 9% from 2016) of the surveyed health facilities.
- Nutrition counseling for HIV+ women and their infants was available in 61% (Increased by 11% from 2016) of the surveyed health facilities
- ARV prophylaxis to newborns born to HIV+ pregnant women was provided in 52% (Increased by 11% from 2016) of the surveyed health facilities.

Figure 56 indicates that PMTCT services were available in 65% of the health facilities of which 65 percent of all facilities in the country provided HIV counselling and testing to HIV+ pregnant women, 62% family planning counselling to HIV+ women, and 45% of them ARV prophylaxis to HIV+ women. Although 65% of surveyed facilities provided PMTCT services, only 52% are providing ARV prophylaxis to newborns born to HIV+ pregnant women. Infant and young child feeding counselling was done in 58% of the health facilities while nutrition counselling for HIV+ women and their infants was available in 61% of the surveyed health facilities.

Figure 56: Percentage of facilities that offer PMTCT services (N=765)

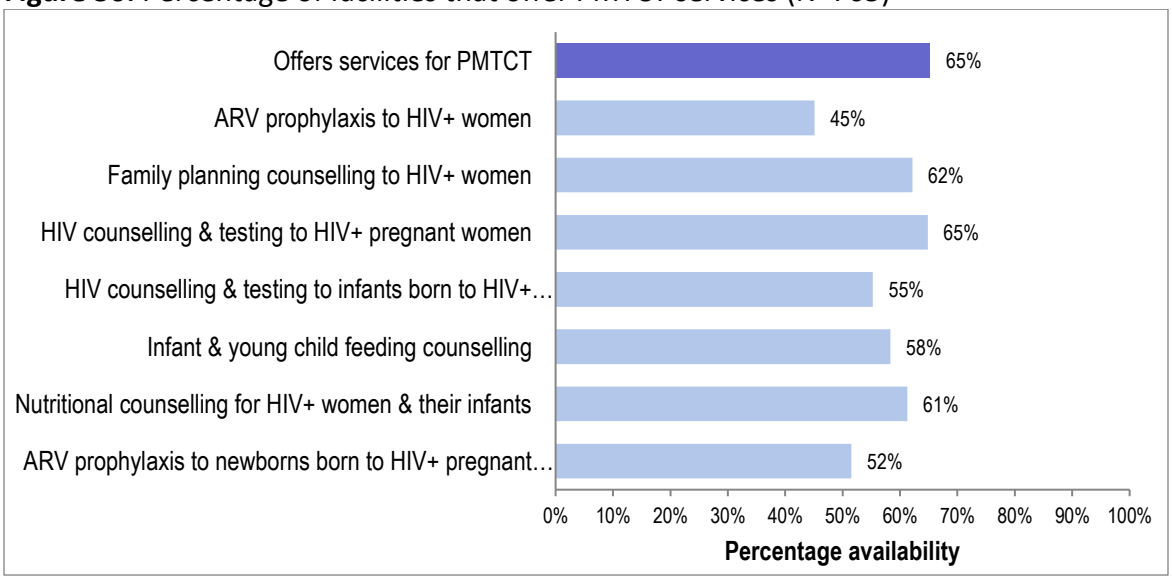
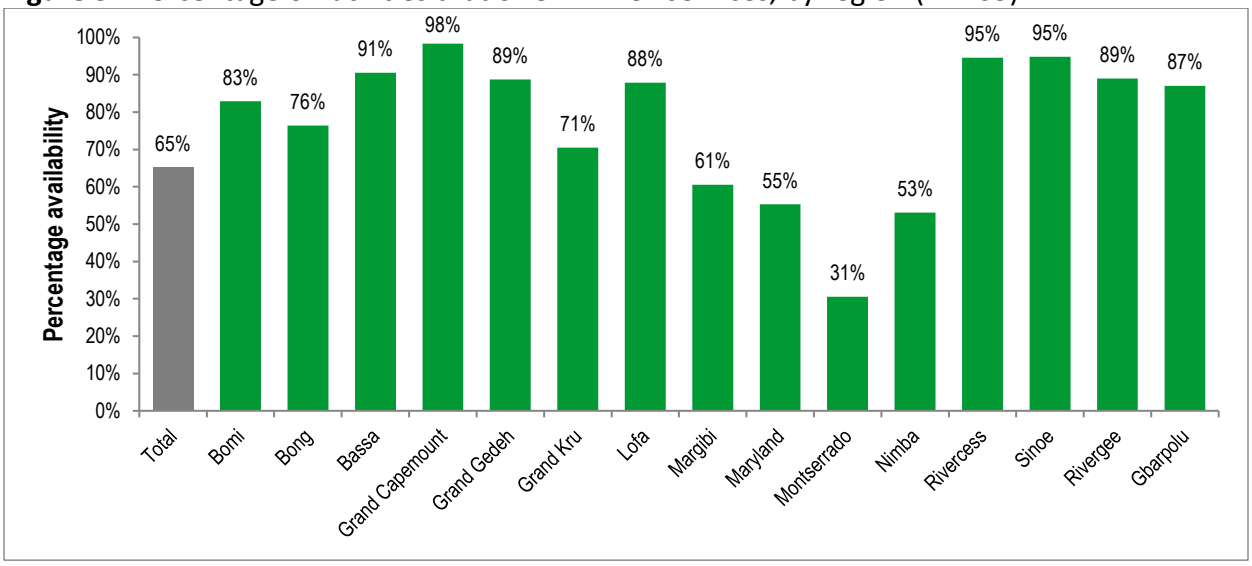


Figure 57 below and Table 26 Annex 1, shows that Prevention of mother to child transmission services are mainly available in hospitals (94%) and health centres (84%) and least in clinics (63%). Most facilities providing PMTCT services were public facilities (83%) and least available in NGO/not-for-profit (19%) and private for-profit (19%) and Faith based (35%) providers. There was a great difference among facilities in urban (36%) and rural (80%). This means that rural health facilities have an increased chance of providing the services compare with urban facilities surveyed. A wide variation was also observed across counties offering PMTCT for instance Montserrado (30%), Nimba (53%) and Maryland (55%) while the rest of the counties were between 61% to 98%.

Figure 57 Percentage of facilities that offer PMTCT services, by region (N=765)



5.6.9 HIV/AIDS: PMTCT service readiness

The following 10 tracer items were used to assess the readiness of the health facilities provide PMTCT services:

Tracer items required for service delivery readiness in PMTCT

Trained staff and guidelines

a) Guidelines for PMTCT
b) Guidelines for infant and young child feeding counselling
c) Staff trained in PMTCT
d) Staff trained in infant and young child feeding

Equipment

a) Visual and auditory privacy

Diagnostics

a) HIV diagnostic capacity for adults
b) Dried blood spot (DBS) filter paper for diagnosing HIV in newborns

Medicines and commodities

a) Zidovudine (AZT) syrup
b) Nevirapine (NVP) syrup
c) Maternal ARV

Key findings

- At least one of the tracer items to provide PMTCT services in Liberia was available in 43% (N=445) of the surveyed health facilities than 37% in 2016 (N=371).
- Capacity to check for HIV in Adult was available in 87% of the surveyed health facilities, similar in 2016
- DBS for diagnosing newborn HIV were available in 3% of the surveyed health facilities compared 1% in 2016
- Room with visual and auditory privacy was available in 91% of the surveyed health facilities than 88% in 2016
- Guideline for PMTCT (76%) and infant and young feeding (61%) were available in health facilities compared to 65% and 46% in 2016
- Maternal antiretroviral prophylaxis was available in 35% of the surveyed health facilities, while nevirapine and Zidovudine syrups were available in 31% and 3% of the health facilities respectively compared to 21%, 26% and 3% in 2016

In determining the readiness for PMTCT services 10 tracer items were taken into account. As seen in Figure 58 below, on the overall, 43% of the facilities had at least 1 tracer item available for PMTCT services in Liberia with none of the facilities having all tracer items. HIV diagnostic capacity for adults and room for visual and auditory privacy was readily available in 91% of the health facilities representing 3.4% increased from 2016.

The least available services identified were dried blood spot (DBS) filter paper for diagnosing newborn HIV (3%), Zidovudine syrup (3%), at least 1 trained staff in infant and young child feeding (22%) and at least 1 trained staff in PMTC in the past two years preceding the survey (24%). Guidelines for PMTCT were readily available in 76% of the health facilities while for infant and young feeding in 61% of the health facilities surveyed. It is important to note that maternal antiretroviral prophylaxis was available in 35% of the health facilities thus representing an increased of 67% from 2016, while Nevirapine and Zidovudine syrups were available in 31% and 3% of the surveyed health facilities respectively.

Figure 58: Facilities that have tracer items for PMTCT services (N=445)

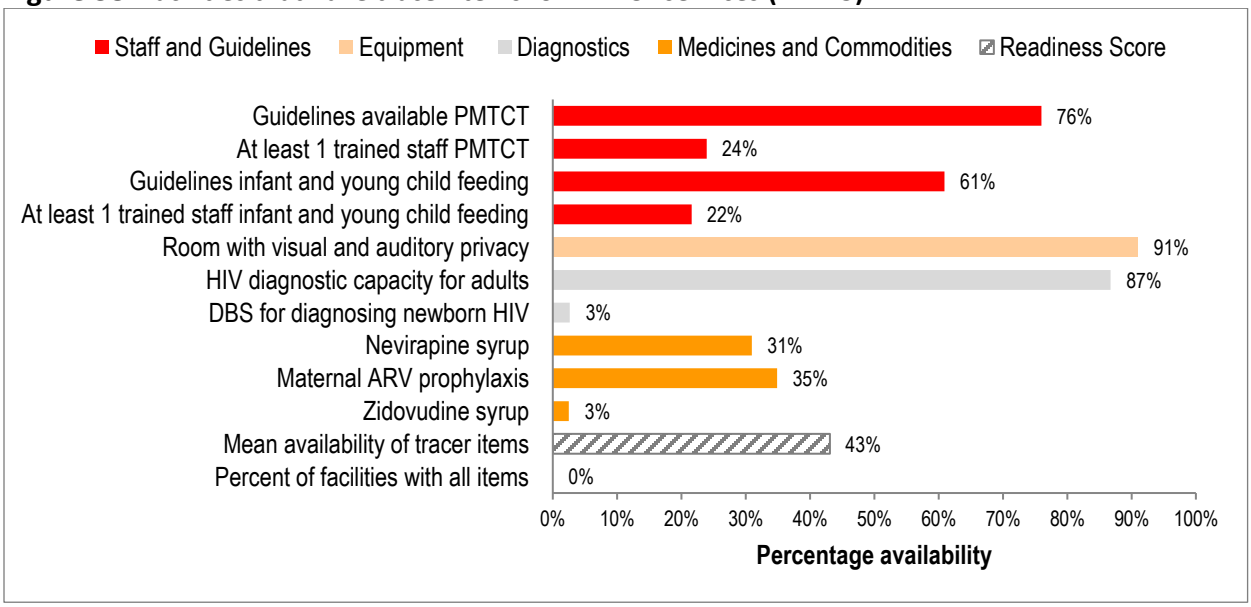
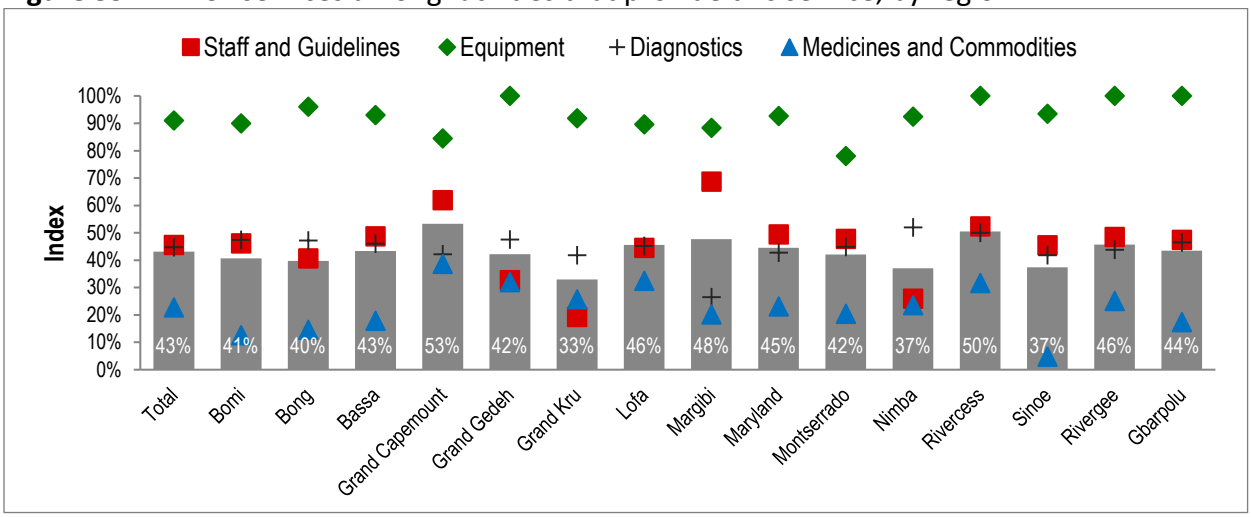


Figure 59 below and **Table 27 Annex** 1 show that the service readiness index across counties was below 45%. But it was important to note that equipment; diagnostics, staff and guidelines tracer indicators were most available in all counties in over 45% of the health facilities. About three out of 15 counties mean readiness scores index were below 40%. These counties were Sinoe (37%), Grand Kru (33%) and Nimba 37%. Medicines and commodities (23%%), staff and guidelines (46%) and diagnostics (45%) were readily available in health facilities in that order. Generally, equipment was mostly available (91%) across all counties.

Figure 59: PMTCT services among facilities that provide this service, by region



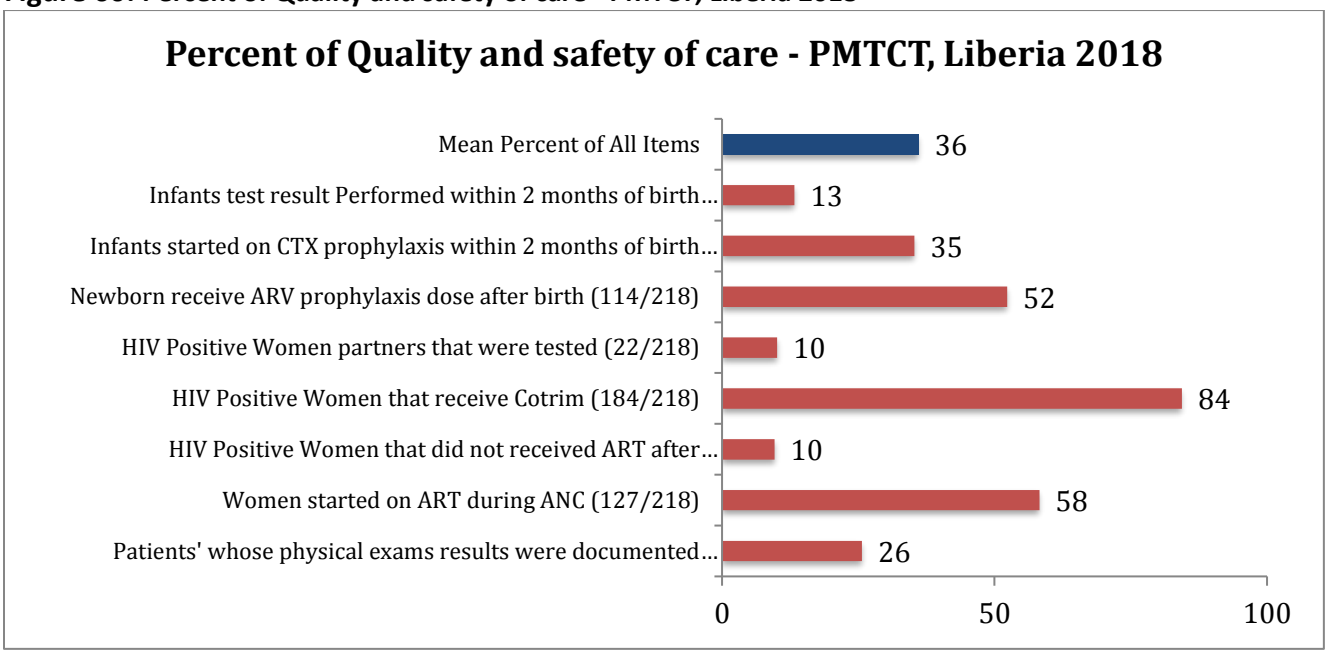
5.6.10 HIV/AIDS: PMTCT service QOC

PMTCT quality and safety of care offered to ptients involved assessment of the followingmeasurementsplication of standards of care, taking into account the parameters of quality and safety of care for the prevention of the transmission of HIV from mother to child, varied in terms of application of the standard criteria for managing clients by service delivery sites.

Key findings

Mean percent of all criteria fulfilled as per the standard for quality and safety of care for PMCTC stood at 36% (N=218 clients) at the time of the survey, this reflects increased from 24% in 2016 as shown in Figure 60 below.

Figure 60: Percent of Quality and safety of care - PMTCT, Liberia 2018



5.7. Sexually transmitted infections service availability and readiness

5.7.1 STIs service availability

In determination of the service availability for the STI services, the following 3 tracer services were considered;

- Availability of STI services
- Availability of Sexually transmitted infection diagnosis
- Availability of sexually transmitted infection treatment.

Types of services offered tracer for STI availability

a) STI services b) STI diagnosis c) STI treatment

Key findings

- Services for STIs were provided in 91% of the health facilities (N=765) in Liberia representing a decrease of 3% from 2016 (N=701)
- Diagnosis for STIs was available in 91% of the surveyed health facilities representing a decrease of 2% from 2016
- Prescriptions for STIs were available in 91% of the surveyed health facilities representing a decrease of 3% from 2016

Figure 61 below shows that STI services were available in 91% of facilities in Liberia while 91% of the health facilities were recorded for diagnosis of STIs and prescribed treatment for STIs respectively.

Figure 61: Percentage of facilities that offer STI services (N=765)

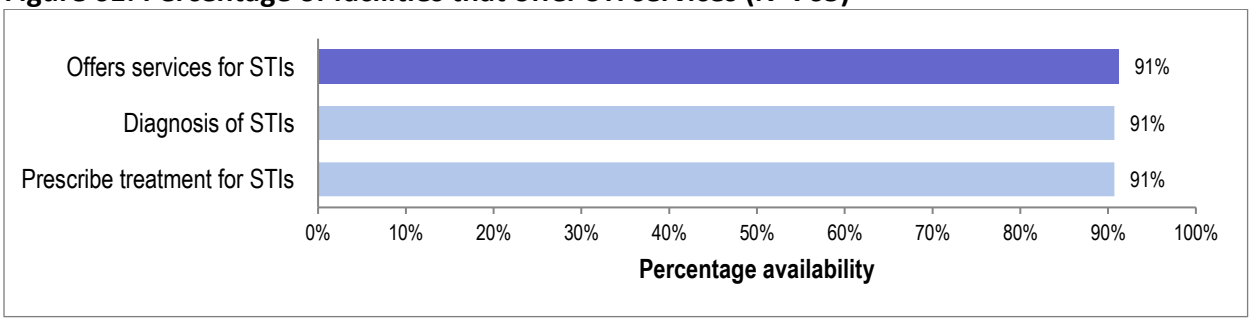
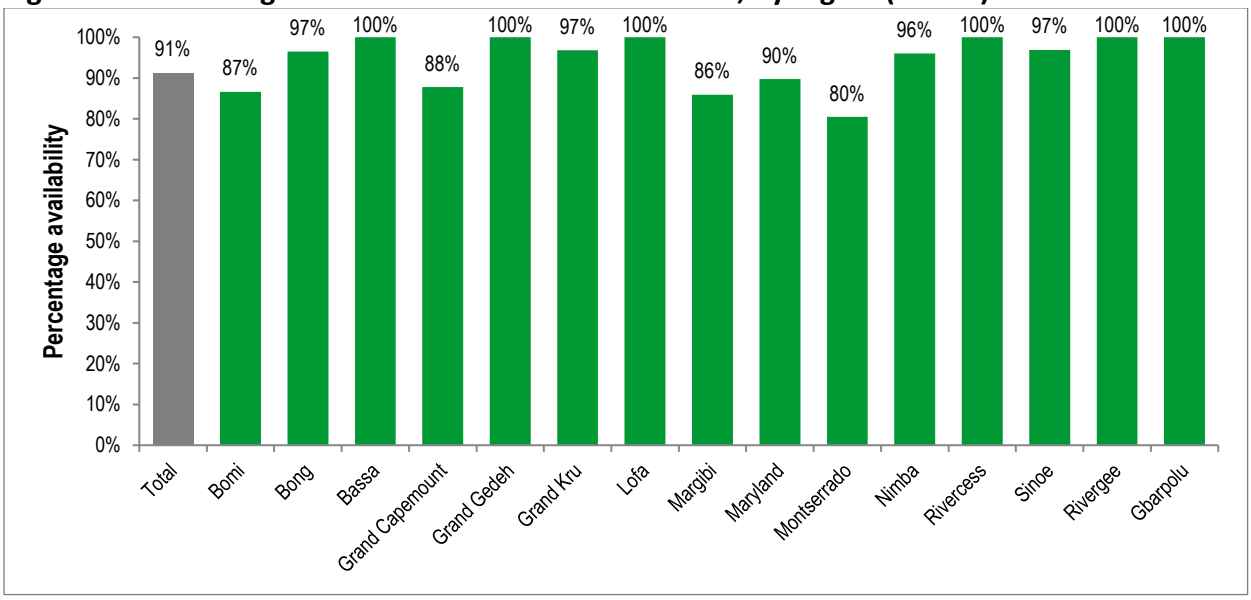


Table 28 in Annex 1 and Figure 62 below show that six out of fifteen counties provided STI services and diagnosis of STIs in 100% of their facilities. All facilities classified as hospitals, health centers and clinics provide this service, 92%, 95% and 91% respectively. . Disparities of the services were seen among the facilities in Rural (97%) and urban (81%) surveyed health facilities 2016.

Figure 62: Percentage of facilities that offer STI services, by region (N=765)



5.7.1 Sexually transmitted infections service readiness

The following seven (7) tracer items were used to establish STI service delivery readiness;

Tracer items required for service delivery readiness

Trained staff and guidelines

a) Guidelines for diagnosis and treatment of STIs b) Staff trained in STI diagnosis and treatment

Diagnostics

a) Syphilis rapid test

Medicines and commodities

a) Condoms b) Metronidazole cap/tab c) Ciprofloxacin cap/tab
d) Ceftriaxone injectable

Key findings

- On average, 52% of the surveyed health facilities (N=686) in 2018 had at least one item to provide sexually transmitted infections services in Liberia with 2% having all tracer items than 55% and 1% in 2016
- Guidelines for diagnosis and treatment for STIs was available in 64% down from 48% in 2016
- Rapid test for Syphilis was provided in 23% of the surveyed health facilities compared to 21% in 2016
- Ceftriaxone injectable was available in 42% from 80% in 2016 thus representing a decreased of 38% in the surveyed health facilities.
- Metronidazole tablets were available in 85% of the surveyed health facilities.
- Ciprofloxacin drugs were available in 53% of the surveyed health facilities than 56% in 2016
- In prevention of STIs, condoms were available in 83% of the surveyed health facilities than 88% in 2016
- Least tracer item available was at least 1 trained staff in STI diagnosis and treatment in the past two years preceding the survey was available (13%) from 9% in 2016

The STI services availability readiness score for the country was 52% and percentage health facilities having all tracer items was 2%. It was observed that 64% of the health facilities had guidelines available for diagnosis and treatment of STIs. The most available items in the surveyed health facilities were Metronidazole (85%), condoms (83%), and Ciprofloxacin (53%). Syphilis rapid test was in only (23%) of the facilities and at least 1 trained staff in diagnosis and treatment of STIs treatment services (13%) was least available as shown by Figure 63 below.

Figure 63: Facilities that have tracer items for STI services (N=686)

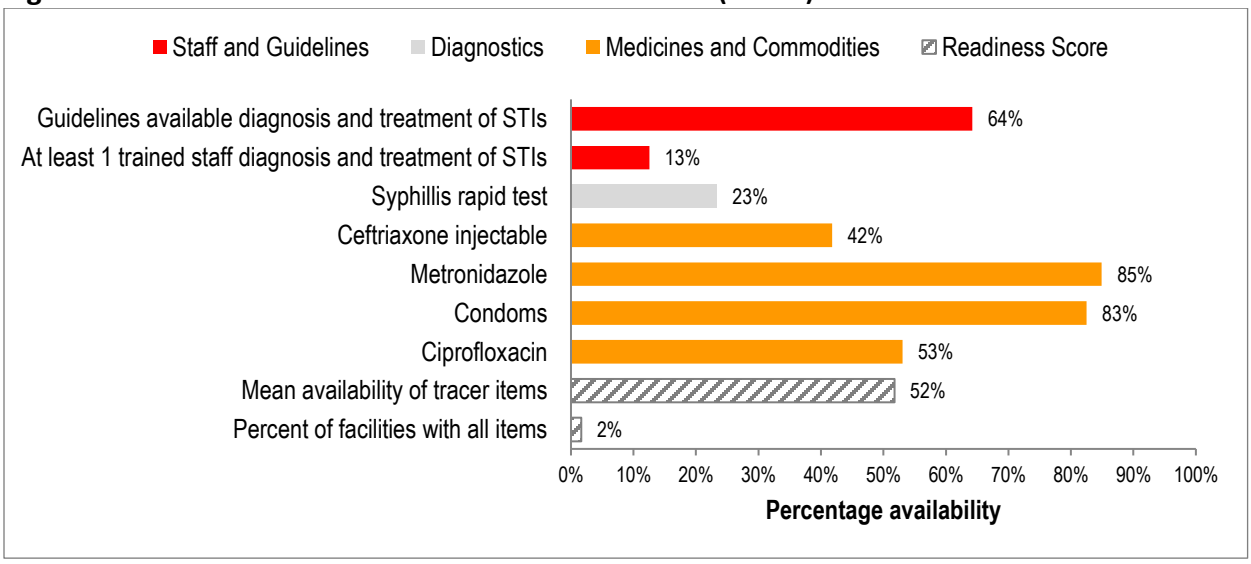
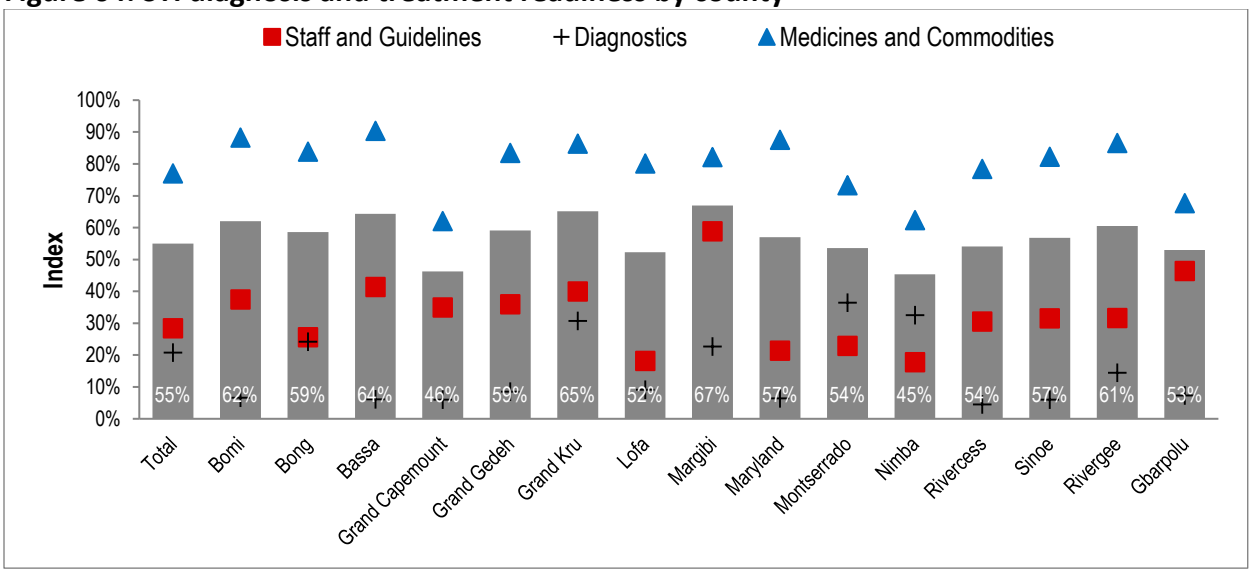


Table 29 Annex 1 shows the service readiness index score for STI services was 52%. A wide difference was noted across counties in diagnostics with five out of fifteen counties having less than 10% of the facilities with diagnostics for STIs. These were Bomi (5%), Bassa (6%), Cape mount (4%) Sinoe (7%) and Gbarpolu (1%). River Cess was the only county with no diagnostics services. There were slight difference in the proportion of hospitals (77%) and Health centers (59%) ready to provide the service however, there were no difference observed amongst urban and rural in relations to readiness to providing STIs services (Figure 64).

Figure 64: STI diagnosis and treatment readiness by county



5.8 Tuberculosis service Availability and Readiness

Tuberculosis is one of the communicable diseases that is of major public health concerns and curable when diagnosed early. Prevention, early detection and treatment, adherence is key in service provision to avoid multi-drug resistant TB (MDR-TB), and also prevent death. The TB prevalence in Liberia is 326 per 100,000 persons according to the WHO 2014 report.

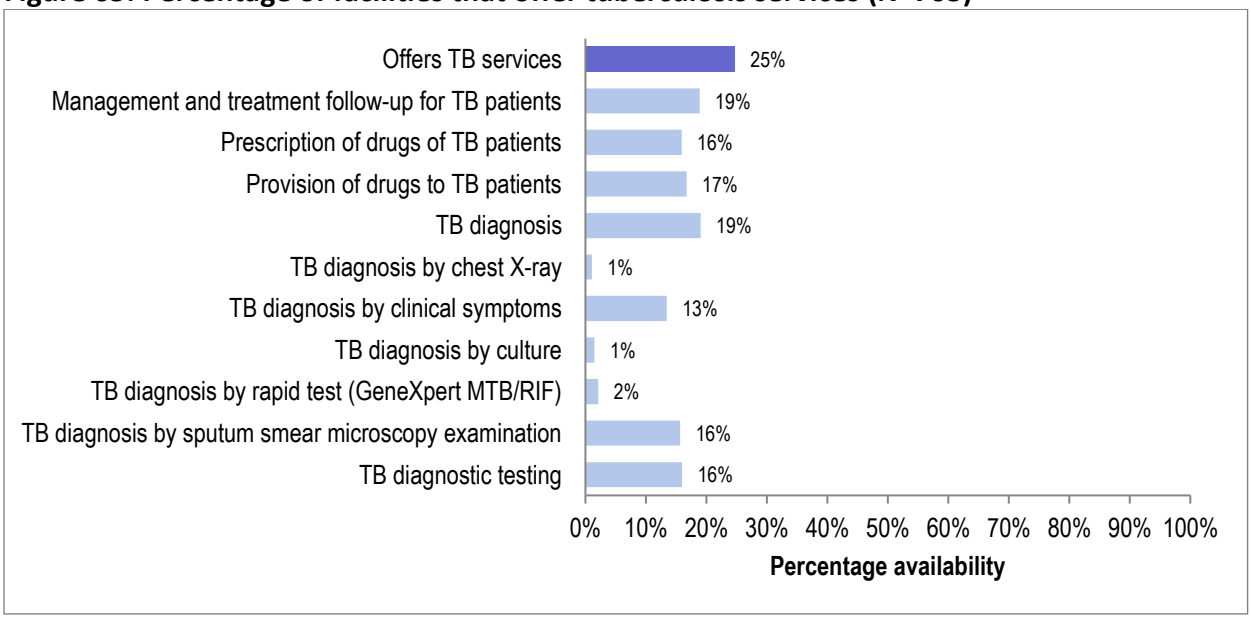
5.8.1 Tuberculosis service availability

Key findings:

- Tuberculosis services in Liberia are provided in 25% of the surveyed health facilities (N=765) as compared to 21% in 2016 (N=701).
- Tuberculosis diagnosis was available in 19 % of the surveyed health facilities with 16% of them able to provide prescription of drugs for tuberculosis to patients and 17% of the surveyed facilities are providing drugs to TB patients. This is higher compared to 2016 with 16%, 14% and 15% respectively.
- On average, Tuberculosis diagnostic testing was done in 16% of the surveyed health facilities.

Figure 65 below, illustrates that 25% of the surveyed health facilities provided Tuberculosis services. Tuberculosis diagnosis was available in 19% of the surveyed health facilities with 16% of them able to provide prescription of drugs of tuberculosis to patients and 17% of them able to provide drugs to Tuberculosis (TB) patients.
On average, Tuberculosis diagnostic testing was done in 16% of the health facilities. Tuberculosis diagnosis by sputum smear microscopy examination were conducted in 16% of the surveyed health facilities while, diagnosis by rapid test using Gene Xpert (MTB/RIF and diagnosis by culture was in 2% of the surveyed health facilities.

Figure 65: Percentage of facilities that offer tuberculosis services (N=765)



Overall, 25% of health facilities in all counties provided tuberculosis services. As illustrated in **Table 30 Annex 1**, Grand Gedeh decreased by 9.5% percentage difference from 2016. However, Grand Gedeh still has majority of the surveyed health facilities providing tuberculosis services (67%), Bong (42%), Grand Bassa and River Gee (40% each) and Sinoe (33%) followed by Gbarpolu at 32%. Majority of the hospitals (78%) and health centres (66%) provided the service while clinics provided the least (20%). The Mission/faith based had the highest facilities providing the services (34%) followed by Government/Public at 30%, while NGO/not-for-profit represented 25%. The least (7%) was observed amongst Private-for-profit. No major differences were observed between rural (26%) and urban (22%) facilities. Of all tracer items, Tuberculosis diagnosis by culture and diagnosis by chest X-ray were the least provided at 1%.

There were no county reporting none of the services provision in the 15 counties. while Gene Xpert machine was available in facilities in Grand Cape mount (7%), Maryland (5%), Sinoe (5%), Montserrado, Nimba, Lofa, and Bassa (2% each) with Grand Gedeh and Margibi representing 1% .

5.8.2 Tuberculosis service readiness

To check for Tuberculosis service readiness, the following 12 tracer items were used;

Tracer items required for service delivery readiness

Trained staff and guidelines

a) Guidelines for diagnosis and treatment of TB
b) Guidelines for management of HIV & TB co-infection
c) Guidelines related to MDR-TB treatment (or identification of need for referral)
d) Guidelines for TB infection control
e) Staff trained in TB diagnosis and treatment
f) Staff trained in management of HIV & TB co-infection
g) Staff trained in client MDR-TB treatment or identification of need for referral
h) Staff trained in TB Infection Control

Diagnostics

a) TB microscopy
b) HIV diagnostic capacity
c) System for diagnosis of HIV among TB clients

Medicines and commodities

a) First-line TB medications

Key findings

- On average 42% of the health facilities (N=184) had at least one tracer item available to provide tuberculosis services in Liberia and 2% of the surveyed health facility had all tracer items as compared to 34% facilities with none having all tracer items in 2016
- All first line tuberculosis medicines were available in 42% of the surveyed health facilities with decreased from 47% in 2016.
- Tuberculosis microscopy was provided in 36% (decreased from 41% in 2016) of the health facilities while, 90% (increased from 84% in 2016) of the facilities had HIV diagnostic capacity and 67% (decreased from 84% in 2016) of them with systems for diagnosis of HIV among tuberculosis.
- Guidelines were available in more than 30% of the health facilities
- Most important is that 42% of health facilities had tuberculosis medicines and commodities available recording a decreased from 47% in 2016.

Figure 66 and 67 below and **Table 31 Annex 1**, show that overall, 42% of the health facilities had at least one tracer item available to provide the tuberculosis services in Liberia with all first line tuberculosis medicines available in 42% of the health facilities. Two per cent of the surveyed health facilities had all tracer items. In terms of diagnostics, Tuberculosis microscopy was provided in 36% of the health facilities while, 90% of the facilities had HIV diagnostic capacity and 67% of them with systems for diagnosis of HIV among tuberculosis.

Guidelines were available in more than 30% of the health facilities especially guidelines for management of HIV and TB co-infections (50%), diagnosis and treatment of TB (49%) and TB infections control (41%) and management of MDR-TB (25%).

At least one trained staff in the past two years preceding the survey were majorly in diagnostic and treatment of TB (32%), infection control (31%), management of HIV and TB control (31%) and MDR_TB (25%) of the surveyed health facilities.

Significantly, most health facilities had tuberculosis medicines and commodities available by county. However, counties such as Grand Gedeh and Sinoe had the least availability in tracer items with less staff availability and guidelines in Grand Gedeh. Medicines were also less available in Bomi (26%) and Lofa (27%. There was no major difference between hospitals (60%) and Health centre (62%) and similarly between urban and rural.

Figure 66: Facilities that have tracer items for TB services

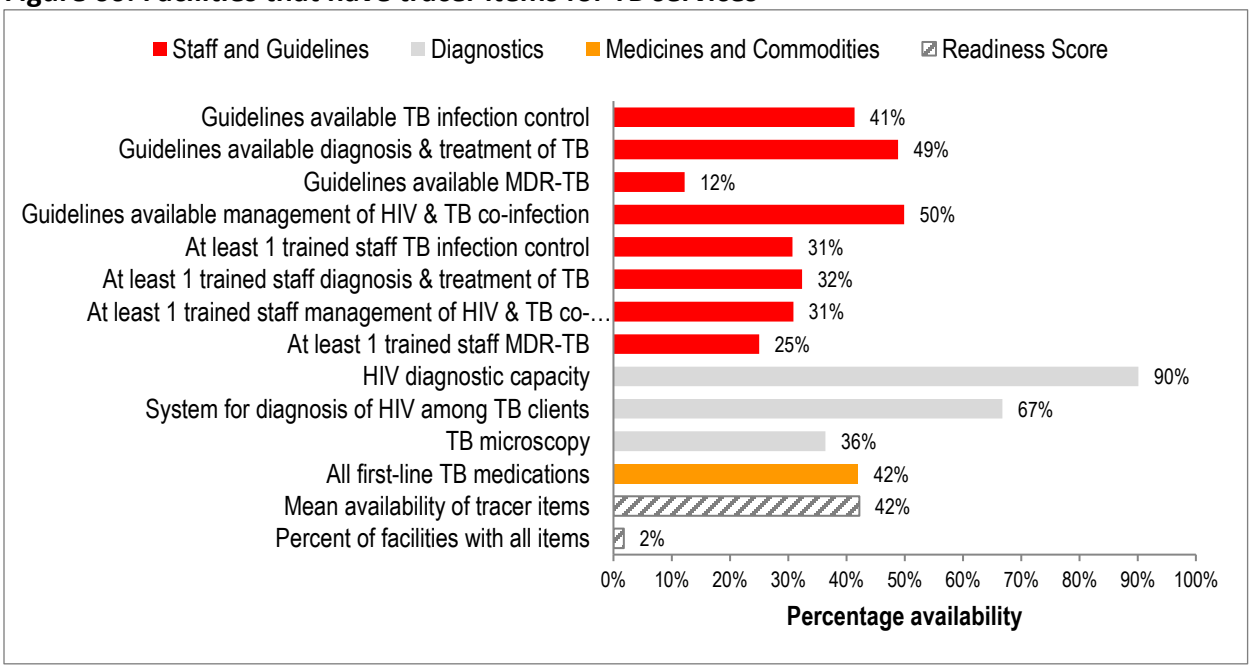
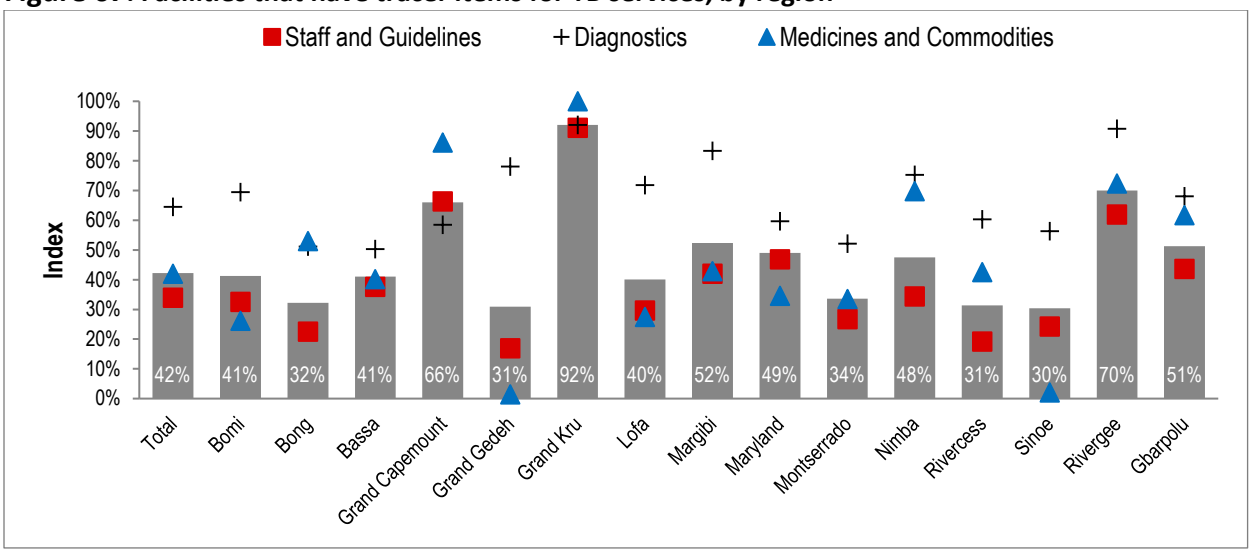


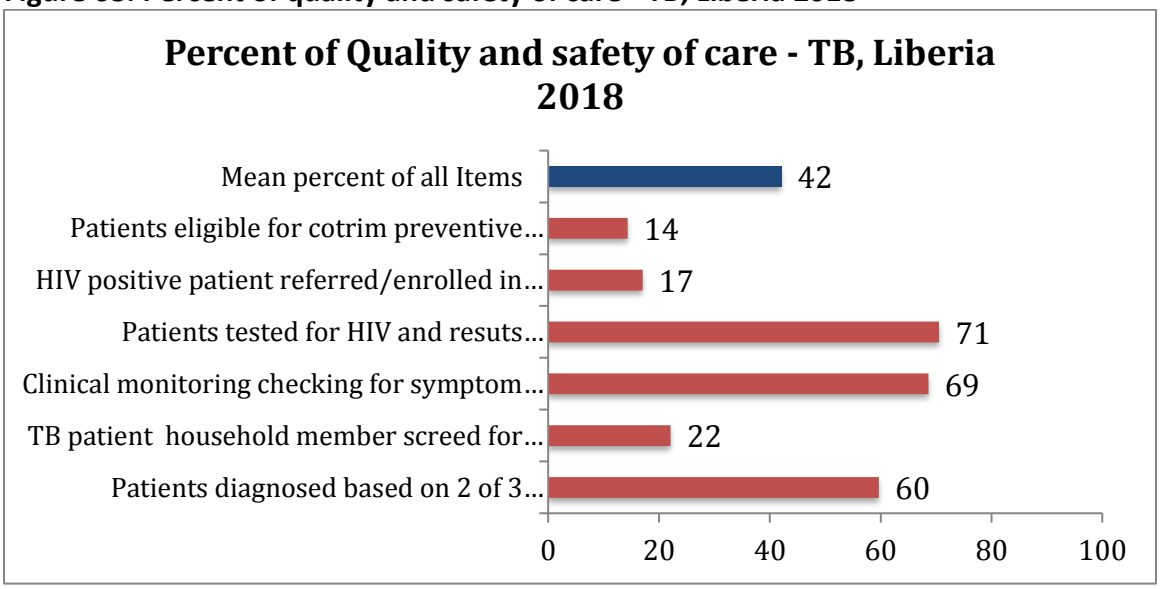
Figure 67: Facilities that have tracer items for TB services, by region



5.8.3 Quality of Care in Tuberculosis services

The TB QOC survey covered 58 health facilities (Hospitals and Health Centers) providing TB care services, and the number of patients' records sampled to assess TB QOC is 258.
The mean percent of all items across facilities assessed was 42% compared to 36% in 2016.
See figure 68 below for details.

Figure 68: Percent of quality and safety of care - TB, Liberia 2018



5.9 Malaria service availability and readiness

5.9.1 Malaria service availability

In determining the availability of the malaria services, the following 7 tracer indicators were used as tracers for service availability.

Types of services offered/tracer for service availability

a) Malaria diagnosis or treatment
b) Malaria diagnosis
c) Malaria diagnostic testing
d) Malaria diagnosis by clinical symptoms
e) Malaria diagnosis by RDT
f) Malaria diagnosis by microscopy
g) Malaria treatment
h) IPT

Key findings

- Diagnosis and treatment of Malaria is provided in 94% of the surveyed health facilities (N=765) thus representing a decreased percentage difference of 3% from 2016
- Malaria diagnosis is available in 94% of the health facilities with 93% of them accounting for malaria diagnosis testing compared to 96% in 2016
- Malaria treatment is provided in 93% of the health facilities surveyed than 96% in 2016
- Malaria Rapid Diagnosis testing kits was available and used in 92 % of surveyed facilities compared to 96% in 2016
- Diagnosis by microscopy was done in 37% of surveyed service delivery points compared 38% in 2016

In Liberia malaria remains the leading cause of morbidity and mortality accounting for 42% of outpatient attendance and 39 percent of inpatient deaths attributable to malaria5.

Figure 69 reveals that diagnosis and treatment for Malaria is provided in 94% of the surveyed health facilities (N=765) in 2018.
Malaria Rapid Diagnosis testing kits was available and used in 92 % of surveyed facilities and diagnosis by microscopy was done in 37% of surveyed service delivery points while 78% of diagnosis carried out in the survey facilities were clinical/presumptive Malaria treatment was provided in 93% of the surveyed health facilities and provision of intermittent Preventive treatment in Pregnancy (IPTp) was carried out in 87% of the surveyed health facilities.

Figure 69: Percentage of facilities that offer malaria services (N=765)

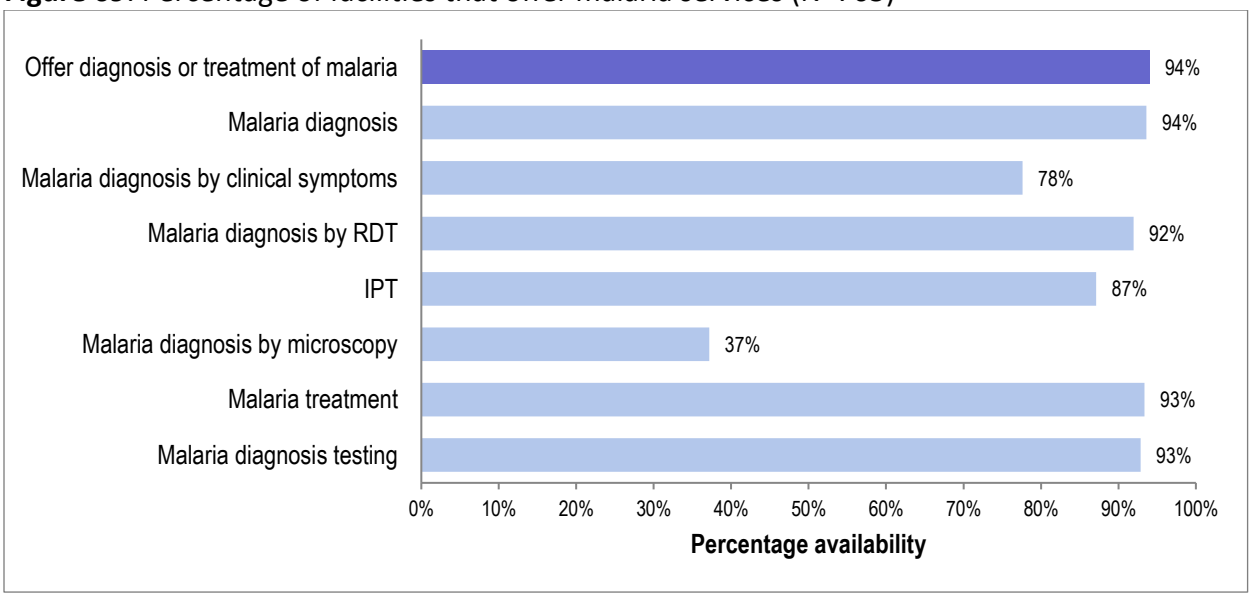
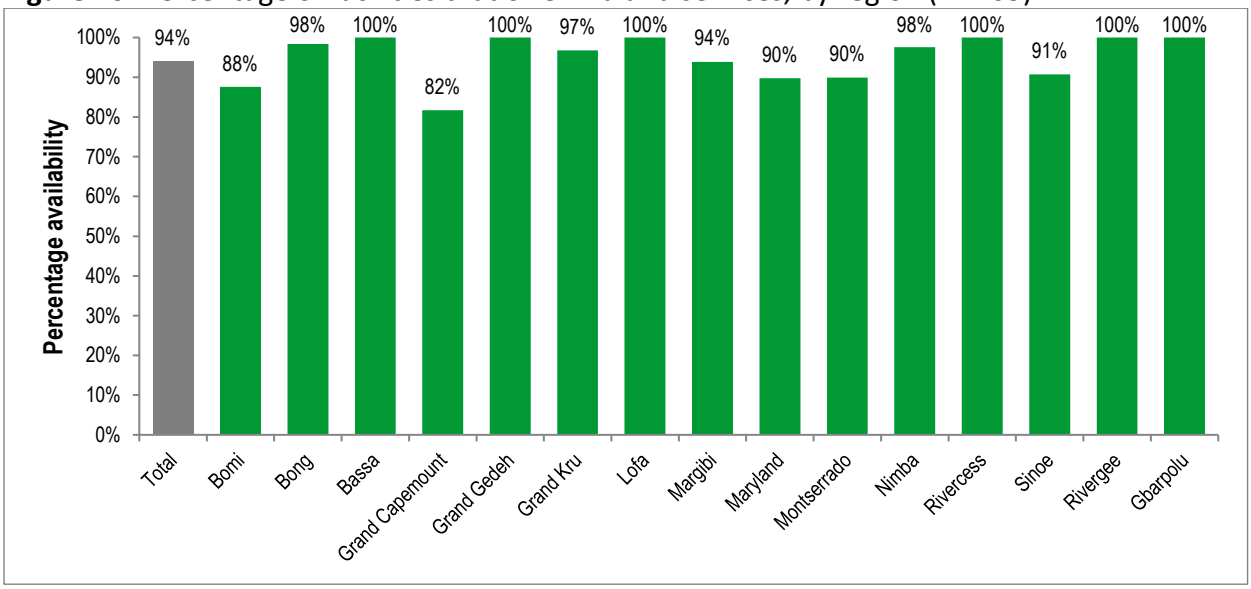


Figure 70 below and **Table 32 Annex 1**, show that six out of 15 counties, 100% of surveyed facilities offer malaria diagnosis and treatment services with the remaining 9 counties, between 88% to 98% of surveyed facilities offered the service. Most of the tracer indicators assessment showed that across all counties, malaria services were available in over 80% of the health facilities. All health centers (96%) provided the malaria diagnosis and treatment services. This was closely followed by clinics (94%) and hospitals (93%). There was little difference between ownership in rural and urban setting. NGO not for profit provided the least service in 89% of the surveyed health facilities.

Figure 70: Percentage of facilities that offer malaria services, by region (N=765)



5.9.2 Malaria service readiness

The assessment considered 9 tracer items to determine the health facility capacity (service readiness) to provide services for malaria. The following tracer items were used;

Tracer items required for service delivery readiness.

Trained staff and guidelines

a) Guidelines for diagnosis and treatment of malaria
b) Guidelines for IPT
c) Staff trained in malaria diagnosis and treatment
d) Staff trained in IPT

Diagnostics

a) Malaria diagnostic capacity

Medicines and commodities

a) First-line antimalarial in stock
b) IPT drug
c) Paracetamol cap/tab
d) ITN

Key findings

- On average, 58% of the surveyed health facilities (N=714) had at least one tracer item to provide malaria services with none of the facility having all items available compared to 60% and 1% in 2016
- Diagnostic capacity to check for malaria in the surveyed health facilities was said to be 70% which show a down ward trend from 88% in 2016
- First-line antimalarial drug availability shows a decline from 93% in 2016 to 88% in 2018 in the surveyed health facilities in Liberia.
- Paracetamol tablets was available in 65% and IPTp in 81% of all surveyed health facilities
- Long Lasting Insecticide treated Nets were available in 71% of the surveyed health facilities
- Guidelines for diagnosis and treatment of Malaria (56%), intermittent presumptive treatment in pregnancy (81% down from 37% in 2016 representing 118.9% increase difference) was available in the surveyed health facilities in Liberia.
- The least available tracer item was "at least one staff trained in malaria diagnosis and treatment in the past two years preceding the survey" (nine per cent of the surveyed health facilities).

Figure 71 and 72 below and **Table 33 Annex 1**, illustrate that overall, 58% of the health facilities had at least one tracer item necessary to deliver malaria treatment. In all, there were slight decline observed from 2016 to 2018 amongst surveyed health facilities that had diagnostic capacity to check for malaria (88% down to 70%) from 2016), while, 80% of surveyed facilities provided first-line antimalarial drugs.

For management of pain, Paracetamol tablets were available in 65% of facilities. Insecticide treated bed net for patients and their families and households for prevention of malaria in pregnancy, IPTp drugs were available in 81% which shows a upward trend from 70% in 2016 and 81% of the surveyed health facilities respectively. Sixty nine (69) percent of health facilities had guidelines for diagnosis and treatment of Malaria and 56% had for intermittent presumptive treatment of malaria in pregnancy. The least available tracer item was "at least one trained staff in diagnosis and treatment of malaria in the past two years preceding the survey" found in only 9% of the health facilities.

Overall, most of the tracer items were available across all counties in equal measures. Nationally, the readiness index score was 58% representing 3% decreased from 2016 with the tracer items, the highest score being in IPTp drug (81%), First line antimalarial in stock (80%) and the item with the least score at least 1 staff trained in malaria diagnosis and treatment (9%) . On the overall, there were slight difference between urban 51% and rural 61% in the surveyed health facilities in terms of readiness see Figure 72 below).

Figure 71: Facilities that have tracer items for malaria services

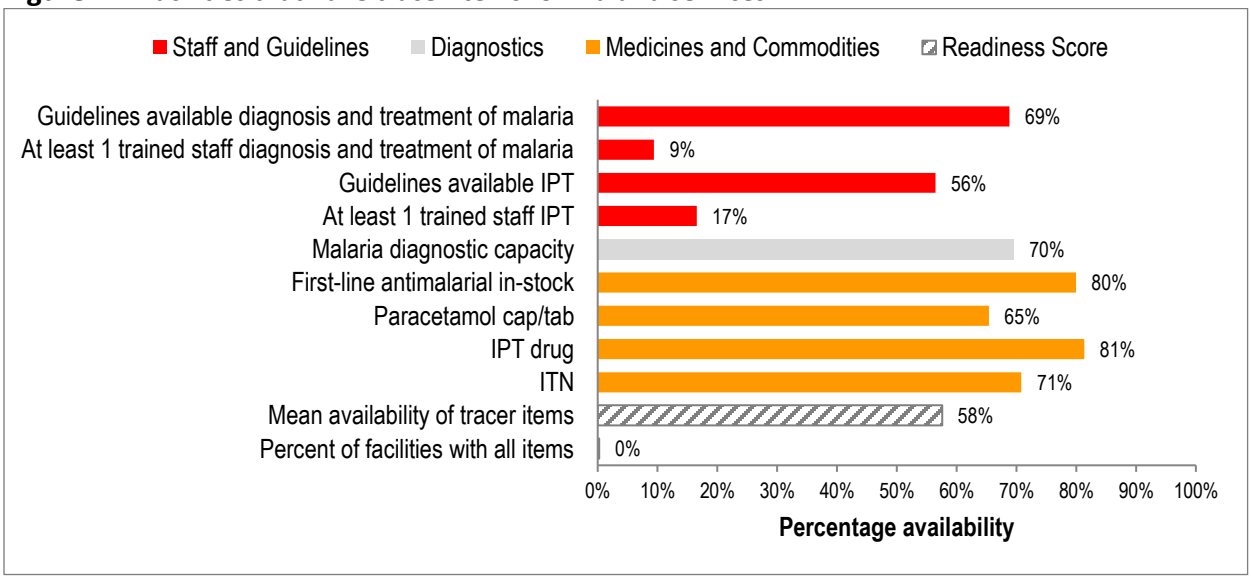
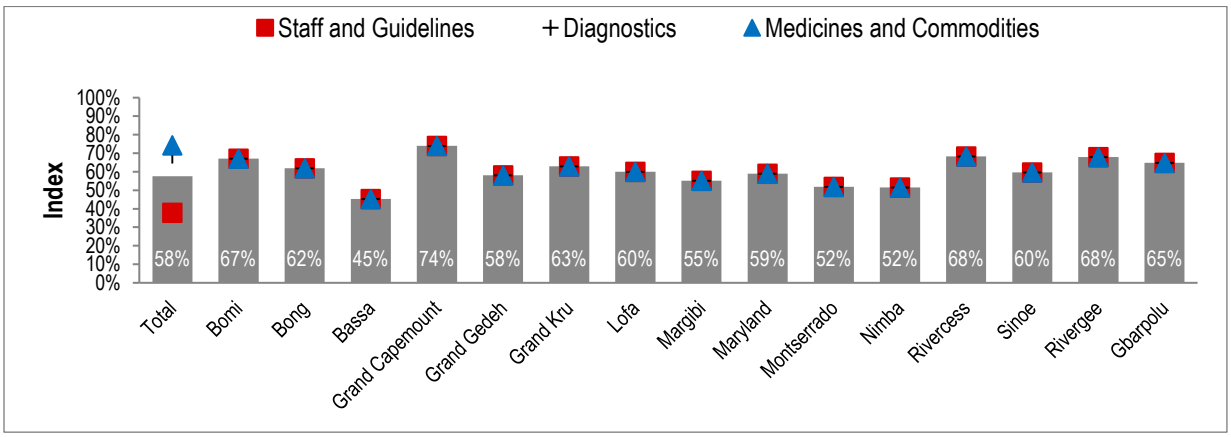


Figure 72: Facilities that have tracer items for malaria services by region

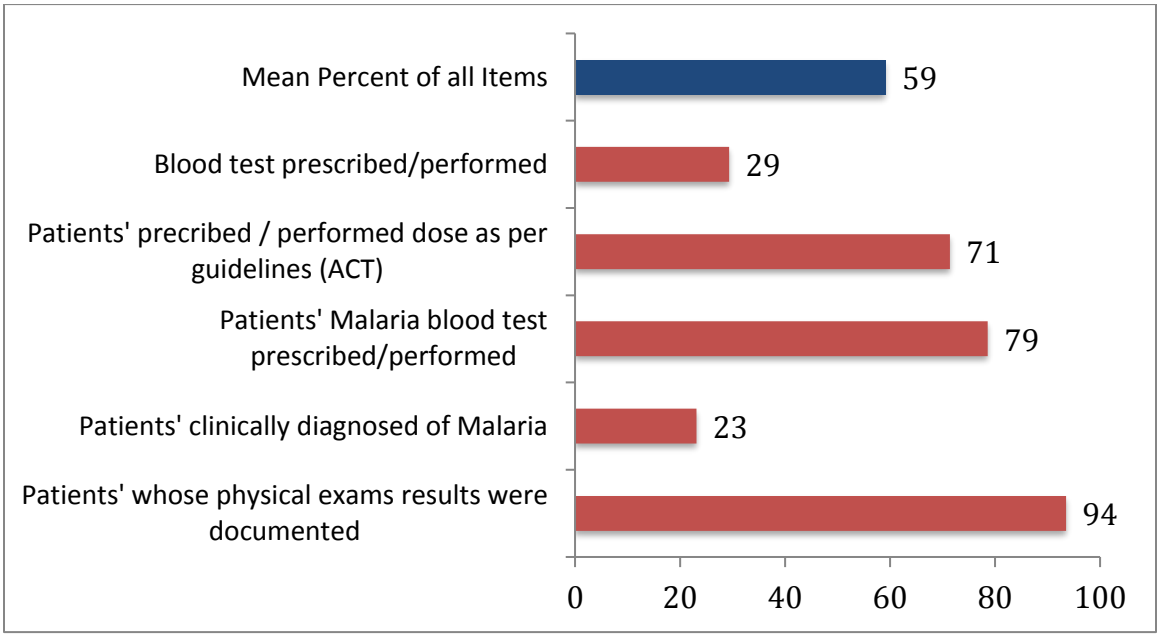


5.16.3 Quality of care in malaria services

As indicated in Figure 73 below, the QOC assessment on quality and safety of malaria intervention in Liberia established the following key findings:

- Mean percentage was 59% in 2018 indicating an improved quality of malaria interventions compared to 30% in 2016.
- On the overall, the number of patients' clinically diagnosed of Malaria amounted to 23.3% where as the number of patients' whose malaria blood test were taken either by mRDT or MS was 79.9% indicating progress toward achieving national target.
- However, these results show a slight fall below the national target of 85% as set in the Malaria Strategic Plan (NMSP) 2016-2020. These could be due to issues surrounding stock availability.
- About 71% percent of patients' were prescribed/provided antimalarial first line dose according to guideline
- Number of patients' diagnosed/confirmed of Malaria by mRDT nationally amounted to 79.9% thus reflecting progress but slightly below the national target of 85%

Figure 73: Percent of quality and safety of care – malaria, Liberia 2018



5.10 Non-communicable diseases availability and readiness

5.10.1 Non- communicable disease availability

In assessment of the availability of non-communicable services in health facilities in Liberia, the following four (4) tracer indicators on type of services was used:

- Availability of diabetes diagnosis and or treatment
- Availability of chronic respiratory disease services
- Availability of cardiovascular disease services
- Availability of cervical cancer diagnosis services

Types of services offered for non-communicable service availability

a) Diabetes diagnosis and/or management
b) Cardiovascular Disease (CVD)
C) Chronic Respiratory disease
d) Cervical Cancer Diagnosis

Key findings

- Non-communicable disease services were available in less than 50% of the health facilities (N=765) similar in 2016
- The most available service was diagnosis and management of cardio vascular disease (49 %) compared to 43% in 2016
- The least available service was cervical cancer diagnosis in 5% of the health facilities than 4% in 2016

The results in Figure 74 and 75 below showed that cardio vascular disease diagnosis and management was provided in 49% of the health facilities compared to 2016 (43%). Cervical cancer diagnosis was the least service available in 5% of the health facilities, an increase of 1% compared to 2016 (4%) and chronic respiratory disease diagnosis and management was conducted in 39% of the health facilities compared to 2016 (32%). Diabetes diagnosis and management was carried out in 29% of the health facilities as seen in the figure below then it was in 2016 (22%).

Figure 74: Availability of non-communicable disease services

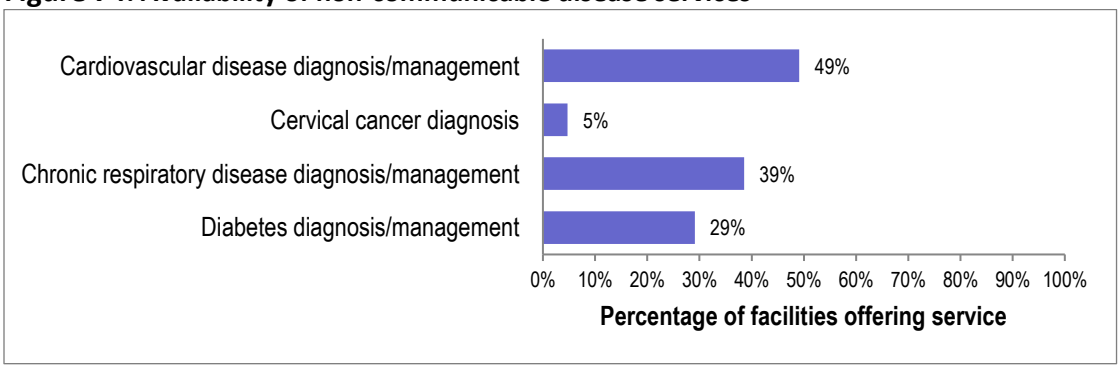
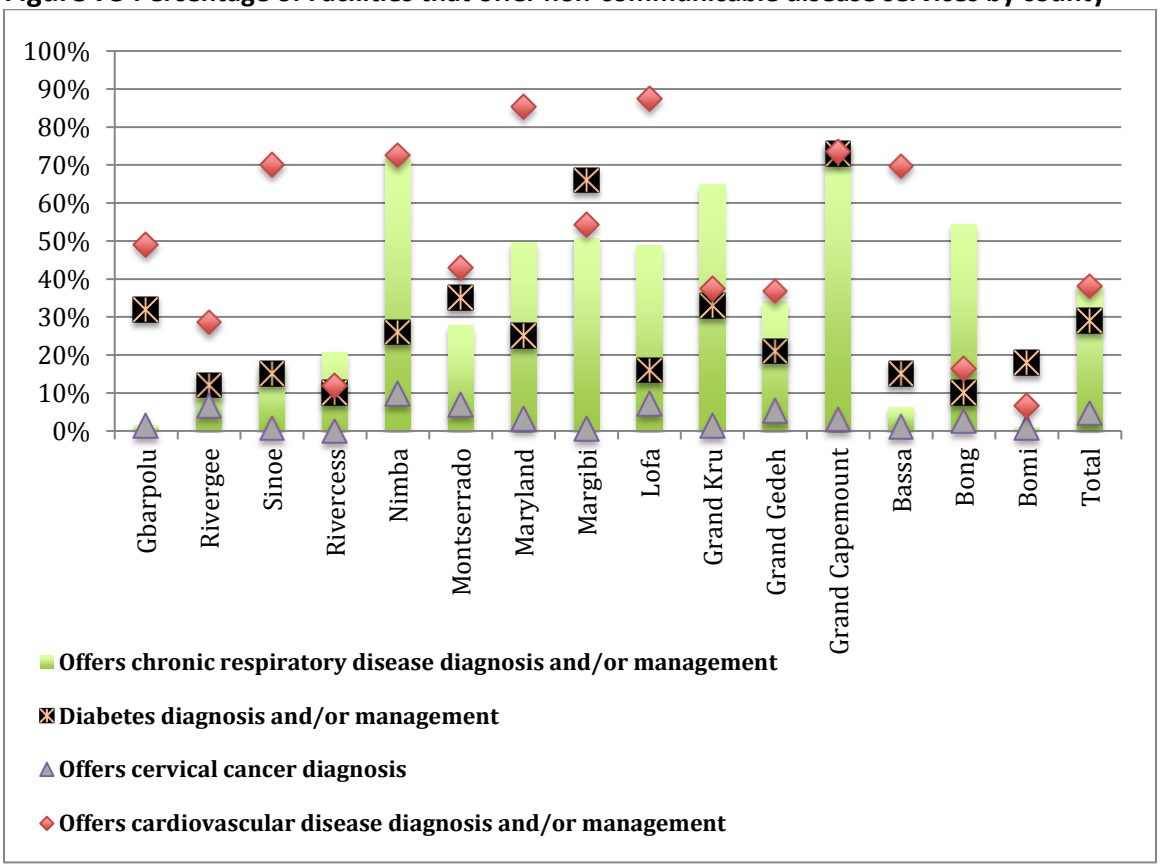


Table 34 in Annex 1 and Figure 75 below show the availability of Non-communicable services in the counties. As in the case in other services, there are variations between counties in the percentage of health facilities providing each of the four NCDs. Cervical cancer diagnosis and treatment is the lowest in all counties while Cardiovascular disease diagnosis and management is more available as measured in the percentage of facilities that do offer the service, for example in Margibi 87%, Grand Kru 85%, Nimba and Grand Cape Mount 73% and River Cess and Bong 70% respectively.

Chronic Respiratory Disease (CRD) diagnosis and management tend not to follow the same trend as cardiovascular disease but notwithstanding, some of the counties like Grand Cape Mount (76%) and Nimba (72%) performed well with a high percentage of facilities offering the service. Diabetes diagnosis and treatment has very low availability in most of the counties, however, the best performing county was Grand Cape Mount where (73%) of facilities offered the service.

Figure 75 Percentage of Facilities that offer non-communicable disease services by county



5.10.2 Readiness to provide Non Communicable Disease services

During the assessment of Non-Communicable disease service readiness, four (4) proxy indicators were used to measure the service readiness. The following were the services:

- Availability of diagnosis and management for diabetes
- Availability of diagnosis and management for chronic respiratory diseases
- Availability of diagnosis and management for cardiovascular diseases
- Availability of diagnosis for cervical cancer

Key findings

- Diabetes diagnosis and management was provided in 44% of the health facilities (N=259) compared to 49% in 2016
- Cardiovascular diseases diagnosis and management was provided in 40% of the health facilities (N=381) than 43% in 2016
- Chronic respiratory disease diagnosis and management was provided in 31% of the health facilities (N=307) compared to 37% in 2016
- Cervical cancer diagnosis was provided in 40% of the health facilities (N=54) compared 31% in 2016.
- Equipment for diagnosis and management of NCDs was 69% available among the indicators used as tracer for NCDs readiness similarly noticed in 2016.

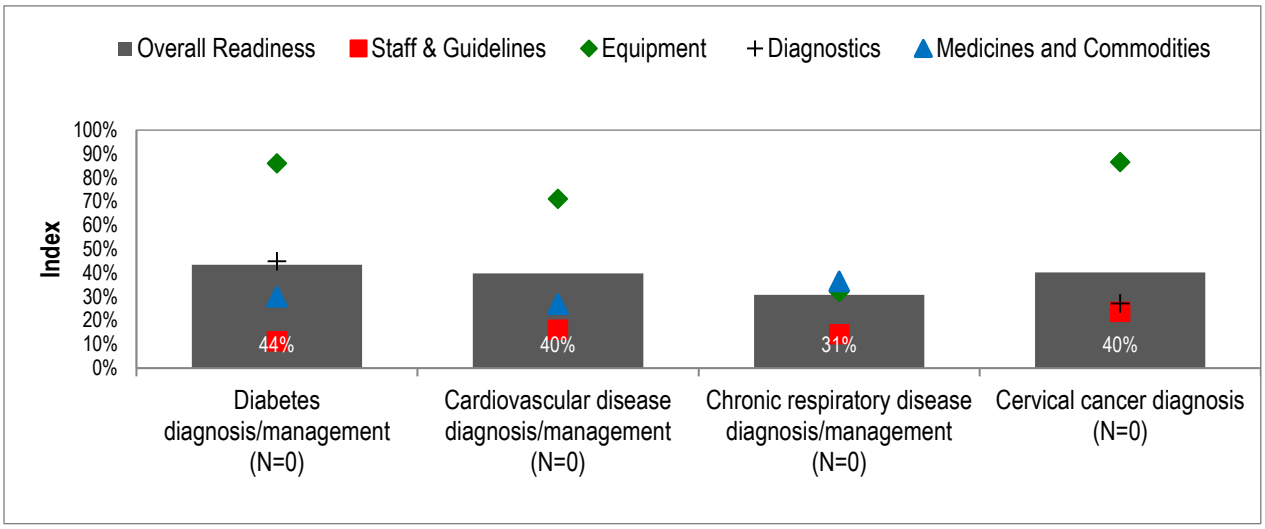
Figure 76 below, shows the key indicators used to measure the specific service readiness for NCDs. Diabetes diagnosis and management was available and provided in 44% of the health facilities indicating 5% decrease. Equipment for diagnosis and management of diabetes were available in over 85% of the health facilities showing a 26% increase from 2016(60%). Least availability was at least one staff trained in the past two years preceding the survey in the management of diabetes and guidelines and drugs and commodities available in 11% and 30% of the health facilities for diabetes.

Cardiovascular diseases diagnosis and management was available and provided in 40% of the health facilities in Liberia with 3% decrease compared to 2016(43%).

Chronic respiratory disease diagnosis and management was available and provided in 31% of the health facilities, with a 6% decrease from 2016 (37%). Medicines for chronic respiratory diseases were in 36% of the health facilities, a decrease by 14%. Equipment for diagnosis and management available in 32% of the health facilities while staff and guidelines were the least in 14% of the health facilities with a 19% decrease compared to 2016 (33%).

Cervical cancer diagnosis was available and provided in 40% of the health facilities showing 9% increment. The basic equipment for cervical cancer screening was available in 87% of the health facilities with 8% reduction from 2016. Diagnostics was in 27% of the health facilities with 16% reduction while the least available tracer items were staff and guidelines in 24%.

Figure 76: Readiness to provide non-communicable diseases services



5.11 Neglected tropical Diseases

5.11.1 Neglected tropical disease service availability

In assessment of the availability of Neglected Tropical Diseases (NTDs) service in health facilities in Liberia, the following six (6) tracer indicators on type of services provided were assessed;

- Availability of leprosy diagnosis and or management services
- Availability of Soil transmitted Helminths (STH) services
- Availability of onchocerciasis diagnosis and management
- Availability of Lymphatic Filiariasis diagnosis and management
- Availability of schistosomiasis diagnosis and management and
- Availability of Buruli Ulcer diagnosis and management.

Types of services offered for NTDs service availability

b) Leprosy diagnosis and/or management
b) Lymphatic Filiariasis diagnosis and management
C) Soil Transmitted Helminths (STH)
d) Schistosomiasis diagnosis and management
e) Onchocerciasis diagnosis and management
f) Buruli Ulcer diagnosis and management

Key findings

- In Liberia 31% of health facilities provide NTDs services compared 51% in 2016.
- Leprosy diagnosis and management services is available in 27.1% of the health facilities compared to 38% in 2016
- Lymphatic Filariasis, Soil Transmitted Helminths and diagnosis and management services are available in 33.6% of the health facilities compared 53% in 2016
- Schistosomiasis diagnosis and management services is available in 30.4% of the health facilities
- Onchocerciasis diagnosis and management services is provided in 32.8% of the health facilities compared to 62% in 2016
- Buruli Ulcer diagnosis and management services is provided in 28% of the health facilities compared 47% in 2016

Figure 77 below, demonstrates that 31% of health facilities provide NTDs services and this has decrease from 2016(51%) by 20%. None of the health facilities had all services available. Leprosy diagnosis and management services is available in 27.1% health facilities, a decrease by 11% in comparison with 2016(38%). Lymphatic Filariasis and Soil Transmitted helminths are available in 33.6% health facilities respectively, 19% decrease compared to 2016 (53%), Schistosomiasis diagnosis and management services are available in 30.4% of the health facilities with a decrease by 22% from 2016(53%). Onchocerciasis diagnosis and management services were provided in 32.8% of the health facilities with a 30% difference while Buruli ulcer diagnosis and management services are provided in 28% of the health facilities, 19% difference as compared to 2016(47%).

Figure 77: Percentage of health facilities offering NTD services

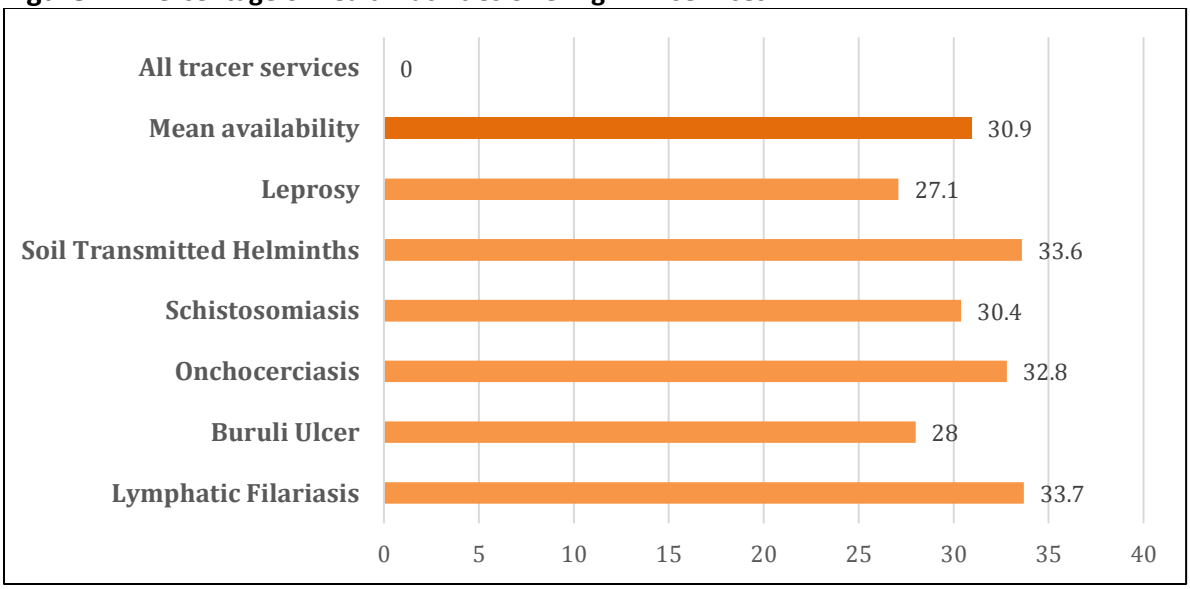
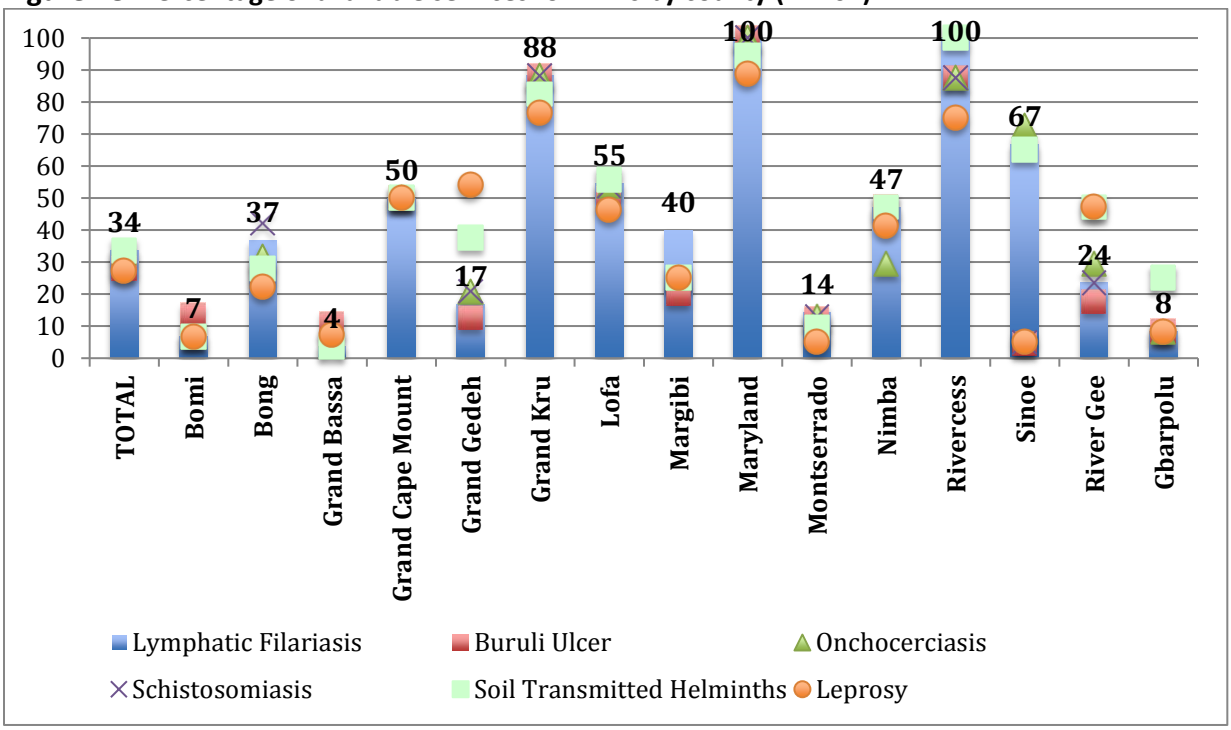


Table 35 in Annex 1 and Figure 78 below; indicate that all counties provided NTDs services while three counties (Montserrado, Grand Bassa, Bomi) had less provision of services. The counties with the highest percentage of facilities that offered NTDs were Maryland (97%), River Cess (89%) and Grand Kru (85%). Majority of these facilities offering these services were at hospital level (76%), a 2% increment since 2016. Hospitals offering these services are located in rural areas and are mostly managed by Government/public facilities.

Figure 78: Percentage of available services for NTDs by county (N=407)



5.11.2 Neglected tropical diseases service readiness

In determination of service readiness for NTDs in health facilities in Liberia, the following eight (8) tracer items on availability and in stock was used;

Tracer items for NTDs service availability readiness

- At least 1 trained staff in diagnosis and management of NTDs

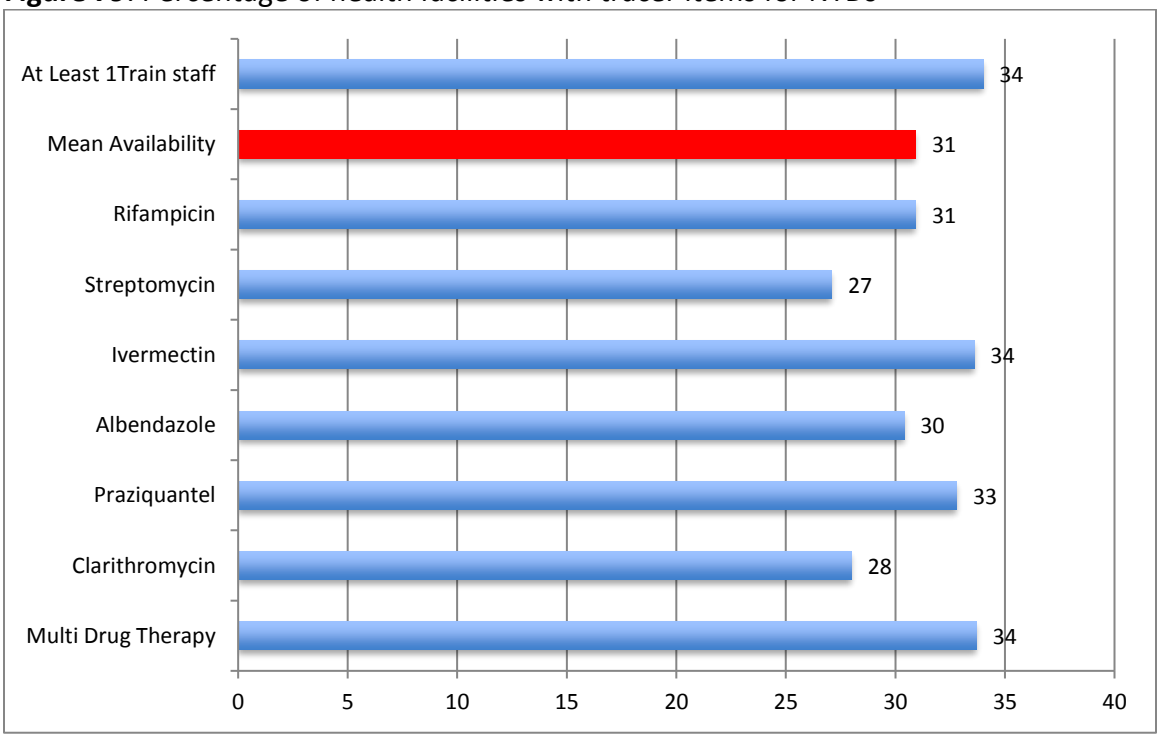
b) Rimphapicin
C) Multi Drug Therapy (MDT)
d) Clarithromycin
e) Streptomycin
f) Praziquantel
g) Ivermectin
h) Albendazole

Key findings

- On average, 31% of the health facilities (N=407) had at least one tracer item for NTDs available, with none having all tracer items.
- Ivermectin and Multi Drug Therapy were the most stocked and available medicine for the management of NTDs in 34% of the health facilities respectively, while the least available drug was Streptomycin found in 27% of the facilities followed by clarithromycin (28%) in the health facilities.
- Praziquantel was readily available and stocked in 33% of the health facilities, while rifampicin and Albendazole (31%) respectively were also available in more than 15% of the health facilities compared to 24% and 33% in 2016
- Availability of 1 trained staff was in 34% of the health facilities compared to 31% in 2016

Figure 79 below shows that 31% of the health facilities had at least one tracer item for NTDs available with none having all tracer items. Ivermectin and Multi Drug Therapy were the most stocked and available medicine for the management of NTDs in 33% of the health facilities. This shows an increase of Multi Drug Therapy in health facilities by 9% from 2016 (24%). The least available drug was Streptomycin found in 27% of the facilities with a 10% increment followed by clarithromycin (28%) in the health facilities with an increase by 12% from 2016(12%).

Figure 79: Percentage of health facilities with tracer items for NTDs



As indicated in **table 36 Annex 1**, the assessment established that these services were not uniform across all counties and only River Gee recorded 100% stocked for Albendazole, while eight counties (Bong (33%), Lofa (25%), Sinoe (15%), Margibi (25%), Montserrado (21%), Gbarpolu (25%), Grand Bassa (11%) and Bomi (7%) reported less stock of Albendazole across their facilities.Comparatively, hospitals had more of the stocked items on overall average with 53% (increased by 10%) while Health Centers and Clinics had the least 42% and 22% respectively.

5.12 Surgical services Availability and readiness

5.12.1 Basic surgery service availability

Basic surgical services were assessed using the availability of the following nine tracer service indicators:

- Availability of basic surgical services
- Availability of wound debridement services
- Availability of suturing services
- Availability of cricothroidoctomy
- Availability of hydrocelereduction
- Availability of incision and drainage of abscesses
- Availability of acute burn management
- Availability of closed treatment of fracture
- Availability of male circumcision and
- Availability of chest tube insertion services.

Types of services offered/tracer indicator for basic surgical services

a)	Basic surgical services	b)	Incision and drainage of abscesses
c)	Wound debridement	d)	Acute burn management
e)	Suturing	f)	Closed treatment of fracture
g)	Cricothyroidotomy	h)	Male circumcision
i)	Hydrocele reduction	j)	Chest tube insertion

Key findings

- On average 51% of the health facilities provide basic surgical services compared to 36% in 2016 .
- Incision and drainage of abscesses was available in 44% of the health facilities compared to 32% in 2016
- Suturing was available in 50% of the health facilities compared to 36% in 2016.
- Wound debridement was available in 38% of the health facilities compared to 27% in 2016
- Acute burn management in 43% of the health facilities compared to 24% in 2016
- Male circumcisions were done in 40% of the health facilities compared to 31% in 2016
- Removal of foreign body was at 33% of health facilities compared to 15% in 2016.
- The rest of basic services were done in less than 11 % of the health facilities compared to services being done in 15% of healthcare facilities in 2016.

As demonstrated in Figure 80 below, the basic surgical services provided by various health facilities and, on average, 51% of the health facilities provided basic surgical services in Liberia with incision and drainage of abscesses available in 44% of the health facilities. The other basic services provided were suturing (50%), Wound debridement (38%), acute burns management (43%), Male circumcisions (40%), and removal of foreign body (33%) among others. The least available services were biopsy of lymph node or mass or other (1%) and chest tube insertion available in three per cent of the health facilities.

Figure 80: Percentage of facilities that offer basic surgical services (N=765)

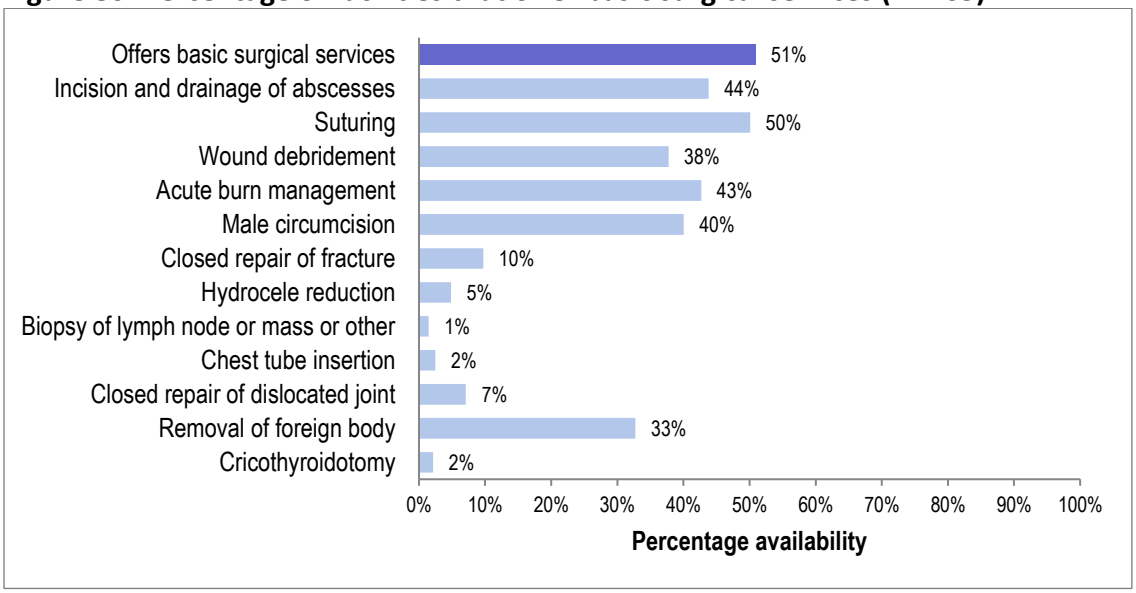
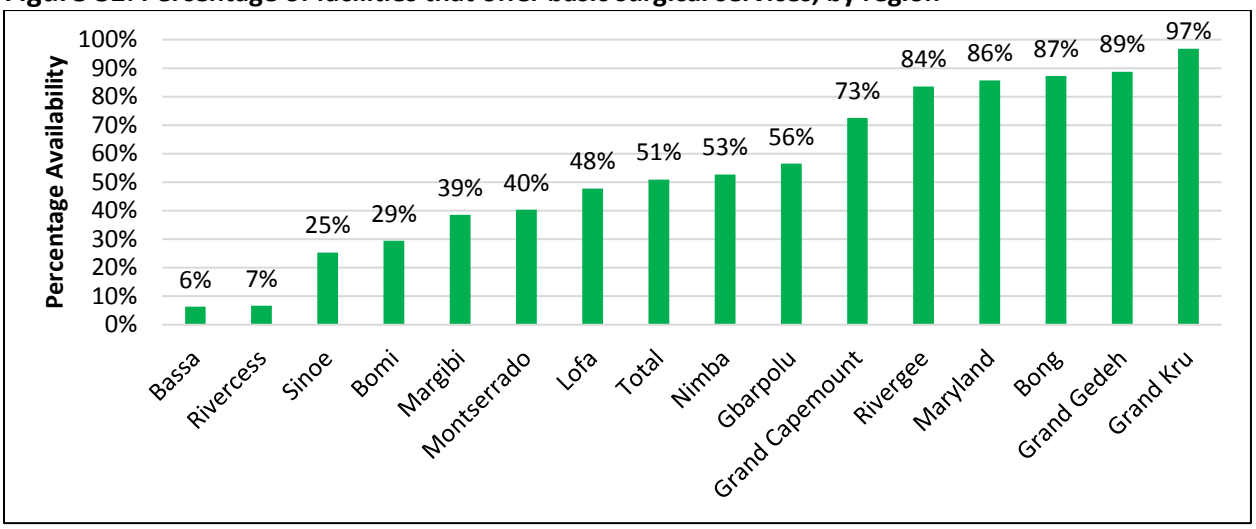


Table 37 Annex 1) comparatively, counties with most health facilities offer this service were Grand Kru (97%), Grand Gedeh (89%) and Bong (87%). Counties with less than 10% of the health facilities having basic surgical services were Grand Bassa (6%), and River Cess (7%). Most of facilities offering basic surgical services were of level of hospitals (92%), while frequency in Health centres was 66% and clinics being the least at 49%. Mission/faith based had a higher likelihood of offering the service (45%) compared to private for profit (43%) health facilities. Almost 45% of facilities located in urban settings provided the basic surgical services (Figure 81 below).

Figure 81: Percentage of facilities that offer basic surgical services, by region



5.12.2 Basic surgery readiness

The service readiness score for basic surgery was assessed using eighteen (18) of the following tracer items required for surgery services availability in health facilities.

Tracer items required for service delivery in basic surgery

Trained staff and guidelines

a) Guidelines for IMEESC
b) Staff trained in IMEESC

Equipment

b) Needle holder
b) Scalpel handle with blade
c) Retractor
d) Surgical scissors
e) Nasogastric tubes (10-16 FG)
f) Tourniquet
g) Adult and paediatric resuscitators
h) Suction apparatus (manual or electric sucker)
i) Oxygen

Medicines and commodities

a) Skin disinfectant
b) Sutures (both absorbable and non-absorbable)
c) Ketamine (injectable)
d) Lidocaine (1% or 2% injectable)
e) Splints for extremities
f) Material for cast

Key findings

- At least 41% of the health facilities had one basic surgery tracer item available to provide surgery in Liberia with none of the health facilities with all items (N=390) compared to 44% in 2016
- Surgical scissors (61%) and sutures (82%) was available in more than 70% of the health facilities while in 2016, surgical scissors (67%) and sutures (94%) were available in more than 65% of the healthcare facilities
- Needle holder availability was in 84% of the health facilities compared to 89% of healthcare facilities in 2016
- Oxygen was available in 7% of the health facilities compared to 9% in 2016.
- Suction machine was available in 47% of the health facilities compared to 47% in 2016
- Lidocaine 1 or 2 injectable was stocked in 95% of the health facilities compared to 93% in 2016
- Skin disinfectants were available in 94% of the health facilities while compared to 98% in 2016
- Least available was guidelines (8%) and an updated staff in the past two years preceding the survey (2%); lease available items were guidelines (4%) and an updated staff in the past two years preceding the survey (1) in 2016.

Figure 82: Facilities that have tracer items for basic surgical services (N=390)

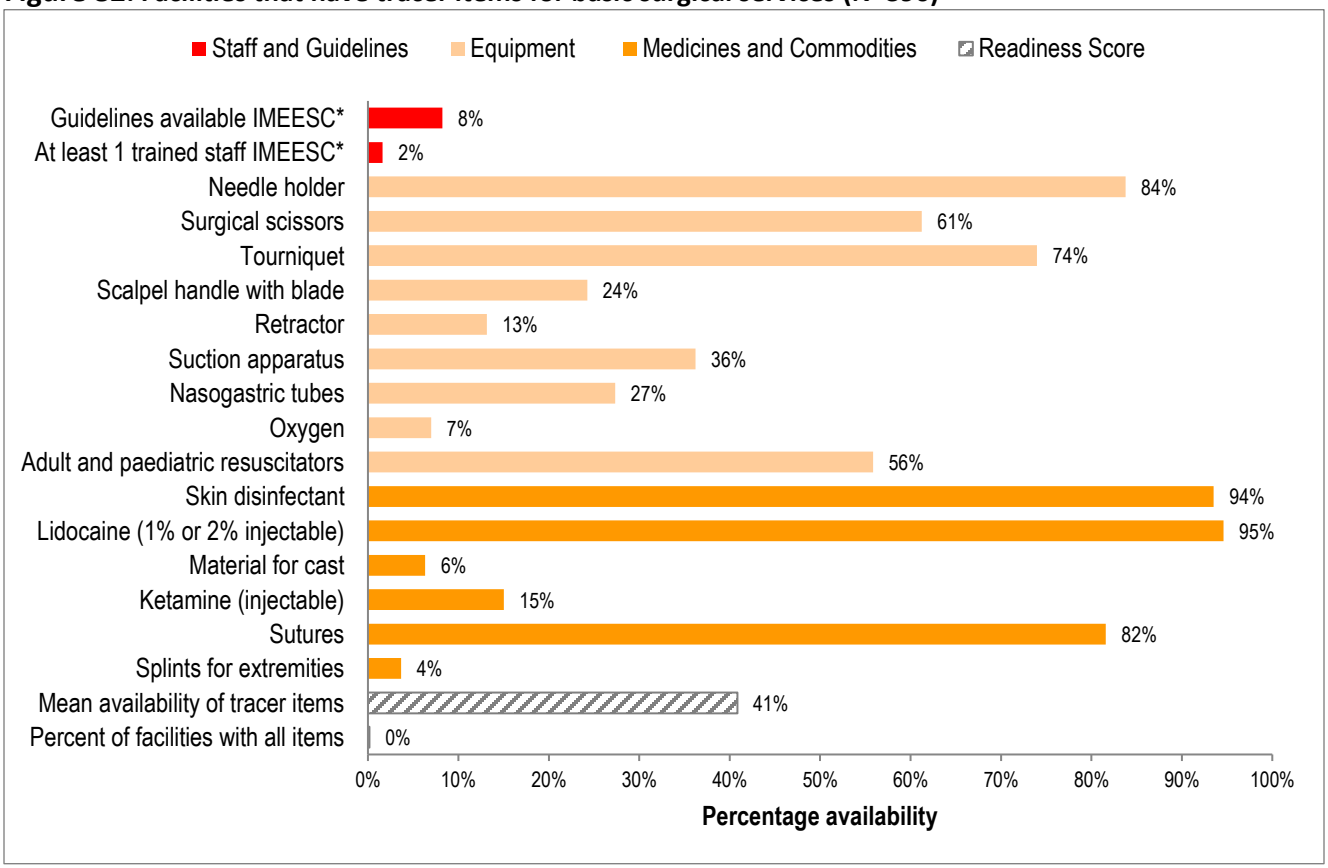


Figure 82 above indicates that basic surgery readiness score was 41%. The least available tracer item was availability of staff trained in IMMEESC and the availability of guidelines were present in 2% and 8% of the health facilities.

Table 38 Annex 1 shows that Trace items for assessment of readiness were broadly categorized into Staff and guidelines, equipment and medicines and commodities. The tracer items categorized as equipment were available in 43%, medicines and commodities (50%) and Staff and Guidelines a paltry 5% of the facilities that offer surgical services.

Many counties did not have facilities with trained staff and guidelines. These were Bomi, Grand Bassa, Grand Cape Mount, Grand Gedeh, Grand Kru, Nimba, Maryland, Sinoe, River Gee, and Gbarpolu. The readiness index score for facilities classified as hospitals was 83%, health centers 54% and clinics 38%.

5.13 Comprehensive surgery availability and readiness

5.13.1 Comprehensive surgery availability

Types of services offered

a)	Comprehensive surgical services	b)	Tracheostomy
c)	Tubal ligation	d)	Vasectomy
e)	Dilatation & Curettage	f)	Obstetric fistula repair
g)	Episiotomy	h)	Appendectomy
i)	Hernia repair (strangulated)	j)	Hernia repair (elective)
k)	Cystectomy	l)	Urethral stricture dilatation
m)	Laparotomy	n)	Congenital hernia repair
o)	Neonatal surgery	p)	Cleft palate
q)	Skin grafting and contracture release	r)	Open reduction and fixation for fracture
s)	Amputation	t)	Cataract surgery
u)	Club foot repair	v)	Drainage of osteomyelitis-septic arthritis

Key findings

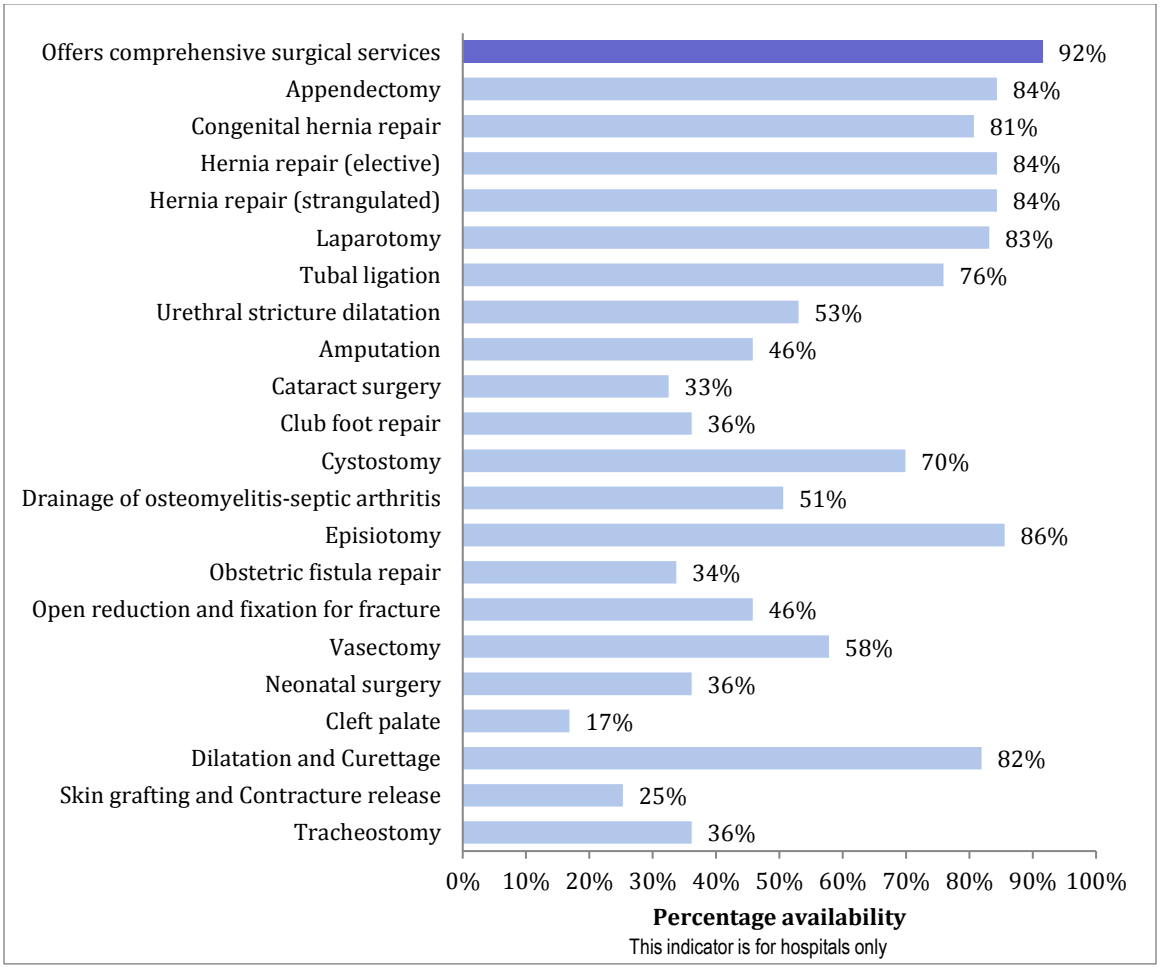
- Comprehensive surgery services were provided in 92% of the hospitals (N=36) compared to 81% in 2016.
- Episiotomy and dilatation and curettage services were carried out in 84% of the hospitals compared to 75% in 2016
- Appendectomy, Laparotomy, Hernia repair elective, and hernia repair strangulated were done in 84% of the hospitals compared to 69% in 2016
- Congenital hernia repairs (81%) and neonatal surgery (36%) were available in less than 60% of the hospitals; in 2016, congenital hernia repairs 67% and neonatal surgery 38% were available in less than 70% of hospitals.
- Tubal ligation was available in 76% of the hospitals compared to 64% in 2016.
- Amputation was carried out in 46% of the hospitals compared to 46% in 2016
- Cystostomy in 70% of the hospitals compared to 52% in 2016

- Club foot repair and Obstetric fistula repair was done in 53% of the hospitals compared to 21% in 2016
- Cataract surgery and cleft palate were available in 25% of the hospital compared to 7% in 2016.
- Open reduction and fixation for fracture and tracheostomy services were available in 41% of the hospitals compared with 27% in 2016.
- Vasectomy (58%) and Skin grafting and contracture release (25%) were also provided in hospitals compared with vasectomy 35% and skin grafting and contract release 24% in 2016.

Figure 83 below presents comprehensive surgery availability services by county. Majority of the hospitals particularly all-private for-profit hospitals (92%) provided the comprehensive surgery services. Among the hospitals providing the most comprehensive services in surgery are Public (92%) and Faith based/ Mission (80%) hospitals and about (90%) of the hospitals providing these services are from urban while 100% of the rural-based hospitals also provide these services.

Across counties, in Table 39 Annex 1, only Montserrado offer less than 100% (72%) of the comprehensive surgical services. However, this shows a great improvement when compared with 2016 where four counties namely Bong (50%), Lofa (70%), Montserrado (67%), and Nimba (83%) recorded less than 100% while Gbarpolu was the only county with out comprehensive surgery services in 2016.

Figure 83: Percentage of hospitals that offer comprehensive surgical services (N=36)



5.13.2 Comprehensive surgery service readiness

The service readiness for comprehensive surgery was assessed based using the following 17 tracer items for service delivery:

Tracer items required for service delivery to assess comprehensive surgery services

Trained staff and guidelines

a) Guidelines for IMEESC (WHO Integrated Management for Essential and Emergency Care) b) Staff trained in IMEESC
c) Staff trained in surgery d) Staff trained in anaesthesia

Equipment

a) Oxygen b) Anaesthesia equipment c) Spinal needle
d) Suction apparatus

Medicines and commodities

a) Thiopental (powder) b) Suxamethonium bromide (powder) c) Atropine (injectable)
e) Diazepam (injectable) d) Halothane (inhalation) f) Bupivacaine (injectable)
g) Lidocaine 5% (heavy spinal solution) (injectable) h) Epinephrine (injectable) i) Ephedrine

Key findings

- On average 70% of the hospitals (N=36) provided comprehensive services in Liberia had at least one tracer item to provide comprehensive surgery services. None of the health facility had all items compared to 61% in 2016
- Most of the hospitals had staff trained in surgery (88%) and anesthesia (88%) while least was at least 1 trained staff in IMEESC in the past two years preceding the survey was in 16% of the hospitals compared to 90%, 74% and 3% respectively in 2016
- Oxygen was available in 58% of the hospitals compared to 77% in 2016
- Suction machine was available in 92% of the hospitals compared to 74% in 2016
- Across all counties 28% of the hospitals (10/36) had anesthetic equipment compared to 20% in 2016
- Most medicines were available in about 70% of the hospitals thus notably; atropine injectable (95%), Diazepam injectable (100%), lidocaine five per cent heavy spinal solution (83%) was available compared to 70%, 93%, 91%, 5% and 75% respectively in 2016
- Halothane inhalation was available in 41% of the hospitals compared 28% in 2016

According to the figure 84 below, the service readiness index for comprehensive surgery was 70%, Most of the hospitals had staff trained in surgery (88%) and Anaesthesia (88%), while only 16% of hospitals had at least one trained staff in IMEESC in the past two years preceding the survey.Oxygen was available in majority of the hospitals (58%) and suction machine (92%). Across all counties, 28% of the hospitals (10/36) had anaesthetic equipment. Most medicines were available in about 70% of the hospitals notably atropine injectable (95%), Diazepam injectable (100%), and lidocaine 5% heavy spinal solution (83%). At the time of the survey, Halothane inhalation was available in 28% of the hospitals.

Figure 84: Hospitals that have tracer items for comprehensive surgical services

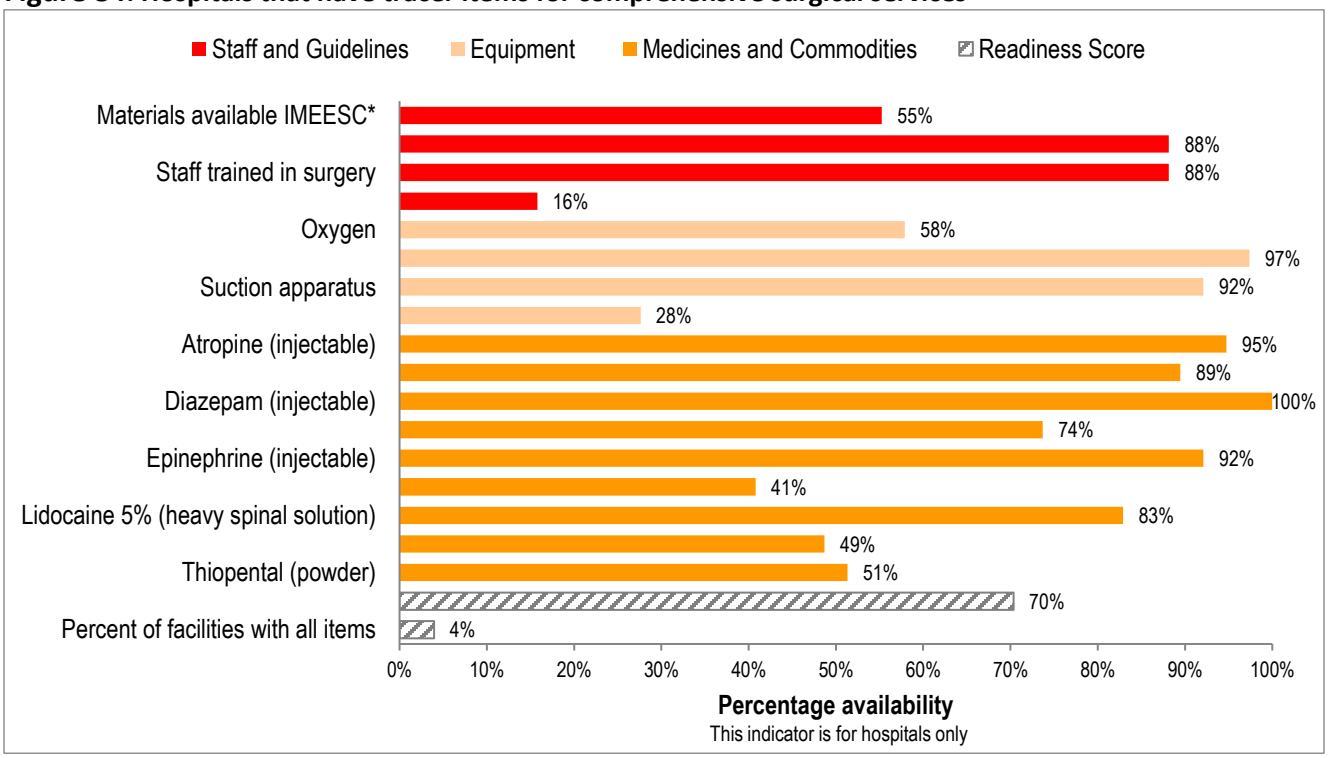
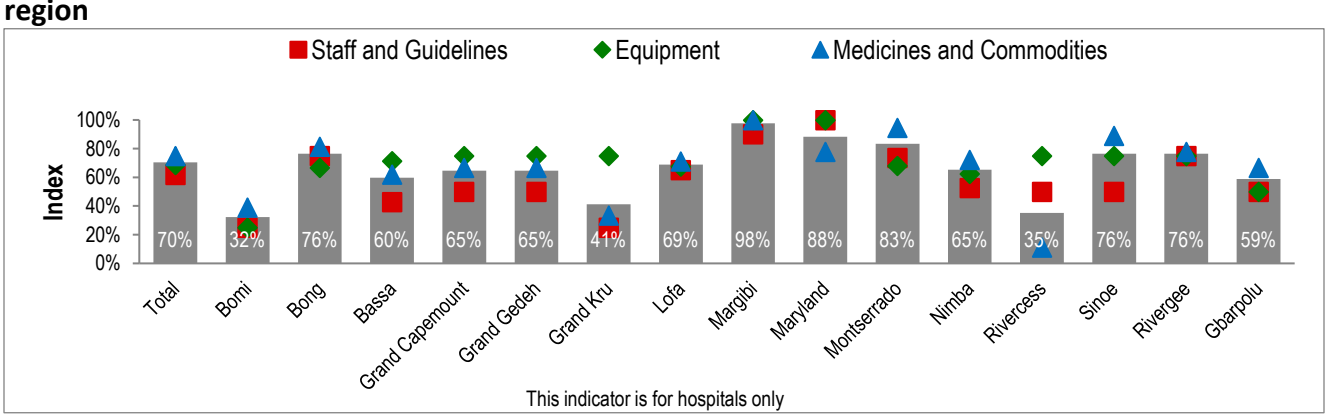


Figure 85 below and **Table 40 Annex 1** reveal that the general readiness for comprehensive surgical services was 70% however readiness in terms of Staff and Guidelines was 62%, Equipment 69%, and Medicines and Commodities 75%. Counties had varying levels of readiness for the provision of comprehensive surgical services for instance Margibi scored an impressive figure of 98% followed by Maryland, 88% and Montserrado, 83%, Sinoe (76%), River Gee (76%), Bong, (76%), and Lofa (69%). Nimba, Grand Cape Mount and Grand Gedeh scored (65%) each. Bomi and River Cess had the poorest scores of 32% and 35% in terms of readiness.

Figure 85: Hospitals that have tracer items for comprehensive surgical services, by region



5.14 Advanced diagnostic services availability and readiness

5.4.1 Advance diagnostic service availability

The following 12 tracer services offered were used as tracer indicators for advance diagnostic service availability in Liberia;

Types of services offered/tracer indicator for advance diagnostic service.

a) Serum electrolytes
b) Full blood count with differential
c) Blood typing (ABO and Rhesus) and cross match (by anti-globulin or equivalent)
d) Liver function test (ALT or other)
e) Renal function test (serum creatinine testing or other)
f) CD4 count and percentage
g) HIV antibody testing (ELISA)
h) Syphilis serology
i) Cryptococcal antigen
j) Gram stain
k) Urine microscopy testing
l) CSF/body fluid counts

Key findings

- On average 37% of the hospitals (N=36) provided advanced diagnostic services compared to 28% in 2016
- Grain stain investigation is provided in 54% of the hospitals compared to 48% in 2016
- Syphilis serology test was done in 48% of the hospitals compared to 56% in 2016
- Liver function and Renal function tests were done in 29% of the hospitals compared to 25% in 2016
- Blood typing (ABO and Rhesus and cross matching by ant globulin was done in 55% (20/36) of the hospitals compared to 27% (10/36) in 2016
- CD4 count and percentage is available in 33% 12/36) hospitals compared to 9% (4/36) in 2016
- Full blood count with differential is done in 33% of the hospitals compared to 13% in 2016
- Serum electrolytes were available in 18%, while CSF body fluid count was available in 39% of the hospitals compared to 18% for serum electrolytes and 39% CSF body fluid in 2016.
- HIV ELISA test is not available in Liberia, also the same finding in 2016.
- Urine dipstick with microscopy available in 82% of the hospitals compared to 80% in 2016.

Figure 86 below shows that on average, 37% of the hospitals had advanced diagnostic services. Gram stain investigation was available in 54%, Syphilis serology test in 48%, Liver function and renal function tests in 28% of the hospitals. Moreover, Blood typing (ABO and Rhesus and cross matching by ant globulin was done in 55% of the hospitals, while CD4 count and percentage was available in 33% hospitals.

Full blood count with differential test could be done in 33%, Serum electrolytes 18%, and CSF body fluid count was available 36% of the hospitals. Majority of the hospitals provided urine dipstick with microscopy (82%), while HIV ELISA test was not available in any of the hospitals in Liberia.

Figure 86: Percentage of hospitals that offer advanced diagnostic services

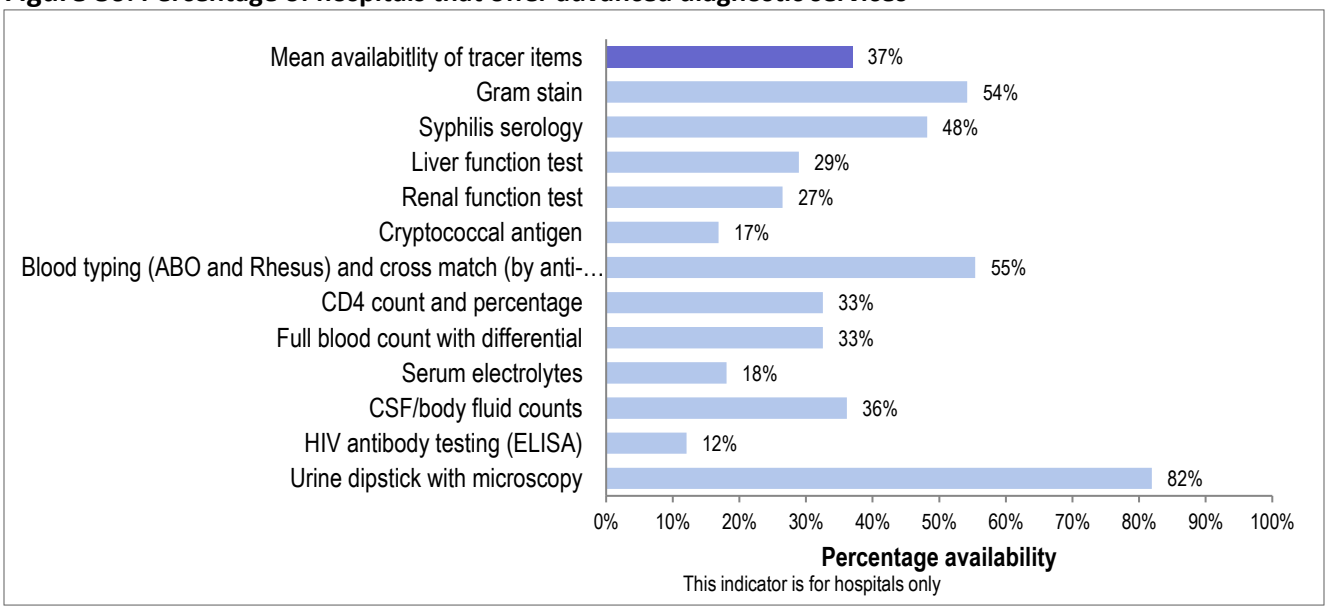
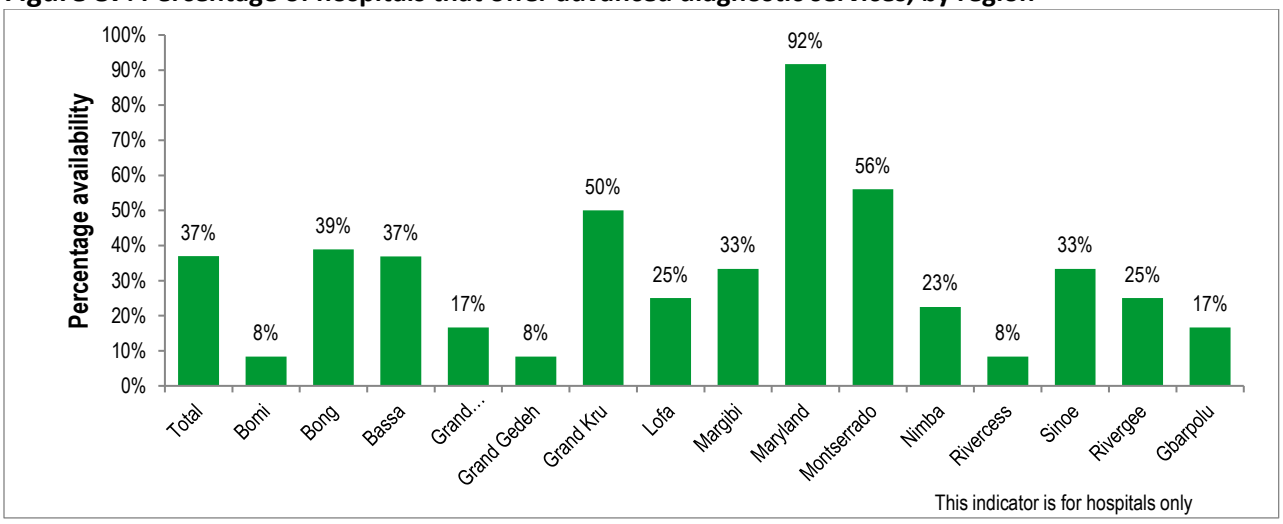


Figure 87 below illustrates that there were major county disparities in the percentage of hospitals providing this service. The counties with the highest percentage of facilities with provision of the advanced diagnostic services was notably in; Maryland (92%) and Montserrado (56%) and the Bomi (50%) and counties with the least were River Cess, Grand Gedeh and Bomi at 8% each.

Figure 87: Percentage of hospitals that offer advanced diagnostic services, by region



5.14.2 High level diagnostic equipment service availability

The following tracer services were assessed to determine availability of the high-level diagnostic equipment services in Liberia

- Availability of X-ray diagnostic services
- Availability of ECG services
- Availability of Ultrasound services
- Availability of CT scan services

Types of services offered by High-level diagnostic equipment availability

a) X-ray
b) ECG
c) Ultrasound
d) CT scan

Key findings

- In Liberia, 48% of the hospitals (17out of 36) provide high-level diagnostic equipment services compared to 34% in 2016.
- Ultrasound services are available in 72% of the hospitals compared to 59% in 2016.
- Electro cardiogram (ECG) services are available in 37% of the hospitals compared to 25% in 2016.
- Diagnostic X-ray services are provided in 64% of the hospitals compared to 47% in 2016.
- Computer tomography CT scans is available in 3 %(1) of the hospitals compared to 4% in 2016.

Figure 88: Hospitals with high level diagnostic equipment (N=36)

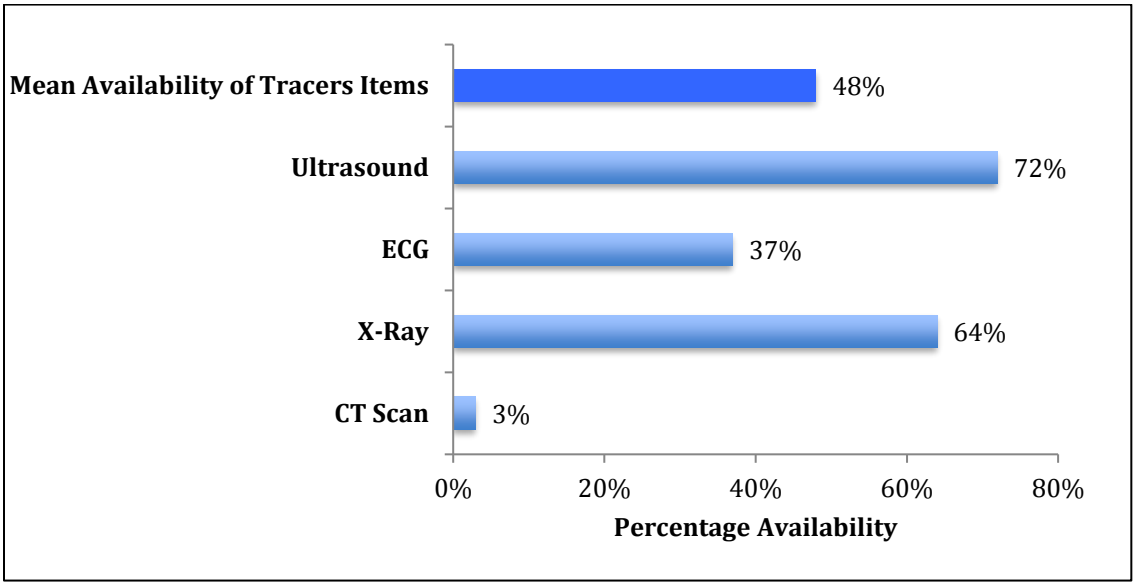


Figure 88 above, shows the percentage of hospitals (N=36) that provided the high level diagnostic equipment services. On average, 48% of the hospitals (N=36) (17 /36) provided high-level diagnostic equipment services. Services for Ultrasound were primarily available in 72% of the hospitals and Diagnostic X-ray services are provided in 64% of the hospitals. Electro Cardiogram (ECG) services are available in 37% hospitals while Computer tomography (CT) scan was available in 3% (1/36) of the hospitals.

Table 41 Annex 1, shows counties with highly specialised diagnostic equipment. However, some counties including Bomi, Grand cape mount, and Grand Kru, did not have any of these equipment. Moreover, ECG services were available only in Margibi (60%), Montserrado (76%), Nimba (70%), and Gbarpolu (100%). CT scan was only available in Nimba (3%).

These high level diagnostic equipment services were majorly available in private for profit hospitals (69%) followed by mission/faith based (55%) while public was least in 39% of the hospitals. X-rays (69%) and Ultrasound (100%) equipment were majorly available in rural hospitals.

5.15 Basic transfusion readiness

A total of the following seven (7) tracer items were assessed for service delivery readiness for basic blood transfusion services;

Tracer items required for service delivery readiness for basic transfusion

Trained staff and guidelines

a) Guidelines on the appropriate use of blood and safe blood transfusion
b) Staff trained in the appropriate use of blood and safe blood transfusion

Equipment

a) Blood storage refrigerator

Diagnostics

a) Blood typing b) Cross match testing

Medicines and commodities

a) Blood supply sufficiency b) Blood supply safety

Key findings

- Blood transfusion in Liberia is provided in 48% of the health facilities, with 4% having all tracer items for blood transfusion readiness index compared to 2% readiness in healthcare facilities and 43% of the facilities having all tracer items for blood transfusion readiness.
- Blood supply safety is provided in 67% of the health facilities compared to 77% in 2016.
- Blood supply sufficiency is available in 52% of the health facilities compared to 58% in 2016.
- Blood typing is done in 60% of the health facilities, while cross matching typing is available in 34% of the health facilities compared to 71% for blood typing and 21% for cross matching typing in 2016.
- On average, 21% of health facilities in Liberia have a blood storage refrigerator compared to 22% in 2016.
- Guidelines on appropriate use of blood and safe blood transfusion are available in 39% of the health facilities, while 64% of the health facilities have at least one trained staff in appropriate use of blood and safe blood transfusion compared to 25% for guidelines on appropriate use of blood and safe blood transfusion and 26% for healthcare facility with at least one trained staff in appropriate use of blood and safe blood transfusion in 2016.

Figure 89: Facilities with tracer items for blood transfusion

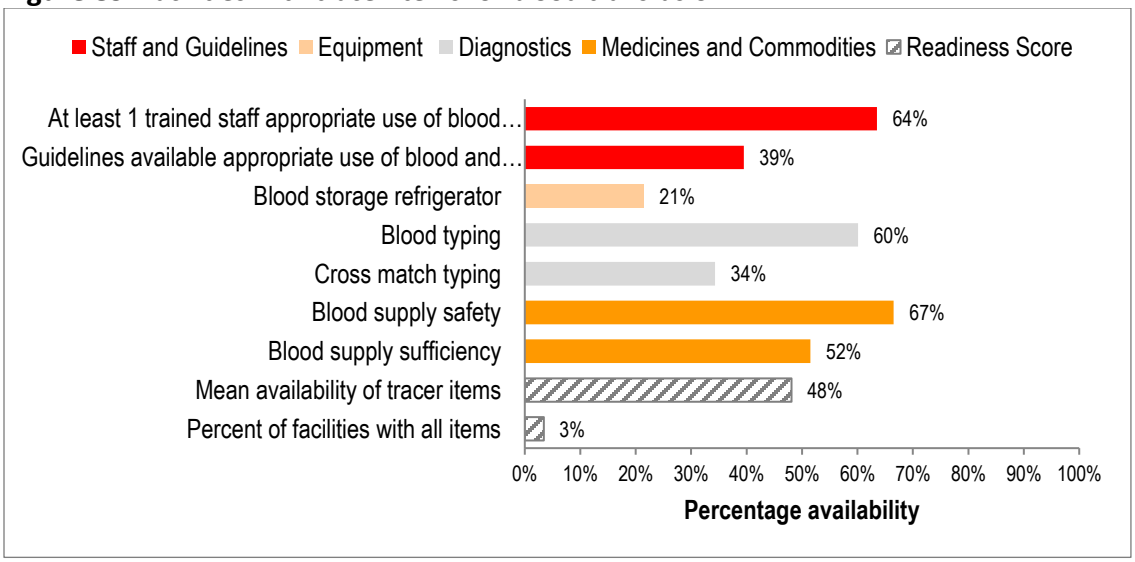


Figure 89 above indicates that Blood transfusion services in Liberia are provided in 48% of the health facilities (N=60) with 3% of them with all tracer items for blood transfusion service readiness index. The other blood service readiness tracer items available in health facilities are Blood supply safety (67%), Blood supply sufficiency (52%), Blood typing (60%), and Cross matching typing (34%). On average 21% of the health facilities in Liberia have blood storage refrigerator. Guidelines on appropriate use of blood and safe blood transfusion are available in 39% of the health facilities while at least 1 trained staff in appropriate use of blood and safe blood transfusion in the two years preceding the survey in 64% of the health facilities.

Figure 88, Table 42 Annex 1 shows that most of the tracer items available for service readiness across all counties were diagnostics (47%), medicines and commodities (59%). Counties with the highest readiness scores were Sinoe (86%) and Lofa (76%), while least counties were Grand Gedeh (10%), River Gee (14%) and Bomi (29%). There was little difference between hospitals (63%), health centers (48%) and clinics (11%). However, medicines and commodities were more available in hospitals (79%) than health centers (47%). Rural and urban differences were of less than 15% of so to the facilities either public or private.

Chapter Six

6.0 Conclusions and recommendations

This section proves summary of key findings, observations and conclusion derived from the SARA process and lessons learned regarding general service availability and readiness as well as specific service availability and readiness for health sector programmes being implemented by Ministry of Health Liberia.

6.1 General comments

This was the second time that the SARA tool had been implemented in Liberia. There are a number of lessons that may help to improve future surveys.

- **Questionnaire tools and Sampling frame**: The Liberian national SARA coordinating committee adapted and reviewed the original WHO tool after the pilot in Grand Bassa including some sections that are not in chart book and questionnaire. It is recommended that subsequent surveys use the new adapted instruments with additional information including the adaptation of QOC and updating the tool and chart book. Also future SARA in Liberia should be sample-based on random of health facilities by counties.

- **Planning and time allocation**: A major survey exercise requires careful advance planning and preparation as well as adequate time to chase up data gaps and anomalies, data cleaning, analysis and write up. Future SARA surveys should benefit from greater lead-time and realistic time lines for completing the exercise and report. Also analysis should be carried out in workshop basis with the participation of key team players including counties, national MOH, LISGIS and partners;

- **Missing service availability elements**: This SARA reported on health facility bed density (using the information from DHIS2) and health workforce density and composition (using health workforce census) and outpatient per capita utilization from about 92% of the health facilities. Future SARA should also collect this information from the health facilities including re-categorization of beds separating general beds and maternity beds. A comprehensive national master health facility list with unique identifiers, basic static and infrastructure information is ideal for Liberia.

- **Master Health Facility lis**t (MHFL): The master list of health facilities has been finalized with names, code, location, type (ie: clinic, health center and hospital) and ownership status (ie: private and public) available. However, there is need to continuously update the MHFL to ensure up to date information.

6.2 General Service availability

Health facility density (facilities per 10,000 population) varied from a ratio of 1: 3 folds across the counties. The equity of health facility distribution is certainly a cause for concern and merits closer examination so that new infrastructure can be prioritized for the deprived areas. Facility density is a proxy measure for access to health care. In sparsely-populated areas it makes sense to have many, smaller facilities (yielding a higher facility-per-10,000) while in densely populated areas it makes sense to have fewer, larger facilities.

OPD visits per capita or utilization per year are a superior measure of effective access to health care. The findings showed that in Liberia this was very low with one fifth of the five (5) WHO recommendations of 5 visits per person per year. May be data collection and documentation in health facilities may be an issue or access to healthcare is not good enough and therefore community strategies for demand of healthcare and introduction of comprehensive services need to be encouraged.

Emergency transport was a major gap across counties with close to half of the counties without an ambulance. Clear mechanisms for referral of patients should be put in place including development of county referral strategies and inter-county referrals to leverage on existing resources. Specialists are also found in referral hospitals only; that mean access to special services in some areas is a challenge; plans for training and deployment of more specialized human resource will assist to reduce the high maternal deaths. Purchase more ambulances and allocate them strategically with county coordination or call centers for ease of referral.

The finding regarding distribution of health personnel appears highly unequal at first sight to the population apart from specialization. This gaps should be clearly be analyzed by county from the Human resource census data and report utilized for health workforce strategic planning including attrition rate (absenteeism, and skill mix gaps) that need be hired or trained.

6.3 General Service readiness

The General Service Readiness (GSR) index score highlighted particularly low scores for diagnostics, essential medicines, basic equipment and basic amenities. It is not surprising that a high proportion of facilities did not have a power source (electricity), improved water source, computers with internet and communication equipment. However, the survey does highlight very poor availability of basic amenities such as adequate sanitation or water supplies.

The assessment established an important deficit in the capability of most health facilities to perform basic/common diagnostic tests. This deficit was not restricted to clinics, but was also evident to a surprising extent at health center and hospitals. The results for standard precautions to prevent infections were encouraging and good with most of the basic items such as soap and water available apart from the final disposal of sharps and infectious waste.

The basic equipment score appeared to be modesty but major difference were experienced in counties with power supply and child weighing scales not commonly available.

The overall medicine score (44%) in 2016 has reduced to 35% in 2018 SARA, which is very low. Among the 24 tracer items included in the assessment none of the health facility in Liberia had all items available but there is an increase from 44% in 2016 to 56% in 2018 the recorded having at least 1 tracer item to provide the service. There was no much difference between hospitals,

health centres and clinics. However, the fact that less than 20% of all health facilities have all items in the five domain needs to be addressed seriously to strengthen the resilient health system and provide essential health services; I therefore recommend four policy briefs in areas of: -

- Diagnostics,
- Basic equipment
- Health products and technologies, and
- Basic amenities and infrastructure
- Also specific county fact sheets with health facility maps to identify areas that may need capital investments.

6.4 Specific service availability

It was encouraging to note that many of the basic primary curative and preventive services were supposedly available with about two thirds or more of the health facilities. This included Malaria, ANC, child immunization, BEmOC and family planning. However, adolescent health HIV counseling and testing, provision of ART, Tuberculosis services, NCDs, Neglected tropical diseases, CEmOc, basic and advance surgery, blood transfusion or advanced diagnostics health facilities were minimally provided across all counties.

The capability to provide comprehensive emergency obstetric care has reduced from 57% to 44% in 2018, that means, only approximately 26 hospitals were ready to provide CEmOc and have at least one of the tracer items to provide the service and none have all items. The need to equip facilities to provide the nine signal functions is essential for obstetric emergencies and saving the lives of women and children and this will drastically reduce the high number of maternal deaths and neonatal deaths.

It is important to note that primary management of cardiovascular disease; chronic respiratory disorders and diabetes were so scarcely available. As the burden of chronic disease rises, Liberia need to put up systems for early diagnosis and halting the rising burden and almost all health facilities should be able to provide basic screening services.

Health promotion interventions/strategies need be intensified among communities and social media to inform the populace on importance of utilization of health services, early detection, treatment and preventions of the diseases that could be fatal or cause disability.

6.5 Specific service readiness

The readiness results were unusual in their variability. It was across all specific services and domains. Each service demonstrated very different pattern of readiness with regard to specific discrepancies. This made it difficult to summarize concisely the specific service readiness results with most areas having none of the health facility with all tracer items available but ranged between 34% to 65% with TB, adolescent, anti-retroviral therapy services, BEmOc and CEmOC with the lowest readiness index score.

ARV score is particularly low due to the very small number of facilities offering advanced diagnostic tests (complete blood count, CD4, renal and liver function). However, it was also the case that health facilities did not have the three first-line anti-retrovirals in stock. The specific

service readiness results will be of particular interest to every national program managers/directors to identify particular deficits in service provision at present and should serve as an evidence against which future progress may be measured in future SARA surveys or assessments.

In conclusions, further analysis of the results in Montserrado county by public vs private to show the inequities in specific areas with comprehensive maps to show the levels of the health facilities; further development of policy briefs that could inform policy implications and conduct SARA using a random sample in every year and Census every 3-4 years to highlight the progress made in the implementation of the RMNCAH investment case supported by the government's pro-poor agenda.

ANNEXES

Annex 1: Tables

Table 2: shows the distribution of transport availability per county

County	Number of functional ambulances per county	Number of utility vehicles (%)
Bomi	3	18
Bong	8	28
Gbarpolu	1	9
Grand Bassa	4	10
Grand Cape Mount	5	16
Grand Gedeh	4	16
Grand Kru	3	11
Lofa	8	31
Margibi	8	13
Maryland	4	11
Montserrado	31	36
Nimba	13	39
River Gee	3	12
River Cess	4	9
Sinoe	4	10
Total	103	369

Table 3: Summary of General Service availability by counties, Liberia 2018

Row Labels	Inpatient Beds per 10,000 population	Health facility density per 10,000	Health Work force density per 10,000	Outpatient Utilization per 10,000
Bomi	18.2	2.2	14.4	1.1
Bong	16.5	1.3	9.9	1.1
Gbarpolu	11.6	1.5	7.3	0.68
Grand Bassa	12.6	1.3	7.1	1.1
Grand Cape Mount	5.6	2.2	7.7	0.84
Grand Gedeh	14.9	1.6	10.5	1.1
Grand Kru	25.0	2.7	12.3	1.7
Lofa	22.6	1.7	9.9	1.6
Margibi	24.3	2.1	10.6	1.1
Maryland	13.9	1.6	9.6	1.1
Montserrado	18.4	2.4	14.0	1.1
Nimba	20.3	1.3	7.7	1.1
River Gee	10.6	2.4	9.6	1.4
River Cess	14.5	2.2	6.4	1.1
Sinoe	17.4	3.6	10.8	1.3
Grand Total	16.4	1.95	10.7	1.12

Table 4: Percentage of General Service readiness index by county (N=765)

	Basic amenities mean score	Basic equipment mean score	Standard precautions mean score	Diagnostics mean score	Essential medicines mean score	General service readiness index	Total number of facilities
Counties							
Bomi	71	74	65	32	36	56	27
Bong	61	80	80	36	39	59	57
Bassa	54	86	57	31	32	52	34
Grand Cape Mount	67	88	87	40	33	63	34
Grand Gedeh	63	76	55	68	39	60	24
Grand Kru	69	76	64	50	41	60	19
Lofa	56	79	73	27	41	55	60
Margibi	70	75	72	32	30	56	48
Maryland	55	88	62	31	38	55	27
Montserrado	59	76	66	45	35	56	268
Nimba	58	82	66	46	38	58	75
River Cess	48	91	68	40	41	58	20
Sinoe	61	73	72	30	23	52	35
River Gee	63	78	56	42	34	55	19
Gbarpolu	68	75	63	20	36	52	18
Facility type							
Hospital	90	86	81	81	63	80	36
Health center	74	82	72	64	43	67	58
Clinic	59	78	68	36	34	55	671
Managing authority							
Government/public	60	80	69	35	34	56	449
NGO/not-for-profit	59	70	69	40	38	55	19
Private-for-profit	60	76	66	50	38	58	261
Mission/faith based	69	84	77	53	44	66	36
Urban/Rural							
Urban	62	76	68	47	36	58	331
Rural	60	80	69	36	35	56	434
Total	60	79	68	39	35	56	765

Table 5: Percentage of facilities with items of basic amenities, by County (N=765)

	Power source	Improved water source	Consultation room	Sanitation facilities	Communication equipment	Computer with internet	Emergency transport	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Counties										
Bomi	75	79	92	79	79	3	92	3	71	27
Bong	78	56	96	81	24	6	85	3	61	57
Bassa	69	55	87	50	33	2	82	2	54	34
Grand Cape Mt	94	63	97	94	28	2	94	0	67	34
Grand Gedeh	54	74	93	78	47	1	91	1	63	24
Grand Kru	88	56	97	79	56	13	94	1	69	19
Lofa	48	50	84	86	33	3	90	1	56	60
Margibi	68	75	96	91	71	5	81	1	70	48
Maryland	35	42	83	74	58	9	86	5	55	27
Montserrado	58	50	68	93	62	25	54	6	59	268
Nimba	71	46	96	58	38	5	89	3	58	75
River Cess	32	4	100	62	41	0	100	0	48	20
Sinoe	57	38	100	85	66	1	78	1	61	35
River Gee	34	56	95	84	95	0	78	0	63	19
Gbarpolu	71	72	100	69	90	1	69	0	68	18
Facility type										
Hospital	82	98	89	98	88	77	95	55	90	36
Health center	73	73	93	93	63	31	91	12	74	58
Clinic	61	51	86	80	51	7	76	1	59	671
Managing authority										
Public	61	53	92	76	49	3	86	1	60	449
NGO/not-for-profit	53	45	78	84	62	23	67	3	59	19
Private-for-profit	66	52	71	92	62	25	54	7	60	261
Mission/faith based	72	74	81	94	59	25	82	6	69	36
Urban/Rural										
Urban	64	56	73	92	62	24	60	7	62	331
Rural	61	52	94	75	47	2	87	1	60	434
Total	62	53	87	81	52	10	78	3	60	765

Table 6: Percentage of facilities with items of basic equipment by County (N=765)

	Adult scale	Child scale	Thermometer	Stethoscope	Blood pressure apparatus	Light source	Percent of facilities with all	Mean availability of tracer items	Total number of facilities
County									
Bomi	59	71	83	88	82	61	36	74	27
Bong	87	68	87	91	87	56	31	80	57
Bassa	89	52	93	96	96	87	39	86	34
Grand Cape Mount	88	63	97	97	88	97	54	88	34
Grand Gedeh	65	74	87	96	91	44	9	76	24
Grand Kru	74	71	85	91	85	49	29	76	19
Lofa	95	76	98	94	90	19	13	79	60
Margibi	76	40	83	90	85	73	37	75	48
Maryland	90	82	90	90	90	86	78	88	27
Montserrado	82	47	86	84	89	66	27	76	268
Nimba	82	68	95	94	87	67	37	82	75
River Cess	95	81	95	95	84	100	75	91	20
Sinoe	69	75	89	100	88	15	5	73	35
River Gee	95	89	84	89	89	22	11	78	19
Gbarpolu	52	65	89	89	83	71	46	75	18
Facility type									
Hospital	87	77	94	94	88	75	57	86	36
Health center	88	77	84	89	85	69	43	82	58
Clinic	81	61	90	91	89	59	31	78	671
Managing authority									
Government/public	81	70	90	92	87	59	33	80	449
NGO/not-for-profit	80	29	84	89	86	51	14	70	19
Private-for-profit	82	43	87	87	91	65	26	76	261
Mission/faith based	91	67	89	92	89	75	55	84	36
Urban/Rural									
Urban	81	48	88	86	89	63	29	76	331
Rural	82	70	90	93	88	59	34	80	434
Total	82	63	89	91	88	60	32	79	765

Table 7: Percentage of facilities with diagnostic capacity available by County N=(765)

	Haemoglobin	Blood glucose	Malaria diagnostic capacity	Urine dipstick-protein	Urine dipstick-glucose	HIV diagnostic capacity	Syphilis rapid test	Urine test for pregnancy	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
County											
Bomi	3	2	70	8	8	85	5	75	0	32	27
Bong	9	8	52	24	23	73	36	61	2	36	57
Bassa	5	8	30	23	25	87	6	67	1	31	34
Grand Cape Mt	2	2	45	63	63	82	4	60	1	40	34
Grand Geed	46	20	84	87	87	76	51	96	9	68	24
Grand Kruk	24	22	85	30	30	85	42	79	7	50	19
Loaf	9	8	41	14	11	81	11	44	1	27	60
Margi	20	13	71	19	19	31	27	54	4	32	48
Maryland	17	9	33	38	33	58	25	38	9	31	27
Montserrat	33	34	77	43	45	40	33	58	10	45	268
Nimbi	21	8	82	48	44	64	21	82	3	46	75
Reverses	0	0	88	22	22	100	0	85	0	40	20
Sine	4	1	78	1	1	81	7	67	1	30	35
River gee	23	12	95	23	23	78	29	56	1	42	19
Gbarpolu	0	7	44	1	7	81	1	17	0	20	18
Facility type											
Hospital	53	78	90	81	81	100	76	86	42	81	36
Health center	52	37	87	67	67	89	42	75	17	64	58
Clinic	15	12	64	29	29	62	20	60	3	36	671
Managing authority											
Government/public	11	5	61	26	25	77	15	61	2	35	449
NGO/not-for-profit	14	34	84	36	36	34	29	53	5	40	19
Private-for-profit	38	39	78	51	53	32	42	63	11	50	261
Mission/faith based	39	47	79	45	48	44	45	75	16	53	36
Urban/Rural											
Urban	33	34	75	45	47	45	34	60	9	47	331
Rural	11	6	62	27	26	74	17	62	2	36	434
Total	19	15	66	33	33	64	23	62	4	39	765

Table 8: SARA general service readiness score card

Indicator/ Domain	Readiness Index Score	Score Rating	Comments
NATIONAL LEVEL			
General Service Readiness Index score	National score 56%		• The national general service readiness average score (56%) is not adequate to facilitate improvement of current access to quality health care services. • Access to quality health care services based on the current readiness index score of 56% is further undermined by clinics general readiness score of 55%; clinics are 87% of Liberian health facilities; • The current average score of general service readiness index is a result of the low perform of the following domains whose readiness scores ranged from average to poor: Basic equipment – 60%, essential medicines – 35% and Diagnostics – 39%.
Basic Amenities	Mean Score – 79%		Availability of basic amenities in Liberian health facilities is good; however, this score is undermined by only 3% of the Liberian health facilities have all the seven basic tracer items.
Standard Precautions	Mean Score – 68%		• Availability and functionality of standard precautions in Liberian health facilities is generally good • This good score would have been even better if it was not for the following tracer items with low scores: appropriate storage of infection waste – 34% and safe final disposal of sharps – 44%.
Basic Equipment	Mean Score – 60%		• The majority of health facilities have basic equipment. • About half (40%) of health facilities had no examination source. This means no access to health care services during the night hours in these health facilities. • Sixty-three per cent of health facilities have child scale. This has an implication for child nutrition services especially growth monitoring.
Essential medicines	Mean Score – 35%		• The essential medicines score (35%) means, 65% of health facilities do not have essential medicines. • The readiness score of essential medicines for managing infections, diarrhea and vomiting, and food supplements was good. However, health facilities readiness score for essential medicines for chronic health conditions is poor.
Diagnostics	Mean Score – 39%		The low score (39%) means quality health care services are compromised in 61% of health facilities. This score could have been further lower if Malaria (66%) and HIV (64%) diagnostics scores were excluded.

Table 9: **Percentage of facilities that offer family planning services, by county (N=765)**

Counties	Offers family planning services	Combined oral contraceptives	Progestin-only contraceptives	Combined injectable contraceptives	Progestin-only injectable contraceptives	Male condoms	Female condoms	IUCD	Implant	Cycle beads for standard days method	Emergency contraceptive pill	Male sterilization	Female sterilization	Total number of facilities
Bomi	87	87	83	19	87	87	71	70	79	78	10	0	0	27
Bong	86	81	82	6	82	84	78	68	80	76	8	2	0	57
Grand Bassam	89	85	89	7	87	85	58	20	85	54	25	2	3	34
Grand Cape Mount	96	100	100	20	100	100	97	94	100	100	8	9	12	34
Grand Gedeh	98	98	98	0	98	79	83	80	89	89	62	0	0	24
Grand Kru	97	97	97	0	97	97	91	74	91	91	68	1	1	19
Lofa	98	95	98	25	96	98	83	79	93	93	6	4	5	60
Margibi	79	77	78	44	79	78	43	37	76	74	5	0	0	48
Maryland	83	75	83	0	83	83	53	63	83	79	71	0	5	27
Montserrado	59	51	47	28	47	45	24	17	43	38	13	3	4	268
Nimba	94	93	90	20	95	94	75	8	83	90	13	2	2	75
River Cess	100	89	100	16	100	84	42	41	100	95	0	0	3	20
Sinoe	95	84	86	32	83	87	76	9	83	89	36	1	1	35
River Gee	95	95	95	0	95	95	89	89	95	84	23	0	0	19
Gbarpolu	100	100	97	6	100	97	61	63	97	87	0	0	1	18
Facility type														
Hospital	84	82	84	23	84	82	66	64	84	77	35	19	43	36
Health center	84	82	84	24	81	77	47	48	77	78	35	5	5	58
Clinic	83	78	78	19	79	77	60	42	74	71	17	2	2	671
Managing authority														
Government/public	95	92	93	19	91	91	74	54	90	87	22	2	2	449
NGO/not-for-profit	58	53	58	27	53	47	42	25	53	53	22	3	3	19
Private-for-profit	55	48	43	22	49	44	22	15	37	32	8	3	4	261
Mission/ faith based	41	32	35	19	38	41	27	18	32	32	5	2	9	36
Urban/ Rural														
Urban	60	53	52	22	54	49	31	24	45	42	15	3	4	331
Rural	95	92	92	18	92	92	74	53	90	87	20	2	2	434
Total	83	79	79	20	79	77	59	43	75	72	18	2	3	765

Table 10: Family planning readiness by County (N=765)

Counties	Guidelines available family planning	Family planning check-lists and/or	At least one trained staff family planning	Blood pressure apparatus	Combined estrogen oral progesterone	Progestin-only contraceptive pills	Injectable contraceptives	Condoms	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Bomi	69	71	0	89	95	95	95	95	0	76	27
Bong	72	81	5	88	99	95	100	99	5	80	57
Grand Bassa	69	85	15	96	84	94	96	78	1	77	34
Grand Cape Mount	94	94	38	87	100	100	97	100	29	89	34
Grand Gedeh	37	42	5	91	82	96	96	73	0	65	24
Grand Kru	25	37	18	88	94	100	100	100	0	70	19
Lofa	82	81	38	92	93	100	96	100	21	85	60
Margibi	70	74	36	88	99	98	100	98	25	83	48
Maryland	78	59	14	100	86	100	95	100	5	79	27
Montserrado	42	45	17	92	68	68	67	70	5	59	268
Nimba	43	73	7	87	91	84	96	98	1	73	75
River Cess	70	75	11	84	89	100	100	95	5	78	20
Sinoe	84	81	6	87	49	51	40	72	0	59	35
River Gee	54	48	0	88	94	88	100	94	0	71	19
Gbarpolu	69	75	28	83	93	87	97	87	18	77	18
Facility type											
Hospital	84	84	16	90	97	93	100	97	13	83	36
Health center	53	65	24	84	84	95	94	91	6	74	58
Clinic	62	68	16	90	85	86	87	88	8	73	671
Managing authority											
Government/public	69	76	18	89	88	91	91	93	9	77	449
NGO/not-for-profit	72	81	6	100	91	100	91	81	6	78	19
Private-for-profit	22	26	13	95	71	65	74	67	6	54	261
Mission/faith based	52	59	22	88	71	71	78	93	7	67	36
Urban/Rural											
Urban	41	50	16	93	76	76	80	75	6	63	331
Rural	69	73	17	89	88	90	91	93	9	76	434
Total	62	68	17	90	85	87	88	89	8	73	765

Table 11: Child health preventative and curative care availability by County (N=765)

	Offers preventive and curative care for U-5s	Diagnosis/treat malnutrition	Vitamin A supplementation	Iron supplementation	ORS and zinc supplementation to children with diarrhea	Child growth monitoring	Treatment of pneumonia	Administration of amoxicillin for the treatment of pneumonia in children	Treatment of malaria in children	Total number of facilities
County										
Bomi	92	92	71	92	87	81	92	92	92	27
Bong	94	81	76	92	91	55	94	94	94	57
Grsnd Bassa	99	88	84	96	96	58	99	99	99	34
Grand Cape Mount	91	91	91	91	91	37	91	91	91	34
Grand Gedeh	96	45	96	96	93	54	91	96	96	24
Grand Kru	96	90	90	96	96	81	96	96	96	19
Lofa	98	69	89	98	98	57	98	98	98	60
Margibi	86	53	68	76	51	30	86	83	86	48
Maryland	90	79	86	90	83	78	90	90	90	27
Montserrado	67	38	48	63	50	30	62	63	67	268
Nimba	93	76	85	90	90	66	94	93	93	75
River Cess	100	100	83	100	92	95	100	100	100	20
Sinoe	98	95	95	98	87	69	98	98	98	35
River Gee	95	73	95	89	95	73	95	95	95	19
Gbarpolu	94	86	83	93	93	67	93	93	93	18
Facility type										
Hospital	93	87	81	88	84	76	90	90	90	36
Health center	94	81	89	89	88	73	94	94	94	58
Clinic	86	66	73	84	77	50	85	85	86	671
Managing authority										
Government/public	94	80	86	92	89	65	93	93	94	449
NGO/not-for-profit	84	51	58	84	73	42	84	84	84	19
Private-for-profit	67	33	43	63	48	17	63	63	66	261
Mission/faith based	85	51	66	82	68	54	85	82	85	36
Urban/Rural										
Urban	70	44	54	64	56	32	67	67	69	331
Rural	95	79	85	94	89	63	95	95	95	434
Total	87	67	75	84	78	53	85	86	87	765

Table 12: Percentage of facilities that have tracer items for preventative and curative care services, by region (N=641)

	Staff and Guidelines	Equipment	Diagnostics	Medicines and Commodities	Readiness Score
Total	33	67	36	63	53
Counties					
Bomi	60	75	30	72	64
Bong	30	64	23	61	49
Grand Bassa	36	61	15	48	44
Grand Cape Mount	31	61	18	62	48
Grand Gedeh	21	61	57	81	59
Grand Kru	52	75	47	76	66
Lofa	33	71	20	70	55
Margibi	24	54	47	59	49
Maryland	76	82	26	75	70
Montserrado	17	58	50	61	49
Nimba	21	76	48	57	53
River Cess	36	75	30	77	61
Sinoe	49	74	29	33	47
River Gee	66	71	52	82	71
Gbarpolu	31	67	18	74	54
Facility type					
Hospital	39	81	74	76	69
Health center	35	77	71	65	63
Clinic	32	65	32	63	52
Managing authority					
Government/public	38	70	30	62	54
NGO/not-for-profit	15	53	50	68	50
Private-for-profit	13	52	54	65	49
Mission/faith based	19	67	58	67	55
Urban/Rural					
Urban	23	60	53	64	53
Rural	36	69	29	63	54

Table 13: Percentage of facilities offering Child immunization service by County (N=765)

Counties	Offers child immunization services	Birth doses	Infant vaccines	Adolescent/adult vaccines	Child immunizations offered daily in facility	Child immunizations offered weekly in facility	Child immunizations offered monthly in facility	Child immunizations offered quarterly in facility	Child immunizations offered other basis in facility	Child immunizations offered daily as outreach	Child immunizations offered weekly as outreach	Child immunizations offered monthly as outreach	Child immunizations offered quarterly as outreach	Child immunizations offered other basis as outreach	Total number of facilities
Bomi	79	75	79	24	79	0	0	0	0	0	79	0	0	0	27
Bong	77	70	75	76	77	0	0	0	0	2	75	0	0	0	57
Bassa	95	88	92	88	95	0	0	0	0	0	90	0	0	0	34
Grand Cape Mount	95	89	89	89	86	0	0	0	0	3	82	0	0	1	34
Grand Gedeh	87	78	87	87	87	0	0	0	0	0	31	49	0	7	24
Grand Kru	92	92	92	92	92	0	0	0	0	0	92	0	0	0	19
Lofa	96	54	95	82	93	4	0	0	0	0	93	2	0	0	60
Margibi	65	64	64	58	59	0	0	0	6	4	37	10	0	13	48
Maryland	86	86	86	82	86	0	0	0	0	4	58	24	0	0	27
Montserrado	60	48	51	44	53	6	1	0	1	3	44	6	1	1	26
Nimba	94	82	90	90	91	2	0	0	2	0	60	29	0	3	75
River Cess	100	99	99	72	95	5	0	0	0	5	74	19	0	0	20
Sinoe	97	97	97	93	93	0	3	0	0	3	81	12	0	0	35
River Gee	100	100	100	84	100	0	0	0	0	0	45	33	5	16	19
Gbarpolu	87	81	87	63	87	0	0	0	0	0	75	12	0	0	18
Facility type															
Hospital	93	73	83	75	87	2	4	0	0	7	60	8	2	5	36
Health center	90	72	82	72	89	0	1	0	0	5	60	13	2	4	58
Clinic	80	71	77	69	76	2	0	0	1	2	63	11	0	2	671
Managing authority															
Government/public	91	83	90	81	89	1	0	0	0	1	74	12	1	3	449
NGO/not-for-profit	56	47	51	47	45	5	0	0	5	3	42	5	0	0	19
Private-for-profit	51	38	42	37	44	6	1	0	1	4	33	6	1	0	261
Mission/faith based	82	58	69	63	78	3	2	0	0	0	57	15	0	3	36
Urban/Rural															
Urban	61	49	53	47	54	4	1	0	2	4	41	8	1	2	331
Rural	91	82	90	81	89	1	0	0	0	1	74	12	0	2	434
Total	81	71	77	69	77	2	0	0	1	2	63	11	1	2	765

Table 14: Percentage of facilities that have tracer items for child immunization services, by region (N=586)

	Staff and Guidelines	Equipment	Medicines and Commodities	Readiness Score
Total	82	84	73	80
Counties				
Bomi	86	91	88	89
Bong	88	87	76	83
Bassa	79	86	67	77
Grand Cape Mount	89	85	90	88
Grand Gedeh	83	78	71	77
Grand Kru	81	80	75	79
Lofa	86	92	71	82
Margibi	82	76	66	74
Maryland	86	85	78	83
Montserrado	73	74	72	75
Nimba	88	88	60	76
River Cess	77	87	81	83
Sinoe	76	93	82	86
River Gee	88	86	70	79
Gbarpolu	86	87	79	84
Facility type				
Hospital	77	89	80	84
Health center	87	86	78	83
Clinic	82	84	73	80
Managing authority				
Government/public	85	87	74	82
NGO/not-for-profit	43	79	76	76
Private-for-profit	72	72	69	73
Mission/faith based	84	77	70	75
Urban/Rural				
Urban	75	76	70	75
Rural	84	87	74	82

Table 15: Percentage of facilities that have tracer items for antenatal care services by County (N=586)

	Staff and Guidelines	Equipment	Diagnostics	Medicines and Commodities	Readiness Score
Total	**55%**	**90%**	**26%**	**80%**	**64%**
County					
Bomi	60%	90%	5%	89%	66%
Bong	58%	88%	14%	87%	66%
Bassa	49%	96%	15%	82%	62%
Grand Cape Mount	78%	88%	33%	76%	70%
Grand Gedeh	43%	90%	66%	87%	71%
Grand Kru	51%	88%	28%	76%	62%
Lofa	66%	92%	12%	95%	72%
Margibi	58%	88%	22%	67%	58%
Maryland	60%	100%	30%	83%	68%
Montserrado	45%	94%	43%	68%	60%
Nimba	46%	88%	34%	88%	67%
River Cess	68%	84%	11%	91%	69%
Sinoe	67%	87%	2%	60%	54%
River Gee	37%	89%	23%	97%	66%
Gbarpolu	69%	82%	1%	88%	66%
Facility type					
Hospital	57%	91%	68%	85%	75%
Health center	58%	85%	59%	79%	70%
Clinic	55%	91%	22%	80%	64%
Managing authority					
Government/public	60%	89%	19%	83%	65%
NGO/not-for-profit	52%	100%	37%	83%	68%
Private-for-profit	36%	96%	53%	69%	60%
Mission/faith based	54%	94%	46%	78%	67%
Urban/Rural					
Urban	45%	94%	44%	71%	61%
Rural	59%	89%	19%	84%	66%

Table 16: Basic obstetric care availability by County (N=765)

Counties	Offers delivery services	Parenteral administration of antibiotics	Parenteral administration of oxytocic drugs	Parenteral administration of anti-convulsants	Assisted vaginal delivery	Manual removal of placenta	Manual removal of retained products	Mean availability of obstetric signal functions	Antibiotics for preterm or prolonged PROM	Neonatal resuscitation	Corticosteroids in preterm labour	KMC for premature/very small babies	Injectable antibiotics for neonatal sepsis	Mean availability of newborn signal functions offered	Administration of oxytocin for the prevention of post-partum haemorrhage	Monitoring and management of labour using	Immediate and exclusive breastfeeding	Hygienic cord care	Thermal protection	Total number of facilities
Bomi	81	89	89	65	1	55	43	57	69	85	20	77	77	55	89	87	89	89	89	27
Bong	88	88	88	83	5	86	47	66	81	82	22	82	86	59	88	85	88	88	86	57
Bassa	89	91	91	87	0	91	35	66	87	89	41	82	84	64	91	89	91	91	91	34
Grand Cape Mount	93	91	91	91	13	82	39	68	85	88	88	88	88	73	88	91	91	91	91	34
Grand Gedeh	89	80	89	58	4	80	36	58	84	84	49	84	89	65	89	84	89	89	93	24
Grand Kru	97	94	94	94	1	94	59	72	94	94	53	71	82	65	94	94	94	94	94	19
Lofa	96	93	96	80	11	85	54	70	82	93	53	84	82	65	96	96	96	96	95	60
Margibi	76	76	76	65	20	72	61	62	74	67	61	51	72	54	76	66	76	71	76	48
Maryland	86	86	86	82	7	86	42	65	82	86	33	74	62	56	86	86	82	86	86	27
Montserrado	67	63	6	46	13	59	31	46	56	47	43	48	49	41	63	45	64	60	64	268
Nimba	95	94	95	75	5	89	61	70	88	90	36	67	82	61	95	95	95	94	95	75
River Cess	100	95	100	100	0	100	33	71	100	100	67	100	100	78	100	100	100	100	100	20
Sinoe	97	97	97	93	4	97	2	65	93	97	60	93	93	73	97	97	97	93	97	35

River Gee	95	100	95	84	7	95	62	73	100	95	73	89	95	75	100	95	100	89	100	19
Gbarpolu	100%	90	94	63	14	69	55	64	84	87	20	81	90	60	90	87	94	94	94	18
Facility type																				
Hospital	92	94	94	92	63	92	83	86	94	94	92	90	94	77	94	94	90	94	94	36
Health center	88%	91	91	86	16	88	69	73	87	90	63	81	83	67	90	90	91	88	91	58
Clinic	84	82	83	69	7	77	39	59	76	75	44	69	73	56	83	76	83	81	83	671
Managing authority																				
Government/public	93	91	92	82	6	85	46	67	86	89	48	81	84	65	92	92	92	92	92	449
NGO/not-for-profit	58	58	58	42	16	47	42	44	58	31	42	53	53	39	58	47	58	42	58	19
Private-for-profit	63	60	58	40	13	56	29	43	51	43	38	43	48	37	60	38	61	56	61	261
Mission/faith based	82	79	82	65	22	82	48	63	74	71	56	59	74	55	82	71	76	76	82	36
Urban/Rural																				
Urban	67	64	63	50	15	61	39	49	60	52	41	50	53	43	64	50	65	62	66	331
Rural	94	92	94	81	6	86	44	67	86	89	48	81	85	65	94	91	94	93	93	434
Total	85	83	83	70	9	78	42	61	77	77	46	70	74	57	84	77	84	82	84	765

Table 17: Comprehensive obstetric and newborn care availability by County (N=765)

	Caesarean section	Blood transfusion	CEmOC*	Total number of facilities
Regions				
Bomi	1%	1%	1%	27
Bong	1%	1%	1%	57
Bassa	6%	6%	0%	34
Grand Cape Mount	15%	5%	4%	34
Grand Gedeh	1%	5%	0%	24
Grand Kru	7%	7%	1%	19
Lofa	2%	4%	2%	60
Margibi	3%	5%	3%	48
Maryland	1%	3%	1%	27
Montserrado	7%	9%	3%	268
Nimba	3%	5%	1%	75
River Cess	1%	1%	0%	20
Sinoe	1%	1%	1%	35
River Gee	1%	1%	1%	19
Gbarpolu	1%	1%	0%	18
Facility type				
Hospital	89%	89%	60%	36
Health center	12%	18%	4%	58
Clinic	2%	2%	1%	671
Managing authority				
Government/public	3%	3%	1%	449
NGO/not-for-profit	3%	14%	0%	19
Private-for-profit	8%	10%	4%	261
Mission/faith based	15%	15%	7%	36
Urban/Rural				
Urban	8%	10%	4%	331
Rural	2%	2%	1%	434
Total	4%	5%	2%	765

Table 18: Percentage of facilities that have tracer items for comprehensive obstetric and newborn care, by County (N=58)

	Staff and Guidelines	Equipment	Diagnostics	Medicines and Commodities	Readiness Score
Total	47%	46%	38%	43%	44%
Regions					
Bomi	50%	40%	0%	56%	45%
Bong	67%	60%	83%	74%	70%
Bassa	16%	39%	31%	26%	28%
Grand Cape mount	41%	33%	19%	22%	28%
Grand Gedeh	50%	80%	50%	67%	65%
Grand Kru	30%	31%	59%	35%	35%
Lofa	63%	58%	75%	74%	68%
Margibi	58%	70%	50%	50%	57%
Maryland	100%	100%	100%	67%	85%
Montserrado	49%	43%	33%	45%	44%
Nimba	56%	60%	55%	59%	59%
River Cess	50%	60%	50%	22%	40%
Sinoe	100%	80%	100%	78%	85%
River Gee	50%	60%	0%	67%	55%
Gbarpolu	50%	60%	50%	67%	60%
Facility type					
Hospital	66%	69%	72%	75%	71%
Health center	43%	48%	45%	49%	47%
Clinic	36%	28%	10%	17%	23%
Managing authority					
Government/public	46%	46%	41%	39%	42%
NGO/not-for-profit	50%	80%	100%	56%	65%
Private-for-profit	49%	42%	28%	38%	40%
Mission/faith based	49%	58%	64%	80%	67%
Urban/Rural					
Urban	55%	48%	35%	43%	46%
Rural	35%	43%	44%	44%	42%

Table 19: Adolescent health service availability by County stratifies (N=765)

Counties	Offers adolescent health services	HIV testing and counselling services to adolescents	Family planning services to adolescents	Provision of combined oral contraceptive pills to adolescents	Provision of male condoms to adolescents	Provision of emergency contraceptive pills to adolescents	Provision of intrauterine contraceptive device (IUCD) to adolescents	Provision of ART to adolescents	Total number of facilities
Bomi	92%	85%	83%	83%	83%	17%	65%	58%	27
Bong	94%	72%	79%	79%	82%	11%	58%	41%	57
Bassa	96%	85%	89%	88%	93%	29%	30%	51%	34
Grand Cape Mount	90%	79%	100%	100%	100%	5%	89%	80%	34
Grand Gedeh	84%	71%	93%	93%	93%	62%	48%	40%	24
Grand Kru	90%	71%	97%	97%	97%	68%	68%	36%	19
Lofa	96%	62%	96%	96%	98%	13%	72%	35%	60
Margibi	87%	33%	78%	79%	78%	17%	33%	26%	48
Maryland	90%	70%	83%	83%	83%	63%	55%	21%	27
Montserrado	69%	31%	43%	48%	49%	13%	17%	13%	268
Nimba	97%	47%	91%	92%	94%	15%	4%	27%	75
River Cess	100%	100%	95%	100%	95%	0%	41%	45%	20
Sinoe	97%	58%	81%	84%	84%	38%	10%	28%	35
River Gee	84%	51%	78%	84%	78%	23%	62%	34%	19
Gbarpolu	88%	87%	94%	100%	94%	0%	43%	75%	18
Facility type									
Hospital	87%	100%	87%	84%	87%	36%	58%	92%	36
Health center	92%	81%	77%	82%	77%	40%	48%	73%	58
Clinic	86%	53%	76%	78%	79%	18%	37%	28%	671

Managing authority									
Government/public	92%	70%	90%	92%	91%	24%	47%	43%	449
NGO/not-for-profit	91%	45%	42%	47%	47%	16%	14%	9%	19
Private-for-profit	68%	19%	42%	45%	48%	10%	17%	6%	261
Mission/faith based	88%	47%	38%	35%	41%	12%	12%	24%	36
Urban/Rural									
Urban	74%	36%	48%	51%	53%	16%	23%	20%	331
Rural	93%	67%	90%	92%	92%	22%	46%	39%	434
Total	**86%**	**56%**	**76%**	**78%**	**79%**	**20%**	**38%**	**33%**	**765**

Table 20: Facilities that had tracer items for adolescent health services (N=639)

	Staff and Guidelines	Diagnostics	Medicines and Commodities	Readiness Score
Total	**19%**	**70%**	**84%**	**38%**
Regions				
Bomi	18%	93%	93%	43%
Bong	15%	77%	91%	38%
Bassa	31%	86%	73%	47%
Grand Cape Mount	26%	90%	100%	49%
Grand Gedeh	20%	84%	74%	39%
Grand Kru	21%	87%	100%	45%
Lofa	23%	82%	98%	45%
Margibi	24%	34%	88%	37%
Maryland	19%	64%	93%	39%
Montserrado	16%	49%	60%	29%
Nimba	10%	64%	97%	34%
River Cess	22%	100%	95%	47%
Sinoe	23%	84%	67%	40%
River Gee	22%	80%	93%	43%
Gbarpolu	19%	78%	85%	40%
Facility type				
Hospital	33%	100%	96%	54%
Health center	25%	90%	80%	45%
Clinic	18%	68%	84%	37%
Managing authority				
Government/public	21%	80%	92%	43%
NGO/not-for-profit	15%	34%	58%	26%
Private-for-profit	11%	39%	58%	23%
Mission/faith based	17%	47%	51%	27%
Urban/Rural				
Urban	15%	53%	64%	30%
Rural	20%	78%	91%	42%

Table 21: Facilities that offer HIV counselling and testing services, by region (N=765)

	Offers HIV counseling and testing services	Total number of facilities
Regions		
Bomi	89%	27
Bong	74%	57
Bassa	91%	34
Grand Cape Mount	85%	34
Grand Gedeh	91%	24
Grand Kru	91%	19
Lofa	73%	60
Margibi	35%	48
Maryland	74%	27
Montserrado	36%	268
Nimba	59%	75
River Cess	100%	20
Sinoe	61%	35
River Gee	89%	19
Gbarpolu	93%	18
Facility type		
Hospital	100%	36
Health center	86%	58
Clinic	61%	671
Managing authority		
Government/public	78%	449
NGO/not-for-profit	56%	19
Private-for-profit	24%	261
Mission/faith based	50%	36
Urban/Rural		
Urban	41%	331
Rural	76%	434
Total	64%	765

Table 22: Percentage of HIV/AIDS counseling and testing readiness by County (N=448)

	Guidelines available HIV counselling and testing	At least 1 trained staff HIV counselling and testing	Room with visual and auditory privacy	HIV diagnostic capacity	Condoms	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Regions								
Bomi	84%	16%	95%	95%	95%	12%	77%	27
Bong	83%	29%	97%	92%	99%	23%	80%	57
Bassa	84%	50%	95%	92%	65%	23%	77%	34
Grand Cape Mount	84%	19%	82%	93%	93%	15%	74%	34
Grand Gedeh	68%	39%	100%	83%	54%	14%	69%	24
Grand Kru	46%	39%	94%	94%	100%	27%	75%	19
Lofa	65%	25%	85%	94%	93%	10%	72%	60
Margibi	91%	82%	80%	80%	84%	59%	84%	48
Maryland	72%	45%	100%	78%	90%	38%	77%	27
Montserrado	66%	37%	77%	87%	66%	17%	67%	268
Nimba	56%	19%	94%	96%	78%	8%	69%	75
River Cess	97%	45%	99%	100%	95%	38%	87%	20
Sinoe	90%	25%	100%	100%	82%	20%	79%	35
River Gee	88%	26%	94%	82%	94%	26%	77%	19
Gbarpolu	100%	20%	100%	87%	80%	13%	77%	18
Facility type								
Hospital	92%	51%	86%	100%	80%	33%	81%	36
Health center	83%	46%	82%	93%	72%	30%	75%	58
Clinic	74%	30%	92%	90%	84%	18%	74%	671
Managing authority								
Government/public	78%	33%	92%	92%	86%	21%	76%	449
NGO/not-for-profit	51%	22%	80%	61%	71%	22%	57%	19
Private-for-profit	56%	30%	81%	89%	63%	15%	64%	261
Mission/faith based	49%	36%	91%	82%	48%	4%	61%	36
Urban/Rural								
Urban	70%	35%	81%	90%	66%	17%	69%	331
Rural	77%	32%	94%	91%	88%	21%	76%	434
Total	**75%**	**32%**	**91%**	**91%**	**83%**	**20%**	**74%**	**765**

Table 23: Percentage of HIV/AIDS care and support services availability by County (N= 765)

County	Offers HIV care and support services	Treatment of opportunistic infections	Provision of palliative care	IV treatment of fungal infections	Treatment for Kaposi's sarcoma	Nutritional rehabilitation services	Provide/prescribe protein fortified	Care for paediatric HIV/AIDS patients	Provide/prescribe preventative treatment	Preventative treatment for opportunistic	Provide/prescribe micronutrient	Family planning counselling	Provide condoms	Total number of facilities
Bomi	54%	54%	6%	15%	0%	54%	1%	54%	11%	54%	54%	54%	54%	27
Bong	60%	53%	47%	13%	15%	49%	41%	41%	19%	58%	60%	60%	60%	57
Grand Bassa	57%	57%	16%	7%	6%	44%	5%	44%	29%	51%	44%	53%	53%	34
Grand Cape Mount	22%	22%	19%	16%	19%	10%	16%	19%	19%	19%	19%	19%	19%	34
Grand Gedeh	36%	32%	23%	14%	19%	23%	22%	27%	27%	36%	36%	36%	36%	24
Grand Kru	36%	36%	36%	30%	24%	24%	19%	30%	30%	36%	36%	36%	36%	19
Lofa	31%	29%	27%	10%	6%	22%	20%	26%	22%	31%	31%	31%	31%	60
Margibi	45%	39%	45%	21%	13%	45%	31%	39%	28%	45%	42%	42%	45%	48
Maryland	23%	23%	23%	19%	14%	11%	5%	17%	18%	23%	23%	17%	21%	27
Montserrado	15%	14%	13%	6%	4%	11%	7%	11%	8%	13%	14%	13%	12%	268
Nimba	33%	32%	33%	17%	12%	18%	18%	29%	16%	32%	32%	33%	33%	75
River Cess	61%	50%	7%	5%	0%	56%	12%	56%	38%	61%	61%	61%	61%	20
Sinoe	19%	19%	16%	4%	7%	10%	10%	16%	13%	16%	19%	19%	19%	35
River Gee	18%	18%	18%	12%	18%	18%	7%	18%	12%	18%	18%	18%	18%	19
Gbarpolu	50%	50%	12%	6%	0%	44%	14%	50%	0%	50%	50%	50%	50%	18
Facility type														
Hospital	94%	94%	84%	57%	63%	88%	76%	92%	54%	94%	94%	90%	94%	36
Health center	68%	65%	68%	53%	41%	60%	47%	65%	62%	70%	70%	64%	62%	58
Clinic	28%	26%	18%	7%	5%	20%	11%	22%	12%	26%	26%	27%	27%	671
Managing authority														
Government/public	40%	38%	28%	13%	11%	31%	19%	34%	20%	39%	39%	39%	39%	449
NGO/not-for-profit	25%	25%	20%	3%	3%	3%	3%	20%	5%	25%	20%	25%	25%	19
Private-for-profit	9%	8%	8%	6%	3%	5%	6%	6%	6%	7%	7%	8%	8%	261
Mission/faith based	24%	24%	24%	17%	13%	18%	5%	18%	22%	24%	24%	13%	12%	36
Urban/Rural														
Urban	22%	22%	20%	13%	11%	17%	13%	20%	15%	21%	21%	20%	19%	331
Rural	37%	34%	24%	11%	8%	28%	16%	30%	18%	36%	35%	36%	37%	434
Total	**32%**	**30%**	**23%**	**12%**	**9%**	**24%**	**15%**	**26%**	**17%**	**31%**	**31%**	**31%**	**31%**	**765**

Table 24: Facilities that have tracer items for HIV care and support services by region (N=231)

	Staff and Guidelines	Diagnostics	Medicines and Commodities	Readiness Score
Total	61%	63%	55%	58%
Regions				
Bomi	68%	85%	56%	63%
Bong	59%	69%	63%	62%
Bassa	63%	31%	40%	46%
Grand Cape Mount	77%	86%	69%	73%
Grand Gedeh	50%	39%	39%	42%
Grand Kru	63%	68%	69%	67%
Lofa	46%	42%	56%	52%
Margibi	69%	54%	54%	58%
Maryland	69%	65%	62%	65%
Montserrado	62%	56%	54%	56%
Nimba	44%	72%	61%	57%
River Cess	58%	100%	55%	60%
Sinoe	83%	52%	32%	49%
River Gee	69%	69%	63%	65%
Gbarpolu	79%	88%	55%	65%
Facility type				
Hospital	76%	92%	75%	77%
Health center	73%	87%	59%	66%
Clinic	57%	56%	53%	55%
Managing authority				
Government/public	60%	63%	54%	57%
NGO/not-for-profit	49%	100%	62%	62%
Private-for-profit	64%	57%	64%	64%
Mission/faith based	74%	80%	65%	69%
Urban/Rural				
Urban	65%	71%	56%	60%
Rural	59%	61%	55%	57%

Table 25: Percentage of facilities that offer ARV services, by region (N=765)

	Offers ARV prescription or ARV treatment follow-up services	ART prescription	Provide treatment follow-up services for persons on ART	Total number of facilities
County				
Bomi	58%	58%	54%	27
Bong	45%	41%	45%	57
Grand Bassa	53%	51%	53%	34
Grand Cape Mount	83%	80%	77%	34
Grand Gedeh	58%	54%	45%	24
Grand Kru	36%	36%	30%	19
Lofa	37%	35%	37%	60
Margibi	26%	26%	26%	48
Maryland	23%	21%	23%	27
Montserrado	16%	14%	13%	268
Nimba	30%	27%	22%	75
River Cess	56%	45%	56%	20
Sinoe	28%	28%	28%	35
River Gee	34%	34%	18%	19
Gbarpolu	81%	81%	63%	18
Facility type				
Hospital	92%	92%	89%	36
Health center	73%	73%	71%	58
Clinic	32%	29%	28%	671
Managing authority				
Government/public	46%	44%	41%	449
NGO/not-for-profit	25%	9%	9%	19
Private-for-profit	8%	7%	7%	261
Mission/faith based	26%	24%	26%	36
Urban/Rural				
Urban	24%	21%	21%	331
Rural	42%	40%	38%	434
Total	36%	34%	32%	765

Table 26: Prevention of mother to child transmission (PMTCT) availability by county (N=765)

	Offers services for PMTCT	HIV counseling & testing to HIV+ pregnant women	HIV counseling & testing to infants born to HIV+ pregnant women	ARV prophylaxis to HIV+ women	ARV prophylaxis to newborns born to HIV+ pregnant women	Infant & young child feeding counseling	Nutritional counseling for HIV+ women & their infants	Family planning counseling to HIV+ women	Total number of facilities
Regions									
Bomi	83	87	87	83	83	87	87	87	27
Bong	76	76	66	43	53	72	72	74	57
Grand Bassa	91	91	81	56	55	78	91	87	34
Grand Cape Mt	98	98	98	92	95	98	98	98	34
Grand Gedeh	89	89	49	71	80	80	80	89	24
Grand Kru	71	71	53	47	47	59	59	53	19
Lofa	88	88	64	52	67	75	77	82	60
Margibi	61	58	56	42	44	54	56	56	48
Maryland	55	51	39	35	39	39	43	45	27
Montserrado	31	30	26	20	21	24	27	28	268
Nimba	53	53	51	36	48	50	53	53	75
River Cess	95	95	95	61	81	92	92	89	20
Sinoe	95	92	73	53	62	83	89	89	35
River Gee	89	89	49	56	84	78	89	89	19
Gbarpolu	87	87	87	81	87	87	87	87	18
Facility type									
Hospital	94	92	92	94	92	94	94	90	36
Health center	84	84	75	77	81	83	83	81	58
Clinic	63	63	53	41	48	56	59	60	671
Managing authority									
Government/ public	83	83	71	59	68	76	79	80	449
NGO/not-for-profit	14	14	14	9	9	14	14	14	19
Private-for-profit	19	19	16	10	9	13	15	16	261
Mission/faith based	35	35	32	21	26	29	32	31	36
Urban/Rural									
Urban	36	36	32	25	27	30	33	34	331
Rural	80	79	67	55	64	73	76	77	434
Total	65	65	55	45	52	58	61	62	765

Table 27: Facilities that have tracer items for PMTCT services, by county (N=445)

	Staff and Guidelines	Equipment	Diagnostics	Medicines and Commodities	Readiness Score
Total	46%	91%	45%	23%	43%
County					
Bomi	46%	90%	48%	13%	41%
Bong	41%	96%	47%	15%	40%
Grand Bassa	49%	93%	46%	18%	43%
Grand Cape Mount	62%	84%	42%	39%	53%
Grand Gedeh	33%	100%	48%	32%	42%
Grand Kru	19%	92%	42%	26%	33%
Lofa	45%	90%	45%	32%	46%
Margibi	69%	88%	27%	20%	48%
Maryland	49%	93%	43%	23%	45%
Montserrado	48%	78%	45%	21%	42%
Nimba	26%	92%	52%	24%	37%
River Cess	52%	100%	50%	32%	50%
Sinoe	45%	94%	42%	5%	37%
River Gee	48%	100%	44%	25%	46%
Gbarpolu	47%	100%	46%	17%	44%
Facility type					
Hospital	49%	83%	60%	53%	56%
Health center	55%	90%	51%	44%	54%
Clinic	44%	91%	44%	20%	42%
Managing authority					
Government/public	46%	93%	44%	23%	43%
NGO/not-for-profit	52%	100%	50%	26%	48%
Private-for-profit	42%	68%	46%	16%	38%
Mission/faith based	43%	95%	51%	36%	48%
Urban/Rural					
Urban	47%	79%	47%	25%	44%
Rural	45%	94%	44%	22%	43%

Table 28: Sexually transmitted infections availability by County (N=765)

	Offers services for STIs	Diagnosis of STIs	Prescribe treatment for STIs	Total number of facilities
County				
Bomi	87	82	82	27
Bong	97	97	97	57
Grand Bassa	100	100	100	34
Grand Cape Mount	88	88	85	34
Grand Gedeh	100	100	100	24
Grand Kru	97	97	97	19
Lofa	100	98	100	60
Margibi	86	86	86	48
Maryland	90	90	90	27
Montserrado	80	80	80	268
Nimba	96	96	96	75
River Cess	100	100	100	20
Sinoe	97	97	97	35
River Gee	100	100	100	19
Gbarpolu	100	100	100	18
Facility type				
Hospital	92	92	92	36
Health center	95	95	95	58
Clinic	91	90	90	671
Managing authority				
Government/public	95	94	94	449
NGO/not-for-profit	80	80	80	19
Private-for-profit	83	82	82	261
Mission/faith based	82	82	82	36
Urban/Rural				
Urban	81	80	80	331
Rural	97	96	96	434
Total	91	91	91	765

Table 29: Facilities that have tracer items for STI services, by County (N=686)

	Staff and Guidelines	Diagnostics	Medicines and Commodities	Readiness Score
Total	38	23	66	52
County				
Bomi	49	5	83	62
Bong	35	35	57	48
Grand Bassa	58	6	59	51
Grand Cape Mount	48	4	70	54
Grand Gedeh	38	51	73	60
Grand Kru	54	43	80	67
Lofa	34	11	79	56
Margibi	37	31	62	50
Maryland	50	28	69	58
Montserrado	27	35	65	50
Nimba	34	22	64	49
River Cess	68	0	54	50
Sinoe	48	7	41	38
River Gee	39	29	75	58
Gbarpolu	28	1	65	46
Facility type				
Hospital	64	79	82	77
Health center	55	42	65	59
Clinic	36	21	65	51
Managing authority				
Government/public	44	15	64	51
NGO/not-for-profit	18	25	66	46
Private-for-profit	21	47	71	54
Mission/faith based	31	44	73	57
Urban/Rural				
Urban	29	38	67	52
Rural	42	17	65	52

Table 30: Facilities that offer tuberculosis services, by County (N=765)

	Offers TB services	TB diagnosis	TB diagnostic testing	TB diagnosis by clinical symptoms	TB diagnosis by sputum smear examination	TB diagnosis by culture	TB diagnosis by rapid test (GeneXpert MTB /RIF)	TB diagnosis by chest X-ray	Prescription of drugs of TB patients	Provision of drugs to TB patients	Management and treatment follow-up for TB patients	Total number of facilities
County												
Bomi	28%	20%	16%	4%	16%	0%	0%	0%	16%	16%	20%	27
Bong	42%	25%	14%	16%	13%	1%	0%	1%	9%	19%	25%	57
Grand Bassa	40%	33%	26%	15%	26%	0%	2%	1%	26%	30%	30%	34
Grand Cape Mt	22%	15%	16%	16%	16%	7%	7%	7%	19%	19%	19%	34
Grand Gedeh	67%	67%	58%	49%	58%	0%	1%	1%	62%	54%	62%	24
Grand Kru	24%	24%	24%	24%	24%	1%	0%	0%	24%	24%	24%	19
Lofa	18%	7%	6%	5%	6%	0%	2%	0%	11%	13%	17%	60
Margibi	9%	9%	9%	2%	9%	0%	1%	0%	11%	11%	11%	48
Maryland	23%	19%	15%	11%	15%	0%	5%	1%	15%	15%	15%	27
Montserrado	13%	8%	7%	8%	6%	2%	2%	1%	7%	8%	8%	268
Nimba	24%	21%	21%	19%	21%	0%	2%	1%	18%	18%	19%	75
River Cess	28%	23%	18%	23%	18%	11%	0%	0%	23%	23%	23%	20
Sinoe	33%	30%	21%	27%	19%	0%	5%	1%	10%	10%	25%	35
River Gee	40%	40%	40%	18%	40%	0%	0%	0%	40%	34%	29%	19
Gbarpolu	32%	26%	26%	0%	26%	0%	0%	0%	26%	26%	26%	18
Facility type												
Hospital	78%	73%	70%	52%	66%	14%	37%	41%	72%	76%	76%	36
Health center	66%	63%	61%	52%	60%	10%	11%	5%	63%	63%	63%	58
Clinic	20%	14%	11%	9%	11%	1%	1%	0%	11%	12%	14%	671
Managing authority												
Government/public	30%	24%	20%	17%	20%	2%	2%	1%	20%	21%	24%	449
NGO/not-for-profit	25%	20%	20%	14%	20%	5%	9%	3%	14%	14%	14%	19
Private-for-profit	7%	4%	3%	3%	2%	0%	0%	1%	3%	3%	3%	261
Mission/faith based	34%	28%	26%	20%	18%	6%	9%	4%	17%	22%	22%	36
Urban/Rural												
Urban	22%	16%	14%	12%	14%	2%	4%	1%	15%	16%	16%	331
Rural	26%	21%	17%	14%	17%	1%	1%	1%	16%	17%	20%	434
Total	25%	19%	16%	13%	16%	1%	2%	1%	16%	17%	19%	765

Table 31: Facilities that have tracer items for TB services by County (N=184)

	Staff and Guidelines	Diagnostics	Medicines and Commodities	Readiness Score
Total	34%	64%	42%	42%
Regions				
Bomi	33%	69%	26%	41%
Bong	22%	51%	53%	32%
Bassa	38%	50%	40%	41%
Grand Cape Mount	66%	58%	86%	66%
Grand Gedeh	17%	78%	1%	31%
Grand Kru	91%	92%	100%	92%
Lofa	30%	72%	27%	40%
Margibi	42%	83%	43%	52%
Maryland	47%	60%	35%	49%
Montserrado	27%	52%	34%	34%
Nimba	34%	75%	70%	48%
River Cess	19%	60%	43%	31%
Sinoe	24%	56%	2%	30%
River Gee	62%	91%	72%	70%
Gbarpolu	44%	68%	62%	51%
Facility type				
Hospital	46%	87%	86%	60%
Health center	55%	81%	66%	62%
Clinic	27%	58%	32%	35%
Managing authority				
Government/public	35%	66%	44%	43%
NGO/not-for-profit	39%	52%	13%	40%
Private-for-profit	25%	49%	18%	30%
Mission/faith based	30%	64%	51%	40%
Urban/Rural				
Urban	34%	65%	46%	42%
Rural	34%	64%	40%	42%

Table 32: Percentage of facilities that offer malaria services, by region (N=765)

	Offer diagnosis or treatment of malaria	Malaria diagnosis	Malaria diagnosis testing	Malaria diagnosis by clinical symptoms	Malaria diagnosis by RDT	Malaria diagnosis by microscopy	Malaria treatment	IPT	Total number of facilities
County									
Bomi	88%	79%	79%	21%	79%	20%	83%	76%	27
Bong	98%	98%	98%	95%	98%	16%	94%	94%	57
Grand Bassa	100%	100%	96%	92%	96%	26%	100%	94%	34
Grand Cape Mount	82%	82%	82%	82%	82%	24%	85%	82%	34
Grand Gedeh	100%	100%	100%	69%	96%	82%	91%	82%	24
Grand Kru	97%	97%	97%	97%	97%	30%	97%	97%	19
Lofa	100%	100%	96%	97%	96%	17%	100%	98%	60
Margibi	94%	94%	94%	53%	94%	41%	94%	83%	48
Maryland	90%	90%	90%	90%	90%	25%	90%	90%	27
Montserrado	90%	90%	89%	65%	87%	50%	90%	79%	268
Nimba	98%	98%	98%	97%	96%	66%	98%	95%	75
River Cess	100%	100%	100%	97%	100%	21%	100%	100%	20
Sinoe	91%	91%	91%	91%	91%	16%	91%	87%	35
River Gee	100%	100%	100%	55%	100%	45%	100%	100%	19
Gbarpolu	100%	100%	100%	69%	100%	1%	100%	72%	18
Facility type									
Hospital	93%	95%	95%	69%	95%	93%	95%	90%	36
Health center	96%	96%	96%	65%	96%	84%	96%	91%	58
Clinic	94%	93%	93%	79%	92%	32%	93%	87%	671
Managing authority									
Government/public	95%	95%	94%	83%	93%	28%	94%	92%	449
NGO/not-for-profit	89%	89%	89%	69%	89%	56%	89%	67%	19
Private-for-profit	91%	91%	91%	63%	88%	59%	91%	76%	261
Mission/faith based	94%	94%	94%	76%	88%	74%	94%	82%	36
Urban/Rural									
Urban	90%	90%	90%	68%	88%	57%	91%	79%	331
Rural	96%	95%	95%	83%	94%	27%	95%	91%	434
Total	94%	94%	93%	78%	92%	37%	93%	87%	765

Table 33: Facilities that have tracer items for malaria services by County (N=714)

	Staff and Guidelines	Diagnostics	Medicines and Commodities	Readiness Score
Total	38%	70%	74%	58%
Regions				
Bomi	67%	67%	67%	67%
Bong	62%	62%	62%	62%
Bassa	45%	45%	45%	45%
Grand Cape Mount	74%	74%	74%	74%
Grand Gedeh	58%	58%	58%	58%
Grand Kru	63%	63%	63%	63%
Lofa	60%	60%	60%	60%
Margibi	55%	55%	55%	55%
Maryland	59%	59%	59%	59%
Montserrado	52%	52%	52%	52%
Nimba	52%	52%	52%	52%
River Cess	68%	68%	68%	68%
Sinoe	60%	60%	60%	60%
River Gee	68%	68%	68%	68%
Gbarpolu	65%	65%	65%	65%
Facility type				
Hospital	69%	69%	69%	69%
Health center	62%	62%	62%	62%
Clinic	57%	57%	57%	57%
Managing authority				
Government/public	61%	61%	61%	61%
NGO/not-for-profit	52%	52%	52%	52%
Private-for-profit	48%	48%	48%	48%
Mission/faith based	62%	62%	62%	62%
Urban/Rural				
Urban	51%	51%	51%	51%
Rural	61%	61%	61%	61%

Table 34: Percentage of Facilities that offer non-communicable disease services by county (N=765)

	Diabetes diagnosis and/or management	Offers cardiovascular disease diagnosis and/or management	Offers chronic respiratory disease diagnosis and/or management	Offers cervical cancer diagnosis	Total number of facilities
Bomi	18%	29%	1%	1%	27
Bong	10%	70%	54%	3%	57
Bassa	15%	12%	6%	1%	34
Grand Cape Mount	73%	73%	76%	3%	34
Grand Gedeh	21%	43%	34%	5%	24
Grand Kru	33%	85%	65%	1%	19
Lofa	16%	54%	49%	7%	60
Margibi	66%	87%	51%	1%	48
Maryland	25%	38%	50%	3%	27
Montserrado	35%	37%	28%	7%	268
Nimba	26%	73%	72%	10%	75
River Cess	10%	70%	21%	0%	20
Sinoe	15%	16%	16%	1%	35
River Gee	12%	7%	12%	7%	19
Gbarpolu	32%	38%	1%	1%	18
Facility type					
Hospital	92%	89%	92%	67%	36
Health center	72%	76%	76%	22%	58
Clinic	24%	46%	34%	2%	671
Managing authority					
Government/public	23%	50%	39%	4%	449
NGO/not-for-profit	47%	58%	47%	9%	19
Private-for-profit	43%	43%	35%	6%	261
Mission/faith based	59%	62%	59%	15%	36
Urban/Rural					
Urban	41%	47%	92%	9%	331
Rural	23%	50%	76%	3%	434
Total	29%	49%	39%	5%	765

Table 35: Availability of Neglected Tropical Disease Services by Region (N=407)

County	Lymphatic Filiariasis	Buruli Ulcer	Onchocerciasis	Schistosomiasis	Soil Transmitted Helminths	Leprosy	Mean availability	all tracer services	Total Health facilities
Total	34	28	33	30	34	27	31	0	407
Bomi	7	13	7	7	7	7	8	0	15
Bong	37	26	32	42	28	22	31	0	19
Grand Bassa	4	11	7	4	4	7	6	0	28
Grand Cape Mount	50	50	50	50	50	50	50	0	4
Grand Gedeh	17	13	21	21	38	54	27	0	24
Grand Kru	88	88	88	88	82	77	85	0	17
Lofa	55	50	54	54	56	46	52	0	53
Margibi	40	20	25	25	25	25	27	0	5
Maryland	100	100	100	100	94	89	97	0	18
Montserrado	14	12	13	13	9	5	11	0	146
Nimba	47	47	29	47	47	41	43	0	17
River Cess	100	88	88	88	100	75	90	0	8
Sinoe	67	4	73	5	65	5	36	0	24
River Gee	24	18	29	24	47	47	31	0	17
Gbarpolu	8	8	8	25	25	8	14	0	12
HOSPITAL	77	77	73	81	81	69	76	0	26
HEALTH CENTRE	55	55	44	53	53	47	51	0	33
CLINIC	28	22	29	24	28	22	26	0	348
Government/public	44	37	43	38	46	39	41	0	253
NGO/not-for-profit	33	38	25	25	25	25	28	0	9
Private-for-profit	13	7	12	13	8	3	9	0	125
Mission/faith based	40	37	32	37	37	16	33	0	20
Urban/rural									
Urban	22	21	19	21	23	19	21	0	169
Rural	42	33	42	37	41	33	38	0	238

Table 36: Percentage of health facilities with tracer items for NTDs service readiness (N=390)

County	Albendazole	Ivermectin	Praziquantel	Streptomycin	Clarithromycin	Rimphapicin	Multi Drug Therapy (MDT	at least 1 trained staff	Mean availability tracer items	Total Health facilities
Total	36	26	9	6	9	10	9	34	17	390
Bomi	7	7	0	0	0	7	7	13	5	15
Bong	33	39	11	6	6	6	0	39	17	18
Grand Bassa	11	0	4	0	0	4	0	7	3	28
Grand Cape Mount	50	25	25	20	20	20	50	50	33	4
Grand Gedeh	71	38	4	0	0	4	4	58	22	24
Grand Kru	88	65	18	12	18	24	24	71	40	17
Lofa	25	33	8	0	6	6	2	60	17	52
Margibi	25	25	25	25	25	25	25	25	25	4
Maryland	83	61	22	22	39	39	17	89	47	18
Montserrado	21	12	9	9	10	7	3	10	10	136
Nimba	65	35	35	18	18	24	29	29	32	17
River Cess	75	75	0	0	0	0	22	75	31	8
Sinoe	15	5	0	0	0	0	0	40	8	20
River Gee	100	53	6	6	12	24	53	59	39	17
Gbarpolu	25	33	0	0	0	0	0	25	10	12
Type of facility										
HOSPITAL	77	69	42	31	35	50	39	58	50	26
HEALTH CENTRE	63	45	36	23	26	26	29	44	36	32
CLINIC	30	21	4	3	5	5	4	31	13	332
Managing authority										
Government/public	43	32	8	6	9	11	11	48	21	247
NGO/not-for-profit	25	0	25	0	13	25	0	13	13	8
Private-for-profit	20	13	8	5	8	5	3	7	9	116
Mission/faith based	47	37	26	16	11	16	11	26	24	19
Urban/rural										
Urban	30	20	13	10	12	14	10	19	16	159
Rural	40	29	7	4	6	6	7	44	18	231

Table 37: Percentage of facilities that offer basic surgical services, by region (N=765)

	Offers basic surgical services	Incision and drainage of abscesses	Wound debridement	Acute burn management	Suturing	Closed repair of fracture	Cricothyroidotomy	Male circumcision	Hydrocele reduction	Chest tube insertion	Closed repair of dislocated joint	Biopsy of lymph node or mass or	Removal of foreign body	Total number of facilities
Regions														
Bomi	29%	23%	21%	25%	25%	1%	0%	23%	1%	1%	0%	0%	22%	27
Bong	87%	83%	81%	85%	87%	40%	1%	16%	3%	1%	6%	1%	75%	57
Bassa	6%	3%	3%	3%	3%	3%	0%	3%	3%	1%	3%	0%	3%	34
Grand Cape Mount	73%	21%	4%	8%	69%	4%	1%	73%	5%	4%	1%	4%	12%	34
Grand Gedeh	89%	93%	93%	93%	93%	0%	0%	80%	1%	1%	49%	1%	76%	24
Grand Kru	97%	91%	91%	91%	97%	7%	6%	88%	19%	7%	13%	7%	91%	19
Lofa	48%	46%	39%	45%	48%	1%	0%	48%	2%	2%	1%	0%	38%	60
Margibi	39%	28%	13%	11%	39%	12%	4%	39%	3%	4%	4%	1%	2%	48
Maryland	86%	78%	66%	82%	86%	5%	0%	70%	1%	1%	1%	0%	43%	27
Montserrado	40%	35%	32%	33%	39%	12%	4%	36%	9%	4%	4%	2%	22%	268
Nimba	53%	51%	44%	52%	51%	12%	2%	39%	4%	2%	12%	2%	48%	75
River Cess	7%	7%	7%	7%	7%	1%	1%	7%	1%	1%	1%	0%	7%	20
Sinoe	25%	13%	19%	25%	25%	4%	0%	25%	1%	0%	1%	0%	1%	35
River Gee	84%	84%	45%	84%	84%	7%	7%	67%	1%	1%	40%	0%	73%	19
Gbarpolu	56%	56%	38%	56%	56%	1%	0%	44%	1%	1%	1%	1%	32%	18
Facility type														
Hospital	92%	92%	92%	82%	92%	63%	25 %	81%	81%	70 %	65%	39%	73%	36
Health center	66%	64%	57%	62%	66%	22%	5%	64%	20%	7%	17%	7%	53%	58
Clinic	49%	41%	35%	40%	48%	8%	1%	37%	2%	1%	5%	0%	30%	671
Managing authority														
Government/public	54%	46%	39%	46%	53%	9%	2%	41%	2%	2%	8%	1%	36%	449
NGO/not-for-profit	56%	40%	40%	47%	56%	20%	0%	31%	7%	7%	9%	0%	25%	19
Private-for-profit	43%	36%	33%	33%	41%	12%	3%	39%	11%	4%	5%	2%	23%	261
Mission/faith based	45%	45%	39%	39%	45%	11%	4%	39%	19%	7%	5%	4%	39%	36
Urban/Rural														
Urban	42%	36%	32%	35%	41%	13%	4%	38%	10%	5%	9%	2%	27%	331
Rural	55%	48%	41%	47%	55%	8%	1%	41%	2%	1%	6%	1%	36%	434
Total	51%	44%	38%	43%	50%	10%	2%	40%	5%	2%	7%	1%	33%	765

Table 38: Facilities that have tracer items for basic surgical services, by County (N=390)

	Staff and Guidelines	Equipment	Medicines and Commodities	Readiness Score
Total	5%	43%	50%	41%
County				
Bomi	0%	35%	42%	33%
Bong	4%	39%	49%	38%
Grand Bassa	0%	52%	60%	49%
Grand Cape Mount	4%	35%	52%	37%
Grand Gedeh	0%	45%	51%	42%
Grand Kru	0%	45%	51%	42%
Lofa	8%	43%	46%	40%
Margibi	11%	50%	50%	45%
Maryland	6%	48%	49%	43%
Montserrado	10%	44%	54%	44%
Nimba	1%	41%	50%	39%
River Cess	41%	55%	53%	52%
Sinoe	0%	32%	47%	34%
River Gee	1%	48%	48%	43%
Gbarpolu	0%	43%	49%	40%
Facility type				
Hospital	36%	92%	86%	83%
Health center	16%	60%	59%	54%
Clinic	3%	39%	48%	38%
Managing authority				
Government/public	3%	40%	48%	39%
NGO/not-for-profit	3%	43%	59%	44%
Private-for-profit	9%	46%	54%	44%
Mission/faith based	19%	74%	72%	67%
Urban/Rural				
Urban	10%	49%	58%	48%
Rural	3%	40%	47%	38%

Table 39: Percentage of hospitals that offer comprehensive surgical services, by region

	Offers comprehensive surgical services
Total	92%
Regions	
Bomi	100%
Bong	100%
Bassa	100%
Grand Cape Mount	100%
Grand Gedeh	100%
Grand Kru	100%
Lofa	100%
Margibi	100%
Maryland	100%
Montserrado	72%
Nimba	100%
River Cess	100%
Sinoe	100%
River Gee	100%
Gbarpolu	100%
Facility type	
Hospital	92%
Health center	
Clinic	
Managing authority	
Government/public	92%
NGO/not-for-profit	100%
Private-for-profit	100%
Mission/faith based	80%
Urban/Rural	
Urban	90%
Rural	100%

Table 40: **Hospitals that have tracer items for comprehensive surgical services, by County (N=36)**

Total	Staff and Guidelines	Equipment	Medicines and Commodities	Readiness Score
	62%	69%	75%	70%
Regions				
Bomi	25%	25%	39%	32%
Bong	75%	67%	81%	76%
Bassa	43%	71%	62%	60%
Grand Cape Mount	50%	75%	67%	65%
Grand Gedeh	50%	75%	67%	65%
Grand Kru	25%	75%	33%	41%
Lofa	65%	68%	71%	69%
Margibi	90%	100%	100%	98%
Maryland	100%	100%	78%	88%
Montserrado	74%	68%	94%	83%
Nimba	53%	63%	72%	65%
River Cess	50%	75%	11%	35%
Sinoe	50%	75%	89%	76%
River Gee	75%	75%	78%	76%
Gbarpolu	50%	50%	67%	59%
Facility type				
Hospital	62%	69%	75%	70%
Health center	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Clinic	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Managing authority				
Government/public	60%	66%	69%	66%
NGO/not-for-profit	63%	75%	72%	71%
Private-for-profit	56%	69%	86%	75%
Mission/faith based	75%	75%	89%	82%
Urban/Rural				
Urban	59%	67%	76%	70%
Rural	72%	77%	69%	72%

Table 41: **Percentage of hospitals with High-level diagnostic equipment availability by County (N=36)**

	X-ray	ECG	Ultrasound	CT scan	Mean availability of tracer items	Total number of facilities
Regions						
Bomi	0%	0%	0%	0%	0%	27
Bong	67%	0%	100%	0%	42%	57
Bassa	71%	0%	71%	0%	36%	34
Grand Cape Mount	0%	0%	0%	0%	0%	34
Grand Gedeh	100%	0%	100%	0%	50%	24
Grand Kru	0%	0%	0%	0%	0%	19
Lofa	20%	0%	50%	0%	18%	60
Margibi	60%	60%	60%	0%	45%	48
Maryland	100%	0%	100%	0%	50%	27
Montserrado	84%	76%	84%	0%	61%	268
Nimba	100%	70%	100%	3%	68%	75
River Cess	0%	0%	100%	0%	25%	20
Sinoe	100%	0%	100%	0%	50%	35
River Gee	0%	0%	100%	0%	25%	19
Gbarpolu	100%	100%	0%	0%	50%	18
Facility type						
Hospital	64%	37%	72%	18%	48%	36
Health center	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	58
Clinic	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	671
Managing authority						
Government/public	52%	20%	60%	24%	39%	449
NGO/not-for-profit	100%	50%	100%	0%	63%	19
Private-for-profit	100%	75%	100%	0%	69%	261
Mission/faith based	60%	60%	80%	20%	55%	36
Urban/Rural						
Urban	63%	37%	66%	19%	46%	331
Rural	69%	38%	100%	13%	55%	434
Total	64%	37%	72%	18%	48%	765

Table 42: Facilities that have tracer items for blood transfusion services, by County (N=60)

Total	Staff and Guidelines	Equipment	Diagnostics	Medicines and Commodities	Readiness Score
	52%	21%	47%	59%	48%
County					
Bomi	50%	0%	0%	50%	29%
Bong	67%	33%	83%	67%	67%
Bassa	25%	13%	31%	94%	45%
Grand Cape Mount	41%	0%	50%	38%	37%
Grand Gedeh	9%	0%	9%	18%	10%
Grand Kru	100%	0%	59%	59%	62%
Lofa	75%	50%	75%	90%	76%
Margibi	60%	20%	100%	75%	70%
Maryland	14%	29%	64%	50%	41%
Montserrado	51%	21%	42%	55%	45%
Nimba	59%	41%	46%	63%	54%
River Cess	100%	0%	50%	50%	57%
Sinoe	100%	100%	100%	50%	86%
River Gee	0%	0%	0%	50%	14%
Gbarpolu	100%	0%	50%	100%	71%
Facility type					
Hospital	73%	39%	72%	79%	69%
Health center	45%	29%	47%	64%	49%
Clinic	37%	0%	26%	37%	28%
Managing authority					
Government/public	58%	25%	45%	57%	49%
NGO/not-for-profit	27%	27%	77%	64%	52%
Private-for-profit	44%	8%	42%	51%	40%
Mission/faith based	68%	56%	64%	100%	74%
Urban/Rural					
Urban	57%	25%	44%	61%	50%
Rural	37%	11%	56%	55%	44%