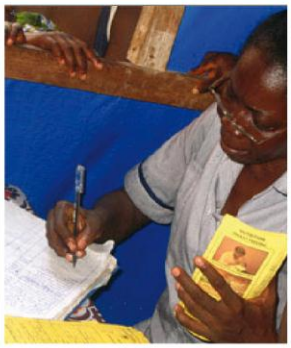
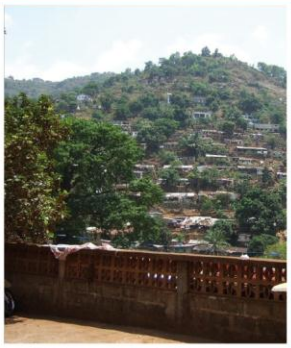
Sierra Leone

Service Availability and Readiness Assessment 2011

Report


Government of Sierra Leone
Ministry of Health & Sanitation

Sierra Leone
Service Availability and Readiness Assessment

2011 Report

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2012

Foreword

The Sierra Leone Service Availability Readiness Assessment, Summary Report provides information on set of tracer indicators that determine service availability and readiness. It is the first of its kind to be conducted in Sierra Leone, as it provides reliable information on service delivery such as the availability of key human and infrastructure resources, on 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 care, HIV, TB, malaria, and non-communicable diseases. This and subsequent report will contribute favourably to monitoring the service availability and readiness of the health sector and to generate evidence to support planning in the health system in Sierra Leone.

The publication of this report is timely and will fill an important information gap in the areas of measuring and tracking progress in health systems strengthening. With the increased demand for accountability and the need to demonstrate results at country and global levels, SARA surveys will help track how health systems 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.

I, therefore, want to encourage you all to use the information in this document for planning, monitoring and evaluation of your health programmes. I would like you to keep in mind that as no situation is static, the figures shown here are expected to change with time. Therefore, we intend to conduct similar surveys on annual basis to determine the level of progress in these indicators.

Finally, on behalf of the Ministry of Health and Sanitation, I hereby express our appreciation to the Global fund to fight AIDs, Tuberculosis and Malaria for providing financial support and the World Health Organization for providing Technical support for the survey.

Honourable, Haja Zianab Hawa Bangura

MINISTER OF HEALTH AND SANITATION

Acknowledgements

The Ministry of Health and Sanitation wishes to acknowledge the contribution of all those who participated in the development of the Service Availability Readiness Assessment, the first to be undertaken in Sierra Leone and West Africa as a whole.

Special thanks and appreciation goes to the Minister of Health and Sanitation for her leadership and guidance during the development of this document.

We are grateful to both individuals and organizations whose support and commitment made this report a reality. In particular, we wish to thank the World Health Organization (WHO) for providing technical support to the country team.

Our appreciations go to all the members of the Sierra Leone Team Dr Edward Magbity (MOHS) who served as the local SARA focal point, Dr Magnus Gbories (Director DPI), Dr. Ansumana Sillah, Messrs Micheal Amara, Mohamed Jalloh, Richard Kaimbay, Alfred Gbla, Bernard Dugba, Mrs. Ekundayo Karim all of whom participated in the crucial stages leading to the development of this report.

The Ministry would like to thank to all those whose names may have been inadvertently left out but who were either consulted during the administration of the questionnaires or who in one way or another contributed to this process. We wish to state that without their contribution this work would not have been possible - we are greatly indebted to them.

This study was supported with financial contribution from the Global HSS Round 9 Grant to Sierra Leone. Financial and Technical support for the report writing was supported by WHO.

Dr Kisito S. Daoh
Chief Medical Officer

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Abbreviations and acronyms

3TC	Lamivudine
ABC	Abacavir
ACT	Artimisinin combination therapy
AIDS	Acquired immune deficiency syndrome
ALT	Alanine aminotransferase
ANC	Antenatal care
ARI	Acute respiratory infection
ART	Antiretroviral therapy
ARV	Antiretroviral
BCG	Bacillus Calmette-Guérin
BEmOC	Basic emergency obstetric care
BP	Blood pressure
BPEHS	Basic package of essential health services
CBC	Complete blood count
CD4	Cluster of differentiation 4
CHC	Community health centre
CHP	Community health post
CEmOC	Comprehensive emergency obstetric care
d4T	Stavudine
D&C	Dilation and curettage
DBS	Dried blood spot
DHS	Demographic health survey
DOTS	Directly Observed Treatment Short course
DTP	Diphtheria tetanus pertussis
EFV	Efavirenz
EPI	Expanded programme on immunization
FHCI	Free health care initiative
FBO	Faith based organization
GoSL	Government of Sierra Leone
GPS	Global positioning system
HepB	Hepatitis B
HiB	Haemophilus influenzae type B
HIV	Human immunodeficiency virus
HIV+	HIV positive
HMIS	Health management information system
IMCI	Integrated management of childhood illness
IMEESC	Integrated management of emergency and essential surgical care
IMPAC	Integrated management of pregnancy and childbirth
IPT	Intermittent preventive therapy
ITN	Insecticide treated net
IUD	Intrauterine device
IV	Intravenous
LLITN	Long-lasting insecticide treated net
M&E	Monitoring and evaluation
MCH	Maternal and child health

MCHP	Maternal and child health post
MDG	Millennium development goal
MDR-TB	Multiple drug resistant tuberculosis
MNCH	Maternal, neonatal and child health
MoHS	Ministry of health and sanitation
NAS	National AIDS secretariat
NCD	Non-communicable disease
NGO	Non-governmental organization
NVP	Nevirapine
OI	Opportunistic infection
OPV	Oral polio vaccine
ORS	Oral rehydration solution
PCV	Pneumococcal conjugate vaccine
PMTCT	Preventing mother-to-child transmission
PHU	Peripheral health unit
RDT	Rapid diagnostic test
SARA	Service availability and readiness assessment
SP	Sufadoxine pyrimethamine
SSL	Statistics Sierra Leone
STI	Sexually transmitted infection
TB	Tuberculosis
TT	Tetanus toxoid
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session
UNICEF	United Nations Children's Fund
WHO	World Health Organization
ZDV	Zidovudine

Executive summary

The 2011 Service Availability and Readiness Assessment (SARA) for Sierra Leone was conducted to assist the health sector in assessing and monitoring service readiness and capacity at district and health facility levels. The SARA survey was conducted in April 2011, to inform the first health sector performance review and was undertaken by the Directorate of Policy, Planning and Information of the MoHS with technical assistance from the World Health Organization. A nationally representative sample of 210 health facilities was drawn, stratified by region and type of facility including the private sector.

The **General service readiness index** is a composite measure designed to combine information from the five general service readiness domains: basic amenities, basic equipment, standard precautions, laboratory diagnostics, and medicines. For each area the average availability was computed using a set of standard items.

Figure 1 shows the General service readiness index and domain scores for the 2011 assessment. The General service readiness index score is 48 out of 100. Across the five domains, the basic equipment score is the highest, and the laboratory diagnostics score is the lowest.

Figure 1. Overall general readiness index and domain scores (N=207) Sierra Leone SARA, 2011

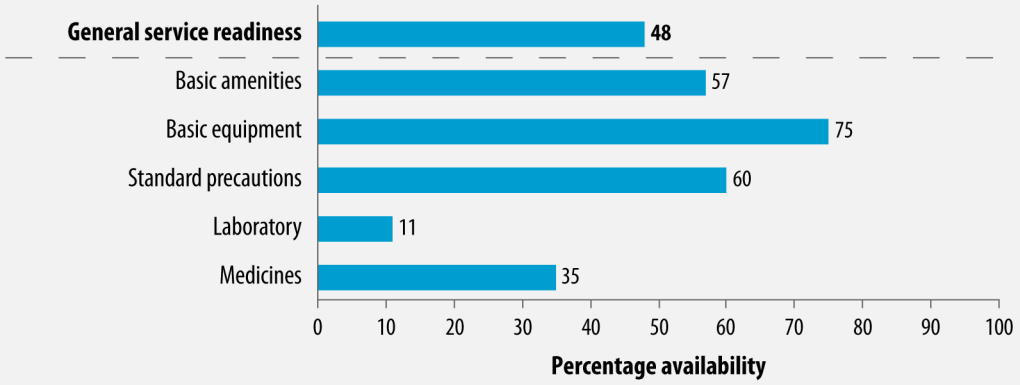


Figure 2 shows the general service readiness index by region. Over the five domains, the Southern region appears to consistently score lower than the other regions. Western Area scores highest in several domains, particularly for medicines and laboratory.

Figure 2. General service readiness index and domain mean scores by region (N=207) Sierra Leone SARA, 2011

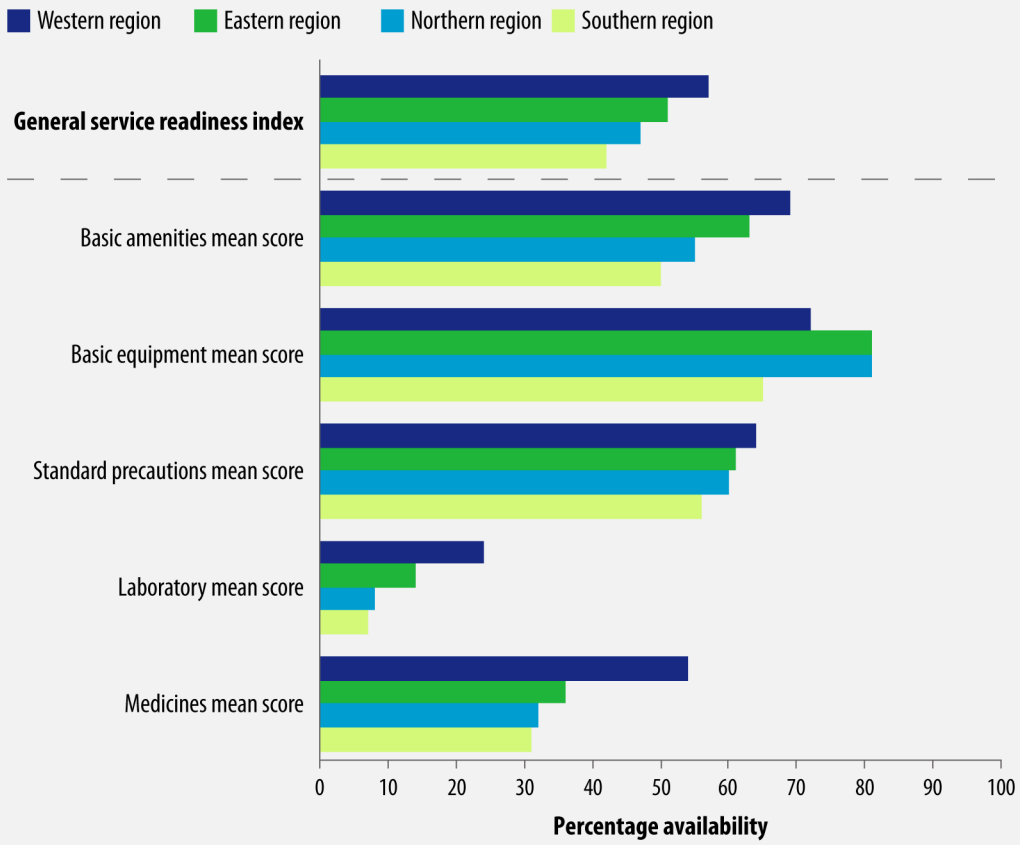


Figure 3 illustrates that for all general service readiness domains except basic equipment, private facilities scored higher than public facilities.

- The largest gap in availability occurred in the medicines domain, that is, a much higher percentage of private facilities had essential medicines in stock on the day of the assessment compared to public facilities.
- The second largest gap in availability occurred in laboratory diagnostics. Only basic equipment items were equally available in both private and public facilities.

Figure 4 shows the general service readiness score for hospitals and for primary care facilities. Hospitals have a much higher readiness score compared to primary care facilities in all domains. This is particularly so for the diagnostics and medicines domain. It is to be expected that larger facilities are better equipped and stocked than smaller facilities; however, most tracer items that comprise the general service readiness index are basic items required to provide an acceptable level of health services.

Figure 3. General service readiness index and domain mean scores by public versus private ownership (N=207) Sierra Leone SARA, 2011

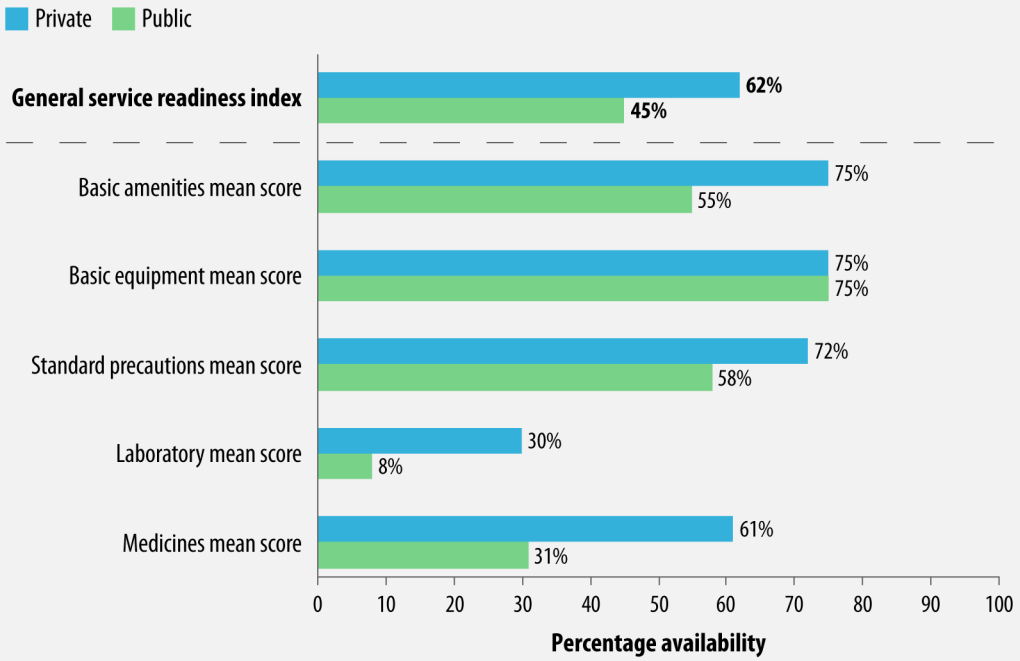


Figure 4. General service readiness index and domain scores by hospital versus primary care facility type (N=207) Sierra Leone SARA, 2011

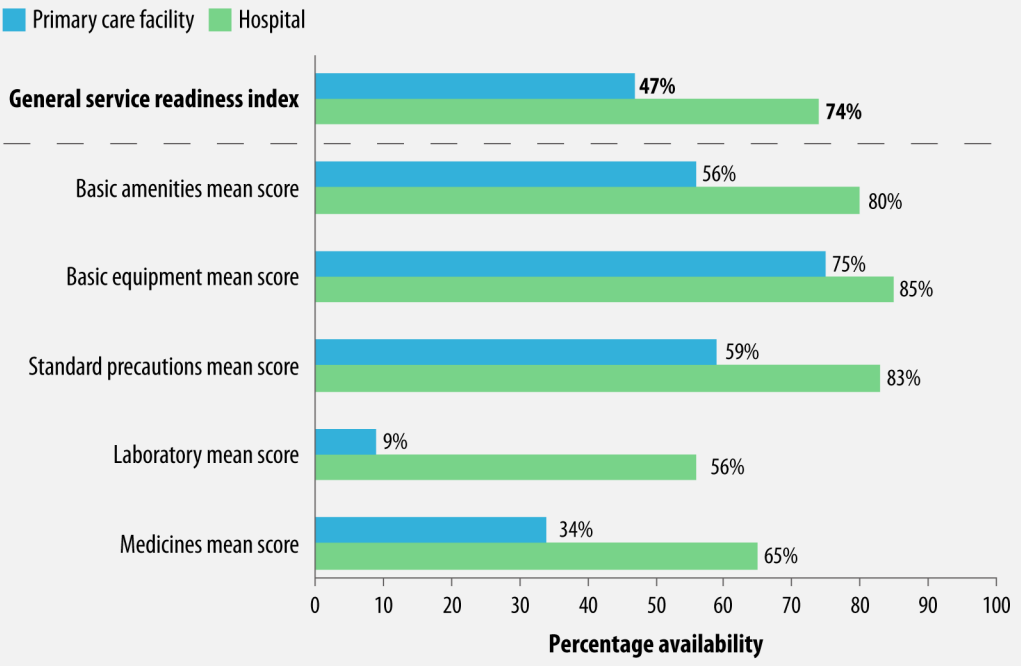


Figure 5 shows the national estimates for **specific services**: the percentage of facilities in Sierra Leone offering MNCH services such as antenatal care, child curative care, and immunization, as well as services for communicable diseases such as malaria, HIV/AIDS, and tuberculosis.

- Over 9 in 10 facilities reported offering maternal, newborn, and child health services, including antenatal care, normal delivery and newborn care, child immunization, and curative care and growth monitoring for children. This reflects the priority placed on health services for pregnant women and young children through the Free Health Care Initiative.
- For communicable diseases, all facilities (100%) reported offering malaria diagnosis and treatment services, and 96% reported offering diagnosis and treatment of sexually transmitted infections. However, it is important to note that this does not mean that the facilities have the necessary equipment, diagnostics, and medicines to offer an adequate level of care.
- Health services for HIV/AIDS were less commonly available, with less than half of facilities offering HIV/AIDS testing and counselling services.
- Availability of tuberculosis diagnosis and treatment services were lowest, at 17% of facilities.

Figure 5. Percentage of facilities offering specific health interventions for MNCH and communicable diseases (N=207) Sierra Leone SARA, 2011

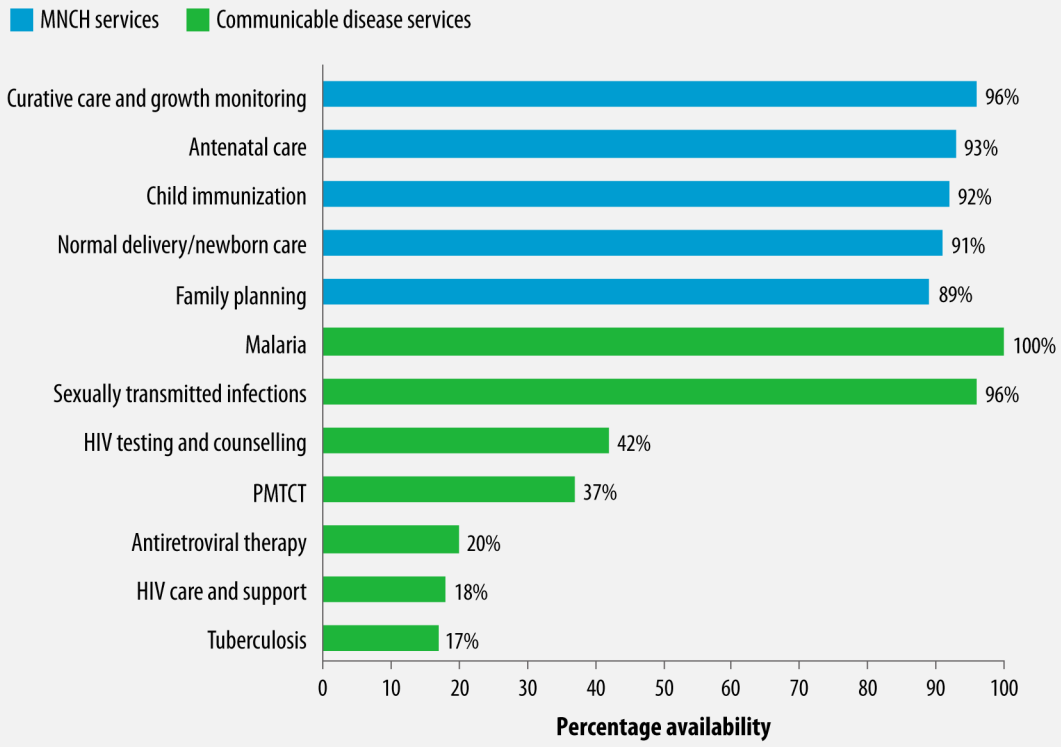


Figure 6 shows an overview of readiness scores for MNCH services with domain scores for trained staff and guidelines, equipment, diagnostics, and medicines and commodities.

- Readiness score was highest for child immunization services (82%).
- Diagnostic capacity was low for multiple services, such as ANC (urine protein dipstick and haemoglobin test) and curative care for children (malaria test, haemoglobin, and general microscopy).
- Readiness to provide comprehensive emergency obstetric care was low at 48%. Only half of hospitals had a safe blood source for transfusions.

Figure 6. Readiness to provide MNCH services
Sierra Leone SARA, 2011

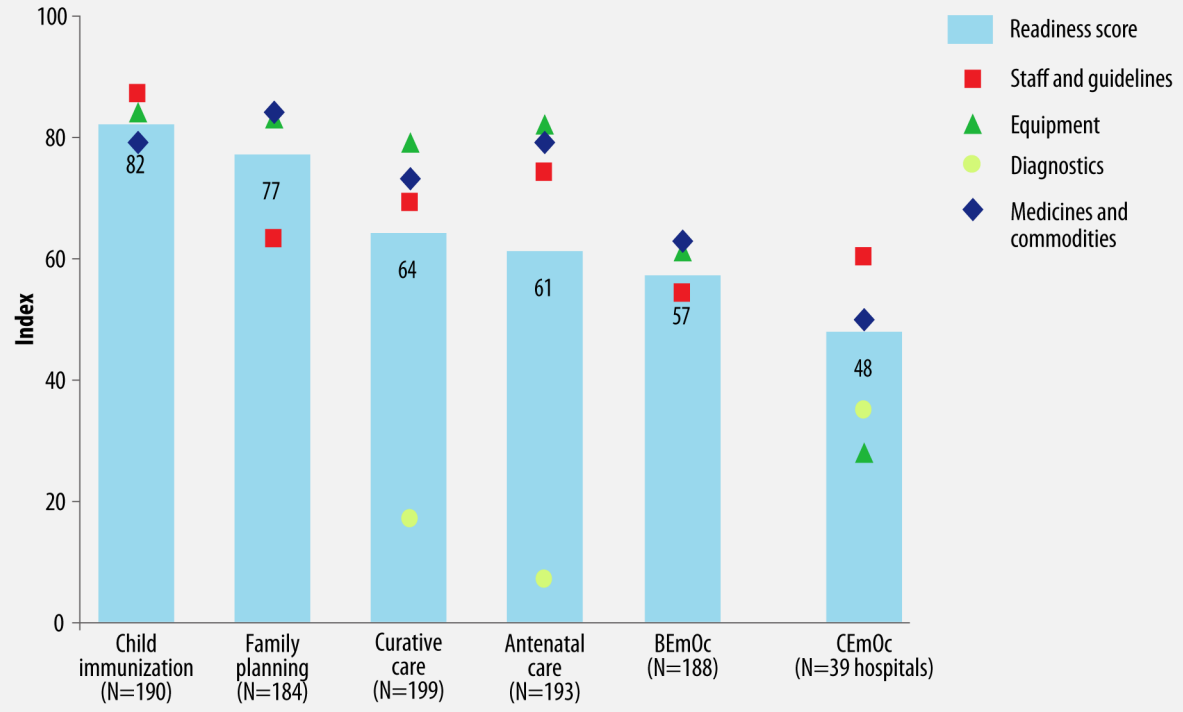
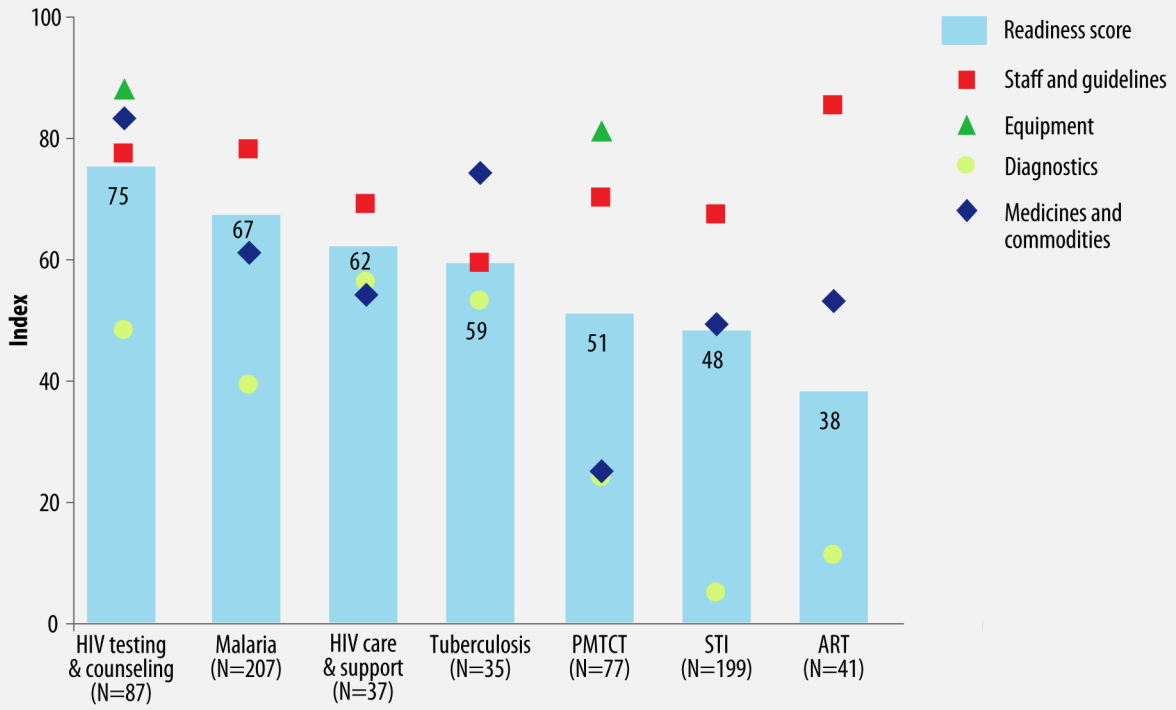


Figure 7 shows an overview of readiness scores for HIV/AIDS, malaria, and TB services, with domain scores for trained staff and guidelines, equipment, diagnostics, and medicines and commodities.

- HIV counseling and testing had the highest readiness score (75%).
- Diagnostic capacity tended to be low. It was the lowest scoring domain for almost all services.
- Presence of trained staff and guidelines was relatively high across services.

Figure 7. Readiness to provide HIV/AIDS, malaria and TB services Sierra Leone SARA, 2011



Introduction

The Republic of Sierra Leone is located on the West African coast, bordered by Guinea to the north and Liberia to the southeast. In 2010, Sierra Leone had a population of 5.7 million, 38% of which lived in urban areas. Life expectancy at birth is estimated at 49 years, which is attribuTable to a heavy disease burden and high child and maternal morbidity and mortality. Nearly one out of five children die before reaching the age of five, primarily due to malaria, diarrhoeal diseases and acute respiratory infection. Underlying factors include pervasive poverty, limited access to safe drinking water and adequate sanitation, poor nutrition, and limited access to quality health services. The poor health status of the population is mainly due to a high disease burden caused by environment related communicable diseases and aggravated by poor nutrition. Malaria is hyper endemic/holoendemic in the country and affects the whole population; children under five years and pregnant women are particularly affected. Although the under-fives constitute about 17% of the population, they make up 49% of consultations at primary health care facilities. Despite improvements in the past ten years, infant mortality and maternal mortality remain high at 89 per 1000 live births and 857 per 100 000 live births, respectively.

Administratively, Sierra Leone is divided into four major areas, namely Northern Province, Southern Province, Eastern Province and the Western Area where the capital Freetown is located. The provinces are further divided into twelve districts, while the districts are sub-divided into chiefdoms. The health infrastructure of the country was largely destroyed during the ten-year civil war that ended in 2002, and has required extensive rebuilding and rehabilitation. Health facilities remain inadequately equipped and under-staffed, often providing only limited services. Health services are delivered through a network of health facilities, consisting of 1,054 Peripheral health facilities which are composed of Community Health Centres (CHCs), Community Health Posts (CHPs), Maternal and Child Health Posts (MCHPs) and 51 hospitals (20 government owned and the rest owned by private-for-profit, non-governmental and faith based organizations).

In recent years, Sierra Leone has shown rapid progress in the implementation of key health initiatives. Following the National Health Sector Strategic Plan 2010-2015, the Free Health Care Initiative (FHCI) was launched in April 2010 to provide free health services to pregnant women, breastfeeding mothers and children under the age of 5 years, offering free consultations including antenatal, postnatal and delivery services, diagnostic services and treatment, and basic and comprehensive emergency obstetric and newborn care. The Basic Package of Essential Health Services for Sierra Leone was also launched in 2010 to outline priority health interventions to reduce mortality rates, particularly for women and children, and to specify the essential health services to be provided at each level of health service delivery. There has been a 250% increase in service utilization and a dramatic decrease in case fatality among children since FHCI came into effect[1]. However, the 2010 Health Sector Performance Report also highlighted the need for continuous availability of essential drugs at all health facilities in order to ensure an adequate level of service. There is also a need to monitor the implementation of the Basic Package of Essential Health Services and to verify that the core services are being offered at health facilities nationwide as an integrated whole.

[1] Ministry of Health and Sanitation, Government of Sierra Leone. 2010 Health Sector Performance Report.

Purpose of the survey

The 2011 Service Availability and Readiness Assessment (SARA) for Sierra Leone was conducted to assist the health sector in assessing and monitoring service readiness and capacity at district and health facility levels; assessing the equitable and appropriate distribution of service and resources as well as providing the sector with skills and tools for monitoring service and resource availability on a regular basis. The SARA provides key information on the state of the health system in terms of service availability (e.g. density of health facilities and beds, core health workers, service utilization), as well as the readiness of the facilities to provide an adequate level of service (e.g. availability of trained staff, diagnostics, equipment and medicines), both for general health services and for specific key health interventions (e.g. maternal and newborn health, HIV/AIDS, tuberculosis, malaria diagnosis and treatment). Monitoring facility-level performance provides information on whether health services are present and are being provided at the expected level, and gives an indication of how investments in the formal health sector are resulting in changes at the level of service delivery. This affects utilization of services and ultimately impacts population-level outcome measures. The SARA can also be used to assess data quality of the routine HMIS data. The SARA endeavours to inform the country progress and performance review process. The outcome of this assessment should be used to provide input into the annual health review as well as the annual planning process.

The survey generates a set of tracer indicators of service availability and readiness that can be used to:

- Detect change and measure progress in health system strengthening over time. Assess and monitor progress in health system strengthening within the broader context of M&E of national health strategies;
- Plan and monitor scale up of interventions key to achieve MDGs (e.g. interventions to reduce child and maternal mortality, HIV/AIDS, tuberculosis, malaria) and better respond to the increasing burden of chronic diseases;
- Generate the 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;
- Support national planners in planning and managing health systems (assessing equiTable and appropriate distribution of services and resources, etc).

The survey is designed to generate a set of core indicators on key inputs and outputs of the health system, which can be used to measure progress in health system strengthening over time.[2] Tracer indicators aim to provide objective information about whether or not a facility meets the required conditions to support provision of basic or specific services with a consistent level of quality and quantity.

[2] World Health Organization. 2010. Monitoring Health System Strengthening: A handbook of indicators and related measurement strategies. http://www.who.int/entity/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf

Methodology and data

In April 2011, the Sierra Leone Ministry of Health and Sanitation (MoHS) conducted the SARA as a situation analysis of the state of health facilities and their capacity to provide health services in order to fill key data gaps to inform the health sector performance review. The SARA survey was undertaken by the Directorate of Policy, Planning and Information of the MoHS with technical assistance from the World Health Organization. Planning for the survey began in February 2011 with a joint Global Fund/WHO mission to Sierra Leone.

A nationally representative sample of facilities was drawn from a sampling frame of 1264 health facilities in Sierra Leone for a rapid assessment of service availability and readiness. The sample was stratified by region (Eastern, Northern, Southern, Western), as well as by the following categories of facilities: Public hospitals, private hospitals, public community health centres (CHCs), public community health posts (CHPs), public maternal and child health posts (MCHPs), public clinics, and private clinics. Public facilities refer to facilities owned and managed by the Ministry of Health and Sanitation. For the purposes of this assessment, all other facilities (private-for-profit, FBO, NGO, military) were grouped together as private facilities. A sample of 210 facilities was selected, based on the minimum requirements for the analysis and logistical considerations. Public and private hospitals and public clinics were purposely oversampled. All district hospitals and national referral hospitals were covered in the assessment. The CHCs, CHPs, MCHPs, and private clinics were sampled with probability proportional to the number of facilities by type at the national and regional levels. The sample covers approximately 17% of all health facilities in Sierra Leone. The sample is not representative at the district level.

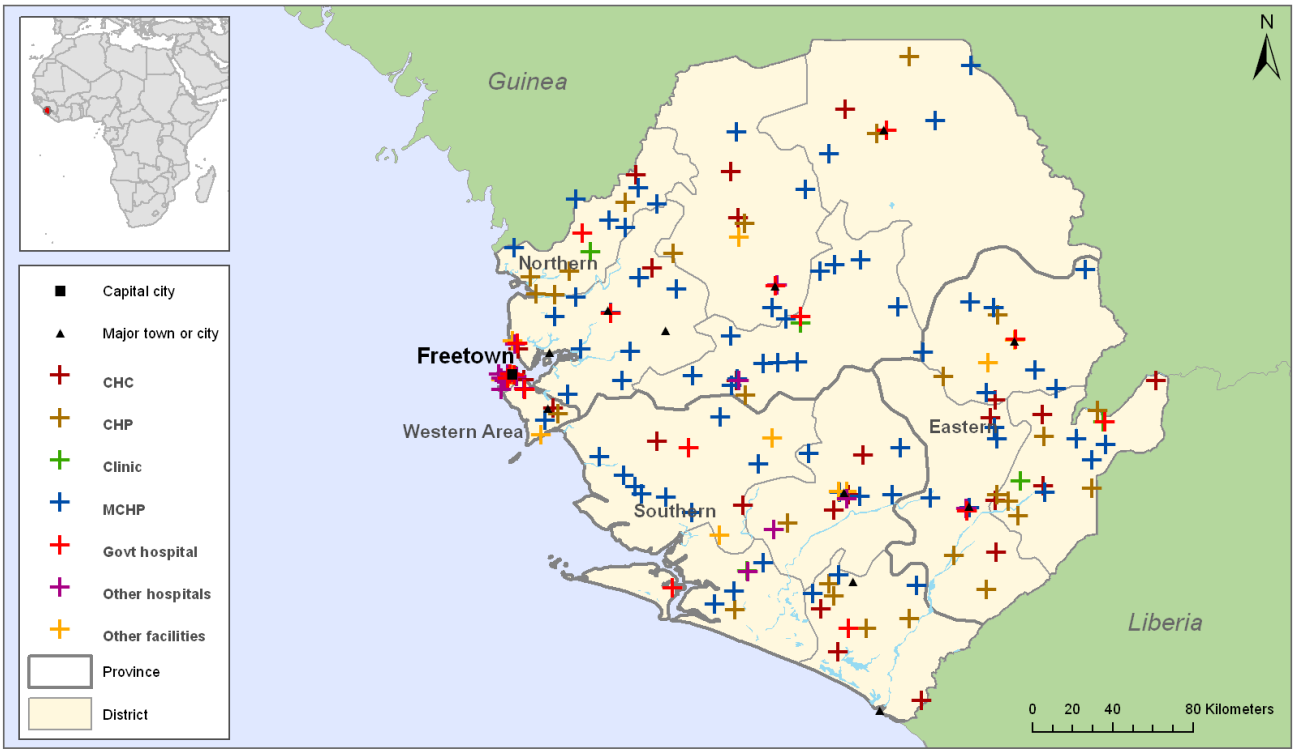
Training of data collectors was conducted the week of April 11, and data collection occurred over the subsequent 2-3 weeks. There were seven facilities that could not be surveyed which were replaced by the nearest facility of the same category in the same district. Data collectors were not able to assess three of the facilities for various reasons. One facility was closed and could not be replaced, one facility was missing, and a third facility (MCH clinic) was assessed in conjunction with the hospital to which it was attached. Thus, the final sample consisted of 207 facilities, a response rate of 99%. Data were weighted during analysis to account for oversampling and to represent the actual distribution of facilities in the country.

Table 1 provides information on the distribution of facilities in the sampling frame and in the sample as well as the weighted and unweighted number of facilities by facility category and region. Facilities in the sample are shown mapped in Figure 8.

Table 1: Number and percentage distribution of health facilities in sampling frame and in sample (weighted and unweighted)

	Total number of facilities	Distribution of facilities	Number of facilities in sample	
			Unweighted	Weighted
Public hospital	20	1.6%	19	3
Private hospital	31	2.5%	20	5
Public CHC	195	15.4%	28	32
Public CHP	236	18.7%	31	39
Public MCHP	623	49.3%	78	102
Public clinic	21	1.7%	13	4
Private clinic	138	10.9%	18	23
Region				
Eastern	296	23.4%	46	48
Northern	456	36.1%	72	75
Southern	356	28.2%	58	58
Western	156	12.3%	31	26
Total	**1264**	**100.0%**	**207**	**207**

Figure 8: Map of sample facilities included in the assessment (GPS coordinates were missing for 34 of the 207 facilities and could not be mapped)



A data analysis workshop was conducted in-country at the end of May 2011, with priority given to key areas of service delivery for the 2010 health sector performance report.

Overview of the assessment

Ensuring access to quality health services is one of the main functions of a health system. For health services to be accessible to the population, health facilities must be distributed in such a way as to allow physical accessibility to clients, with sufficiently many to respond to demand for services. The facilities themselves should have the capacity to deliver the services offered, which is referred to as service readiness. This includes having the necessary trained staff, guidelines, and the presence of infrastructure, equipment, commodities, medicines, and diagnostic tests at the health facility. For Sierra Leone, these elements are defined in the Basic Package of Essential Health Services. The SARA[3] is meant to provide key information on the state of the health system in the following areas:

- General service availability (availability of health services): health infrastructure (density of facilities and inpatient beds), core health personnel, and inpatient/outpatient services utilization.
- General service readiness (capacity of health facilities to provide general health services): presence of infrastructure/amenities, basic equipment, standard precautions for prevention of infections, laboratory diagnostic capacity, and medicines and commodities.
- Specific service availability and readiness (proportion of facilities providing specific key health interventions and their capacity to provide these services): availability of guidelines, trained staff, equipment, diagnostics, and medicines and commodities required to provide the service.

The Services Availability and Readiness Assessment (SARA) consists of a parsimonious set of tracer indicators of service availability and readiness that can be used to detect change and measure progress in health system strengthening over time. Service readiness is recognized as a potentially robust expression of the strength of a health system. Tracer indicators aim to provide objective information about whether or not a facility meets the required conditions to support provision of basic or specific services with a consistent level of quality and quantity. These tracer indicators are summarized in composite indicators, also called indexes, which are a useful means to summarize and communicate information about multiple indicators and domains of indicators.

[3] World Health Organization. 2011. Measuring Service Availability and Readiness: A health facility assessment tool. http://www.who.int/healthinfo/systems/sara_introduction/en/index.html

1. General service availability and readiness

1.1. General service availability (health facility density)

Health services must be physically accessible for the population to benefit from them. The facility density is primarily an indicator of outpatient service access, and was computed using the MoHS Master list of 1264 facilities. Facility density was computed by district and region. Eleven of the 13 districts exceed 2 facilities per 10,000. The Western Area, although it has the most health facilities, has the lowest density of health facilities because of the large population. Although health facility density gives some idea of the accessibility of health services, it does not provide a full picture as it does not take into account the size of the facilities. For example, while the Western Area has the lowest health facility density, it also has the most hospitals, which can serve a much larger number of clients. Also, Table 2 shows that half of all facilities in the country are MCHPs, which are small health posts with one or two trained staff providing a limited range of services. It is possible that even with a facility density above the target value, the population may not have sufficient physical access to the full range of health services.

Table 2: Facility density per 10,000 population by district and by region

	Population 2010	Number of facilities	Facility density (per 10,000)
District			
Bo	596,469	134	2.2
Bombali	445,620	106	2.4
Bonthe	152,059	57	3.7
Kailahun	421,287	81	1.9
Kambia	308,929	65	2.1
Kenema	592,466	130	2.2
Koinadugu	303,289	72	2.4
Kono	288,245	85	2.9
Moyamba	248,378	98	3.9
Port Loko	503,500	117	2.3
Pujehun	306,700	66	2.2
Tonkolili	392,997	96	2.4
Western Area	1,186,861	156	1.3
Region			
Eastern	1,303,606	296	2.3
Northern	1,954,335	456	2.3
Southern	1,303,606	356	2.7
Western	1,186,861	156	1.3
Sierra Leone	**5,746,800**	**1264**	**2.2**

1.2 General service readiness

General Service Readiness refers to the overall capacity of health facilities to provide general health services.

Readiness is defined as the availability of components required to provide services such as basic infrastructure and amenities, basic equipment, standard precautions for infection control, laboratory tests, and medicines and commodities. This includes information on:

- ***Basic amenities:*** Power, improved water source, room with privacy, adequate sanitation facilities, communication equipment, access to computer with internet, emergency transportation
- ***Basic equipment:*** Blood pressure machine and cuff, stethoscope, adult scale, infant scale, child scale, thermometer, light source, neonatal bag and mask
- ***Standard precautions:*** Sterilization equipment, safe disposal of sharps and infectious wastes, sharps box, waste receptacle, disposable syringes, disinfectant, hand-washing soap, alcohol based hand rub, latex gloves, masks, gowns, eye protection, guidelines
- ***Diagnostic capacity:*** HIV RDT, haemoglobin, malaria RDT or smear, TB microscopy, blood glucose, syphilis RDT, general microscopy, urine pregnancy test, urine dipstick, DBS collection, ALT and creatinine
- ***Essential medicines:*** 14 essential medicines

Details of the indicators and their definitions can be found in Measuring Service Availability and Readiness: Service Readiness Indicators[4].

[4] World Health Organization. 2011. Measuring Service Availability and Readiness: Service Readiness Indicators. http://www.who.int/healthinfo/systems/SARA_ServiceReadinessIndicators.pdf

1.2.1 Basic amenities

Providing an enabling working environment is a requirement for an effective and functional health care delivery system. Such enabling environment includes the physical infrastructure and the availability of basic requirements for delivering quality services. The Basic Package of Essential Health Services outlines the minimum amenities and equipment required at each service delivery point of the health care delivery system. Service readiness for basic amenities was assessed based on the availability of the following tracer items: power supply (grid or generator), communication equipment, improved water source, sanitation facilities, computer with internet access, and emergency transportation.

Figure 9 shows estimates for the availability of basic amenities and infrastructure at health facilities in the country.

- On average, facilities had 4 of 7 tracer items, for an overall basic amenities readiness score of 63 out of 100. Only 62% of health facilities had a source of improved water on facility grounds or within 50 meters, and only one in five facilities had power on the day of the assessment (electricity grid or functional generator with fuel). This gives an indication that many facilities are lacking in basic infrastructure to provide health services.
- Over 90% of facilities were found to have a consultation room with auditory and visual privacy for patient consultations.
- Very few facilities had a computer with internet and email access (7%). Only 3% of facilities had all seven basic amenities.

Figure 9. Percentage of health facilities with basic amenities (N=207) Sierra Leone SARA, 2011

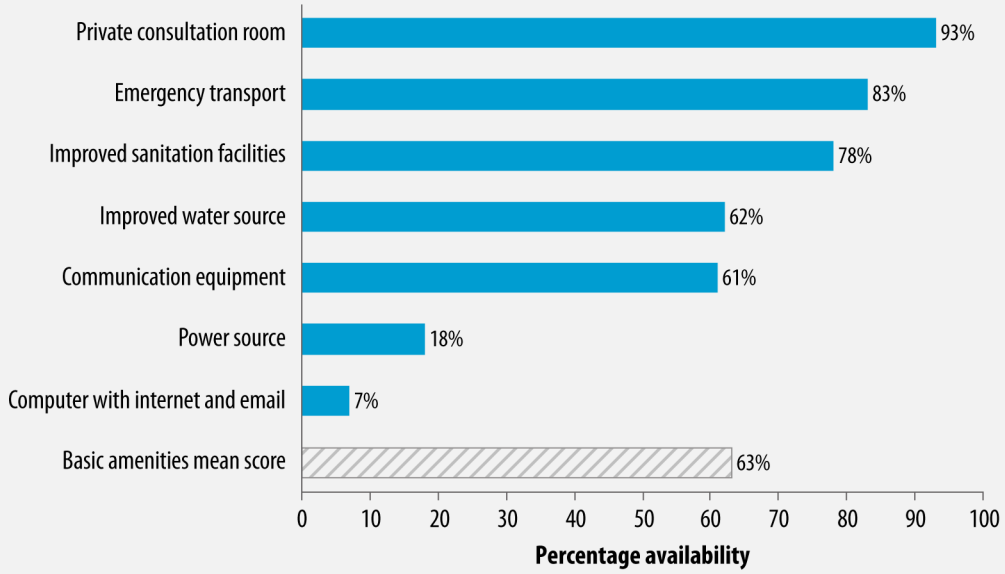


Table 3 shows the availability of basic amenities by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and a more detailed breakdown by facility type/managing authority.

- Hospitals were generally more likely to have the basic amenities available compared to primary care facilities.
- Some items were significantly more available in hospitals compared to primary care facilities, such as power source (87% for hospitals, 15% for primary care facilities), and computer with internet and email (57% for hospitals, 4% of primary care facilities).
- Improved water source (87% for hospitals, 61% for primary care facilities) and improved sanitation facilities (93% in hospitals, 77% in primary care facilities) were moderately more available in hospitals.
- Availability of most basic amenities items was generally higher in privately owned facilities, with the notable exception of communication equipment and emergency transport, which were both more available in public facilities.
- Computers with internet and email were virtually unavailable in publicly owned facilities (1%), and were available in only 43% of privately owned facilities. This is due to the large number of smaller primary care facilities such as CHPs and MCHPs in rural areas, whereas private facilities exist primarily in urban areas where access to power and computers with internet is much easier.
- The western area has the highest availability of basic amenities items for similar reasons, though some items such as private consultation room, improved sanitation facilities, and emergency transport were generally available in all regions.

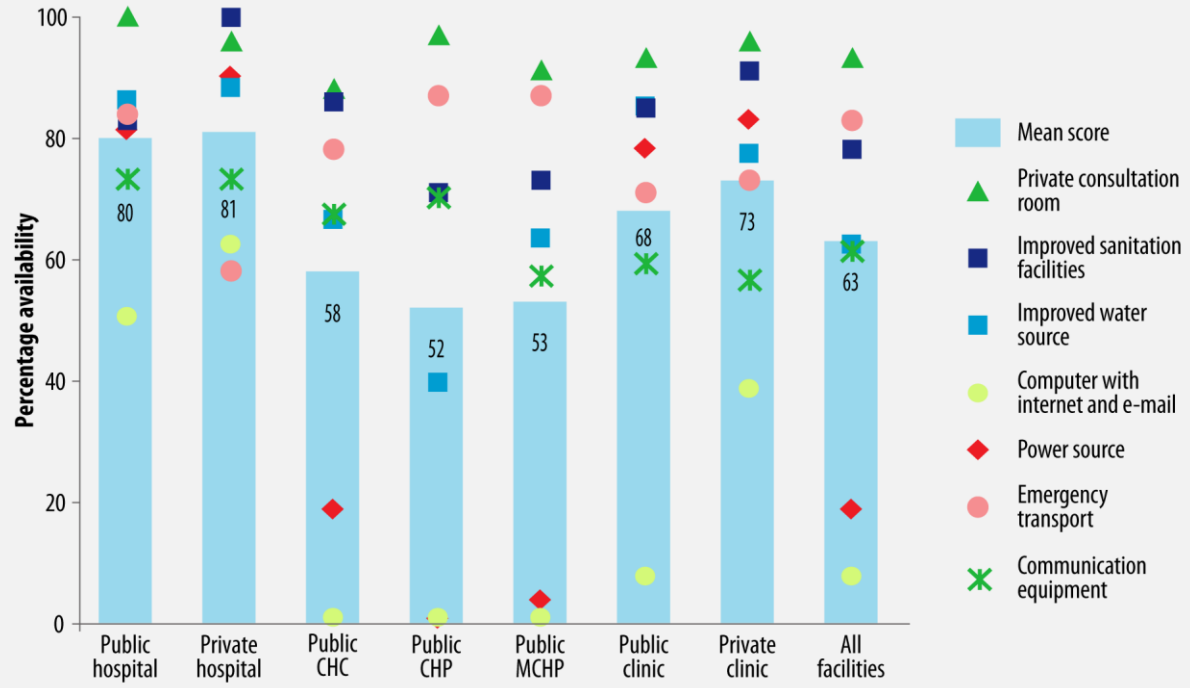
Table 3: Availability of basic amenities tracer items by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Private consultation room	Emergency transport	Improved sanitation facilities	Improved water source	Communication equipment	Power source	Computer with interne and email	All items	Basic amenities mean score (out of 100)
Region									
Eastern	100%	96%	80%	64%	85%	13%	4%	0%	63
Northern	94%	81%	78%	61%	62%	7%	4%	2%	55
Southern	85%	82%	72%	56%	36%	13%	4%	4%	50
Western Area	93%	66%	87%	74%	72%	71%	23%	9%	69
Hospital vs. primary care facility									
Hospital	97%	68%	93%	87%	73%	87%	57%	26%	84
Primary care	92%	84%	77%	61%	61%	15%	4%	2%	61
Public vs. private ownership									
Public	92%	85%	76%	59%	62%	8%	1%	1%	59
Private	96%	70%	92%	79%	59%	84%	43%	18%	79
Type-managing authority									
Public hospital	100%	84%	83%	86%	73%	81%	50%	38%	80
Private hospital	96%	58%	100%	88%	73%	90%	62%	18%	81
Public CHC	88%	78%	86%	66%	67%	18%	0%	0%	58
Public CHP	97%	87%	71%	39%	70%	0%	0%	0%	52
Public MCHP	91%	87%	73%	63%	57%	3%	0%	0%	53
Public clinic	93%	71%	85%	85%	59%	78%	7%	0%	68
Private clinic	96%	73%	91%	77%	56%	83%	38%	18%	73
Total	**93%**	**83%**	**78%**	**62%**	**61%**	**18%**	**7%**	**3%**	**63**

Figure 10 below shows the availability of basic amenities by facility type-managing authority. The overall mean score for all items is indicated with bars.

- The mean score appears to be higher for the two hospital categories (public and private) at around 80%, compared to other facility categories, particularly the CHCs, CHPs, and MCHPs (50-60%).
- The score for these smaller primary care facilities is affected by the availability of computer with internet (0%) and power (under 20%). Since these primary care facilities are currently not expected to have a computer, and these results simply provide a baseline result from which to measure future progress.
- However, all facilities should have a source of improved water, whereas the overall availability is only 62%. The levels vary considerably between facility type, from 39% of CHPs to 88% of private hospitals reporting availability of an improved water source.

Figure 10. Availability of basic amenities and mean score by facility category
Sierra Leone SARA, 2011



1.2.2 Basic equipment

Facilities were assessed on the availability of the following basic equipment items: adult weighing scale, child weighing scale, infant weighing scale, thermometer, stethoscope, blood pressure apparatus, light source, and neonatal bag and mask.

Figure 11 shows the estimates for the availability of these basic equipment tracer items at the national level.

- On average, facilities had 6 of the 8 items, for an overall basic equipment readiness score of 75 out of 100.
- The most commonly available items were thermometers (93%) and stethoscopes (88%).
- Less than half of health facilities had a neonatal bag and mask.
- 19% of facilities were fully equipped with all 8 basic equipment items.

Figure 11. Percentage of facilities with basic equipment items (N=207) Sierra Leone SARA, 2011

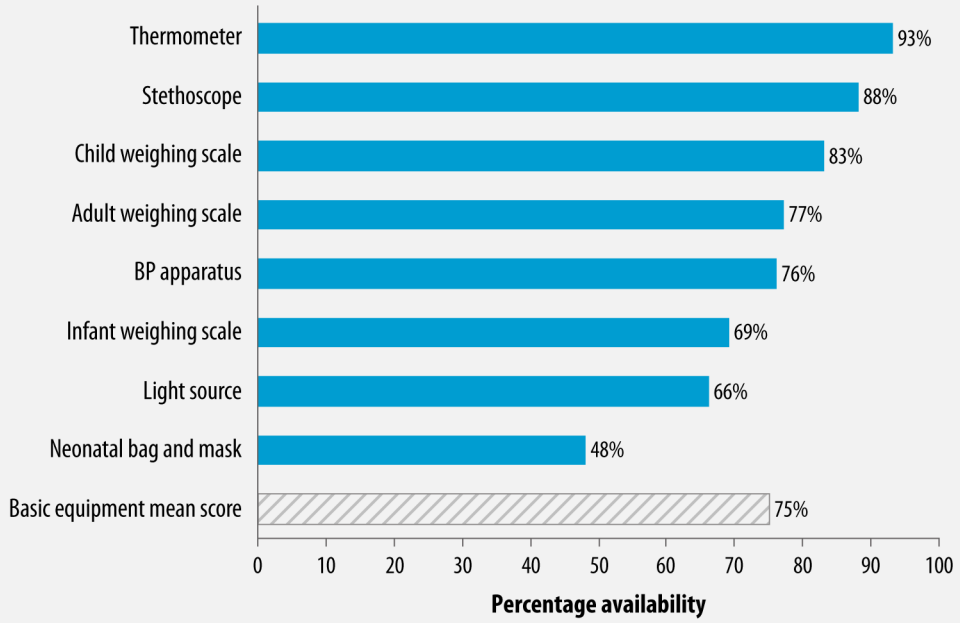


Table 4 shows availability of basic equipment tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

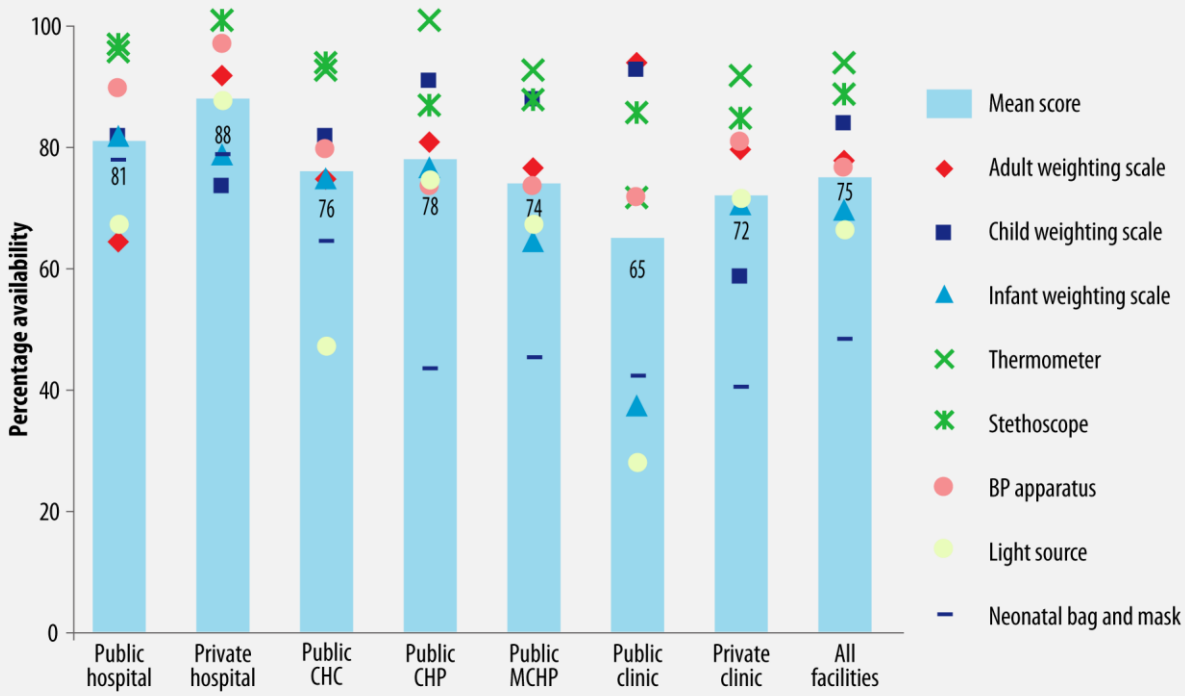
- Hospitals were generally better equipped than primary care facilities, although availability did not differ significantly between hospital and primary care facility for most basic equipment items.
- Notable differences were apparent for neonatal bags and masks (77% for hospitals, 47% for primary care facilities) and for blood pressure apparatus (93% for hospitals, 75% for primary care facilities).
- Almost half of hospitals had all 8 basic equipment items (48%) compared to 18% of primary care facilities.
- There was not a large difference in availability of equipment between public and private facilities. The one exception was the child weighing scales, which were available in 87% of public and 61% of private facilities.
- The Eastern and Northern regions had the highest basic equipment mean scores (81% each), while the Southern region had the lowest score (65%).

Table 4: Availability of basic equipment tracer items by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Thermo-meter	Stethoscope	Child weighing scale	Adult weighing scale	BP apparatus	Infant weighing scale	Light source	Neonatal bag and mask	All items	Basic equipment mean score (out of 100)
Region										
Eastern	93%	95%	90%	86%	87%	89%	66%	37%	23%	81
Northern	98%	88%	85%	81%	76%	68%	82%	65%	28%	81
Southern	90%	80%	84%	66%	59%	57%	50%	35%	10%	65
Western Area	86%	92%	63%	75%	91%	59%	52%	52%	9%	72
Hospital vs. primary care facility										
Hospital	98%	98%	76%	80%	93%	79%	80%	77%	48%	89
Primary care	93%	88%	84%	77%	75%	68%	65%	47%	18%	81
Public vs. private ownership										
Public	93%	88%	87%	76%	74%	68%	64%	49%	20%	81
Private	93%	87%	61%	81%	83%	71%	74%	47%	17%	84
Type-managing authority										
Public hospital	95%	96%	81%	64%	89%	81%	67%	77%	44%	81
Private hospital	100%	100%	73%	91%	96%	78%	87%	78%	50%	88
Public CHC	92%	93%	81%	74%	79%	74%	47%	64%	30%	76
Public CHP	100%	86%	90%	80%	73%	76%	74%	43%	22%	78
Public MCHP	92%	87%	87%	76%	73%	64%	67%	45%	16%	74
Public clinic	71%	85%	92%	93%	71%	37%	28%	42%	0%	65
Private clinic	91%	84%	58%	79%	80%	70%	71%	40%	9%	72
Total	**93%**	**88%**	**83%**	**77%**	**76%**	**69%**	**66%**	**48%**	**19%**	**75**

Figure 12 shows the availability of basic equipment items by facility type-managing authority. The overall mean score for all equipment items is shown as bars. Overall there was not a large variation in the mean score by facility category (65 – 88%).

Figure 12. Availability of basic equipment items and mean score by facility category Sierra Leone SARA, 2011



1.2.3 Standard precautions

Safety is an essential part of the health service delivery system. Health workers must be able to work in a safe working environment and must be provided with all the safety training and equipment they need to carry out their duties. They must also be able to render services to their patients in the safest manner, which means using the best standard safety precautions. Disposing of needles and medical products properly, sterilizing medical equipment appropriately and disinfecting restrooms and work areas are among the basic safety standard precautions expected in health facilities.

Service readiness regarding standard precautions was assessed based on the availability of the following 14 tracer items: sterilization equipment, safe disposal of sharps, safe disposal of infectious wastes, sharps box, waste receptacle, disinfectant, disposable or auto-destruct syringes, soap, alcohol-based hand rub, latex gloves, masks, gowns, eye protection, and guidelines on standard precautions.

Figure 13 shows the availability of these tracer items.

- On average, facilities had around 8 of the 14 items for an overall standard precautions readiness score of 60 out of 100.
- Almost all facilities had disposable syringes and sharps boxes, and over 90% of facilities reported appropriate disposal of sharps waste.
- In addition, the availability of soap and latex gloves was high (95% and 89% respectively), indicating that most facilities had these basic items.
- Sterilization equipment (dry heat sterilizer or autoclave), masks, and eye protection were the least commonly available items, most commonly available in hospitals.
- Eleven percent of facilities had all 14 standard precautions items.

Figure 13. Percentage of facilities with standard precaution items (N=207) Sierra Leone SARA, 2011

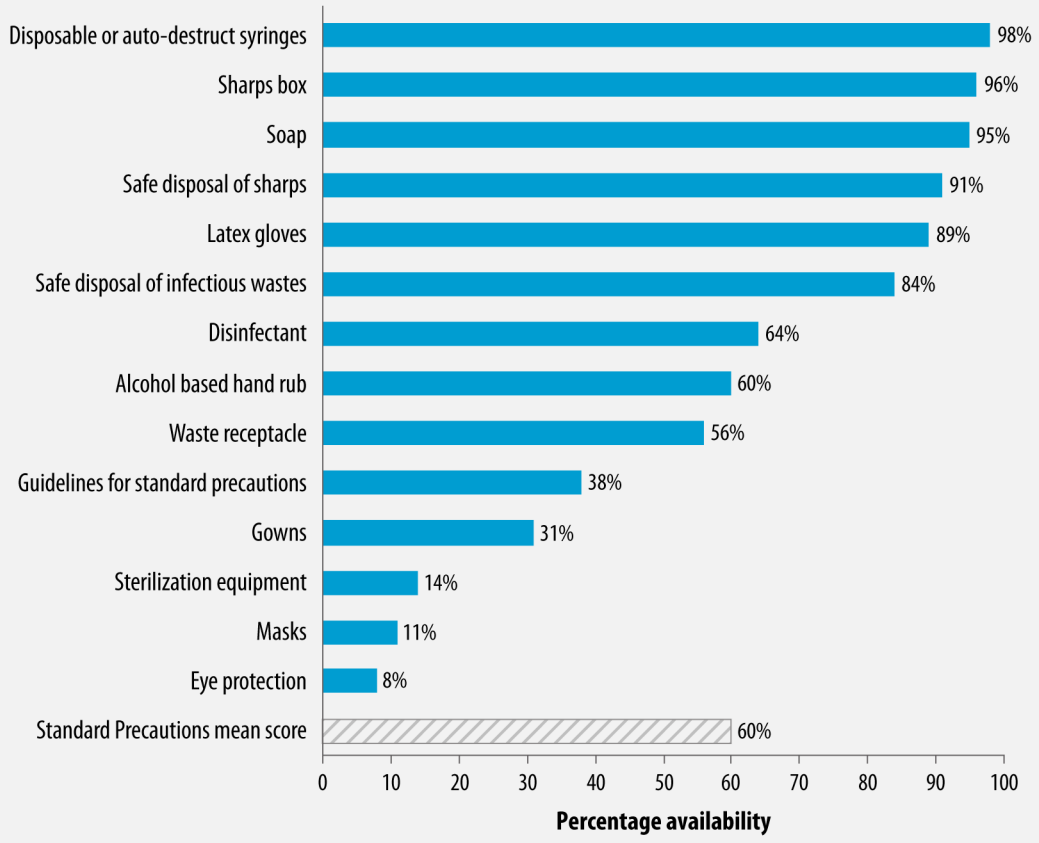


Table 5 shows the availability of standard precaution items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

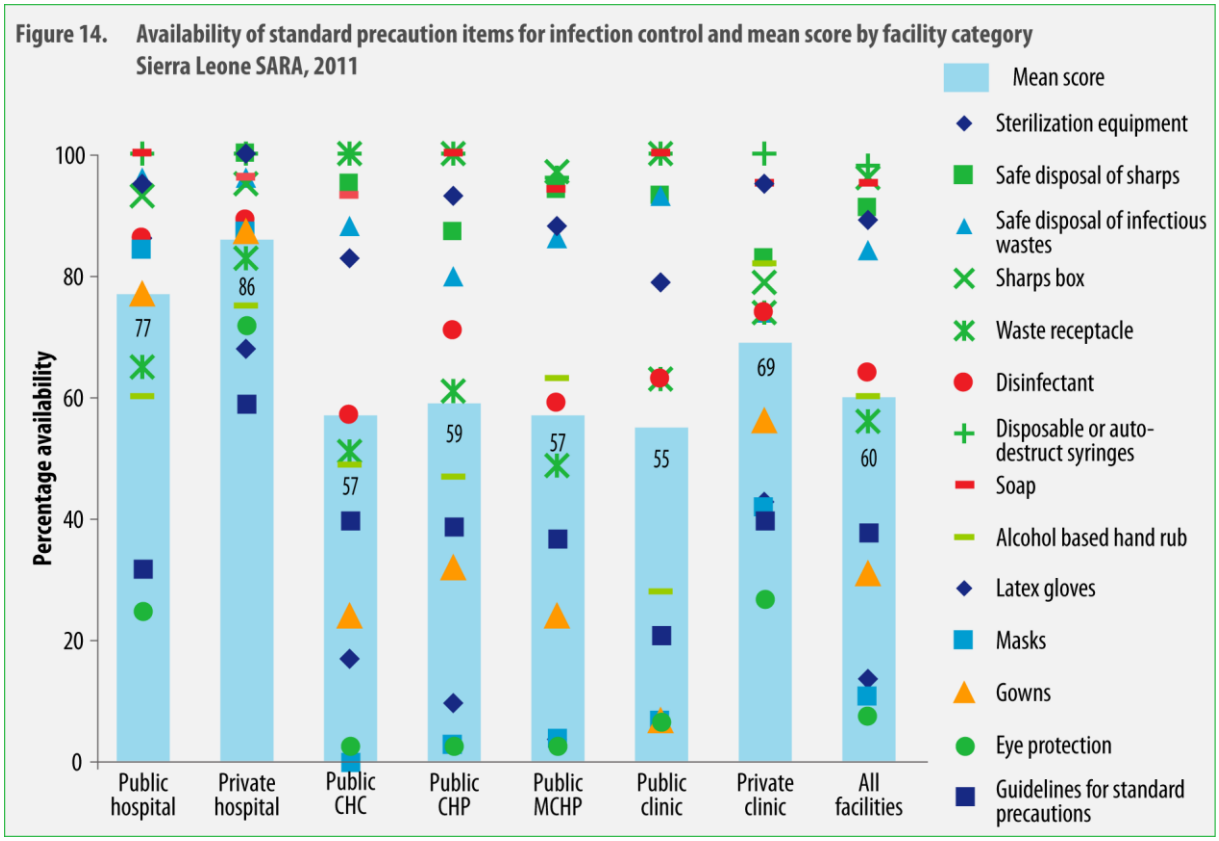
- The top five standard precautions items (syringes, sharps box, soap, disposal of sharps, and gloves) showed very little difference in availability between hospitals and primary care facilities. In contrast, sterilization equipment, masks, gowns, and eye protection were significantly more available in hospitals compared to primary care facilities. Sterilization equipment was available in 75% of hospitals and only 12% of primary care facilities.
- Similarly, masks were available in 86% of hospitals and only 8% of primary care facilities, while eye protection was available in 53% of hospitals but only 6% of primary care facilities. As these items pertain more to surgical services than general outpatient services, it is not surprising that these items were less available in primary care facilities, many of which were small facilities (CHPs and MCHPs).
- Similar trends could be seen when comparing the results of public and private facilities, as a large proportion of public facilities were small primary care facilities. Interestingly, public facilities were more likely to have a sharps box (98% for public, 82% for private), whereas private facilities were more likely to have a waste receptacle (76% for private, 52% for public).

Table 5: Availability of standard precaution tracer items by region/province, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Disposable syringes	Sharps box	Soap	Safe disposal sharps	Latex gloves	Safe disposal wastes	Disinfectant	Alcohol hand rub	Waste receptacle	Guidelines	Gowns	Sterilization equipment	Masks	Eye protection	All precautions	Standard Precautions Mean Score (out of 100)
Region																
Eastern	100%	97%	94%	89%	87%	81%	65%	55%	45%	48%	58%	18%	9%	7%	0%	61
Northern	96%	99%	100%	94%	88%	82%	67%	69%	55%	39%	26%	6%	10%	4%	1%	60
Southern	98%	98%	90%	96%	89%	96%	52%	46%	65%	29%	10%	14%	3%	7%	2%	56
Western Area	100%	84%	95%	78%	98%	70%	78%	72%	54%	39%	42%	32%	33%	22%	2%	64
Hospital vs. primary care facility																
Hospital	100%	94%	97%	94%	98%	96%	88%	69%	76%	49%	83%	75%	86%	53%	29%	83
Primary care	98%	96%	95%	91%	89%	84%	63%	59%	55%	38%	29%	12%	8%	6%	0%	59
Public vs. private ownership																
Public	98%	98%	95%	92%	88%	85%	62%	56%	52%	38%	26%	9%	5%	3%	*	58
Private	100%	82%	95%	86%	96%	78%	77%	80%	76%	43%	62%	48%	50%	35%	8%	72
Type-managing authority																
Public hospital	100%	93%	100%	84%	95%	96%	86%	60%	65%	32%	77%	86%	84%	25%	4%	77
Private hospital	100%	95%	96%	100%	100%	96%	89%	75%	83%	59%	87%	68%	87%	72%	45%	86
Public CHC	100%	100%	93%	95%	83%	88%	57%	49%	51%	40%	24%	17%	0%	3%	0%	57
Public CHP	100%	100%	100%	87%	93%	80%	71%	47%	61%	39%	32%	10%	3%	3%	0%	59
Public MCHP	96%	97%	94%	94%	88%	86%	59%	63%	49%	37%	24%	4%	4%	3%	0%	57
Public clinic	100%	100%	100%	93%	79%	93%	63%	28%	63%	21%	7%	7%	7%	7%	0%	55
Private clinic	100%	79%	95%	83%	95%	74%	74%	82%	74%	40%	56%	43%	42%	27%	0%	69
Total	**98%**	**96%**	**95%**	**91%**	**89%**	**84%**	**64%**	**60%**	**56%**	**38%**	**31%**	**14%**	**11%**	**8%**	**1%**	**60**

Figure 14 shows the availability of standard precaution items by facility type-managing authority.

- Private hospitals appear to have a higher proportion of the items available compared to other facilities with a score of 86% (12 of the 14 items available on average).
- Availability of disposable or auto-destruct syringes was very high (close to 100%) across facility types.
- Likewise, almost all facilities had a sharps box, although availability at private clinics was slightly lower at around 79%.
- Availability of eye protection was below 30% for all facility types except private facilities where it was 72%.
- Interestingly, availability of guidelines for standard precautions appeared to be higher in private facilities (59% for hospitals, 40% for clinics) compared to public facilities (40% or under for all facility categories).



1.2.4 Diagnostic capacity

For any disease to be cured, it has to be first diagnosed correctly, which makes laboratories and diagnostics important elements of the health care delivery system in the country. The year 2010 saw a lot of activities in Sierra Leone in the area of laboratory with the formulation of a new laboratory policy, the development of a strategic plan, the establishment of a Central Public Health Reference Laboratory for HIV and other infectious diseases and procurement of some laboratory equipment and reagents. However, availability of equipment and reagents still remain a challenge for effective functioning of laboratories in health facilities.

Laboratory diagnostic capacity was assessed based on the capacity to conduct the following 12 Level 1 diagnostic tests on site at the facility, including availability of functioning equipment and reagents: haemoglobin, blood glucose, malaria rapid test, malaria smear, urine dipstick, HIV rapid test, DBS collection, TB microscopy, syphilis rapid test, general microscopy, urine test for pregnancy, and ALT and creatinine.

Figure 15 shows the overall capacity of facilities to perform these tests on site.

- The overall mean availability score for onsite laboratory tests is low at 11% (on average, only 1 out of 12 tests available).
- The most commonly available diagnostic test was the malaria rapid test at around 40%; however, this is likely to be an underestimate of the true availability.

Figure 15. Capacity to conduct level 1 laboratory tests on site (N=207) Sierra Leone SARA, 2011

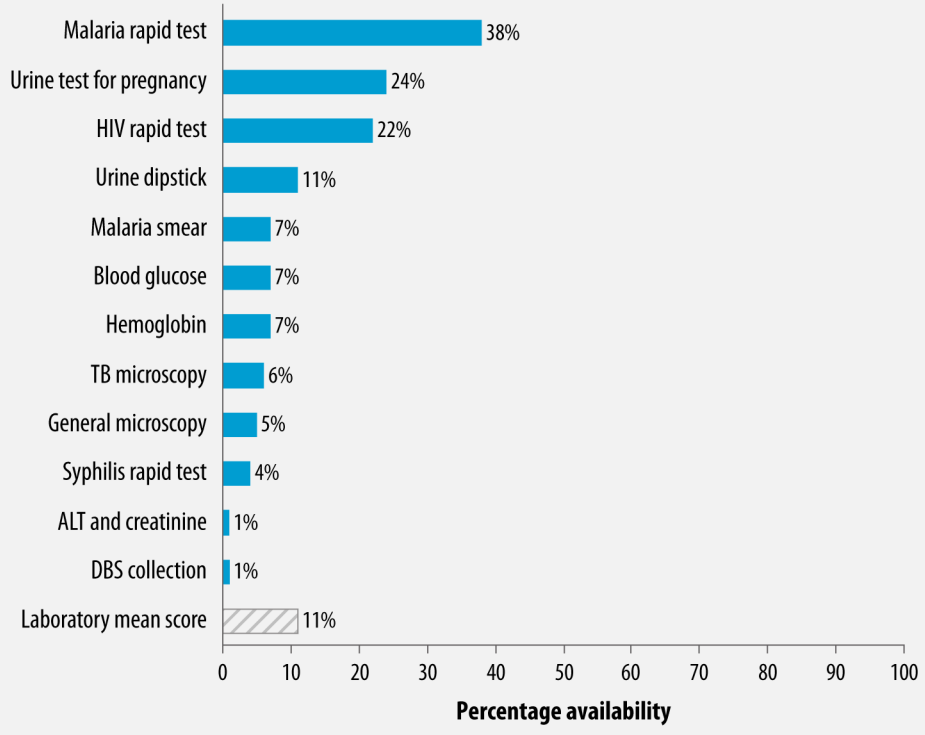


Table 6 shows availability of laboratory tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Availability scores for laboratory diagnostics were overall quite low, but as expected were much lower in primary care facilities compared to hospitals.
- Overall, the laboratory score for primary care facilities was only 9 out of 100, while it was 56 for hospitals. Similarly, scores were much lower in publicly owned facilities compared to privately owned facilities, as most public facilities are primary care facilities.
- Only 2% of public facilities had the capability to perform hemoglobin tests on site, whereas 40% of privately owned facilities had the ability to do so. This gap in availability was similar for most laboratory diagnostics tracer items.
- Availability was also higher in the Western Area compared to all other regions. Whereas 30% of facilities in the Western Area could perform on site haemoglobin tests, less than 6% of facilities in all other regions had this capability.

Table 6: Availability of laboratory diagnostics tracer items by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

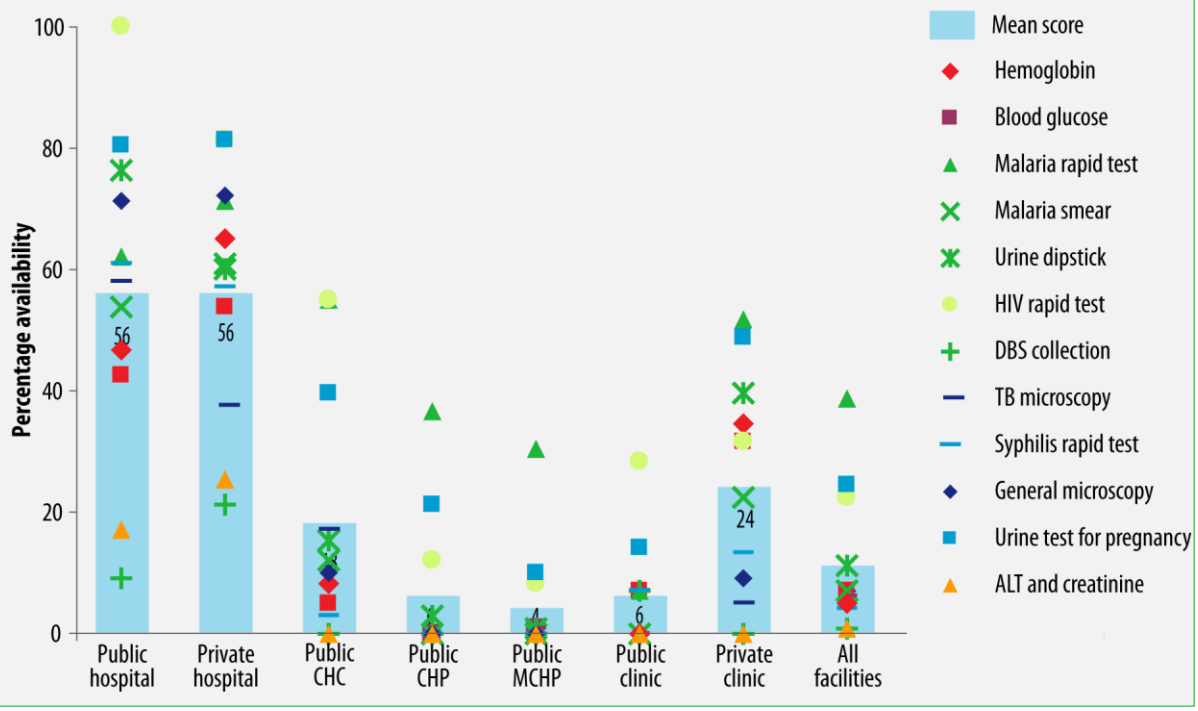
	Malaria RDT	Urine pregnancy	HIV RDT	Urine dipstick	Malaria smear	Blood glucose	Haemoglobin	TB microscopy	General microscopy	Syphilis rapid test	ALT and creatinine	DBS collection	All laboratory diagnostics	Laboratory mean score (out of 100)
Region														
Eastern	71%	30%	26%	11%	2%	5%	3%	5%	5%	2%	*	1%	0%	14
Northern	27%	19%	17%	4%	5%	3%	6%	6%	5%	4%	1%	1%	*	8
Southern	17%	13%	19%	6%	5%	4%	3%	6%	4%	6%	*	1%	0%	7
Western Area	58%	51%	36%	39%	22%	27%	30%	4%	9%	7%	3%	1%	0%	24
Hospital vs. primary care facility														
Hospital	67%	79%	88%	65%	58%	48%	57%	45%	71%	58%	22%	16%	4%	56
Primary care	37%	21%	19%	8%	4%	5%	5%	4%	3%	2%	0%	*	0%	9
Public vs. private ownership														
Public	36%	19%	19%	6%	3%	3%	2%	5%	3%	2%	*	*	8%	8
Private	54%	54%	40%	43%	29%	35%	40%	11%	21%	21%	5%	4%	30%	30
Type-managing authority														
Public hospital	61%	79%	100%	75%	53%	42%	46%	57%	70%	60%	17%	9%	0%	56
Private hospital	70%	80%	80%	59%	60%	53%	64%	37%	71%	56%	25%	21%	6%	56
Public CHC	54%	39%	54%	15%	12%	5%	8%	17%	10%	3%	0%	0%	0%	18
Public CHP	36%	21%	12%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6
Public MCHP	30%	10%	8%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	4
Public clinic	7%	14%	28%	0%	0%	7%	7%	0%	0%	7%	0%	7%	0%	6
Private clinic	51%	48%	31%	39%	22%	31%	34%	5%	9%	13%	0%	0%	0%	24
Total	**38%**	**24%**	**22%**	**11%**	**7%**	**7%**	**7%**	**6%**	**5%**	**4%**	**1%**	**1%**	*	**11**

* rounded to zero.

Figure 16 shows the capacity of facilities to perform laboratory diagnostic tests onsite by facility type-managing authority.

- Scores are particularly low for CHCs, CHPs, MCHPs, and public clinics, which is not surprising as they are not required to provide most of these tests on site.
- The mean scores are higher for hospitals at 56% (on average 6-7 of the 12 tests available onsite), and all public hospitals were found to offer onsite HIV testing.
- However, these scores for hospitals are still quite low and reflect the overall lack of laboratory capacity in the country.

Figure 16. Capacity to conduct laboratory tests onsite and mean score by facility category Sierra Leone SARA, 2011



1.2.5 Medicines and commodities

Access to essential medicines and supplies is fundamental to the good performance of the health care delivery system. Availability of medicines is commonly cited as the most important element of quality by health care consumers, and the absence of medicines is a key factor in the underuse of government health services. Problems in access are often related to inefficiencies in the pharmaceutical supply management system, such as inappropriate selection, poor distribution, deterioration, expiry, and irrational use. Where medicines are available, price may be a barrier for the poor. Weak regulation of the pharmaceutical market is also associated with poor quality control, presence of fake and substandard medicines on the market, growing drug resistance problems due to irrational use, dispensing by unqualified practitioners, and self-medication in lieu of seeking qualified health care.

There was a major increase in the procurement and availability of drugs to health facilities in 2010 due to the extra procurement done as a result of the introduction of the Free Health Care Initiative. Several drugs were procured and distributed to the districts, though some challenges were encountered in getting the medicines to Peripheral Health Units (PHUs), especially in remote areas, which led to unavailability of drugs in health centers.

Facilities were assessed on whether they had the following 14 essential medicines in stock on the day of the assessment: Amitriptyline, Amoxicillin, Atenolol, Captopril, Ceftriaxone injection,

Ciprofloxacin, Co-trimoxazole suspension, Diazepam, Diclofenac, Glibenclamide, Omeprazole, Paracetamol suspension, Salbutamol inhaler, and Simvastatin. Only medicines that were observed at the facility with valid expiration date were considered.

Figure 17 shows the overall availability of the tracer medicines. The medicines are grouped by indication: 4 antibiotics for infectious disease, 2 analgesics, and 8 medicines for non-communicable diseases such as asthma, diabetes, and cardiovascular disease.

- On average, facilities had 35% of the 14 essential tracer medicines available on the day of the assessment.
- The most commonly available drug was co-trimoxazole suspension oral antibiotic for children, while the least commonly available drug was simvastatin for the treatment of high cholesterol.
- Overall, the availability of antibiotics and pain/inflammation medicines was higher (mean availability of 48% and 52%) than medicines for NCDs (25%).
- Availability of medicines for cardiovascular disease was particularly low with a mean availability of 16%.

Figure 17. Percentage of facilities with 14 essential tracer medicines (N=207) Sierra Leone SARA, 2011

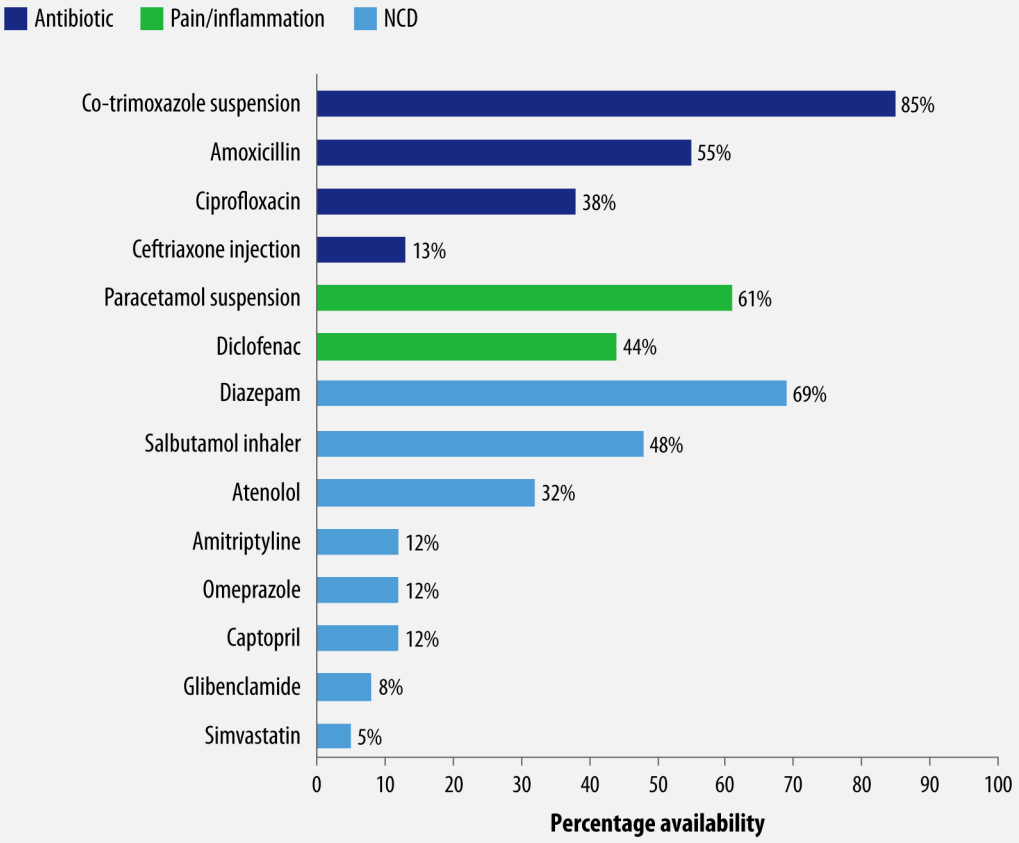


Table 7 shows availability of essential medicines by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Availability of nearly all essential medicines was significantly higher in hospitals compared to primary care facilities. Only co-trimoxazole suspension was available in roughly the same percentage in both.
- Similarly, all essential medicines with the exception of co-trimoxazole suspension were more available in private facilities compared to public facilities.
- Several essential medicines, such as ceftriaxone injection, captopril, glibenciamide, omeprazole, and simvastatin, were available in less than 1 out of 10 public facilities.
- The Western Area had the highest availability score.

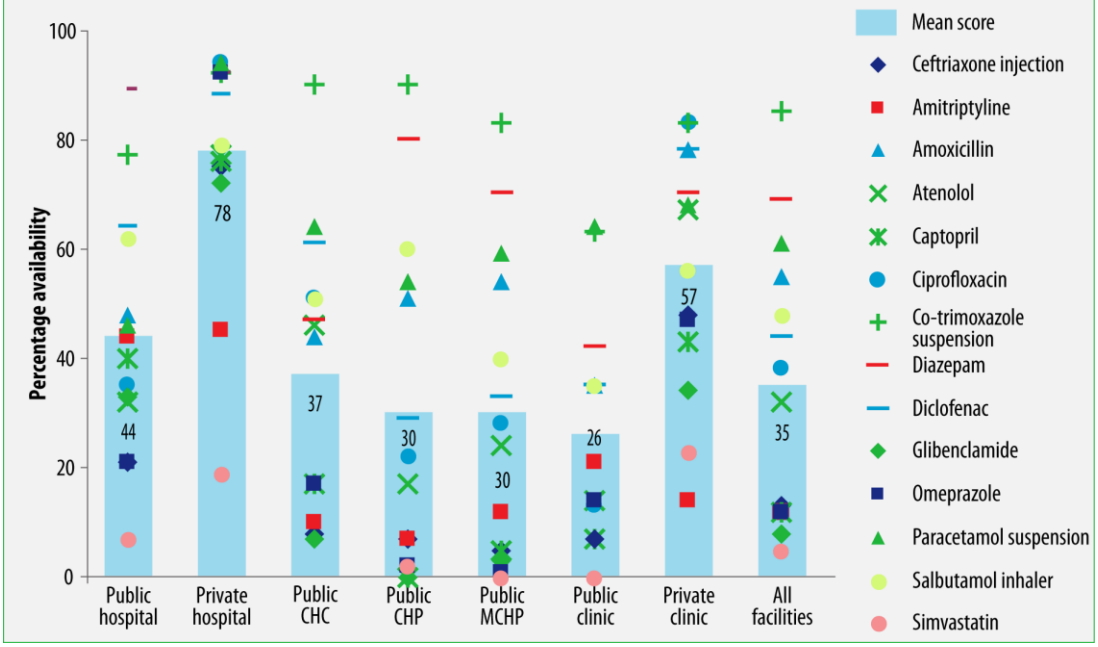
Table 7: Availability of essential medicines by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Antibiotic				Pain		NCDs									
	Co-trimoxazole suspension	Amoxicillin	Ciprofloxacin	Ceftriaxone injection	Paracetamol suspension	Diclofenac	Diazepam	Salbutamol inhaler	Atenolol	Amitriptyline	Omeprazole	Captopril	Glibenclamide	Simvastatin	All medecines	Medicines mean score
Region																
Eastern	90%	64%	33%	10%	68%	46%	74%	57%	39%	5%	5%	8%	3%	1%	1%	36
Northern	83%	49%	39%	5%	63%	38%	60%	38%	28%	18%	9%	7%	8%	1%	0%	32
Southern	83%	46%	30%	11%	42%	37%	73%	50%	28%	9%	5%	10%	8%	5%	1%	31
Western Area	90%	77%	65%	44%	83%	71%	77%	57%	42%	16%	48%	44%	22%	21%	2%	54
Hospital vs. primary care facility																
Hospital	86%	76%	71%	54%	75%	79%	90%	73%	59%	45%	64%	62%	56%	14%	12%	65
Primary care	85%	54%	37%	11%	60%	42%	68%	47%	31%	11%	9%	10%	6%	4%	0%	34
Public vs. private ownership																
Public	85%	51%	31%	6%	59%	38%	68%	46%	26%	11%	5%	7%	3%	2%	0%	31
Private	85%	81%	85%	53%	73%	79%	74%	60%	69%	20%	55%	49%	41%	22%	3%	61
Type-managing authority																
Public hospital	77%	48%	35%	21%	46%	64%	89%	62%	32%	44%	21%	40%	33%	7%	0%	44
Private hospital	92%	94%	94%	75%	94%	88%	92%	79%	77%	45%	92%	76%	72%	19%	19%	78
Public CHC	90%	44%	51%	8%	64%	61%	47%	51%	46%	10%	17%	17%	7%	7%	0%	37
Public CHP	90%	51%	22%	7%	54%	29%	80%	60%	17%	7%	2%	0%	0%	2%	0%	30
Public MCHP	83%	54%	28%	5%	59%	33%	70%	40%	24%	12%	1%	5%	3%	0%	0%	30
Public clinic	63%	35%	13%	7%	64%	35%	42%	35%	14%	21%	14%	7%	7%	0%	0%	26
Private clinic	83%	78%	83%	48%	68%	78%	70%	56%	67%	14%	47%	43%	34%	23%	0%	57
Total	**85%**	**55%**	**38%**	**13%**	**61%**	**44%**	**69%**	**48%**	**32%**	**12%**	**12%**	**12%**	**8%**	**5%**	*	**35**

* rounded to zero.

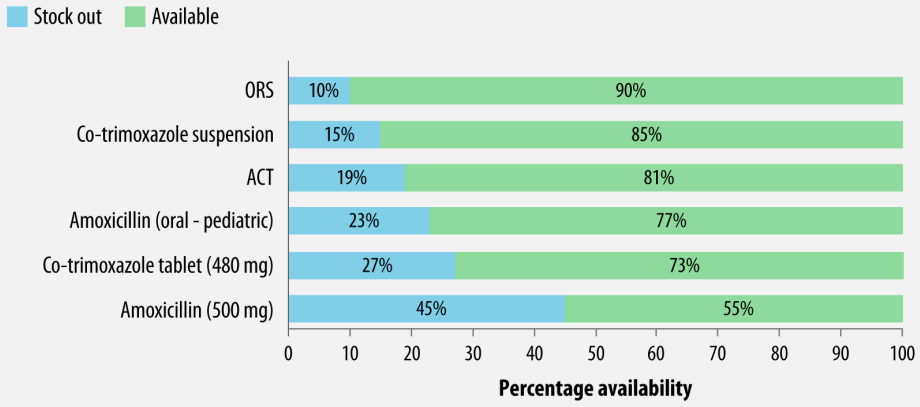
Figure 18 shows the availability of the 14 essential medicines by facility type-managing authority. From the mean availability scores, private facilities (both hospitals and clinics) have a higher proportion of drugs available compared to public facilities.

Figure 18. Availability of 14 essential tracer medicines and mean score by facility category Sierra Leone SARA, 2011



In addition to the list of 14 essential medicines, Figure 19 looks at the rate of stock-outs for six national essential tracer drugs (oral rehydration solution (ORS), co-trimoxazole suspension, co-trimoxazole 480 mg Tablet, amoxicillin 500 mg Tablet, amoxicillin oral antibiotic for children, and artimisinin combination therapy (ACT)). These are drugs that all facilities of all types are expected to always have in stock. For the purposes of this analysis, facility was considered to have a stock out for a particular drug if it did none were available with valid expiration date on the day of the assessment. Since the launch of the Free Health Care Initiative in April 2010, stock outs of these national priority drugs have become a significant barrier to adequate delivery of services to pregnant and lactating women and young children. The least available medicine was the amoxicillin 500 mg Tablets, as it was not available at 45% of facilities. ORS had the lowest rate of stock-outs as it was not available in 10% of facilities.

Figure 19. Availability and stock outs* of national essential tracer drugs (N=207) Sierra Leone SARA, 2011



* A facility was considered to have a stock out for a particular medicine if none were observed available with valid expiration date on the day of the assessment.

2. Service specific availability and readiness

In addition to assessing the offer of general services by health facilities, the SARA also measured the availability and readiness of health facilities to offer specific health intervention domains through consideration of tracer items that include trained staff, guidelines, equipment, diagnostic capacity, and medicines and commodities. The following key health services were considered:

1. Maternal, neonatal, and child health
   - Family planning
   - Antenatal care
   - Basic emergency obstetric care
   - Comprehensive emergency obstetric care
   - Child immunization
   - Child curative care and growth monitoring
2. Malaria services
3. HIV/AIDS
   - HIV counseling and testing
   - HIV/AIDS care and support services
   - Antiretroviral therapy (ART)
   - Preventing mother-to-child transmission (PMTCT)
4. Tuberculosis services
5. Non-communicable disease services
6. Surgical services
   - Basic surgery
   - Comprehensive surgery
   - Blood transfusion

For each service, the percentage of facilities offering the service were 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 in the following domains:

- Guidelines and trained staff
- Equipment
- Laboratory capacity
- 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. As for general service readiness, an overall readiness score was computed for each health service by taking the mean of the availabilities of the tracer items.

2.1 Maternal, neonatal and child health

2.1.1 Family planning

Family planning reduces mortality and morbidity associated with pregnancy by preventing unwanted pregnancies, particularly high risk pregnancies among adolescents and older women, and by increasing birth intervals. Birth spacing of less than 24 months compared with spacing of 36 months carries with it greater risks of foetal, infant and childhood death, low birth weight and childhood under-nutrition. The Basic Package of Essential Health Services for Sierra Leone specifies that family planning services should be provided at all levels of the health delivery system. In particular, contraceptives such as male and female condoms, oral contraceptive pills, and injectable contraceptives should be available at all facilities, in addition to information on contraceptive methods and counselling.

Service availability

Table 8 shows the percentage of facilities offering key family planning services by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Overall, 89% of facilities offered family planning services. This included almost all public facilities (96%) and primary care facilities (91%). The proportion of facilities offering family planning services was much lower in private facilities (42%) and in hospitals (49%). The Western Area had the lowest percentage at 65%; this is due to the large number of private facilities in Freetown.
- The most commonly distributed contraceptives were male condoms (86%), combined oral contraceptive pills (84%), and combined injectable contraceptives (76%). This is consistent with the results of the UNFPA reproductive health survey[5] conducted in October 2010, which found that oral pills, male condoms, and injectables were the most commonly provided contraceptive methods provided, all of which were provided at 75% or more of service delivery points.
- Overall, 88% of facilities offered two or more modern methods of family planning.

Table 8: Percentage of facilities offering key family planning services by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Offer family planning services	Distribute male condoms	Distribute combined oral pills	Administer combined injectable	Distribute progestin-only pills	Distribute female condoms	Administer progestin-only injectable	Distribute emergency contraceptive pill	Insert implant	Distribute cycle beads	Insert IUD	Offer at least two modern methods of family planning
Region												
Eastern	93%	93%	87%	71%	47%	59%	33%	13%	9%	8%	0%	90%
Northern	95%	93%	93%	84%	44%	28%	42%	12%	3%	5%	4%	95%
Southern	89%	84%	84%	77%	67%	30%	15%	12%	6%	6%	6%	87%
Western Area	65%	57%	49%	55%	45%	24%	14%	10%	20%	6%	13%	65%
Hospital vs. primary care facility												
Hospital	49%	44%	45%	38%	29%	32%	34%	19%	31%	27%	28%	49%
Primary care	91%	88%	85%	77%	52%	35%	29%	12%	6%	5%	4%	90%
Public vs. private ownership												
Public	96%	94%	93%	82%	57%	38%	31%	12%	5%	6%	3%	95%
Private	42%	34%	26%	33%	16%	14%	14%	15%	24%	4%	16%	42%
Type-managing authority												

[5] Government of Sierra Leone and United Nations Population Fund. 2011. Survey of availability of modern contraceptives and essential life-saving maternal and reproductive health medicines in service delivery points in Sierra Leone. http://www.whosierraleone.org/1_docs/mohspartnersdocs/unfpa_modern_contraceptive_volume1.pdf

	Offer family planning services	Distribute male condoms	Distribute combined oral pills	Administer combined injectable	Distribute progestin-only pills	Distribute female condoms	Administer progestin-only injectable	Distribute emergency contraceptive pill	Insert implant	Distribute cycle beads	Insert IUD	Offer at least two modern methods of family planning
Public hospital	47%	43%	47%	36%	28%	35%	24%	16%	32%	35%	35%	47%
Private hospital	50%	44%	44%	40%	30%	31%	40%	21%	31%	21%	24%	50%
Public CHC	95%	95%	95%	81%	61%	32%	28%	7%	0%	3%	0%	95%
Public CHP	100%	97%	93%	77%	56%	39%	31%	20%	0%	10%	3%	100%
Public MCHP	98%	95%	94%	87%	57%	40%	32%	10%	7%	5%	3%	95%
Public clinic	85%	85%	78%	58%	49%	43%	35%	0%	15%	7%	7%	85%
Private clinic	40%	31%	23%	31%	13%	11%	8%	14%	23%	0%	14%	40%
Total	**89%**	**86%**	**84%**	**76%**	**52%**	**35%**	**29%**	**12%**	**7%**	**6%**	**5%**	**88%**

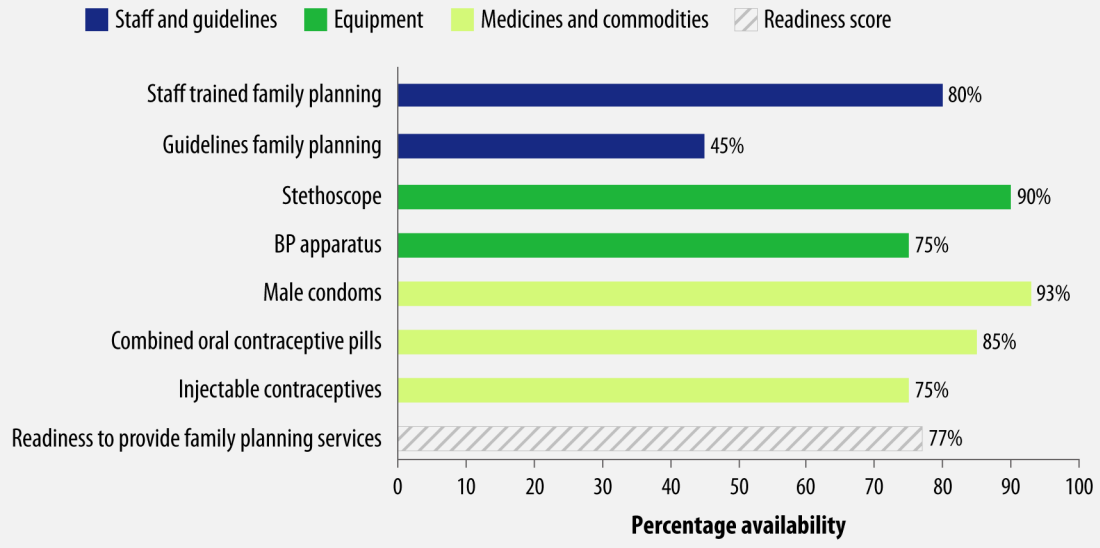
Service readiness

Readiness to offer family planning services was assessed based on the availability of the following 7 tracer items: guidelines on family planning, staff trained in family planning in the past two years, stethoscope, blood pressure apparatus, male condoms, combined oral contraceptive pills, and injectable contraceptives.

Figure 20 shows the percentage availability of these tracer items in facilities that offer family planning services (N=184).

- Twenty-two percent of facilities had all 7 items.
- On average, facilities had 5 of the 7 tracer items for family planning, for an overall readiness score of 77 out of 100. Availability of contraceptives on the day of the assessment was quite high: 92% of facilities had male condoms, 84% had combined oral contraceptive pills, and 74% had injectable contraceptives.
- Equipment such as stethoscope and blood pressure apparatus were also available in 90% and 75% of facilities respectively.
- Eighty percent of facilities had at least one staff member trained in the past 2 years in family planning; however, only 45% had family planning guidelines at the facility.

Figure 20. Availability of tracer items for family planning at facilities offering the service (N=184) Sierra Leone SARA, 2011



Service distribution

Table 9 shows availability of family planning tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Overall, availability of most items did not differ much across categories. Guidelines for family planning, though, were available in approximately twice as many hospitals as primary care facilities. Similarly, guidelines for family planning were available in twice as many public as private facilities.
- Primary care facilities, however, had higher availability of all contraceptives (combined oral contraceptive pills, injectable contraceptives, and male condoms).
- Availability of combined oral contraceptive pills and injectable contraceptives were especially low in public hospitals in particular.
- The Southern region had the lowest overall readiness score for family planning services, but not by a significant amount.

Table 9: Availability of tracer items for family planning at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=184), Sierra Leone 2011

	Staff trained family planning	Guidelines family planning	Stethoscope	BP apparatus	Male condoms	Combined oral contraceptive pills	Injectable contraceptives	All items	Readiness to provide family planning services
Region									
Eastern	77%	46%	97%	88%	96%	79%	67%	23%	79
Northern	73%	46%	87%	75%	94%	90%	78%	27%	78
Southern	90%	43%	83%	56%	87%	85%	75%	16%	74
Western Area	87%	41%	100%	99%	88%	72%	76%	20%	80
Hospital vs. primary care facility									
Hospital	89%	81%	97%	91%	83%	62%	65%	43%	86
Primary care	80%	44%	89%	75%	93%	85%	74%	22%	82
Public vs. private ownership									
Public	80%	46%	89%	74%	93%	86%	74%	23%	82
Private	88%	23%	92%	85%	78%	62%	78%	11%	78
Type-managing authority									
Public hospital	100%	100%	91%	76%	89%	33%	42%	33%	76
Private hospital	82%	69%	100%	100%	79%	80%	79%	49%	84
Public CHC	86%	43%	93%	78%	96%	93%	73%	23%	80
Public CHP	68%	42%	86%	73%	100%	86%	66%	18%	74
Public MCHP	82%	49%	90%	74%	90%	84%	77%	25%	78
Public clinic	92%	34%	92%	75%	100%	82%	75%	8%	79
Private clinic	90%	10%	90%	80%	78%	56%	78%	0%	69
Total	**80%**	**45%**	**90%**	**75%**	**92%**	**84%**	**74%**	**22%**	**77**

2.1.2 Antenatal care

Antenatal care is essential to identify and treat problems during pregnancy such as anaemia and hypertension, as well as for preventive care such as folic acid and iron supplementation, intermittent preventive treatment (IPT) for malaria, and tetanus toxoid vaccination.

The World Health Organization (WHO) recommends that in the absence of complications a woman should have at least four ANC visits, the first during the first trimester. The Basic Package of Essential Health Services in Sierra Leone specifies that facilities at all levels should offer antenatal care services.

2.1.2.1 Service availability

Table 10 shows the percentage of facilities offering key antenatal care services: iron supplementation, folic acid supplementation, IPT, tetanus toxoid vaccination, and monitoring for pregnancy-induced hypertensive disorder. Overall, 93% of facilities offered these antenatal care services.

- Almost all public facilities (98%) and primary care facilities (94%) offered antenatal care services, showing a similar pattern as for family planning services.
- All of the key antenatal care services were offered by a high percentage of facilities, above 85% for all services.

Table 10: Percentage of facilities offering key antenatal care services by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	ANC services offered	Iron supplementation	IPT for malaria	Tetanus toxoid vaccination	Monitoring for hypertensive disorder	Folic acid supplementation
Region						
Eastern	96%	96%	96%	94%	83%	82%
Northern	99%	99%	99%	99%	96%	96%
Southern	94%	92%	93%	92%	88%	88%
Western Area	68%	67%	67%	67%	66%	64%
Hospital vs. primary care facility						
Hospital	69%	66%	66%	64%	64%	61%
Primary care	94%	94%	94%	93%	88%	87%
Public vs. private ownership						
Public	98%	97%	98%	97%	92%	91%
Private	62%	62%	61%	61%	57%	58%
Type-managing authority						
Public hospital	59%	52%	59%	54%	59%	45%
Private hospital	75%	75%	70%	70%	66%	70%
Public CHC	95%	95%	92%	95%	92%	85%
Public CHP	100%	100%	100%	100%	93%	100%
Public MCHP	100%	99%	100%	97%	92%	91%
Public clinic	92%	92%	92%	92%	92%	78%
Private clinic	59%	59%	59%	59%	55%	55%
Total	**93%**	**93%**	**93%**	**92%**	**87%**	**86%**

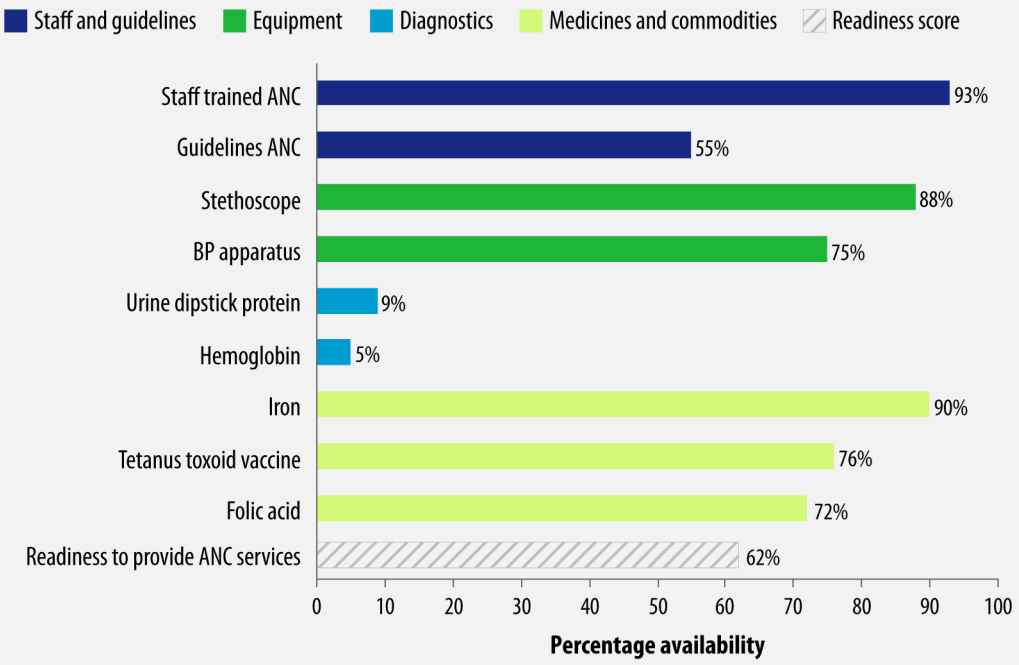
2.1.2.2 Service readiness

Readiness to provide antenatal care was assessed based on the availability of the following 9 tracer items: guidelines on antenatal care, staff trained in antenatal care in the past two years, blood pressure apparatus, stethoscope, capacity to conduct haemoglobin test, urine protein dipstick, iron tablets, folic acid tablets, and tetanus toxoid vaccine.

Figure 21 shows the percentage availability of these tracer items in facilities that offer antenatal care services (N=193).

- One percent of facilities had all 9 items.
- On average, facilities had 5-6 of the 9 tracer items, for an overall readiness score of 62 out of 100.
- Equipment and medicine items such as blood pressure apparatus, iron supplements and tetanus vaccine are available in over seven of ten facilities offering ANC services.
- However, less than one in ten facilities reported having diagnostic capacity for testing urine protein and haemoglobin levels.

Figure 21. Percentage availability of tracer items for antenatal care at facilities offering the service (N=193) Sierra Leone SARA, 2011



2.1.2.3 Service distribution

Table 11 shows availability of antenatal care tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority. Overall readiness scores did not differ much between categories, although there were differences in availability for certain items. As noted above, capacity to conduct haemoglobin and urine protein tests was quite low overall. It was particularly low in public facilities, primary care facilities, and in all regions except the Western Area. Over half of the hospitals were able to conduct these tests on site. Guidelines for antenatal care were available in approximately twice as many public facilities as private facilities.

Table 11: Availability of tracer items for antenatal care at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=193), Sierra Leone 2011

	Staff trained ANC	Guidelines ANC	Stethoscope	BP apparatus	Urine dipstick protein	Hemoglobin	Iron	Tetanus toxoid vaccine	Folic acid	All items	Readiness to provide antenatal care services
Region											
Eastern	90%	61%	95%	87%	11%	0%	93%	68%	60%	0%	63
Northern	92%	58%	88%	76%	5%	5%	91%	85%	87%	0%	65
Southern	95%	50%	79%	56%	3%	1%	89%	71%	66%	0%	57
Western Area	100%	44%	100%	99%	42%	30%	78%	80%	61%	14%	64
Hospital vs. primary care facility											
Hospital	100%	59%	98%	94%	57%	52%	91%	74%	87%	15%	73
Primary care	93%	55%	88%	75%	8%	4%	90%	77%	72%	1%	62
Public vs. private ownership											
Public	94%	57%	88%	74%	6%	2%	91%	78%	73%	1%	62
Private	90%	34%	90%	85%	40%	35%	78%	61%	66%	5%	61
Type-managing authority											
Public hospital	100%	76%	93%	81%	65%	38%	73%	76%	61%	0%	67
Private hospital	100%	50%	100%	100%	52%	59%	100	72%	100%	23%	77
Public CHC	97%	57%	93%	78%	16%	9%	86%	86%	63%	5%	64
Public CHP	87%	44%	86%	73%	3%	0%	97%	84%	80%	0%	62
Public MCHP	95%	62%	87%	73%	4%	0%	91%	73%	73%	0%	62
Public clinic	100%	55%	92%	77%	0%	8%	77%	77%	77%	0%	58
Private clinic	87%	29%	87%	80%	36%	28%	72%	58%	57%	0%	57
Total	**93%**	**55%**	**88%**	**75%**	**9%**	**5%**	**90%**	**76%**	**72%**	**1%**	**62**

2.1.3 Emergency obstetric and newborn care

2.1.3.1 Basic emergency obstetric and newborn care

Infant and maternal mortality rates in Sierra Leone remain among the highest in the world. The main causes of maternal deaths in 2010 were ruptured uterus, puerperal sepsis, hypertensive disorders, and anaemia[6]. Improving access to emergency obstetric care has been shown to be an effective strategy for the reduction of maternal and infant mortality, in which complications of pregnancy and childbirth are identified and referred to a higher level if necessary. Basic emergency obstetric care (BEmOC) includes capacity to provide the following seven signal functions: (1) parenteral administration of antibiotics, (2) parenteral administration of oxytocics, (3) parenteral administration of anticonvulsants, (4) assisted vaginal delivery, (5) manual removal of placenta, (6) manual removal of retained products, and (7) neonatal resuscitation. The Ministry of Health and Sanitation is currently upgrading 70 health centres to provide basic emergency obstetric care.

Service availability

Table 12 shows the percentage of facilities offering normal delivery services, each of the seven BEmOC signal functions, and the percentage offering all seven.

- Most facilities (91%) offered normal delivery services. Almost all public facilities (97%) offered normal delivery services, while about half of private facilities (54%) did so.
- Of the 7 BEmOC signal functions, neonatal resuscitation was the most commonly available service (85%), whereas assisted vaginal delivery was the least available (52%).
- It is thought that the estimates for assisted vaginal delivery and removal of retained products (manual vacuum aspiration) are too high, as smaller facilities such as CHPs and MCHPs are not expected to offer these services and generally do not have staff with the appropriate training (indeed, this is supported by the readiness results below showing that only a handful of facilities had the required equipment to offer assisted vaginal deliveries or manual vacuum aspiration). It is possible that respondents misinterpreted the question or were not sufficiently familiar with these procedures to provide an accurate response.

[6] Ministry of Health and Sanitation, Government of Sierra Leone. 2010 Health Sector Performance Report.

Table 12: Percentage of facilities offering key obstetric and newborn care services, by region, hospital vs. primary care, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Offer normal delivery or newborn care services	Neonatal resuscitation	Parenteral administration of antibiotics	Parenteral administration of oxytocic	Parenteral administration of anticonvulsant	Manual removal of placenta	Removal of retained products after delivery	Assisted vaginal delivery	BEmOC (7 signal functions)
Region									
Eastern	95%	79%	79%	84%	71%	75%	84%	56%	30%
Northern	98%	92%	87%	84%	81%	85%	86%	62%	39%
Southern	96%	93%	77%	67%	83%	72%	66%	43%	17%
Western Area	54%	53%	45%	54%	37%	43%	42%	39%	22%
Hospital vs. primary care facility									
Hospital	85%	79%	83%	82%	79%	81%	82%	72%	58%
Primary care	91%	85%	77%	75%	73%	74%	74%	52%	27%
Public vs. private ownership									
Public	97%	90%	81%	80%	78%	77%	79%	55%	29%
Private	54%	52%	50%	44%	47%	53%	46%	35%	26%
Type-managing authority									
Public hospital	93%	93%	88%	93%	86%	93%	86%	74%	55%
Private hospital	79%	69%	79%	75%	75%	74%	79%	70%	60%
Public CHC	95%	88%	88%	81%	83%	81%	76%	56%	24%
Public CHP	100%	90%	90%	86%	83%	82%	79%	64%	41%
Public MCHP	99%	92%	78%	80%	76%	76%	81%	53%	26%
Public clinic	21%	14%	7%	7%	14%	14%	14%	7%	7%
Private clinic	48%	48%	43%	37%	41%	48%	39%	27%	18%
Total	**91%**	**85%**	**77%**	**75%**	**74%**	**74%**	**74%**	**52%**	**28%**

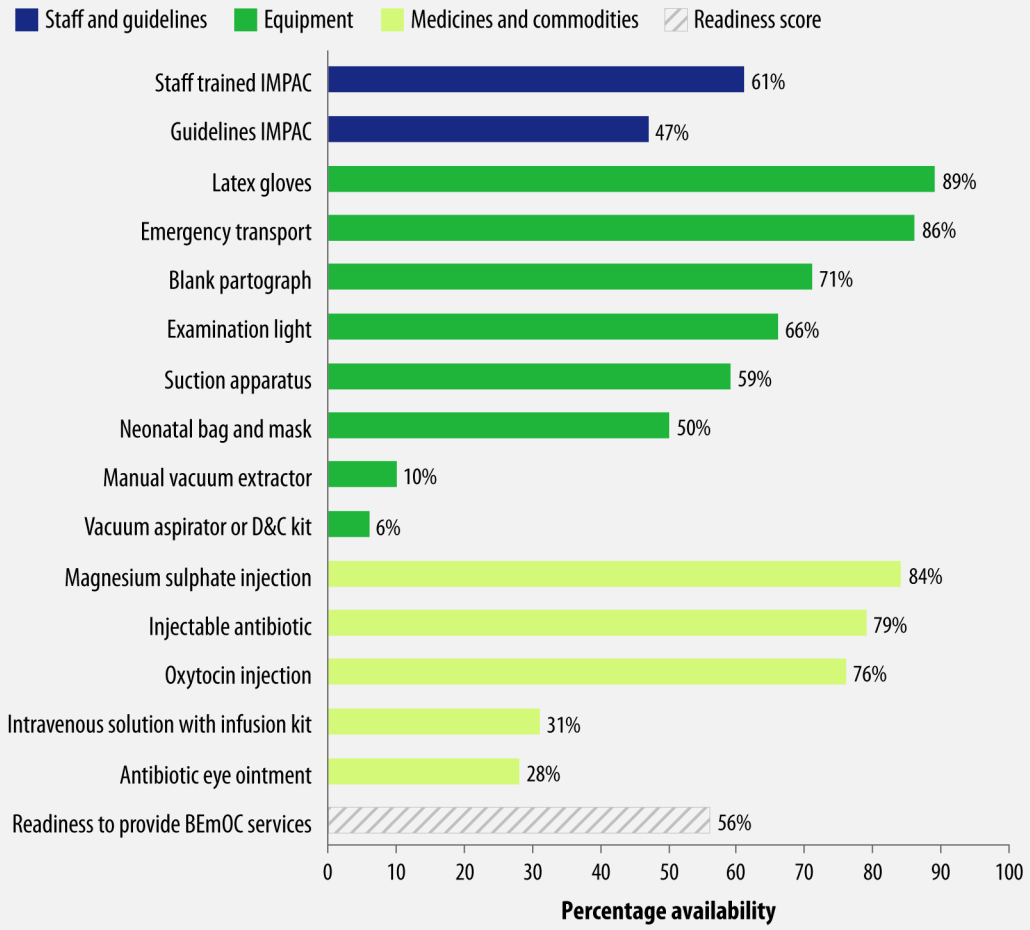
Service readiness

Readiness to provide basic emergency obstetric care was assessed based on the availability of the following 15 tracer items: guidelines for Integrated management of pregnancy and childbirth (IMPAC), staff trained in IMPAC in the past two years, emergency transport, examination light, suction apparatus (mucus extractor), manual vacuum extractor, vacuum aspirator or D&C kit, neonatal bag and mask, partograph, gloves, antibiotic eye ointment for newborns, injectable oxytocin, injectable antibiotic, magnesium sulphate, and intravenous solution with infusion set.

Figure 22 shows the percentage availability of these tracer items at facilities that offer at least one of the seven BEmOC signal functions (N=188).

- No facilities had all 15 tracer items. On average, facilities had 8 of the 15 items, for an overall readiness score of 56 out of 100.
- Only three in ten facilities had intravenous solution with an infusion kit, and only half of facilities had a neonatal bag and mask.
- Over three quarters of facilities had magnesium sulphate (84%), injectable antibiotic (79%), and oxytocin (76%) available.
- Very few facilities had a manual vacuum extractor (10%) and vacuum aspirator or D&C kit (6%); as mentioned above, this was because smaller health facilities are not expected to offer assisted vaginal delivery and manual vacuum aspiration.
- About one third of facilities had intravenous solution with infusion kit in stock on the day of the assessment (31%).
- Overall, the results indicate a need to upgrade basic diagnostic capacity in facilities, and to improve the supply system to prevent stock outs of essential supplies such as IV solution.

Figure 22. Percentage availability of tracer items for basic emergency obstetric care at facilities offering one or more BEmOC signal functions (N=188), Sierra Leone SARA, 2011



Service distribution

Table 13 shows availability of basic emergency obstetric care tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Hospitals showed a higher readiness score compared to primary care facilities (75 vs. 55 out of 100). Hospitals were much more likely to have equipment items such as suction apparatus, vacuum extractor/D&C kit, and neonatal bag and mask, and medicines such as antibiotic eye ointment and oxytocin injection.
- Even among hospitals, only 47% had intravenous solution with infusion kit available; availability was much higher among private hospitals compared to public hospitals.
- The Western Area has the highest overall readiness score at 69 out of 100, most likely because of the higher concentration of hospitals in Freetown.
- The Southern Region has the lowest readiness score at 49 out of 100. In particular, availability of the partographs, oxytocin injection, and staff trained in IMPAC were low relative to other regions.

Table 13: Availability of tracer items for basic emergency obstetric care at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=188), Sierra Leone 2011

	Staff trained IMPAC	Guidelines IMPAC	Latex gloves	Emergency transport	Blank partograph	Examination light	Suction apparatus	Neonatal bag and mask	Manual vacuum extractor	Vacuum aspirator or D&C kit	Magnesium sulphate injection	Injectable antibiotic	Oxytocin injection	Intravenous solution with infusion kit	Antibiotic eye ointment	All items	Readiness to provide obstetric and newborn care
Region																	
Eastern	69%	45%	86%	97%	97%	59%	62%	37%	5%	5%	83%	87%	86%	25%	32%	0%	58
Northern	65%	51%	88%	81%	80%	82%	56%	65%	11%	3%	85%	73%	82%	22%	28%	*	58
Southern	48%	40%	89%	84%	33%	54%	55%	34%	6%	5%	88%	77%	57%	41%	19%	1%	49
Western Area	74%	57%	100%	80%	95%	56%	75%	80%	40%	28%	70%	84%	84%	52%	54%	0%	69
Hospital vs. primary care facility																	
Hospital	84%	62%	98%	66%	79%	71%	88%	85%	68%	70%	67%	82%	79%	47%	70%	9%	75
Primary care	60%	46%	88%	87%	71%	66%	58%	48%	8%	3%	85%	78%	13%	30%	27%	0%	55
Public vs. private ownership																	
Public	62%	49%	88%	86%	71%	65%	56%	50%	6%	3%	86%	77%	74%	28%	25%	0%	55
Private	55%	21%	92%	82%	71%	77%	85%	51%	62%	43%	64%	94%	90%	59%	66%	4%	67
Type-managing authority																	
Public hospital	77%	69%	95%	82%	83%	48%	86%	82%	58%	44%	88%	57%	88%	21%	63%	0%	69
Private hospital	89%	57%	100%	54%	76%	89%	89%	87%	75%	89%	52%	100%	92%	67%	75%	15%	79
Public CHC	68%	54%	82%	82%	85%	39%	53%	68%	9%	11%	88%	89%	78%	34%	32%	0%	58
Public CHP	50%	46%	93%	87%	69%	77%	65%	43%	3%	0%	90%	78%	84%	31%	31%	0%	56
Public MCHP	64%	48%	88%	87%	68%	69%	53%	46%	4%	0%	84%	74%	69%	26%	19%	0%	53
Public clinic	66%	34%	100%	66%	34%	32%	66%	68%	34%	34%	66%	34%	34%	66%	66%	0%	53
Private clinic	43%	8%	89%	92%	69%	73%	84%	37%	57%	26%	68%	92%	89%	57%	63%	0%	63
Total	**61%**	**47%**	**89%**	**86%**	**71%**	**66%**	**59%**	**50%**	**10%**	**6%**	**84%**	**79%**	**76%**	**31%**	**28%**	*	**56**

* rounded to zero.

2.1.3.2 Comprehensive emergency obstetric care

Sierra Leone had a very high institutional maternal mortality rate of 951 per 100,000 live births in 2010[7], likely due to women arriving very late at facilities, or poor quality of care. While the number of caesarean sections has nearly doubled from 1,459 in 2009 to 2,634 in 2010 due to free health care, this still represents a low coverage of 1.1% of all births in 2010 indicating that there may still be significant unmet need. It is thought that increasing accessibility to high quality emergency obstetric care will lead to reduced maternal and infant mortality. To be able to manage obstetric complications, a facility must have a surgeon and anaesthetist available or on call at all times, with the required equipment, supplies, and trained support staff to administer blood transfusions and anaesthesia. Comprehensive emergency obstetric care (CEmOC) is generally offered at the district hospital level, and consists of all the functions of basic emergency obstetric care plus Caesarean section and safe blood transfusion. Guidelines jointly issued by WHO, UNICEF, and UNFPA recommend four facilities offering basic and one facility offering comprehensive care for every 500,000 people.

Service availability

Table 14 shows the percentage of hospitals offering the 9 CEmOC signal functions. Each signal function was offered by over seven in ten hospitals. However, only 45% of hospitals offered all 9 signal functions for comprehensive emergency obstetric care.

Table 14: Percentage of facilities offering key obstetric and newborn care services, by region and public vs. private ownership (N=39), Sierra Leone 2011

	Parenteral administration of antibiotics	Parenteral administration of oxytocic	Removal of retained products after delivery	Parenteral administration of anticonvulsant	Manual removal of placenta	Caesarean section	Neonatal resuscitation	Blood transfusion	Assisted vaginal delivery	CEmOC (9 signal functions)
Region										
Eastern	100%	75%	100%	100%	100%	100%	100%	100%	58%	58%
Northern	83%	83%	83%	83%	93%	83%	83%	93%	76%	69%
Southern	78%	86%	86%	72%	72%	86%	72%	86%	71%	35%
Western Area	80%	80%	73%	80%	74%	66%	74%	46%	73%	33%
Public vs private ownership										
Public	88%	93%	86%	93%	89%	86%	93%	75%	74%	43%
Private	79%	75%	79%	74%	76%	75%	69%	73%	70%	46%
Total	**83%**	**82%**	**82%**	**81%**	**81%**	**79%**	**79%**	**74%**	**72%**	**45%**

[7] Ministry of Health and Sanitation, Government of Sierra Leone. 2010 Health Sector Performance Report.

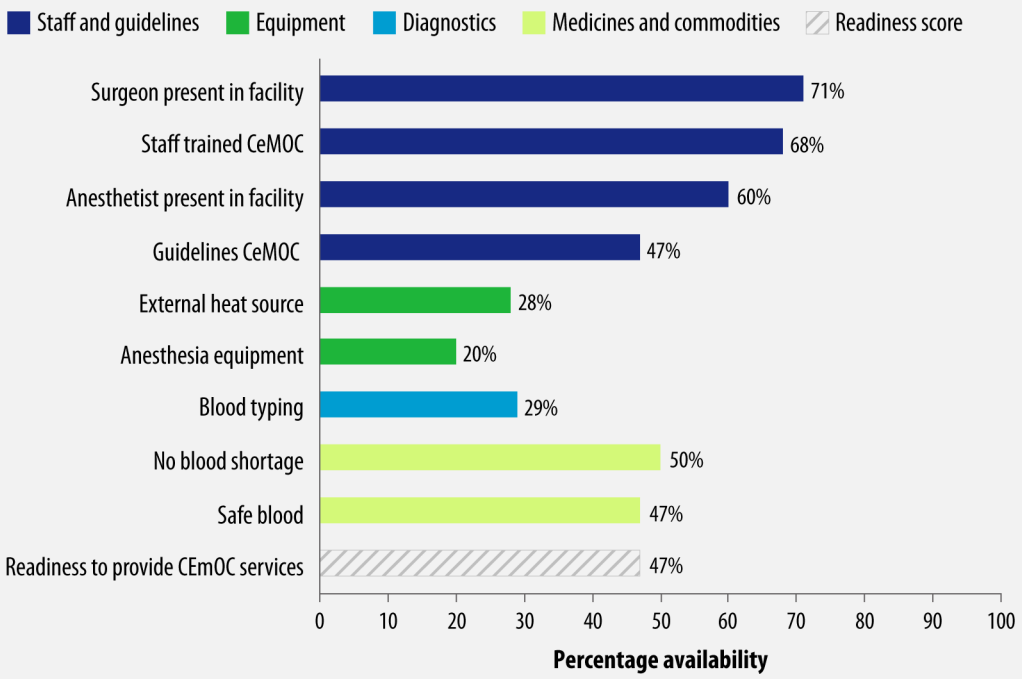
Service readiness

Readiness to provide CEmOC was assessed based on the presence of the following 9 tracer items: guidelines for CEmOC, staff trained in CEmOC in the past two years, staff trained in surgery (present in facility or on-call 24 hours a day), staff trained in anaesthesia (present in facility or on-call 24 hours a day), anaesthesia equipment, external health source, capacity to conduct blood typing and compatibility testing on site, blood sufficiency (no shortage of blood in the past 3 months), and blood safety (blood obtained only from national or regional blood bank, or blood obtained from other sources but screened for HIV and other transmissible infections).

Figure 23 shows the availability of tracer items for comprehensive emergency obstetric care at hospitals. No hospitals had all 9 items.

- On average, facilities had 4 of 9 tracer items. Less than three in ten hospitals had anaesthesia equipment and an external heat source (incubator or heat lamp).
- Only a third of hospitals had adequate blood typing capacity, and only one in two had safe blood for transfusion (blood obtained solely from a national/regional blood bank or all blood screened for HIV and other transfusion transmissible infections).
- Half of the hospitals had experienced a blood shortage in the past three months. These results indicate some specific weaknesses in the blood system, which contributes to the high rate of institutional maternal mortality.

Figure 23. Percentage availability of tracer items for comprehensive emergency obstetric care at hospitals (N=39 hospitals*) Sierra Leone SARA, 2011



* Results were weighted to ensure proportional representation of public and private hospitals in the country.

Service distribution

Table 15 shows the readiness to provide comprehensive emergency obstetric care items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority. There was no difference in overall readiness between public and private hospitals, although there were differences in availability of particular tracer items. Private hospitals were more likely to have equipment items such as anaesthesia equipment (25% vs. 12%) and an external heat source (33% vs. 21%); however, public hospitals were much more likely to have an anaesthetist an staff or on call 24 hours a day (81% vs. 47%), as well as to have blood typing and compatibility testing capacity on site (44% vs. 20%). Availability of anaesthesia equipment was particularly low as it requires many individual pieces of equipment: anaesthesia machine, tubings and connectors, resuscitator bag and mask, and intubation set (oropharyngeal airway, endotracheal tubes, laryngoscope, Magill's forceps, and stylet). The Western Area has a lower overall CEmOC readiness score compared to the other regions, primarily due to low availability of the blood-related items. It should be taken into consideration that only half of hospitals (46%) in the Western Area reported offering blood transfusion services (see Table 14 above), thus it follows that availability of items required for blood transfusion would be low.

Table 15: Availability of tracer items for CEmOC at hospitals by region and public vs. private ownership (N=39), Sierra Leone 2011

	Surgeon	Staff trained CEmOC	Anesthetist	Guidelines CEmOC	External heat source	Anesthesia equipment	Blood typing compatibility	Blood sufficiency	Blood safety	CEmOC all items	CEmOC readiness mean score (out of 100)
Region											
Eastern	67%	58%	58%	33%	25%	0%	58%	100%	58%	0%	51
Northern	86%	62%	86%	55%	31%	17%	45%	45%	62%	0%	54
Southern	35%	78%	37%	57%	49%	22%	15%	57%	71%	0%	47
Western Area	87%	67%	61%	40%	14%	27%	20%	33%	20%	0%	41
Public vs. private ownership											
Public	66%	63%	81%	40%	21%	12%	44%	49%	44%	0%	47
Private	74%	70%	47%	51%	33%	25%	20%	50%	49%	0%	47
Total	**71%**	**68%**	**60%**	**47%**	**28%**	**20%**	**29%**	**50%**	**47%**	**0%**	**47**

2.1.4 Routine child immunization

The Ministry of Health and Sanitation (MoHS) has responsibility for immunization services in Sierra Leone. Routine vaccination constitutes the key strategy for success in reducing vaccine-preventable diseases. The Expanded Programme on Immunization (EPI) was introduced in 1978 by the MoHS aimed at reducing burden of diseases attributable to vaccine preventable diseases. The following antigens BCG, DTP, OPV, TT and measles were introduced into the routine program at the start of the program in 1978. Yellow fever was later introduced in 2002. The coverage for key antigens remained very low for many years until the programme was restructured and re-launched to achieve better coverage.

Service availability

Vaccination services are provided in about 90% of health facilities. In addition, vaccination services are provided by mobile and outreach teams to provide services to populations that cannot be reached through health facilities**.** Irregular fuel supplies prompted a shift to solar powered refrigerators in 2002. This shift has been credited as one of the key factors in immunization coverage improvements in Sierra Leone in the past decade[8].

Table 16 shows the percentage of facilities offering child immunization services (routine or outreach).

- Overall, 92% of facilities offered child immunization services. All facilities that offered child immunization services offered measles, DTP-HiB-HepB, polio, BCG, and PCV immunizations, showing a remarkably consistent provision of immunization services.
- Almost all public facilities (98%) offered child immunization services.
- The Western Area has the lowest percentage of facilities offering child immunization services at 59%. This is due to a higher proportion of private facilities and hospitals, which typically are less likely to offer these services.

Table 16: Percentage of facilities offering key child immunization services, by region, hospital vs. primary care, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Routine measles immunization	Routine DPT-Hib-HepB immunization	Routine polio immunization	BCG immunization	PCV immunization	Child immunization services offered
Region						
Eastern	96%	96%	96%	96%	96%	96%
Northern	98%	98%	98%	98%	98%	98%
Southern	94%	94%	94%	94%	94%	94%
Western Area	59%	59%	59%	59%	59%	59%
Public vs. private ownership						
Public	98%	98%	98%	98%	98%	98%
Private	50%	50%	50%	50%	50%	50%
Hospital vs primary care facility						
Hospital	58%	58%	58%	58%	58%	58%
Primary care	93%	93%	93%	93%	93%	93%
Type-managing authority						
Public hospital	47%	47%	47%	47%	47%	47%
Private hospital	65%	65%	65%	65%	65%	65%
Public CHC	95%	95%	95%	95%	95%	95%
Public CHP	100%	100%	100%	100%	100%	100%
Public MCHP	100%	100%	100%	100%	100%	100%
Public clinic	92%	92%	92%	92%	92%	92%
Private clinic	47%	47%	47%	47%	47%	47%
Total	**92%**	**92%**	**92%**	**92%**	**92%**	**92%**

[8] Sierra Leone solar cold chain performance and logistics assessment. 2010.

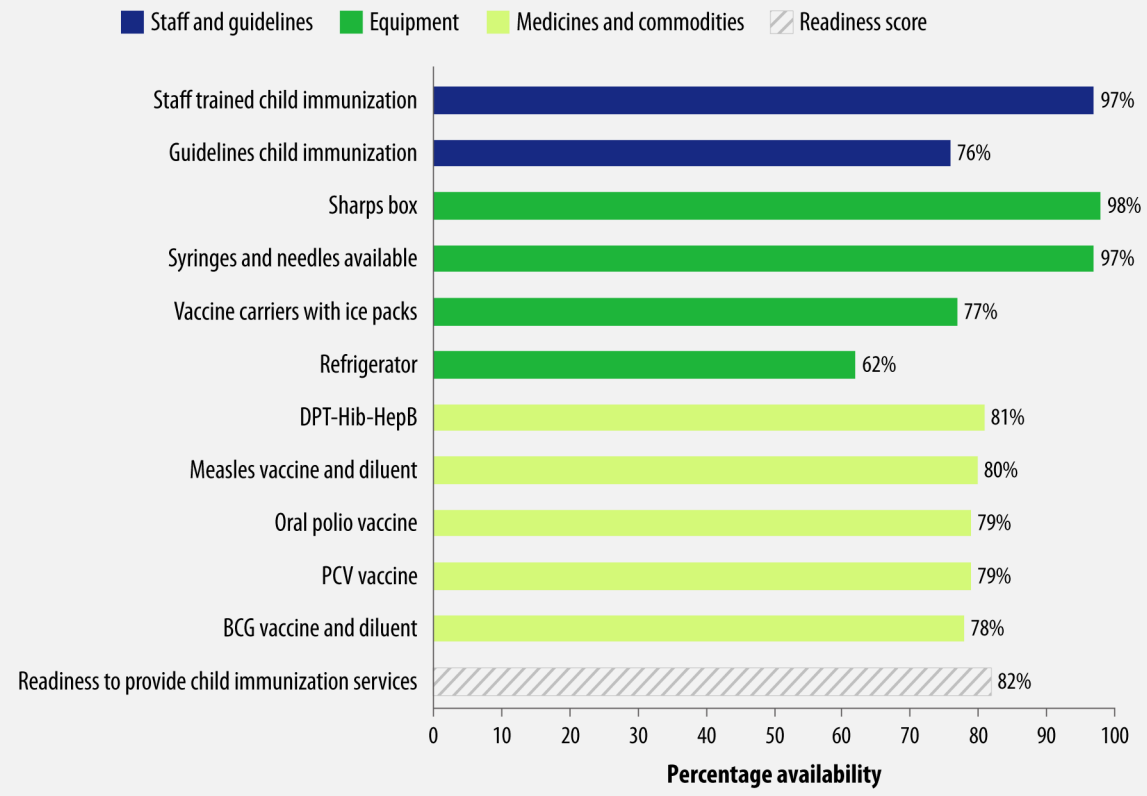
Service readiness

Readiness to provide child immunization services was assessed based on the availability of the following 11 tracer items: guidelines for EPI, staff trained in EPI, cold box or vaccine carrier with ice packs, refrigerator, sharps container, single use syringes (standard disposable or auto-destruct), measles vaccine, DTP-Hib-HepB vaccine, polio vaccine, PCV vaccine, and BCG vaccine.

Figure 24 shows the percentage availability of these tracer items at facilities that offer child immunization services (N=190).

- Thirty-six percent of facilities had all 11 items; on average, facilities had 9 of 11 tracer items for an overall readiness score of 82 out of 100. Availability of tracer items for immunization was generally high overall.
- Almost all facilities had a sharps box (98%) and single-use syringes (97%), and availability of antigens on the day of the assessment (observed with valid expiration date) was around 80% for all antigens.
- However, only six in ten facilities had a refrigerator, pointing to some weakness in the cold chain. This is consistent with the 2010 assessment of cold chain performance and logistics, which found that 62% of PHUs had refrigerators installed, although about a quarter of them were not functional.

Figure 24. Percentage availability of tracer items for routine child immunization at facilities offering the service (N=190) Sierra Leone SARA, 2011



Service distribution

Table 17 shows availability of routine child immunization tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Availability was generally high for all child immunization tracer items across all categories. Hospitals were somewhat better equipped, as they were more likely to have vaccine carriers with ice packs (100% vs. 77%) and refrigerators (87% vs. 62%) compared to primary care facilities.
- Primary care facilities were more likely to have EPI guidelines than hospitals (76% vs. 60%). Overall, there appears to be a relatively high level of readiness to provide child immunization services at health facilities across the country.

Table 17: Availability of tracer items for routine child immunization at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=190), Sierra Leone 2011

	Staff trained child immunization	Guidelines child immunization	Sharps box	Syringes and needles available	Vaccine carriers with ice packs	Refrigerator	DPT-Hib-HepB	Measles vaccine and diluent	Oral polio vaccine	PCV vaccine	BCG vaccine and diluent	All items	Readiness to provide child immunization services
Region													
Eastern	99%	75%	97%	100%	54%	64%	84%	84%	77%	84%	79%	31%	82
Northern	95%	74%	99%	95%	79%	66%	86%	83%	86%	84%	84%	35%	85
Southern	98%	76%	98%	96%	93%	56%	72%	74%	72%	68%	70%	36%	79
Western Area	100%	89%	98%	100%	82%	59%	79%	79%	79%	79%	79%	54%	84
Hospital vs. primary care facility													
Hospital	95%	60%	90%	100%	100%	87%	91%	91%	91%	88%	91%	39%	89
Primary care	97%	76%	98%	97%	77%	62%	81%	80%	79%	79%	78%	36%	82
Public vs private ownership													
Public	97%	77%	98%	96%	77%	62%	82%	81%	80%	80%	80%	36%	83
Private	98%	62%	92%	100%	81%	66%	70%	70%	64%	70%	64%	30%	76
Type-managing authority													
Public hospital	100%	67%	85%	100%	100%	91%	89%	89%	89%	80%	89%	33%	89
Private hospital	93%	57%	93%	100%	100%	85%	91%	91%	91%	91%	91%	42%	89
Public CHC	100%	78%	100%	96%	84%	80%	89%	89%	89%	86%	89%	52%	89
Public CHP	100%	90%	100%	97%	70%	72%	88%	88%	84%	88%	84%	55%	87
Public MCHP	95%	72%	97%	96%	77%	53%	77%	76%	76%	75%	75%	24%	79
Public clinic	100%	78%	100%	100%	84%	56%	84%	84%	84%	84%	84%	48%	85
Private clinic	100%	63%	92%	100%	75%	60%	63%	63%	55%	63%	55%	27%	72
Total	**97%**	**76%**	**98%**	**97%**	**77%**	**62%**	**81%**	**80%**	**79%**	**79%**	**78%**	**36%**	**82**

2.1.5 Child curative care and growth monitoring services

Children under the age of 5 account for the majority of outpatient consultations at public facilities, and the number of consultations has grown by 250% since the introduction of free health care in April 2010. Approximately half of consultations are for malaria, and a quarter for acute respiratory infections (ARI)[9]. According to the Basic Package of Essential Health Services for Sierra Leone, diagnosis and management of childhood illnesses as well as growth monitoring should be offered at health facilities of levels. Smaller facilities such as MCHPs are expected to diagnose and refer severe cases of illness and malnutrition.

Service availability

Table 18 shows the percentage of facilities offering the following key child curative care and growth monitoring services: diagnosis and treatment of child malnutrition, vitamin A supplementation, iron supplementation, provision of ORS and zinc to treat diarrhoea, growth monitoring, and curative care services.

- Overall, 96% of facilities offered child curative care services and 90% offered growth monitoring. Provision of ORS and zinc to children with diarrhoea was available in 93% of facilities, and provision of Vitamin A and iron supplementation were available at 91% and 92% of facilities respectively.
- Public facilities were more likely to provide these services compared to private facilities.

Table 18: Percentage of facilities offering key child curative care and growth monitoring services, by region, hospital vs. primary care, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Diagnose/ treat child malnutrition	Vitamin A supplementation	Iron supplementation	ORS and zinc to children with diarrhea	Growth monitoring	Child health curative care services offered
Region						
Eastern	68%	98%	95%	92%	95%	99%
Northern	84%	98%	99%	99%	96%	99%
Southern	93%	93%	95%	93%	88%	95%
Western Area	71%	57%	59%	75%	67%	82%
Public vs. private ownership						
Public	82%	98%	97%	96%	94%	99%
Private	74%	51%	61%	74%	61%	78%
Hospital vs. primary care facility						
Hospital	74%	67%	74%	77%	71%	79%
Primary care	81%	92%	93%	93%	91%	97%
Type-managing authority						
Public hospital	68%	60%	58%	72%	51%	72%
Private hospital	77%	71%	84%	79%	84%	84%
Public CHC	90%	95%	95%	95%	92%	100%
Public CHP	87%	100%	100%	97%	97%	100%
Public MCHP	78%	99%	97%	96%	96%	99%
Public clinic	78%	92%	92%	92%	92%	92%
Private clinic	73%	47%	56%	73%	55%	77%
Total	**81%**	**91%**	**92%**	**93%**	**90%**	**96%**

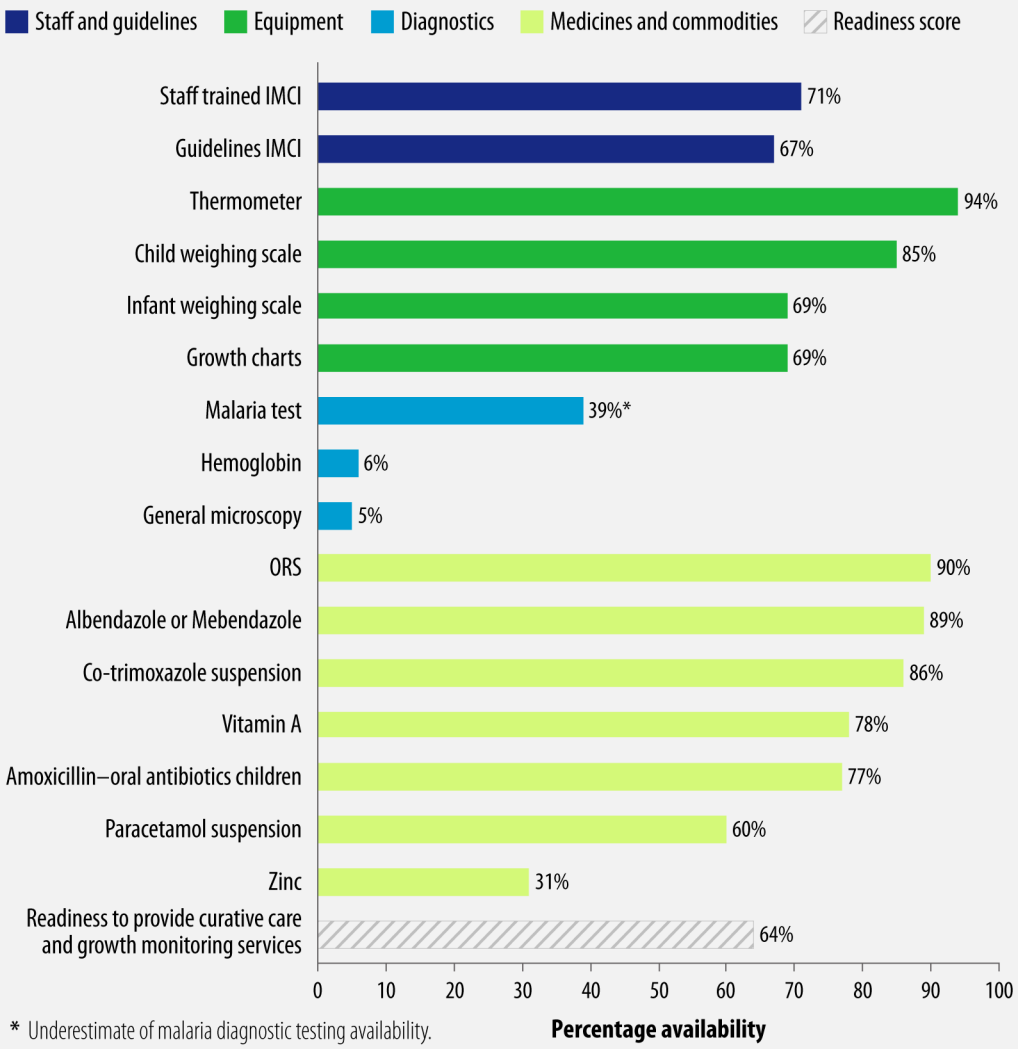
[9] Ministry of Health and Sanitation, Government of Sierra Leone. Health Sector Performance Review Report 2010. August 2011

Service readiness

Readiness to offer child curative care and growth monitoring services was assessed based on the presence of the following 16 tracer items: guidelines for Integrated management of childhood illness (IMCI), staff trained in IMCI in the past two years, child scale, infant scale, thermometer, growth chart, capacity to conduct malaria testing, haemoglobin test, general microscopy (to test for parasite in stool), ORS, albendazole/mebendazole, co-trimoxazole suspension, vitamin A, amoxicillin, paracetamol suspension, and zinc. Figure 25 shows the percentage availability of these tracer items in facilities that offer child curative care services (N=199).

- No facilities had all 16 tracer items; on average, facilities had 10 of the 16 tracer items for an overall readiness score of 64 out of 100.
- Approximately nine in ten facilities had ORS, albendazole or mebendazole, and co-trimoxazole suspension in stock on the day of the assessment, and eight in ten had vitamin A and oral amoxicillin for children.
- Diagnostic capacity was weak, with less than one in ten facilities able to conduct a haemoglobin test or general microscopy (e.g. for stool test for parasites).
- Availability of malaria testing was around 40%; however, this is likely to be a significant underestimate of the true availability according to malaria programme specialists[10].

Figure 25. Percentage availability of tracer items for curative care and growth monitoring at facilities offering the service (N=199), Sierra Leone SARA, 2011



[10] The reasons for this and the extent of underestimation are currently under further investigation.

Service distribution

Table 19 shows availability of curative care and growth monitoring tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Public and private facilities had approximately equal readiness scores (64 and 63 out of 100, respectively).
- Hospitals had a higher overall readiness score compared to primary care facilities (76 vs. 63 out of 100).
- The big differences in availability between hospitals and primary care facilities were primarily for the diagnostic tests: malaria test (75% vs. 38%), haemoglobin test (57% vs. 5%), and general microscopy (75% vs. 3%).
- Hospitals were also more likely to have an infant weighing scale (83% vs. 68%), growth charts (85% vs. 68%), and paracetamol suspension (71% vs. 59%) compared to primary care facilities. However, primary care facilities were more likely to have vitamin A supplements in stock on the day of the assessment (79% vs. 50%).

Table 19: Availability of tracer items for curative care and growth monitoring at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=199), Sierra Leone 2011

	Staff trained IMCI	Guidelines IMCI	Thermometer	Child Weighing Scale	Infant Weighing Scale	Growth charts	Malaria test	Hemoglobin	General microscopy	ORS	Albendazole or Mebendazole	Co-trimoxazole suspension	Vitamin A	Amoxicillin-oral antibiotics children	Paracetamol suspension	Zinc	All items	Readiness to provide curative care and growth monitoring services
Region																		
Eastern	80%	61%	94%	90%	90%	79%	71%	3%	5%	98%	89%	90%	78%	84%	15%	29%	0%	69
Northern	71%	72%	98%	86%	68%	66%	27%	5%	4%	87%	85%	83%	75%	86%	15%	48%	0%	64
Southern	66%	66%	90%	84%	55%	67%	20%	3%	4%	84%	93%	84%	84%	56%	16%	11%	1%	57
Western Area	67%	67%	92%	75%	59%	61%	62%	26%	9%	94%	93%	90%	70%	90%	20%	29%	2%	67
Hospital vs. primary care facility																		
Hospital	73%	70%	98%	83%	83%	85%	75%	57%	75%	90%	94%	91%	50%	86%	71%	40%	11%	76
Primary care	71%	67%	94%	85%	68%	68%	38%	5%	3%	90%	89%	86%	79%	77%	59%	31%	0%	63
Public vs. private ownership																		
Public	74%	71%	94%	87%	68%	69%	36%	2%	3%	90%	89%	86%	81%	78%	58%	32%	0%	64
Private	46%	35%	100%	71%	75%	68%	64%	39%	24%	91%	92%	81%	53%	71%	71%	23%	3%	63
Type managing authority																		
Public hospital	78%	83%	93%	83%	74%	66%	81%	45%	81%	81%	83%	83%	16%	81%	32%	22%	0%	68
Private hospital	71%	63%	100%	82%	88%	95%	71%	63%	72%	95%	100%	95%	69%	88%	93%	49%	17%	81
Public CHC	85%	81%	92%	81%	74%	83%	54%	8%	10%	90%	93%	90%	78%	76%	64%	46%	0%	69
Public CHP	78%	81%	100%	90%	76%	74%	36%	0%	0%	90%	91%	90%	90%	79%	54%	37%	0%	67
Public MCHP	69%	63%	92%	87%	64%	63%	30%	0%	0%	90%	87%	85%	79%	78%	59%	26%	0%	61
Public clinic	92%	84%	77%	100%	40%	60%	7%	8%	0%	84%	84%	69%	92%	85%	70%	31%	0%	62
Private clinic	40%	28%	100%	69%	72%	62%	62%	33%	12%	90%	90%	78%	49%	67%	66%	16%	0%	59
Total	**71%**	**67%**	**94%**	**85%**	**69%**	**69%**	**39%**	**6%**	**5%**	**90%**	**89%**	**86%**	**78%**	**77%**	**60%**	**31%**	*	**64**

* rounded to zero.

2.2 Malaria

Malaria is hyper/holoendemic in Sierra Leone and is one of the most serious public health problems in the country, accounting for about half of all outpatient visits and a third of inpatient admissions[11]. Pregnant women and children under 5 are particularly vulnerable: malaria accounts for about half of all hospital deaths of children under 5[12]. The anti-malarial drug policy recommends Intermittent Preventive Therapy (IPT) using Sufadoxine pyrimethamine (SP) in the second an third trimesters. Combined therapy with Artenusate plus Amodiaquine (ACT) is the recommended first line treatment of malaria; the 2010 survey on coverage of malaria control interventions found that approximately 75% of facilities had Artenusate plus Amodiaquine in stock. Prevention remains the primary strategy to control the spread of malaria. The MoHS has distributed 3.2 million long-lasting insecticide treated nets to all households in the country during the one week maternal and child health campaign in November 2010.

Service availability

Table 20 shows the percentage of facilities offering malaria diagnosis, malaria treatment, and IPT. All health facilities provided malaria diagnosis or treatment services. IPT was provided by 93% of facilities. Hospitals and private facilities were less likely to provide IPT. It is important to note that although all facilities reported offering malaria services, this does not necessarily imply that they had the required diagnostic equipment, medicines and supplies to provide an adequate level of care. This is assessed under service readiness below.

Table 20: Percentage of facilities offering key malaria services, by region, hospital vs. primary care, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Diagnose malaria	Prescribe treatment for malaria	IPT for malaria	Malaria diagnosis or treatment offered
Region				
Eastern	100%	100%	96%	100%
Northern	99%	98%	99%	100%
Southern	100%	100%	93%	100%
Western Area	100%	100%	67%	100%
Public vs. private ownership				
Public	100%	99%	98%	100%
Private	97%	100%	61%	100%
Hospital vs. primary care facility				
Hospital	100%	100%	66%	100%
Primary care	100%	99%	94%	100%
Type-managing authority				
Public hospital	100%	100%	59%	100%
Private hospital	100%	100%	70%	100%
Public CHC	100%	100%	92%	100%
Public CHP	100%	100%	100%	100%
Public MCHP	100%	99%	100%	100%
Public clinic	100%	100%	92%	100%
Private clinic	96%	100%	59%	100%
Total	**100%**	**99%**	**93%**	**100%**

[11] Ministry of Health and Sanitation, Sierra Leone. 2010. Coverage of malaria control interventions.
[12] Ministry of Health and Sanitation, Government of Sierra Leone. 2010 Health Sector Performance Report.

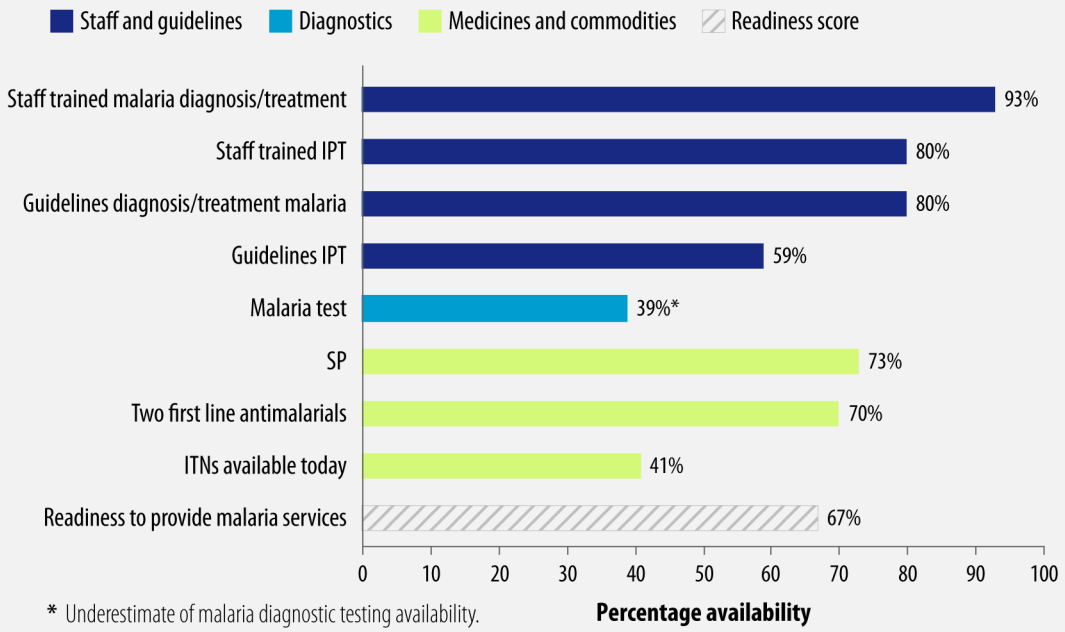
Service readiness

Readiness to provide malaria services was assessed based on the presence of the following 8 tracer items: guidelines on malaria diagnosis and treatment, staff trained in malaria diagnosis and treatment in the past two years, guidelines for IPT, staff trained in IPT, malaria diagnostic capacity, at least two first line anti-malarials in stock, SP, and ITNs.

Figure 26 shows the percentage availability of these tracer items (N=207).

- Seven percent of facilities had all 8 items; on average, facilities 5 of the 8 items for an overall readiness score of 67 out of 100.
- Over seven in ten facilities had SP and at least two first-line antimalarials in stock. Availability of onsite malaria diagnostic testing was low at 39%; this is likely to be an underestimate of the true availability according to malaria programme specialists.
- Most facilities have trained staff (93%) and guidelines (80%) for malaria diagnosis and treatment. ITNs are available at 41% of facilities; this is likely because ITNs are generally only distributed in campaigns and not routinely.

Figure 26. Percentage availability of tracer items for malaria services at facilities offering the service (N=207) Sierra Leone SARA, 2011



Service distribution

Table 21 shows availability of malaria tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- With the exception of malaria tests, availability of all malaria tracer items was higher in publicly owned facilities compared to privately owned facilities.
- Malaria tests, SP, and ITNs were more available in hospitals than in primary care facilities, while all other tracer items were more available in primary care facilities.
- The Eastern and Northern regions had the highest readiness scores for malaria services.

Table 21: Availability of tracer items for malaria at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Staff trained malaria diagnosis/ treatment	Staff trained IPT	Guidelines diagnosis/ treatment malaria	Guidelines IPT	Malaria test	SP	Two first line antimalarials	ITNs available today	All items	Readiness to provide malaria services
Region										
Eastern	95%	81%	86%	64%	71%	77%	71%	45%	16%	74
Northern	94%	87%	86%	64%	27%	82%	75%	50%	5%	71
Southern	93%	83%	74%	58%	19%	59%	59%	35%	*	60
Western Area	84%	47%	67%	35%	60%	69%	75%	21%	11%	57
Hospital vs. primary care facility										
Hospital	88%	51%	76%	48%	74%	89%	62%	42%	9%	67
Primary care	93%	81%	80%	59%	38%	72%	70%	41%	7%	67
Public vs private ownership										
Public	96%	87%	85%	64%	36%	75%	70%	43%	8%	70
Private	74%	33%	51%	23%	59%	60%	69%	28%	2%	50
Type-managing authority										
Public hospital	91%	45%	68%	45%	79%	73%	40%	60%	9%	63
Private hospital	85%	55%	80%	49%	70%	100%	77%	31%	8%	69
Public CHC	97%	88%	78%	68%	54%	63%	61%	49%	8%	70
Public CHP	93%	77%	90%	54%	36%	80%	80%	32%	12%	68
Public MCHP	96%	92%	86%	68%	30%	77%	71%	45%	7%	71
Public clinic	100%	58%	79%	43%	7%	50%	43%	29%	0%	51
Private clinic	71%	29%	44%	17%	56%	52%	67%	27%	0%	45
Total	**93%**	**80%**	**80%**	**59%**	**39%**	**73%**	**70%**	**41%**	**7%**	**67**

* rounded to zero.

2.3 HIV/AIDS

National HIV prevalence was estimated to be stable at 1.5% according to the 2008 Sierra Leone Demographic Health Survey (DHS) [13]. HIV prevalence is higher in urban (2.5%) compared to rural areas (1.0%), and was particularly high in the Western Area (3%). The annual ANC sentinel surveillance surveys show a decrease in prevalence from 4.4% in 2007 to 3.2% in 2009 among pregnant women. The National AIDS Secretariat (NAS) was established in 2003 to provide strategic leadership and to coordinate multisectoral responses. The National Policy on HIV/AIDS and the National Strategic Framework provide the general principles for the intervention, care, and support for those affected by the disease.

2.3.1 HIV/AIDS counselling and testing

HIV counselling and testing is an entry point to receiving care and treatment. The number of Voluntary Counselling and Testing sites increased from 351 in 2009 to 511 in 2010[14]. According to the Basic Package of Essential Health Services, HIV counselling and testing services will be expanded in a phased manner to include all health facilities.

Service availability

Table 22 shows the percentage of facilities offering HIV/ counselling and testing services, by region, managing authority (public vs. private), facility type (hospital vs. primary care facility), and facility type/managing authority.

- Forty-two percent of facilities offered HIV testing and counselling services. Hospitals were twice as likely to offer HIV testing and counselling services compared to primary care facilities (82% vs. 41%).
- The Northern Region has the highest proportion of facilities offering the service at 50%, whereas the Southern Region has the lowest at 30%.

Table 22: Percentage of facilities offering HIV counselling and testing services, by region, hospital vs. primary care, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	HIV counselling and testing service offered
Region	
Eastern	44%
Northern	50%
Southern	30%
Western Area	45%
Public vs. private ownership	
Public	41%
Private	49%
Hospital vs. primary care facility	
Hospital	82%
Primary care	41%
Type-managing authority	
Public hospital	100%
Private hospital	70%
Public CHC	81%
Public CHP	31%
Public MCHP	30%
Public clinic	78%
Private clinic	44%
Total	**42%**

[13] Statistics Sierra Leone (SSL) and ICF Macro. 2009. Sierra Leone Demographic and Health Survey 2008. Calverton, Maryland, USA: Statistics Sierra Leone (SSL) and ICF Macro. http://www.measuredhs.com/pubs/pdf/FR225/FR225.pdf

[14] Ministry of Health and Sanitation, Government of Sierra Leone. 2010 Health Sector Performance Report.

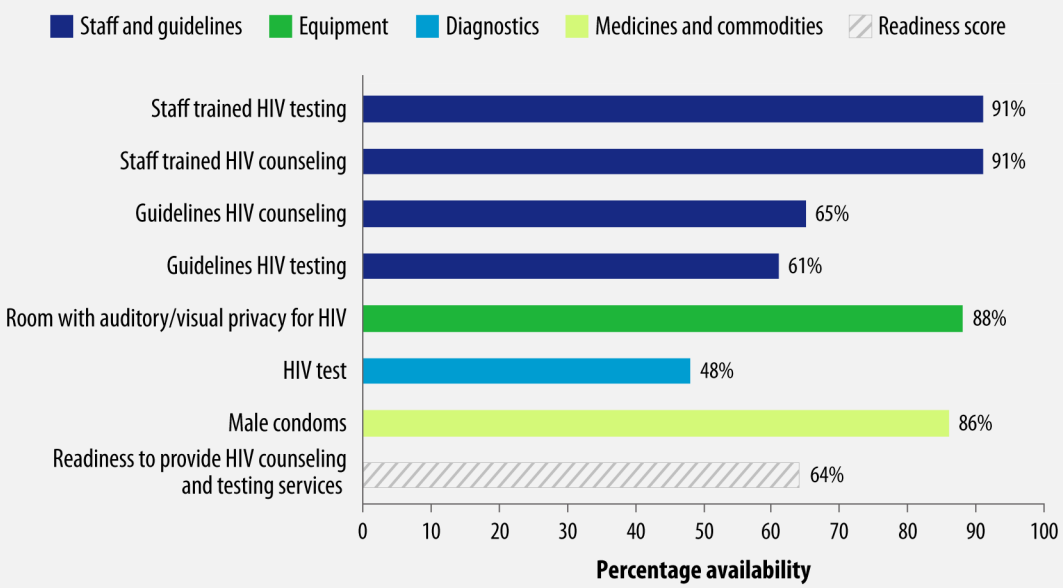
Service readiness

Readiness to provide HIV counselling and testing services was assessed based on the presence of the following 7 tracer items: guidelines on HIV counselling, guidelines on HIV testing, staff trained in HIV/AIDS counselling in the past two years, staff trained in HIV testing in the past two years, room with visual and auditory privacy, capacity to conduct HIV diagnostic test on site, and male condoms.

Figure 27 shows the percentage availability of these tracer items at facilities offering HIV/AIDS testing and counselling services (N=87).

- Four percent of facilities had all 7 items; on average, facilities had 5 of the 8 items for an overall readiness score of 64 out of 100.
- Less than half of facilities offering HIV testing and counselling services had the capacity to conduct an HIV diagnostic test on the day of the assessment. This may indicate a shortage of testing kits, equipment and reagents needed to conduct diagnostic testing.
- Most facilities had staff trained in counselling and testing (91%), and most also had private rooms (88%) and male condoms (86%) available.

Figure 27. Percentage availability of tracer items for HIV/AIDS counselling and testing at facilities offering the service (N=87) Sierra Leone SARA, 2011



Service distribution

Table 23 shows availability of HIV/AIDS counselling and testing tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Hospitals had a higher readiness score compared to primary care facilities (85 vs. 62 out of 100). In particular, public hospitals had a much higher readiness score of 92 out of 100, compared to other facility categories.
- Hospitals were much more likely to be able to conduct an HIV diagnostic test on site (100% vs. 43%).
- However, primary care facilities were much more likely to have male condoms available (88% vs. 58%).

Table 23: Availability of tracer items for HIV/AIDS counselling and testing at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=87), Sierra Leone 2011

	Staff trained HIV testing	Staff trained HIV counseling	Guidelines HIV counseling	Guidelines HIV testing	Room with auditory/visual privacy for HIV	HIV test	Male condoms	All items	Readiness to provide HIV counseling and testing services
Region									
Eastern	89%	89%	50%	55%	94%	58%	88%	2%	63
Northern	89%	89%	73%	66%	85%	34%	85%	3%	63
Southern	94%	94%	55%	55%	85%	48%	89%	5%	62
Western Area	96%	96%	80%	63%	90%	72%	77%	12%	74
Hospital vs primary care facility									
Hospital	92%	92%	66%	66%	98%	100%	58%	56%	85
Primary care	91%	91%	64%	60%	87%	43%	88%	0%	62
Public vs private ownership									
Public	90%	90%	64%	58%	88%	42%	92%	3%	62
Private	97%	97%	65%	78%	87%	78%	53%	9%	74
Type-managing authority									
Public hospital	96%	96%	82%	82%	96%	100%	69%	77%	92
Private hospital	88%	88%	51%	51%	100%	100%	47%	35%	78
Public CHC	92%	92%	71%	71%	87%	58%	100%	0%	67
Public CHP	90%	90%	58%	51%	89%	32%	100%	0%	59
Public MCHP	87%	87%	61%	48%	87%	27%	83%	0%	57
Public clinic	100%	100%	55%	36%	83%	36%	100%	0%	59
Private clinic	100%	100%	70%	88%	82%	70%	54%	0%	73
Total	**91%**	**91%**	**65%**	**61%**	**88%**	**48%**	**86%**	**4%**	**64**

2.3.2 HIV/AIDS care and support services

HIV/AIDS care and support services include treatment of opportunistic infections and palliative care. Tuberculosis is a common opportunistic infection, with approximately 14% of HIV-positive cases co-infected with TB[15]. Inadequate nutrition increases the risk of rapid progression of HIV to AIDS and decreases the body's defenses against opportunistic infections. According to the Basic Package of Essential Health Services, treatment of opportunistic infections should be provided at the CHP level and above.

Service availability

Table 24 shows the percentage of facilities offering the following HIV/AIDS care and support services: treatment of opportunistic infections, palliative care, intravenous treatment of fungal infections, treatment for Kaposi's sarcoma, nutritional rehabilitation services, fortified protein supplementation, care for paediatric HIV patients, preventative treatment for TB, micronutrient supplementation, family planning counselling, and provision of condoms.

- Only 18% of facilities offered HIV/AIDS care and support services.
- Treatment of opportunistic infections and micronutrient supplementation were provided by 17% of facilities, while palliative care was provided by 13% of facilities.
- Only 8% of facilities provided preventative treatment for TB to HIV/AIDS patients.
- Hospitals were much more likely to provide these services compared to primary care facilities (62% vs. 16% overall).
- Most public hospitals offer HIV/AIDS care and support services (86%).

[15] National HIV/AIDS secretariat. 2010 Sierra Leone UNGASS Progress Report. http://www.unaids.org/en/dataanalysis/monitoringcountryprogress/2010progressreportssubmittedbycountries/sierraleone_2010_country_progress_report_en.pdf

Table 24: Percentage of facilities offering key HIV/AIDS care and support services, by region, hospital vs. primary care, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	HIV care and support services offered	Treatment for OIs	Micronutrient supplementation	Family planning counseling	Condom provision	Preventative treatment for OIs	Palliative care	Nutritional rehabilitation services	Care for paediatric HIV patients	IV treatment of fungal infections	Fortified protein supplement ation	Preventative treatment for TB	Treatment for Kaposi's sarcoma	HIV care and support services offered
Region														
Eastern	17%	17%	15%	17%	17%	15%	12%	15%	8%	5%	10%	5%	7%	17%
Northern	23%	21%	21%	23%	23%	19%	16%	12%	17%	12%	9%	13%	5%	23%
Southern	10%	10%	10%	8%	10%	10%	10%	5%	6%	5%	3%	5%	5%	10%
Western Area	27%	27%	27%	25%	19%	27%	13%	13%	11%	10%	12%	5%	5%	27%
Public vs. private														
Public	16%	15%	15%	15%	16%	14%	11%	11%	10%	7%	7%	7%	4%	16%
Private	32%	32%	32%	31%	25%	32%	25%	12%	17%	12%	13%	13%	13%	32%
Hospital vs. Primary care facility														
Hospital	62%	60%	62%	56%	62%	62%	58%	52%	51%	36%	51%	38%	31%	62%
Primary care	16%	16%	15%	16%	15%	15%	11%	9%	9%	7%	6%	6%	4%	16%
Type-managing authority														
Public hospital	86%	82%	86%	79%	86%	86%	77%	71%	65%	26%	60%	52%	43%	86%
Private hospital	46%	46%	46%	42%	46%	46%	46%	40%	42%	42%	46%	30%	23%	46%
Public CHC	44%	44%	37%	40%	44%	40%	29%	32%	25%	22%	18%	20%	7%	44%
Public CHP	7%	7%	7%	7%	7%	7%	3%	7%	7%	0%	7%	0%	3%	7%
Public MCHP	9%	8%	9%	9%	9%	7%	7%	4%	5%	5%	3%	4%	3%	9%
Public clinic	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Private clinic	29%	29%	29%	29%	20%	29%	20%	5%	11%	5%	5%	9%	11%	29%
Total	**18%**	**17%**	**17%**	**17%**	**17%**	**16%**	**13%**	**11%**	**11%**	**8%**	**8%**	**8%**	**5%**	**18%**

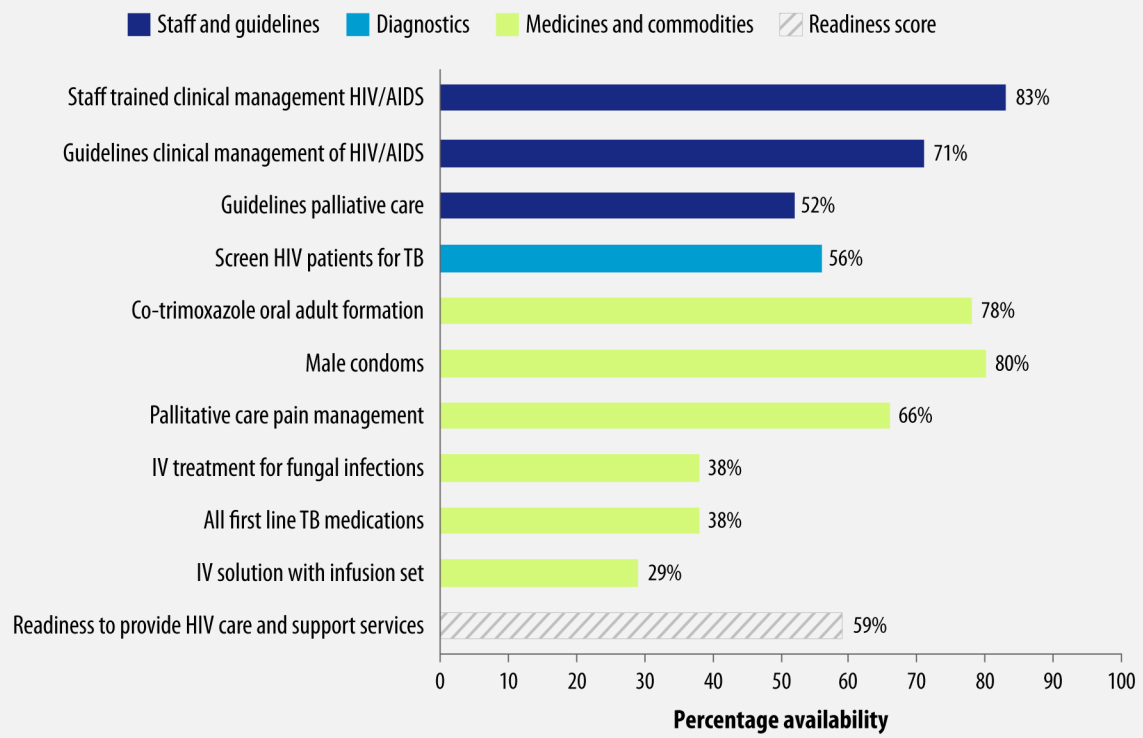
Service readiness

Readiness to provide HIV/AIDS care and support services was assessed based on the presence of the following 10 tracer items: guidelines for clinical management of HIV and AIDS, guidelines for palliative care, staff trained in clinical management of HIV and AIDS in the past two years, system for diagnosis of TB among HIV positive patients, intravenous solution with infusion set, intravenous treatment of fungal infections, co-trimoxazole, all four first-line TB treatment medications, palliative care pain management medication, and male condoms.

Figure 28 shows the percentage availability of these tracer items at facilities offering HIV/AIDS care and support services (N=37).

- No facilities had all 10 items; on average, facilities had around 6 of the 10 tracer items available for an overall readiness score of 59 out of 100.
- Co-trimoxazole and male condoms are available at 78% and 74% of facilities respectively.
- Intravenous solution with infusion set was the least available tracer item, with less than a third (29%) of facilities having this item in stock on the day of the survey.
- Slightly over half of facilities offering HIV & AIDS care and support services had a system for diagnosing TB among HIV patients, and around 40% had first line TB medications in stock..

Figure 28. Percentage availability of tracer items for HIV/AIDS care and support services at facilities offering the service (N=37) Sierra Leone SARA, 2011



Service distribution

Table 25 shows availability of HIV/AIDS care and support tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Hospitals had a higher readiness score compared to primary care facilities (76 vs. 60 out of 100), and generally had higher availability of tracer items such as first-line TB medications (73% vs. 33%), diagnosis of TB among HIV patients (93% vs. 50%), IV treatment of fungal infections (63% vs. 34%), and guidelines for palliative care (87% vs. 46%).
- However, male condoms were more commonly available in primary care facilities (79% vs. 37%).
- IV solution with infusion set was entirely unavailable in the Eastern region, and was available in only 17% of all public facilities.
- Overall, IV solution with infusion set, IV treatment for fungal infections, and all first line TB medications were the least available items.

Table 25: Availability of tracer items for HIV/AIDS care and support at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=37), Sierra Leone 2011

	Staff trained clinical management HIV/AIDS	Guidelines clinical management of HIV/AIDS	Guidelines palliative care	Screen HIV patients for TB	IV solution with infusion set	IV treatment for fungal infections	Co-trimoxazole oral adult formation	All first line TB medications	Palliative care pain management	Male condoms	All items	Readiness to provide HIV care and support services
Region												
Eastern	87%	74%	62%	59%	0%	42%	83%	29%	56%	86%	0%	58
Northern	76%	76%	55%	54%	22%	45%	59%	38%	68%	80%	0%	57
Southern	81%	59%	35%	100%	56%	3%	100%	57%	65%	94%	0%	65
Western Area	97%	68%	45%	22%	58%	45%	100%	33%	74%	62%	0%	60
Hospital vs. primary care facility												
Hospital	90%	93%	87%	93%	45%	63%	79%	73%	72%	59%	0%	75
Primary care	82%	68%	46%	50%	27%	34%	78%	33%	65%	83%	0%	57
Public vs private ownership												
Public	78%	74%	52%	50%	17%	40%	72%	39%	61%	87%	0%	57
Private	100%	64%	50%	78%	69%	30%	96%	37%	83%	56%	0%	66
Type-managing authority												
Public hospital	82%	87%	76%	87%	22%	51%	73%	92%	59%	64%	0%	69
Private hospital	100%	100%	100%	100%	73%	78%	86%	50%	87%	54%	0%	83
Public CHC	77%	77%	35%	54%	19%	35%	77%	50%	66%	100%	0%	59
Public CHP	100%	100%	100%	0%	0%	0%	100%	0%	100%	100%	0%	60
Public MCHP	72%	57%	57%	43%	14%	57%	57%	14%	43%	72%	0%	49
Public clinic	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	0%	90
Private clinic	100%	51%	32%	70%	68%	13%	100%	32%	81%	57%	0%	60
Total	**83%**	**71%**	**52%**	**56%**	**29%**	**38%**	**78%**	**38%**	**66%**	**80%**	**0%**	**59**

2.3.3 HIV/AIDS antiretroviral prescription and client management services

Uptake of antiretroviral therapy (ART) and scale up ART sites has increased significantly since the provision of free Antiretroviral Therapy came into effect in 2005. The number of clients on ART increased from 2526 in 2009 to 5881 in 2010, which represents 14% and 21% of the HIV-positive population respectively. Similarly, antiretroviral treatment sites increased from 111 in 2009 to 131 in 2010. Facilities at all levels are expected to provide supervision of ART including home-based care[16].

Service availability

Table 26 shows the percentage of facilities offering antiretroviral prescription and client management services.

- Twenty percent of facilities offered antiretroviral therapy.
- Hospitals were much more likely to offer the service compared to primary care facilities (69% vs. 18%). In particular, all public hospitals were found to offer antiretroviral therapy.
- The Western Area had the highest proportion of facilities offering ART; this is due to the relatively large concentration of hospitals in Freetown, but is also perhaps due to the higher prevalence of HIV in urban areas.
- The Southern Region had the lowest proportion of facilities offering ART at 8%.

Table 26: Percentage of facilities offering HIV counselling and testing services, by region, hospital vs. primary care, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Prescribe ART	Treatment follow-up services for ART patients	ARV treatment services offered
Region			
Eastern	15%	18%	18%
Northern	23%	20%	25%
Southern	6%	8%	8%
Western Area	37%	32%	37%
Public vs. private ownership			
Public	17%	16%	19%
Private	24%	26%	28%
Hospital vs. primary care facility			
Hospital	66%	59%	69%
Primary care	16%	16%	18%
Type-managing authority			
Public hospital	93%	89%	100%
Private hospital	49%	40%	49%
Public CHC	47%	47%	47%
Public CHP	9%	10%	15%
Public MCHP	9%	6%	9%
Public clinic	22%	22%	22%
Private clinic	18%	23%	23%
Total	**18%**	**18%**	**20%**

[16] Ministry of Health and Sanitation, Government of Sierra Leone. 2010. Basic Package of Essential Health Services for Sierra Leone. http://www.afro.who.int/en/downloads/doc_download/5751-basic-package-of-essential-health-services-for-sierra-leone.html

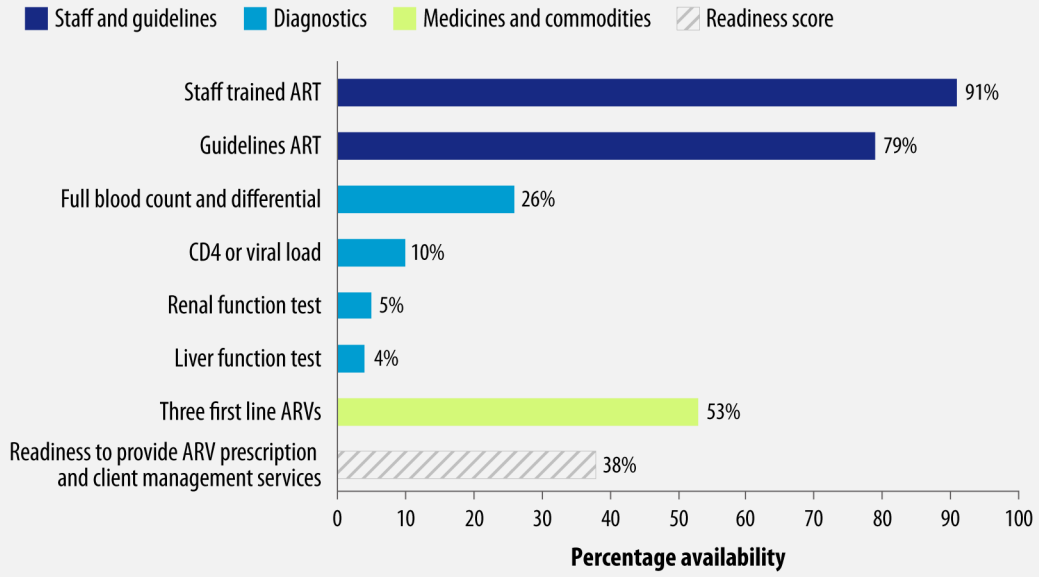
Service readiness

Readiness to provide antiretroviral therapy was assessed based on the presence of the following 7 tracer items: guidelines for ART, staff trained in ART in the past two years, capacity to conduct a complete blood count (CBC), CD4 or viral load, renal function test, liver function test, and three first-line antiretrovirals. For the four diagnostic tests, both on site and off site testing were considered. The first line antiretroviral medicines were taken from the Sierra Leone national antiretroviral treatment guidelines, and the following drug combinations were considered: ZDV + 3TC + EFV or d4T +3TC + EFV or d4T + 3TC + NVP or ZDV + 3TC + ABC.

Figure 29 shows the percentage availability of these tracer items at facilities offering ART services (N=41).

- No facilities had all 7 items; on average, facilities had 3 of the 7 items for an overall readiness score of 38 out of 100.
- Only half (53%) of facilities had three first line antiretrovirals with valid expirations dates in stock on the day of the survey.
- A quarter of facilities were able to conduct a complete blood count on site or off site; however, all were missing one or more equipment items or reagents on the day of the assessment.
- Ten percent or less offered CD4 or viral load, blood urea, and liver function tests.

Figure 29. Percentage availability of tracer items for antiretroviral prescription and client management at facilities offering the service (N=41), Sierra Leone SARA, 2011



Service distribution

Table 27 shows availability of HIV/AIDS ART tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Hospitals had a much higher readiness score compared to primary care facilities (61 vs. 35 out of 100). This was primarily due to much higher capacity to conduct the four diagnostic tests on site or off site. While primary care facilities cannot necessarily be expected to offer these diagnostic tests on site, there should be a system in place to refer patients or samples for off site testing.
- Hospitals were also twice as likely to have three first-line ARVs (96% vs. 46%).

Table 27: Availability of tracer items for HIV/AIDS antiretroviral prescription and client management at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=41), Sierra Leone 2011

	Staff trained ART	Guidelines ART	Full blood count and differential	CD4 or viral load	Renal function test	Liver function test	Three first line ARVs	Readiness to provide ARV prescription and client management services
Region								
Eastern	98%	82%	6%	14%	4%	2%	40%	35
Northern	86%	86%	15%	12%	4%	4%	41%	36
Southern	95%	70%	44%	9%	3%	3%	44%	39
Western Area	91%	68%	55%	5%	7%	7%	91%	46
Hospital vs. primary care facility								
Hospital	82%	82%	76%	29%	34%	31%	96%	61
Primary care	92%	79%	18%	7%	0%	0%	46%	35
Public vs private ownership								
Public	90%	80%	17%	10%	3%	2%	46%	35
Private	95%	78%	63%	11%	14%	14%	81%	51
Type-managing authority								
Public hospital	81%	82%	82%	26%	26%	21%	100%	60
Private hospital	83%	81%	68%	34%	44%	44%	90%	63
Public CHC	100%	75%	11%	7%	0%	0%	64%	37
Public CHP	100%	86%	0%	0%	0%	0%	0%	27
Public MCHP	71%	85%	15%	15%	0%	0%	28%	31
Public clinic	69%	33%	33%	33%	0%	0%	33%	28
Private clinic	100%	77%	60%	0%	0%	0%	77%	45
Total	**91%**	**79%**	**26%**	**10%**	**5%**	**4%**	**53%**	**38**

2.3.4 PMTCT Services

Mother-to-child transmission of HIV can occur during pregnancy, during delivery through infected birth canal, or after birth from breastfeeding. A 2009 study by the MoHS and the National AIDS Secretariat found an overall HIV prevalence of 56% in children born to HIV-positive mothers without PMTCT, compared to 9% in those on ART prophylaxis. The uptake of PMTCT services increased from 650 HIV-positive pregnant women (40%) in 2009 to 717 (48%) in 2010. The Basic package of essential health services specifies that PMTCT should be provided at health facilities of all levels.

Service availability

Table 28 shows the percentage of facilities offering key PMTCT services, including counselling and testing for pregnant women and infants, ARV prophylaxis for pregnant women and infants, infant and young child feeding counselling, nutritional counselling, and family planning counselling. Overall, 37% of facilities offered PMTCT services. All PMTCT services were offered by a quarter to a third of facilities. Hospitals were much more likely to offer PMTCT services compared to primary care facilities, 62% vs. 36%. Most public hospitals offered PMTCT services (88%). Public and private facilities offered the service at approximately the same rate, nor was there a big difference between regions.

Table 28: Percentage of facilities offering PMTCT services, by region, hospital vs. primary care, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	HIV counselling and testing for HIV+ pregnant women	Family planning counselling to HIV+ pregnant women	Nutritional counselling for HIV+ women and their infants	ARV prophylaxis for HIV+ pregnant women	Infant and young child feeding counselling	HIV counselling and testing for infants born to HIV+ women	ARV prophylaxis for newborns of HIV+ pregnant women	PMTCT services offered
Region								
Eastern	28%	31%	25%	28%	23%	20%	25%	36%
Northern	37%	34%	26%	27%	28%	27%	25%	41%
Southern	32%	30%	28%	28%	27%	24%	23%	32%
Western Area	34%	34%	27%	25%	25%	26%	32%	38%
Public								
Public	33%	32%	26%	27%	26%	24%	25%	37%
Private	36%	32%	32%	25%	31%	31%	31%	36%
Hospital								
Hospital	62%	62%	59%	62%	54%	59%	59%	62%
Non-hospital	32%	31%	25%	26%	25%	23%	24%	36%
Type-managing authority								
Public hospital	88%	88%	81%	88%	77%	88%	88%	88%
Non- public hospital	45%	45%	45%	45%	40%	40%	40%	45%
Public CHC	68%	64%	49%	61%	53%	53%	57%	71%
Public CHP	26%	30%	23%	23%	23%	20%	23%	32%
Public MCHP	22%	21%	17%	17%	17%	14%	13%	26%
Public clinic	64%	50%	57%	28%	22%	22%	22%	64%
Non-public clinic	34%	29%	29%	20%	29%	29%	29%	34%
Total	**33%**	**32%**	**27%**	**27%**	**26%**	**25%**	**25%**	**37%**

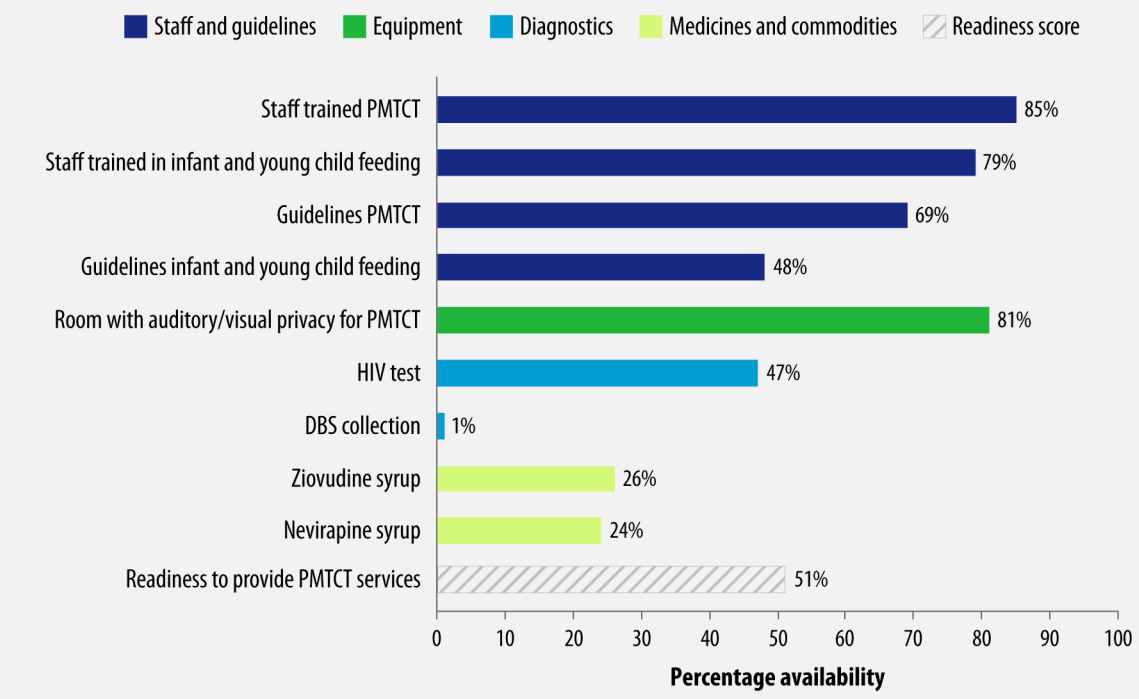
Service readiness

Readiness to provide PMTCT services was assessed based on the presence of the following 9 tracer items: guidelines for PMTCT, staff trained in PMTCT in the past two years, guidelines for infant and young child feeding counselling, staff trained in infant and young child feeding counselling in the past two years, room with visual and auditory privacy, capacity to conduct HIV diagnostic testing on site, dried blood spot (DBS) filter paper for diagnosing HIV in newborns, zidovudine syrup, and nevirapine syrup.

Figure 30 shows the percentage availability of these tracer items at facilities offering PMTCT services (N=77).

- One percent of facilities had all 9 items; on average, facilities had 4-5 of the 9 tracer items for an overall readiness score of 51 out of 100.
- Very few facilities (1%) offered DBS testing and almost none had DBS filter paper in stock to conduct the test.
- Only a quarter of facilities offering PMTCT services had zidovudine and nevirapine syrups.
- About half were able to conduct an HIV diagnostic test for adults on site. Most (85%) facilities had staff trained in PMTCT, and 79% had staff trained in infant and young child feeding.

Figure 30. Percentage availability of tracer items for PMTCT at facilities offering the service (N=77) Sierra Leone SARA, 2011



Service distribution

Table 29 shows availability of PMTCT tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Hospitals had a much higher capacity to conduct diagnostic tests and higher availability of medicines compared to primary care facilities. For example, HIV diagnostic testing for adults was available in all hospitals but in only 44% of primary care facilities offering PMTCT services. DBS collection was available in 16% of hospitals but not at all in primary care facilities.
- Ziovudine and Nevirapine syrups were available in 75% and 69% of hospitals, respectively, and in only 23% and 21% of primary care facilities, a three-fold difference.

Table 29: Availability of tracer items for PMTCT at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=77), Sierra Leone 2011

	Staff Trained PMTCT	Guidelines PMTCT	Staff trained in infant and young child feeding	Guidelines infant and young child feeding	Room with auditory/visual privacy for PMTCT	HIV test	DBS collection	Ziovudine syrup	Nevirapine syrup	All items	Readiness to provide PMTCT services
Region											
Eastern	71%	56%	70%	33%	70%	57%	0%	28%	14%	0%	44
Northern	90%	80%	82%	56%	89%	38%	3%	30%	24%	4%	55
Southern	87%	70%	86%	50%	67%	39%	0%	14%	17%	0%	48
Western Area	93%	58%	75%	43%	100%	79%	2%	36%	59%	0%	61
Hospital vs. primary care facility											
Hospital	84%	86%	82%	67%	94%	100%	16%	75%	69%	15%	75
Primary care	85%	68%	79%	46%	80%	44%	*	23%	21%	1%	50
Public vs private ownership											
Public	84%	69%	80%	48%	82%	43%	1%	24%	20%	1%	50
Private	98%	70%	75%	43%	72%	76%	5%	43%	55%	7%	60
Type-managing authority											
Public hospital	79%	92%	87%	69%	100%	100%	10%	84%	74%	4%	77
Private hospital	91%	78%	77%	64%	86%	100%	23%	63%	64%	28%	72
Public CHC	90%	69%	76%	53%	90%	57%	0%	29%	31%	0%	55
Public CHP	89%	83%	89%	58%	79%	31%	0%	27%	7%	0%	52
Public MCHP	75%	60%	80%	40%	75%	31%	0%	10%	10%	0%	42
Public clinic	89%	67%	54%	21%	79%	44%	11 %	34%	23%	17%	47
Private clinic	100%	68%	75%	37%	68%	68%	0%	37%	52%	0%	56
Total	**85%**	**69%**	**79%**	**48%**	**81%**	**47%**	**1%**	**26%**	**24%**	**1%**	**51**

2.4 Tuberculosis

Tuberculosis control is a priority of the MoHS, with an estimated prevalence rate of all cases of TB at 1282 per 100,000 and mortality rate excluding HIV at 146 per 100,000 in 2011[17]. TB prevalence has shown a steady increase over the past several years, fuelled in part by the rise in HIV infections. The main strategy for TB management and control is the directly observed treatment short course (DOTS). There were 148 DOTS centres nationwide in 2010, in which smear positive and most smear negative cases could be diagnosed and appropriate treatment prescribed. Some primary health care facilities are qualified to supervise continuing treatment of TB.

Service availability

Table 30 shows the percentage of facilities offering tuberculosis diagnosis and treatment services.

- Seventeen percent of facilities offered TB diagnosis or treatment. The percentage of facilities that offered TB diagnosis and the percentage of facilities that offered TB treatment and management of TB patients were both at 15%.
- Hospitals were much more likely to offer TB services compared to primary care facilities (65% vs. 15%).
- Most public hospitals (86%) offered TB diagnosis and treatment, as well as a majority of CHCs (59%) and private hospitals (52%).
- The Southern Region had the highest proportion of facilities offering TB services (23%).

Table 30: Percentage of facilities offering HIV counselling and testing services, by region, hospital vs. primary care, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Diagnose TB	Prescribe TB treatment or manage patients on treatment	TB diagnosis/treatment offered
Region			
Eastern	14%	12%	14%
Northern	15%	15%	15%
Southern	19%	18%	23%
Western Area	12%	12%	12%
Public vs. private ownership			
Public	14%	14%	15%
Private	25%	20%	25%
Hospital vs. primary care facility			
Hospital	65%	62%	65%
Primary care	13%	13%	15%
Type-managing authority			
Public hospital	86%	86%	86%
Private hospital	52%	46%	52%
Public CHC	59%	59%	59%
Public CHP	0%	0%	3%
Public MCHP	3%	3%	4%
Public clinic	14%	14%	14%
Private clinic	18%	15%	18%
Total	**15%**	**15%**	**17%**

[17] World Health Organization. 2011. Global Tuberculosis Control 2011. http://www.who.int/tb/publications/global_report/2011/gtbr11_full.pdf

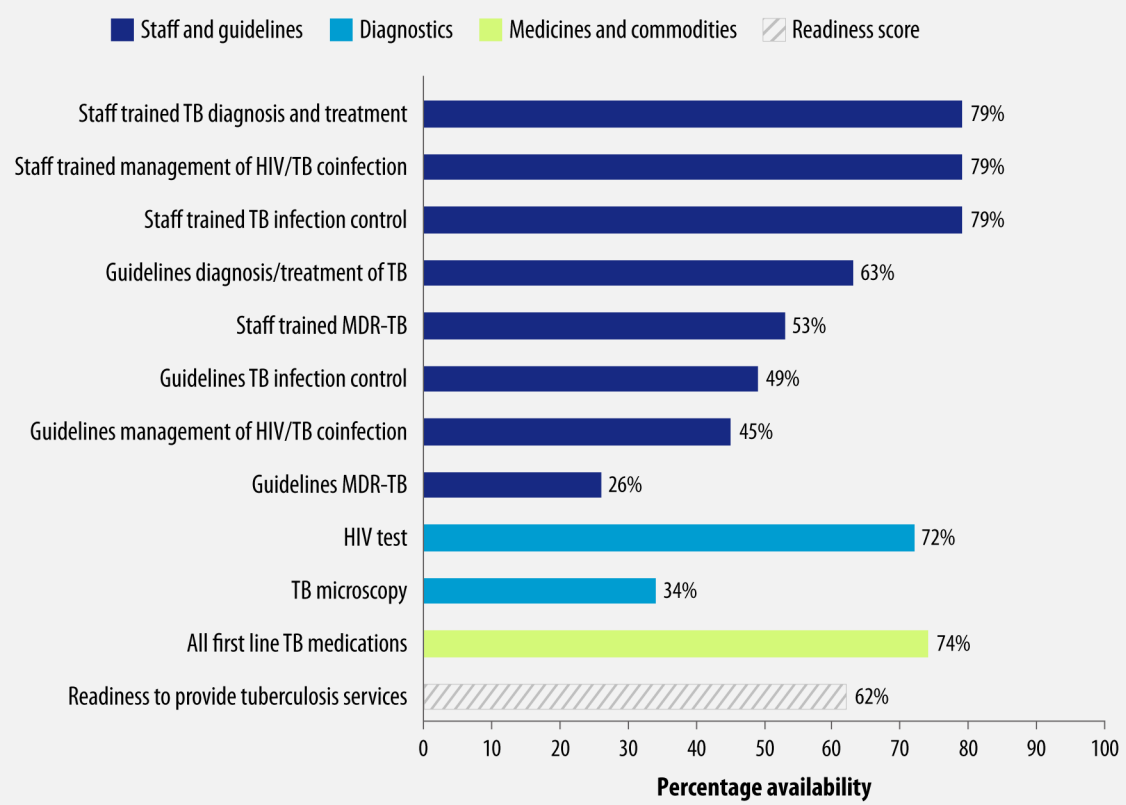
Service readiness

Readiness to provide TB services was assessed based on the presence of the following 11 tracer items: guidelines for diagnosis and treatment of TB, for management of HIV/TB co-infection, for MDR-TB, and for TB infection control, staff trained in TB diagnosis and treatment, in management of HIV/TB co-infection, and in MDR-TB, staff trained in TB infection control, capacity to conduct on site TB microscopy, HIV test, and all first-line TB medications (isoniazid, pyrazinamide, rifampicin, and ethambutol as standalone drugs or in any fixed-dose combination).

Figure 31 shows the percentage availability of these tracer items at facilities offering TB services (N=35).

- Of these facilities, 3% had all 11 tracer items; on average, facilities had 7 of the 11 tracer items for an overall readiness score of 62 out of 100.
- Three quarters of facilities had all first line TB medications available, but only one third (34%) had the capacity to diagnose TB on site, including functional equipment and reagents on the day of the assessment.
- Most facilities (79%) had staff trained in TB diagnosis and treatment, HIV/TB co-infection, and TB infection control in the past two years. The availability of trained staff was consistently higher (53-79%) than the availability of guidelines in the same topic (26-63%). Availability of trained staff and guidelines was lowest for MDR-TB (53% and 26% respectively).
- About 70% of facilities offering TB services also had the capacity to offer HIV diagnostic testing.

Figure 31. Percentage availability of tracer items for TB services at facilities offering the service (N=35) Sierra Leone SARA, 2011



Service distribution

Table 31 shows availability of tuberculosis tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Private facilities had a higher readiness score compared to public facilities (77 vs. 57 out of 100).
- Sixteen percent of hospitals offering TB services had all 11 tracer items, whereas no primary care facilities did. Guidelines for MDR-TB were overall quite low, available in only 1 out of 4 facilities, and TB microscopy was similarly available in only 1 out of 3 facilities.
- Interestingly, while the Southern Region had the highest proportion of facilities offering TB services (see Table 30), it had the lowest readiness score among the regions. It is important to note, however, that these percentages and scores should be interpreted with caution as they are based on a small sample (N=35 facilities offering TB services).

Table 31: Availability of tracer items for TB at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=35), Sierra Leone 2011

	Staff trained TB diagnosis and treatment	Staff trained management of HIV/TB coinfection	Staff trained TB infection control	Guidelines diagnosis/ treatment of TB	Staff trained MDR-TB	Guidelines TB infection control	Guidelines management of HIV/TB coinfection	Guidelines MDR-TB	HIV test	TB microscopy	All first line TB medications	TB all items	Readiness to provide tuberculosis services
Region													
Eastern	82%	98%	82%	69%	53%	47%	34%	16%	84%	39%	71%	0%	66
Northern	99%	87%	96%	87%	43%	73%	55%	31%	70%	42%	90%	1%	80
Southern	61%	61%	61%	34%	52%	24%	32%	15%	61%	25%	60%	6%	49
Western Area	86%	93%	93%	86%	86%	79%	93%	79%	100%	35%	79%	0%	75
Hospital vs. primary care facility													
Hospital	81%	83%	80%	73%	70%	49%	72%	47%	95%	69%	83%	16%	71
Primary care	79%	79%	79%	61%	49%	49%	40%	22%	68%	28%	72%	0%	61
Public vs private ownership													
Public	77%	76%	76%	68%	52%	49%	42%	28%	66%	31%	77%	1%	57
Private	89%	93%	93%	41%	54%	50%	58%	20%	96%	46%	59%	9%	77
Type-managing authority													
Public hospital	89%	84%	79%	73%	79%	48%	73%	43%	100%	66%	92%	11%	81
Privatehospital	73%	81%	81%	73%	60%	51%	71%	51%	89%	71%	73%	22%	59
Public CHC	89%	88%	89%	71%	54%	54%	49%	25%	71%	28%	89%	0%	71
Public CHP	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	13
Public MCHP	34%	34%	34%	34%	34%	34%	0%	34%	34%	34%	34%	0%	0
Public clinic	100%	100%	100%	100%	100%	100%	52%	52%	100%	0%	100%	0%	100
Private clinic	100%	100%	100%	21%	50%	50%	50%	0%	100%	29%	50%	0%	82
Total	**79%**	**79%**	**79%**	**63%**	**53%**	**49%**	**45%**	**26%**	**72%**	**34%**	**74%**	**3%**	**62**

2.5 STI services

Sexually transmitted infections (STIs) are thought to be increasingly prevalent in Sierra Leone. According to the 2008 Sierra Leone demographic and health survey, 19% of women and 11% of mean age 15-49 self-reported having an STI or symptoms of an STI in the 12 months preceding the survey. The Basic Package of Essential Health Services promotes regular enquiries about STI symptoms at family planning, antenatal, and general outpatient clinics at health facilities of all levels.

Service availability

Table 32 shows the percentage of facilities offering STI diagnosis and treatment services.

- Overall, 96% of facilities offered STI services.
- Approximately the same percentage offered STI diagnosis (95%) and treatment (96%).
- Forty percent of facilities referred STI clients for HIV testing and counselling.

Table 32: Percentage of facilities offering HIV counselling and testing services, by region, hospital vs. primary care, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Diagnose STIs	Treatment for STIs	STI clients referred for HIV counselling and testing	STI services offered
Region				
Eastern	98%	98%	41%	98%
Northern	93%	95%	49%	95%
Southern	100%	100%	27%	100%
Western Area	84%	84%	42%	84%
Public vs. private ownership				
Public	96%	97%	42%	97%
Private	89%	89%	30%	89%
Hospital vs. primary care facility				
Hospital	95%	95%	47%	95%
Primary care	95%	96%	40%	96%
Type-managing authority				
Public hospital	93%	93%	54%	93%
Private hospital	96%	96%	42%	96%
Public CHC	95%	95%	51%	95%
Public CHP	100%	100%	44%	100%
Public MCHP	95%	96%	37%	96%
Public clinic	100%	100%	55%	100%
Private clinic	88%	88%	27%	88%
Total	**95%**	**96%**	**40%**	**96%**

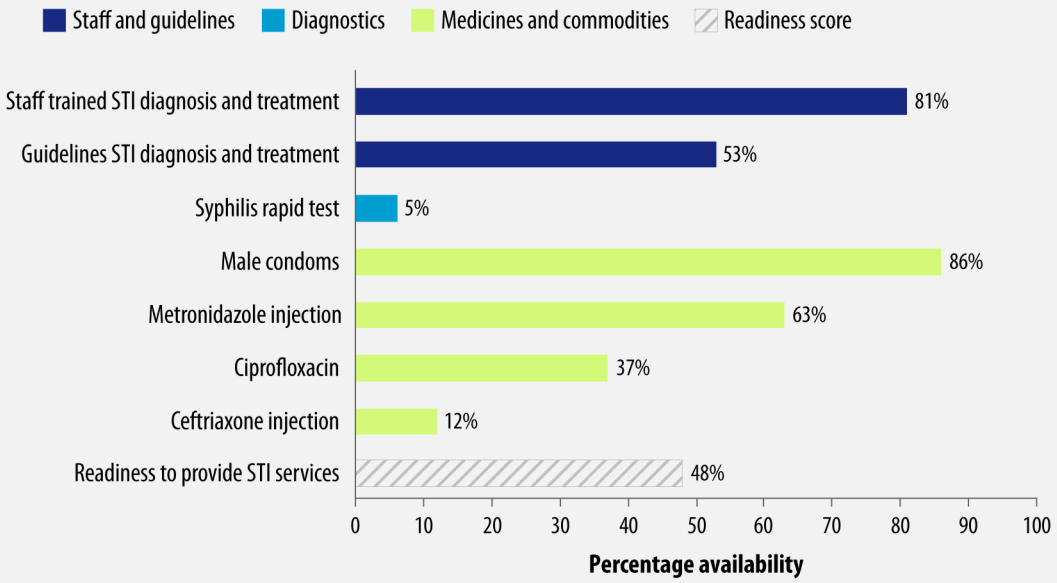
Service readiness

Readiness to provide STI services was assessed based on the presence of the following 7 tracer items: guidelines for diagnosis and treatment of STIs, staff trained in diagnosis and treatment of STIs in the past two years, capacity to conduct on site syphilis rapid test, male condoms, metronidazole, ciprofloxacin, and ceftriaxone injection.

Figure 32 shows the percentage availability of these tracer items at facilities offering STI services (N=199).

- One percent of facilities offering STI services had all 7 tracer items; on average, facilities had 3 of the 7 tracer items for an overall readiness score of 48 out of 100.
- Male condoms were the most widely available item, with 86% of facilities having this commodity in stock on the day of the survey.
- The syphilis rapid test was the least available item, with only 5% of facilities offering STI services able to conduct the test on-site on the day of the survey.
- Most (81%) of facilities also have available staff trained in STI diagnosis and treatment, and approximately half (53%) have guidelines available for STI diagnosis and treatment.
- Metronidazole injections were available in two thirds of facilities; however, other medicines such as ciprofloxacin and ceftriaxone injections were less commonly available at 37% and 12% of facilities, respectively.

Figure 32. Percentage availability of tracer items for STI services at facilities offering the service (N=199) Sierra Leone SARA, 2011



Service distribution

Table 33 shows availability of STI tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Hospitals had a higher readiness score compared to primary care facilities (67 vs. 47 out of 100).
- In particular, hospitals were much more likely to be able to conduct a syphilis rapid test on site (58% vs. 2%), and to have ceftriaxone injection (54% vs. 10%), ciprofloxacin (72% vs. 36%) and metronidazole injection (82% vs. 62%).
- Hospitals were also more likely to had guidelines on STI diagnosis and treatment (87% vs. 51%).
- However, primary care facilities were more likely to have male condoms available on the day of the assessment (87% vs. 57%).
- Eight percent of private facilities had all 7 tracer items – no public facilities had all items available.

Table 33: Availability of tracer items for STI at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=199), Sierra Leone 2011

	Staff trained STI diagnosis and treatment	Guidelines STI diagnosis and treatment	Syphilis rapid test	Male condoms	Metronidazole injection	Ciprofloxacin	Ceftriaxone injection	All items	Readiness to provide STI services
Region									
Eastern	92%	41%	2%	92%	72%	34%	11%	0%	49
Northern	76%	59%	4%	90%	52%	37%	5%	0%	46
Southern	78%	53%	6%	81%	67%	30%	11%	2%	46
Western Area	77%	57%	7%	70%	68%	67%	42%	3%	54
Hospital vs. primary care facility									
Hospital	78%	87%	58%	57%	82%	72%	54%	8%	67
Primary care	81%	51%	2%	87%	62%	36%	10%	1%	47
Public vs private ownership									
Public	81%	53%	2%	90%	61%	30%	7%	0%	46
Private	76%	49%	23%	52%	78%	87%	51%	8%	57
Type-managing authority									
Public hospital	78%	90%	65%	66%	53%	38%	23%	0%	55
Private hospital	78%	86%	54%	51%	100%	94%	74%	13%	75
Public CHC	78%	56%	4%	91%	77%	54%	9%	0%	53
Public CHP	87%	60%	0%	100%	48%	22%	7%	0%	46
Public MCHP	80%	49%	0%	87%	61%	27%	5%	0%	44
Public clinic	79%	36%	7%	100%	41%	13%	7%	0%	39
Private clinic	76%	40%	15%	52%	72%	85%	45%	6%	53
Total	**81%**	**53%**	**5%**	**86%**	**63%**	**37%**	**12%**	**1%**	**48**

2.6 Surgical care

An assessment of surgical capacity at 10 government hospitals in Sierra Leone in February 2008 found severe shortages in infrastructure, personnel, and supplies required for delivering surgical care18. In particular, hospitals did not have a reliable supply of electricity and running water, there were fewer than 10 fully trained Sierra Leonean surgeons, and oxygen concentrators and other equipment items were often not functional. Improving efficacy, safety, and equity in the provision of surgical care is an increasingly recognized priority in low and middle income countries. Basic surgical care for minor procedures can be performed at the primary care level, whereas more comprehensive surgical care requiring a well-equipped major operating theatre is generally performed only at the district hospital level or above. In this survey, assessments were done for basic and comprehensive surgical care.

2.6.1 Basic surgical care

Service availability

Table 34 shows the percentage of facilities offering basic surgical care as well as the following key services: incision and drainage, wound debridement, suturing, acute burn management, closed treatment of fracture, cricothyroidotomy, male circumcision, and chest tube insertion.

- Overall, 65% of facilities offered basic surgical care. Almost all hospitals (95%) offered basic surgical care, as well as 63% of primary care facilities.
- Of the key basic surgical procedures, suturing (63%) and incision and drainage of abscesses (61%) were the most commonly available procedures.
- Cricothyroidotomy (3%), chest tube insertion (4%), and hydrocele reduction (7%) were the least available - these procedures were offered almost exclusively in hospitals.
- Male circumcision was offered in 40% of facilities.

[18] Kingham TP, Kamara TB, Cherian MN, Gosselin RA, Simkins M, Meissner C, Foray-Rahall L, Daoh KS, Kabia SA, Kushner AL. Quantifying surgical capacity in Sierra Leone: a guide for improving surgical care. Archives of Surgery, 2009; 144(2): 122-127. http://www.who.int/surgery/QuantifyingSurgicalCapacity_ArchSurg.pdf

Table 34: Percentage of facilities offering key basic surgical care services by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=207), Sierra Leone 2011

	Incision and drainage of abscesses	Wound debridement	Suturing	Acute burn management	Closed treatment of fracture	Crico-thyroidotomy	Male circumcision	Hydrocele reduction	Chest tube insertion	Surgical services offered
Region										
Eastern	68%	53%	74%	49%	23%	1%	54%	4%	4%	74%
Northern	53%	55%	58%	47%	16%	3%	31%	8%	2%	60%
Southern	67%	58%	63%	59%	11%	5%	38%	6%	3%	67%
Western Area	56%	55%	56%	52%	25%	3%	44%	16%	13%	56%
Hospital vs. primary care facility										
Hospital	92%	89%	95%	87%	71%	24%	88%	85%	47%	95%
Primary care	59%	54%	62%	50%	15%	2%	38%	4%	2%	63%
Public vs. private ownership										
Public	60%	54%	62%	50%	16%	2%	38%	4%	1%	64%
Private	66%	64%	67%	62%	27%	8%	52%	27%	22%	67%
Type-managing authority										
Public hospital	100%	86%	100%	93%	76%	32%	95%	89%	32%	100%
Private hospital	87%	92%	92%	83%	67%	20%	83%	83%	57%	92%
Public CHC	69%	66%	63%	59%	30%	0%	66%	7%	0%	69%
Public CHP	72%	61%	71%	62%	16%	7%	63%	3%	3%	75%
Public MCHP	51%	46%	58%	42%	10%	0%	18%	1%	0%	58%
Public clinic	51%	44%	51%	23%	7%	0%	36%	7%	0%	51%
Private clinic	61%	57%	61%	57%	17%	5%	45%	14%	14%	61%
Total	**61%**	**55%**	**63%**	**52%**	**18%**	**3%**	**40%**	**7%**	**4%**	**65%**

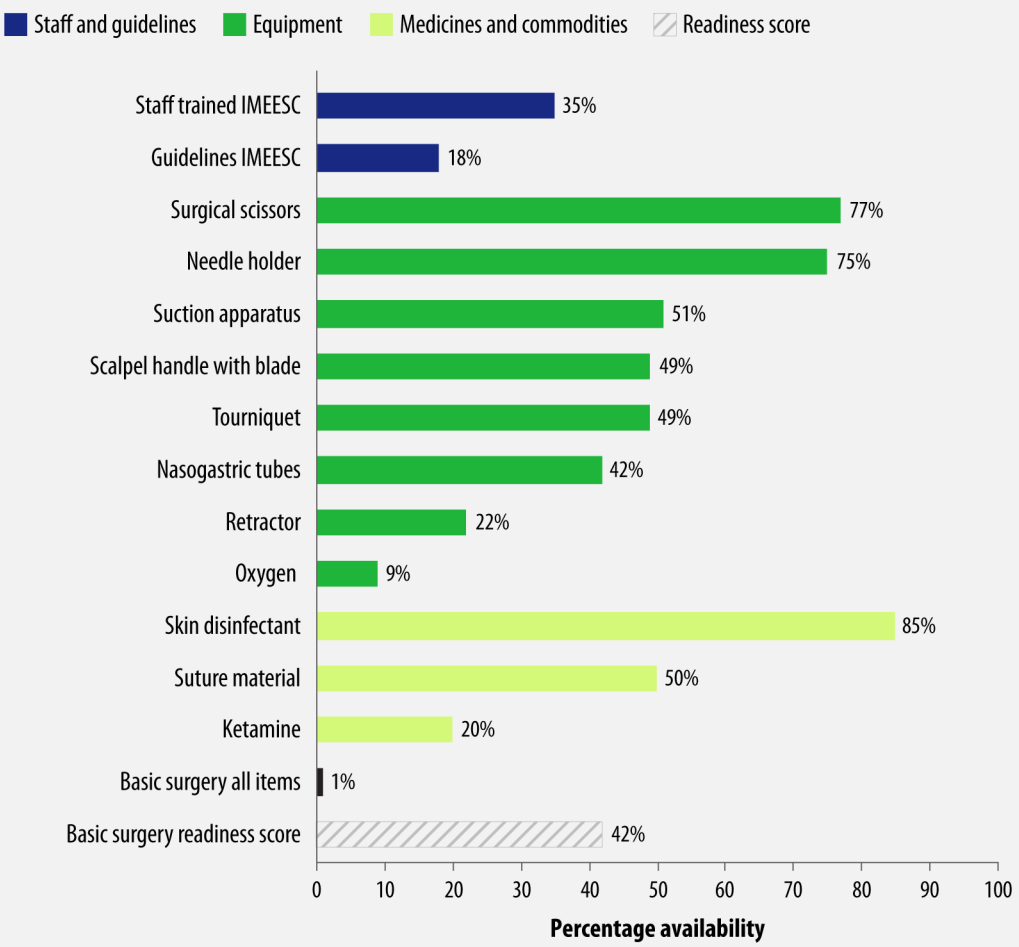
Service readiness

Readiness to provide basic surgical care services was assessed based on the availability of the following 14 tracer items: guidelines for Integrated management of emergency and essential surgical care (IMEESC), staff trained in IMEESC in the past two years, needle holder, scalpel handle with blade, retractor, surgical scissors, nasogastric tubes, tourniquet, adult and paediatric resuscitators, suction apparatus, oxygen, skin disinfectant, sutures, and ketamine.

Figure 33 shows the percentage availability of these tracer items in facilities that offer basic surgical care (N=135). 1% of facilities had all 14 items.

- On average, facilities had 6 of the 14 tracer items, for an overall readiness score of 42 out of 100.
- Equipment items such as surgical scissors and needle holder were available in 77% and 75% of facilities offering basic surgical care, respectively.
- The least available equipment items were oxygen (cyl125
- inder or concentrator) at 9% of facilities, and retractor at 22%.
- Only 20% of facilities had ketamine available on the day of the assessment, and only half of facilities had both absorbable and non-absorbable sutures.

Figure 33. Percentage availability of tracer items for basic surgical care at facilities offering the service (N=135) Sierra Leone SARA, 2011



Service distribution

Table 35 shows availability of basic surgical care tracer items by region, facility type (hospital vs. primary care facilities), managing authority (public vs. private), and by facility type/managing authority.

- Hospitals had a much higher readiness score (87 out of 100) compared to primary care facilities (39 out of 100).
- Thirty-eight percent of private hospitals had all 14 tracer items available, whereas none of the public hospitals did. In addition, private hospitals had a higher availability for each tracer item compared to public hospitals.
- In particular, private hospitals were much more likely to have oxygen (68% vs. 44%), tourniquet (94% vs. 79%), and guidelines (68% vs. 52%) and staff trained (85% vs. 69%) in IMEESC. This is consistent with the 2008 surgical care assessment, which found that non-government hospitals were much better equipped and supplied compared to government hospitals.

Table 35: Availability of tracer items for basic surgical care at facilities offering the service by region, hospital vs. primary care facility, public vs. private ownership, and type-managing authority (N=135), Sierra Leone 2011

	Guidelines IMEESC	Staff trained IMEESC	Needle holder	Scalpel handle with blade	Retractor	Surgical scissors	Nasogastric tubes	Tourniquet	Suction apparatus	Oxygen	Skin disinfectant	Suture material	Ketamine	Basic surgery all items	Basic Surgery Readiness score
Region															
Eastern	20%	52%	93%	49%	30%	89%	45%	69%	58%	3%	89%	44%	3%	0%	47
Northern	21%	31%	70%	38%	19%	54%	31%	50%	47%	9%	79%	41%	19%	1%	37
Southern	6%	13%	57%	44%	8%	84%	40%	21%	51%	3%	83%	55%	22%	2%	35
Western Area	33%	67%	97%	97%	47%	100%	72%	70%	51%	41%	97%	77%	61%	6%	67
Hospital vs. primary care facility															
Hospital	61%	78%	100 %	100%	100%	100%	98%	88%	90%	58%	98%	96%	98%	22%	87
Primary care	15%	33%	73%	46%	17%	75%	38%	46%	49%	6%	84%	47%	15%	0%	39
Public vs. private ownership															
Public	15%	30%	72%	42%	18%	73%	37%	44%	50%	4%	83%	46%	13%	0%	38
Private	37%	69%	95%	95%	46%	100%	75%	81%	63%	43%	95%	73%	64%	10%	69
Type-managing authority															
Public hospital	52%	69%	100%	100%	100%	100%	95%	79%	84%	44%	96%	91%	96%	0%	83
Private hospital	68%	85%	100 %	100%	100%	100%	100%	94%	94%	68%	100%	100%	100%	38%	90
Public CHC	5%	44%	80%	56%	24%	85%	49%	53%	39%	0%	100%	47%	0%	0%	43
Public CHP	16%	37%	73%	51%	13%	82%	51%	59%	52%	4%	77%	57%	13%	0%	42
Public MCHP	16%	20%	67%	29%	14%	62%	22%	31%	51%	2%	80%	38%	13%	0%	32
Public clinic	0%	0%	56%	27%	14%	100%	14%	27%	27%	14%	40%	40%	14%	0%	28
Private clinic	27%	64%	94%	94%	28%	100%	67%	77%	53%	35%	94%	64%	52%	0%	62
Total	**18%**	**35%**	**75%**	**49%**	**22%**	**77%**	**42%**	**49%**	**51%**	**9%**	**85%**	**50%**	**20%**	**1%**	**42**

2.6.2 Comprehensive surgical care

Service availability

Hospitals are able to provide a wider and more comprehensive range of surgical care services compared to smaller facilities.

Table 36 shows the percentage of hospitals offering the following key surgical procedures: tracheostomy, tubal ligation, vasectomy, caesarean section, dilation and curettage, obstetric fistula repair, episiotomy, cervical and vaginal laceration, appendectomy, hernia repair (strangulated, elective), cystostomy, urethral stricture dilation, laparotomy (uterine rupture, ectopic pregnancy, acute abdomen, intestinal obstruction, perforation, injuries), congenital hernia repair, neonatal surgery (abdominal wall defect, colostomy, imperforate anus, intussuceptions), cleft lip repair, contracture release, skin grafting, open treatment of fracture, amputation, and cataract surgery.

- The most commonly available surgical procedures at hospitals were hernia repair (strangulated or elective) (offered at 85% of hospitals), laparotomy (85%), and appendectomy (84%).
- Cataract surgery was the least available, as it was available at only 5% of hospitals. This is broadly consistent with the findings of the 2008 surgical care assessment, which found that appendectomies, caesarean sections, and inguinal hernia repairs were the most commonly performed procedures.

Table 36: Percentage of hospitals offering key surgical procedures by region and public vs. private ownership (N=39), Sierra Leone 2011

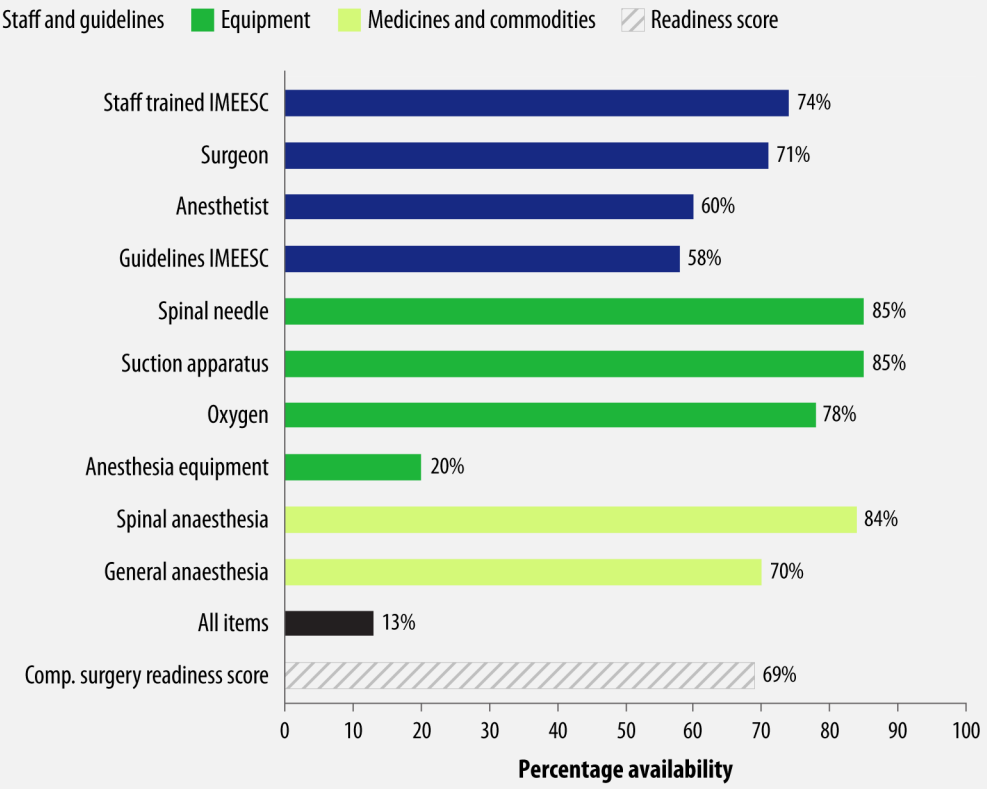
	Region				Public vs. private		
	Eastern (N=5)[1]	Northern (N=10)[1]	Southern (N=9)[1]	Western Area (N=15)[1]	Public (N=19)[1]	Private (N=20)[1]	Overall (N=39)[1]
Hernia repair (strangulated, elective)	100%	93%	100%	67%	89%	83%	85%
Laparotomy	100%	86%	86%	81%	91%	82%	85%
Appendectomy	100%	93%	86%	74%	89%	82%	84%
Caesarean section	100%	93%	72%	74%	89%	76%	81%
Episiotomy cervical and vaginal laceration	100%	93%	72%	67%	89%	72%	78%
Dilatation & Curettage	75%	86%	72%	67%	77%	71%	74%
Congenital hernia repair	100%	86%	71%	54%	74%	69%	71%
Cystostomy	58%	71%	78%	67%	59%	77%	70%
Tubal ligation	58%	76%	43%	61%	74%	50%	59%
Urethral stricture dilatation	67%	79%	57%	34%	53%	55%	54%
Open treatment of fracture	33%	79%	37%	33%	56%	38%	45%
Skin grafting	25%	64%	28%	40%	23%	53%	41%
Neonatal surgery	25%	40%	29%	34%	35%	32%	33%
Contracture release	25%	64%	22%	20%	28%	34%	32%
Vasectomy	0%	55%	42%	7%	20%	30%	26%
Amputation	58%	64%	22%	47%	8%	16%	23%
Tracheostomy	25%	40%	0%	20%	18%	22%	21%
Obstetric fistula repair	17%	17%	22%	13%	17%	16%	17%
Clift lip repair	25%	33%	0%	14%	14%	18%	16%
Cataract surgery	17%	0%	8%	13%	3%	1%	5%

Service readiness

Readiness to provide comprehensive surgical care was assessed based on the presence of the following 10 tracer items: guidelines for IMEESC, staff trained in IMEESC in the past two years, surgeon on staff, anaesthetist on staff, oxygen, anaesthesia equipment, spinal needle, suction apparatus, capacity to perform general anaesthesia, and capacity to perform spinal anaesthesia.

- Thirteen percent of facilities had all 10 items; on average, facilities had 7 of the 10 items for an overall readiness score of 69 out of 100. Most hospitals had a suction apparatus (85%), spinal needle (85%), and could perform spinal anaesthesia (84%).
- However, only 20% of hospitals had all the required anaesthesia equipment (anaesthesia machine, tubings and connectors, resuscitator bag and mask, and intubation set - oropharyngeal airway, endotracheal tubes, laryngoscope, Magill's forceps, and stylet).

Figure 34. Percentage availability of tracer items for surgical care at hospitals (N=37) Sierra Leone SARA, 2011



Service distribution

Table 37 shows availability of surgical care tracer items by region and managing authority (public vs. private).

- While public and private hospitals did not differ significantly in the overall readiness score (67 vs. 69 out of 100), 21% of private hospitals had all 10 surgery tracer items whereas no public hospitals did.
- This is similar to the results for basic surgery, and is also consistent with the results of the 2008 assessment. Private hospitals were more likely to have the full complement of equipment required for anaesthesia (25% vs. 12%); however, public facilities were more likely to have an anaesthetist on staff (81% vs. 47%).
- Hospitals in the Northern Region had the highest readiness score overall, with a score of 80 out of 100.

Table 37: Availability of tracer items for surgical care at hospitals by region and public vs. private ownership (N=39), Sierra Leone 2011

	Guidelines IMEESC	Staff Trained IMEESC	Surgeon	Anesthetist	Oxygen	Anesthesia equipment	Spinal needle	Suction apparatus	General anaes. inhalational	Spinal anaes.	All items	Comp. Surgery readiness score
Region												
Eastern	0%	83%	67%	58%	58%	0%	67%	100%	58%	100%	0%	59
Northern	86%	86%	86%	86%	93%	17%	86%	93%	86%	86%	17%	80
Southern	57%	71%	35%	37%	71%	22%	100%	78%	65%	78%	14%	61
Western Area	60%	67%	87%	61%	80%	26%	81%	80%	67%	81%	13%	69
Public vs. private ownership												
Public	52%	69%	66%	81%	74%	12%	81%	84%	67%	86%	0%	67
Private	62%	77%	74%	47%	81%	25%	87%	86%	71%	82%	21%	69
Total	**58%**	**74%**	**71%**	**60%**	**78%**	**20%**	**85%**	**85%**	**70%**	**84%**	**13%**	**69**

2.7 Blood transfusion

Sierra Leone had a very high institutional maternal mortality rate of 951 per 100,000 live births in 2010[19]. The most common causes of maternal death, such as ruptured uterus and sepsis, require blood for treatment; thus the strengthening of blood services has been prioritized. The National Blood Transfusion Policy and Plan is currently being reviewed and updated, and progress has been made towards strengthening the national blood bank and establishing district blood banks in each district. All district-level hospitals are expected to have the capacity to perform blood transfusions.

Service availability

- Seventy-four percent of hospitals offered blood transfusion services.
- Public and private hospitals offered blood transfusion services at approximately the same rate.
- The Western Area had the lowest percentage of hospitals performing blood transfusion at 46%.

Table 38: Percent of hospitals offering basic emergency obstetric care (BEmOC), caesarean section, blood transfusion and comprehensive emergency obstetric care services (N=39), Sierra Leone SARA 2011

	Blood transfusion	Number of hospitals (unweighted)
Region		
Eastern	100%	5
Northern	93%	10
Southern	86%	9
Western Area	46%	15
Public vs. private ownership		
Public	75%	19
Private	73%	20
Total	**74%**	**39**

Service readiness

Readiness to provide blood transfusion services at hospitals was assessed based on the presence of the following six tracer items: guidelines on appropriate use of blood and safe transfusion practices, staff trained in the above, refrigerator for blood storage, capacity to conduct blood typing and compatibility testing on site (ABO blood group testing, Rhesus blood group testing, and cross-matching, with centrifuge, 37 degree incubator, and grouping sera), sufficiency (no shortage of blood in the past three months), and safety (blood obtained only from national or regional blood bank, or blood obtained from other sources but screened for HIV and other transmissible infections).

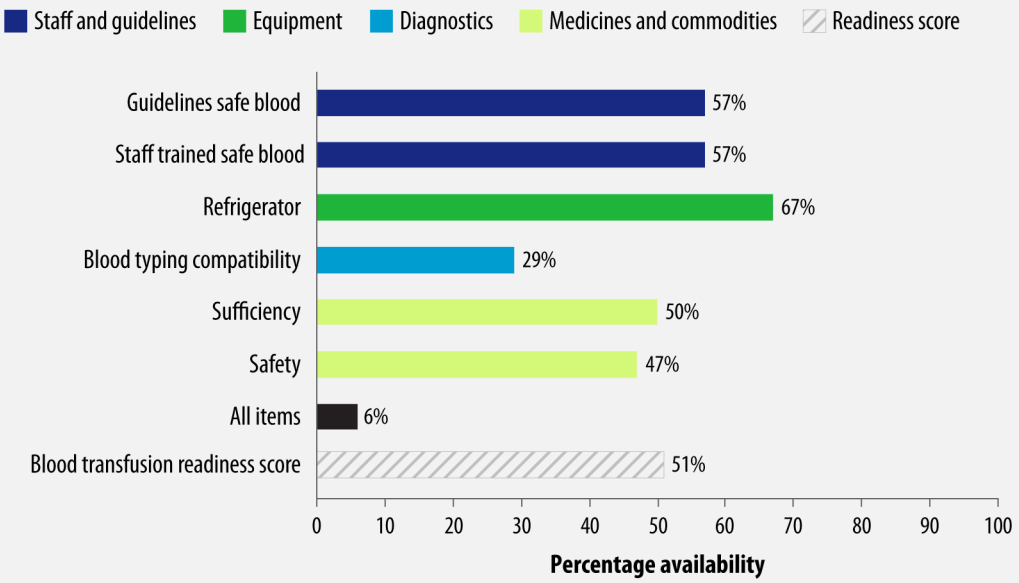
Figure 35 shows the percentage availability of these tracer items in hospitals.

- Six percent of hospitals had all six tracer items.
- On average, hospitals had 3 of the 6 items, for an overall readiness score of 51 out of 100. Sixty-seven percent of hospitals had a refrigerator for the storage of blood in the blood transfusion service area.
- Capacity to conduct blood typing and compatibility testing was low (29%), as many hospitals lacked the equipment (incubator, centrifuge) required for these tests.
- Analysis of the availability of equipment items for cross-matching indicates that most facilities were performing the simpler form of cross-matching, instead of methods recommended by WHO that would ensure a much higher level of safety (see Table 40).

[19] Ministry of Health and Sanitation, Government of Sierra Leone. 2010 Health Sector Performance Report.

- Slightly over half of hospitals had guidelines (57%) and staff that had been trained in appropriate use of blood and safe transfusion practices (57%).
- Approximately half of hospitals had experienced a shortage of blood in the past three months (50%), and did not have a safe source of blood (47%) that had been thoroughly screened for HIV and other transfusion transmissible infections.

Figure 35. Percentage availability of tracer items for blood transfusion at hospitals (N=39) Sierra Leone SARA, 2011



Service distribution

Table 39 shows the availability of blood transfusion tracer items by region and by managing authority (public vs. private ownership).

- Overall, with a readiness score of 59 out of 100, public hospitals were better prepared to offer blood transfusion compared to private facilities (46 out of 100).
- Close to half (44%) of public hospitals were able to conduct blood typing and compatibility testing, compared to only 20% of private hospitals.
- Public hospitals were also much more likely to have guidelines and staff trained in safe blood practices (70%) compared to private facilities (48%).
- The Eastern region showed the highest overall readiness score, with 100% of hospitals in the region having a refrigerator for blood storage, and no hospitals experiencing blood shortages in the last three months.
- Western Area had the lowest overall mean score of 31 out of 100. Given that only half of hospitals in the Western Area offered blood transfusion services, it is to be expected that the availability of blood transfusion tracer items would be quite low.

Table 39: Availability of tracer items for blood transfusion at hospitals (N=39), Sierra Leone SARA, 2011

	Percentage of hospitals that have							Blood transfusion readiness mean score (out of 100)
	Guidelines safe blood	Staff trained safe blood	Refrigerator	Blood typing compatibility	Sufficiency	Safety	All 6 items	
Region								
Eastern	50%	75%	100%	58%	100%	58%	17%	74
Northern	86%	93%	76%	45%	45%	62%	7%	68
Southern	58%	51%	86%	15%	57%	71%	0%	57
Western Area	40%	34%	40%	20%	33%	20%	6%	31
Public vs. private ownership								
Public	70%	70%	75%	44%	49%	44%	9%	59
Private	48%	48%	63%	20%	50%	49%	4%	46
Total	**57%**	**57%**	**67%**	**29%**	**50%**	**47%**	**6%**	**51**

Table 40: Components of blood typing and compatibility testing indicator

	Facility performs blood typing and compatibility testing	ABO blood group test	Rhesus blood group test	Cross-matching	Equipment		
					Centrifuge	37 degree incubator	Grouping sera
Region							
Eastern	100%	100%	75%	100%	100%	58%	100%
Northern	93%	76%	93%	93%	86%	69%	93%
Southern	72%	58%	72%	72%	58%	29%	65%
Western Area	40%	80%	74%	66%	53%	27%	60%
Public vs. private ownership							
Public	75%	89%	89%	75%	63%	48%	70%
Private	63%	68%	71%	80%	70%	36%	76%
Total	**68%**	**76%**	**78%**	**78%**	**67%**	**41%**	**73%**

2.8 Client satisfaction

Client care is a central concept in health as a response to general trends increasing attention to several inclusiveness and needs of the patient. Client satisfaction is increasingly linked with improvement in the quality of health care and improved health outcomes.

The client satisfaction assessment assessed a) complain about clinic/hospital b) percentage satisfaction with the care received c) general satisfaction with staff d) general satisfaction with building and equipment e) availability of medicine at the facility f) quality of the examination and treatment g) treatment of client by staff h) problem with time wasted and i) payment for services.

Figure 36 above shows the percentage of client satisfaction as was observed during exit intervals with pregnant women and lactating mothers during the survey. The highest satisfaction of 69% was met for satisfaction with care received, general satisfaction with the staff, and general satisfaction with building and equipment. It was observed that 48% of the client did not have problem with time wasted. A mean score of 63% was reached for all the facilities visited.

Figure 36. Percentage client satisfaction Sierra Leone SARA, 2011