Sierra Leone

Service Availability and Readiness Assessment

2012 Report




Government of Sierra Leone
Ministry of Health & Sanitation

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Foreword

The Sierra Leone Mini Service Availability Readiness Assessment (SARA) report provides information on a set of tracer indicators of service availability and readiness. It provides reliable information on service delivery (such as the availability of key human and infrastructural 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 reports will contribute favourably to monitoring service availability and readiness of the health sector and to generating evidence to support planning in the health system of the country.

Hence, the publication of this report is timely, filling the important information gap in the areas of measuring and tracking progress in health systems strengthening. With enhanced awareness on 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 as well as the impact such inputs and processes have on improved health outcomes and better health status.

We therefore implore all to use the information in this document for planning, monitoring and evaluation of our health programmes. Since no situation is static, the figures shown here are expected to change with time. Therefore, we intend to conduct similar surveys on an annual basis to determine the level of progress in these indicators.

Finally, on behalf of the Ministry of Health and Sanitation, I express our appreciation to the World Health Organization for providing much needed financial and technical support for this survey

Hon. Tamba M. Borbor- Sawyer

DEPUTY MINISTER (1) 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 Mini Service Availability Readiness Assessment (SARA), the second to be undertaken in Sierra Leone.

Indeed, we are grateful to both individuals and organizations whose support and commitment made this report a reality. In particular, we wish to single out the World Health Organization (WHO) for providing financial and technical support during the developmental process and for their constant interaction with the country team.

Special thanks go to Dr. Wondimagegnehu Alemu, WHO Country Representative in Sierra Leone, and Dr. Tenin Gakuruh of the WHO Country Office for initiating the SARA exercise and for their continuous follow-up and guidance throughout the development process.

Our appreciations go to all the members of the Sierra Leone Team: Dr Magnus Gborie (Director DPI), Dr Edward Magbity (MOHS), who served as the local SARA focal point, Dr. Michael Amara, Messrs Mohamed Jalloh, Richard Kaimbay, Bernard Dugba, Silleh Bah, Prince Koh, Dr. Musa Kamara, Mrs. Ekundayo Karim, Mrs. Emralda Kabba-Kamara, all of whom participated in the crucial stages leading to the development of this report.

Our thanks to many other people 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.

Dr Kisito S. Daoh
Chief Medical Officer

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Abbreviations and acronyms

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
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
D&C	Dilation and curettage
DBS	Dried blood spot
DTP	Diphtheria tetanus pertussis
EPI	Expanded programme on immunization
FHCI	Free health care initiative
GoSL	Government of Sierra Leone
GPS	Global positioning system
HepB	Hepatitis B
HiB	Haemophilusinfluenzae 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
IV	Intravenous
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
NCD	Non-communicable disease
ORS	Oral rehydration solution
PMTCT	Preventing mother-to-child transmission
PHU	Peripheral health unit
RDT	Rapid diagnostic test
SARA	Service availability and readiness assessment
SP	Sufadoxinepyrimethamine
STI	Sexually transmitted infection
TB	Tuberculosis
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

EXECUTIVE SUMMARY

Following the successful implementation of the 2011 Service Availability and Readiness Assessment (SARA), a lighter version of the assessment was carried out in 2012 to inform the annual health sector review and planning process; in particular, to fill key data gaps in service delivery and readiness. A nationally representative sample of 106 facilities out of 1264 was selected for the assessment, with an oversampling of hospitals. All results were weighted to take into account the national distribution of facilities. The assessment was undertaken by the Directorate of Policy, Planning, and Information (DPI) with technical assistance from the World Health Organization.

Over 90% of facilities provided child health services (preventive and curative care, routine immunization). Maternal and reproductive health services such as antenatal care and family planning were also widely available with over 90% of facilities providing these services. Delivery care was offered in 90% of facilities. Availability of maternal and child health services remained stable from 2011. Adolescent health services were less widely available (70% of facilities).

Malaria treatment and diagnosis and treatment of sexually transmitted infections was provided in almost all facilities. Few facilities provided health services for non-communicable disease such as diabetes (12%), chronic respiratory disease (33%), and cardiovascular disease (38%). Tuberculosis, antiretroviral therapy, and HIV/AIDS care and support services were also not widely available, offered in one in five facilities. Prevention of mother-to-child transmission of HIV and HIV counselling and testing services showed an increase in availability from 2011, while for other services the percentage of facilities offering the service remained stable across the two years.

Readiness summary scores were computed for each health service by taking the mean of the availabilities of tracer items at facilities providing the service. Child preventive and curative care and delivery services showed an increase in readiness score from 2011 to 2012, from 64% to 73% and from 56% to 65% respectively. Readiness scores for all other services remained stable over the two years. Child immunization remained the service with the highest readiness score (80%) among maternal and child health services, while comprehensive obstetric care, adolescent health, and antenatal care had the lowest readiness scores (around 60%). Availability of anaesthesia equipment for comprehensive obstetric care remained low (7%), as well as diagnostic capacity for antenatal care (urine protein testing 24%, haemoglobin testing 5%). As well, medicines have shown a decrease in availability for some services, such as injectable diazepam and uterotonic for obstetric care, and a drop in availability of antigens for child immunization by about ten percentage points.

HIV counselling and testing had the highest readiness score (82%) among all other health services, and showed an increase from 64% the previous year. Malaria and tuberculosis readiness scores were moderately high (72% and 70% respectively) and also showed a slight increase from 2011. Antiretroviral therapy had the lowest readiness score (30%), and appeared to show a decrease from the previous year (38%) due to lower diagnostics and staffing scores as well as lower availability of antiretroviral medicines. Health services for chronic respiratory disease (33%) and cardiovascular disease (37%) also had low readiness scores.

In terms of readiness to provide general health services, health facilities appear to be moderately well equipped, with five of the six basic equipment tracer items present on average, and 35% of facilities having all six items. Diagnostic capacity and essential medicines remain low (under 30%). In

particular, the availability of essential medicines showed a decrease from 2011. Diagnostic capacity appeared to show an increase; however, much of this change may be attributed to measurement error in the 2011 assessment resulting in an underestimation of malaria and HIV testing capacity in particular. The general service readiness summary score remained stable between 2011 and 2012.

Overall, the results from the 2012 assessment show a similar picture to that from the 2011 assessment, with a few key changes or trends observed. There remain substantial gaps in diagnostic capacity, both for the basic list of twelve diagnostic tests as well as for services such as antiretroviral therapy, antenatal care, and diagnosis of sexually transmitted infections. Availability of medicines and commodities has decreased between 2011 and 2012, both for the general list of 14 essential medicines as well as for specific services such as obstetric care, child immunization, and ARVs for PMTCT and ART. This could be due to increased utilization, such as for maternal and child health services due to free health care; it may also point to persisting issues with the supply chain in getting the necessary supplies down to the facility level.

SURVEY BACKGROUND

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. The 2010 first annual health sector performance report showed a 250% increase in service utilization and a dramatic decrease in case fatality among children since FHCI came into effect . However, it also highlighted the need to improve the availability of essential drugs at all health facilities in order to ensure an adequate level of service.

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). Administratively, Sierra Leone is divided into four regions (Northern Province, Southern Province, Eastern Province and the Western Area where the capital Freetown is located), which are further divided into twelve districts, and the districts into chiefdoms. The health infrastructure of the country has required extensive rebuilding and rehabilitation since the end of the civil war in 2002, and health facilities often remain under-staffed and limited in the services that can be provided. To direct resources to where they are most needed, and to provide a solid base of evidence for decision-making and planning in health infrastructure and service delivery, the Ministry of Health and Sanitation first conducted a rapid health facility assessment of service availability and readiness (SARA) in advance of the annual Health Summit in 2011.The results of the 2011 assessment were incorporated in the first health sector performance report, and were made available in a stand-alone report[1].

Following the successful implementation of the 2011 study, a lighter version of the assessment was carried out in 2012 to inform the annual health sector review and planning process; in particular, to fill key data gaps in service delivery and readiness and to monitor progress in the rollout of the Basic Package of Essential Health Services nationwide. The assessment in 2012 also included a data verification module, in which facility records were reviewed to assess the reliability of facility reporting. A nationally representative sample of 106 facilities out of 1264 was selected for the assessment, with an oversampling of hospitals. Half the facilities were selected from the 2011 SARA sample facilities, while the other half were new[2]. Key characteristics of the sample are shown in Table 1, and a map of facilities in the sample is shown in Figure 1. All results were weighted to take into account the national distribution of facilities. Training of data collectors and field supervisors was conducted in April 2012, followed by two to three weeks of data collection in the field. Nine

[1]Technical details of the assessment including questionnaires, sampling methodology, and final report are available online here: http://apps.who.int/healthinfo/systems/datacatalog/index.php/catalog/25

[2] Recommended sampling method for estimating trends and change over time.
Sampling Manual for Facility Surveys for Population, Maternal Health, Child Health and STD Programs in Developing Countries. MEASURE Evaluation Manual Series, No. 3.MEASURE *Evaluation*. Carolina Population Center, University of North Carolina at Chapel Hill. July 2001.

facilities could not be visited (facility was closed or no longer existed – master list of facilities used for sampling was out of date) and were replaced by the closest facility of the same type and managing authority. The Census and Survey Processing System[3] (CSPro) was used for data entry, processing, and parts of the analysis, while Microsoft Excel was used for the tabulation and graphing of results. The assessment was undertaken by the Directorate of Policy, Planning, and Information (DPI) with technical assistance from the World Health Organization. Only national level results are shown for the 2012 assessment – a larger sample would be required to show breakdowns by region/district, facility type and managing authority.

Table 1: Key characteristics of the 2012 SARA sample

	Total number of facilities	Distribution of facilities	Number of facilities in sample	
			Unweighted	Weighted
Facility type				
Hospital	51	19%	20	4
Primary care	1213	81%	86	102
Managing authority				
Public	1095	83%	88	92
Private (incl. faith-based)	169	17%	18	14
Region				
Eastern	278	22%	23	25
Northern	420	34%	36	38
Southern	325	27%	29	30
Western	96	17%	18	13
Total	**1264**	**100%**	**106**	**106**

Figure 1: Sampled facilities for 2012 assessment[4]

The 2011 and 2012 assessment questionnaire was very similar, although a few changes were made to streamline the data collection at the facility and to improve the quality of the results. Differences in the questionnaire which could affect the results are noted in the text. In comparing the results from 2012 to those from the previous year, it is important to keep in mind the possible sources of

[3] http://www.census.gov/population/international/software/cspro/
[4] 25 facilities in the sample were missing GPS coordinates, primarily in cities such as Freetown.

error that may affect accuracy of the estimates. Sampling error refers to variation that occurs by chance due to surveying a sample instead of the entire population. For an indicator value of 50% measured on the entire sample (i.e. half of facilities have the tracer item) and a confidence level of 95%, the margin of error would be 11.4% for the 2012 assessment, and 7.7% for the 2011 assessment. For a change between the two years to be significant with a confidence level of 95%, an indicator with a value close to 50% would have to show a change of at least 11.9% from 2011 to 2012. For example, if a tracer item is available in 45% of facilities in 2011 and 60% in 2012, this can be considered as a significant increase in the availability of the item (at a confidence level of 95%), whereas a change from 45% to 55% would not be considered significant. Similarly, an indicator with a value of 75% or 25% would have to show a change of at least 10.3% in order to be considered significant.

In addition, measurement and processing error have been minimized by using a standard questionnaire and data collection methodology that has been tested in a number of countries, as well as standard tools that have been developed to automate to the extent possible the data processing and cleaning. However, these types of error remain difficult to quantify.

1. GENERAL SERVICE READINESS

General service readiness refers to the capacity of the health facility to provide general health services. It measures the availability of equipment and supplies necessary to provide services within the following five domains: basic amenities, basic equipment, standard precautions, diagnostic testing, and essential medicines. Table 2 lists the tracer items in each domain. Further details on the indicators and indicator definitions can be found in the SARA methodology and documentation[5].

Table 2: Tracer items for general service readiness

Domains	Tracer indicators (% of facilities with item)
Basic amenities	Power (grid or generator with fuel), improved water source, sanitation facilities, private consultation room, communication equipment (phone or SW radio), computer with email/internet, emergency transportation.
Basic equipment	Adult scale, child scale, thermometer, stethoscope, blood pressure apparatus, light source.
Standard precautions	Sterilization equipment (dry heat sterilizer or autoclave), safe disposal of sharps, safe disposal of medical waste, sharps box, waste receptacle, disinfectant, single use syringes (standard disposable or auto-disable), soap/hand disinfectant, latex gloves, medical masks, gowns, eye protection, guidelines for standard precautions.
Diagnostic capacity (on site)	Haemoglobin, blood glucose, urine dipstick protein, urine dipstick glucose, malaria (RDT or blood smear), HIV (RDT or ELISA), syphilis rapid test, TB microscopy, general microscopy, urine pregnancy test, DBS collection, ALT

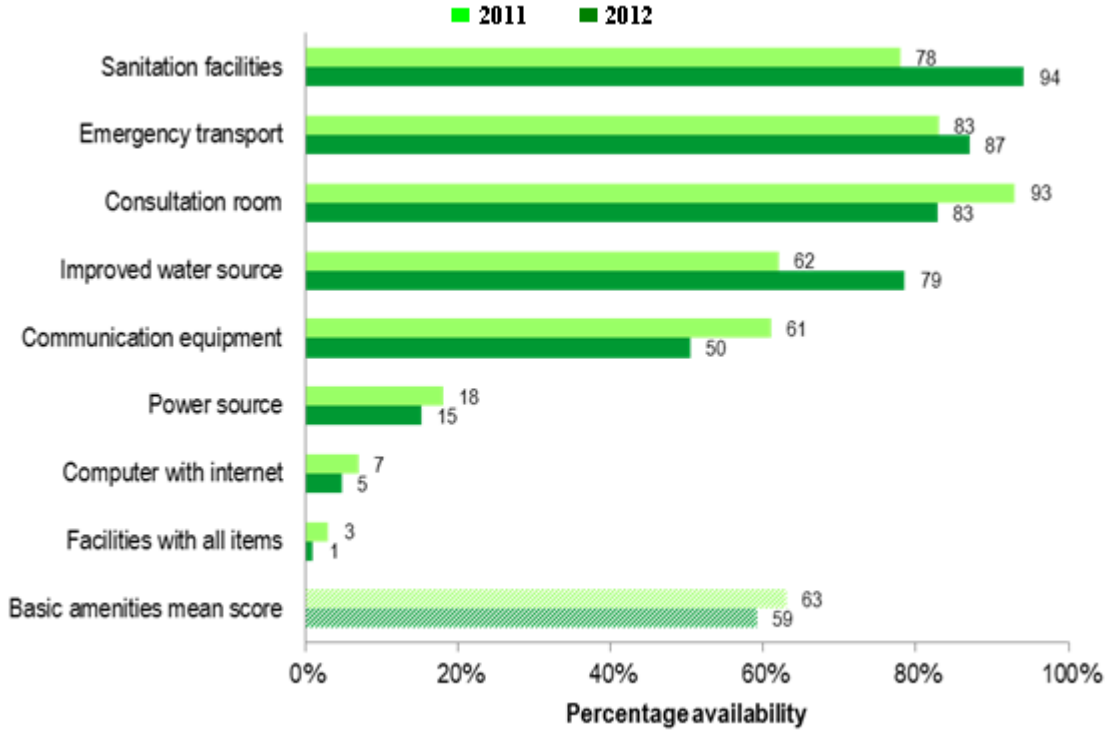
[5] World Health Organization. Measuring Service Availability and Readiness: A health facility assessment methodology for monitoring health systems strengthening, Service Readiness Indicators. November 2011. http://www.who.int/entity/healthinfo/systems/SARA_ServiceReadinessIndicators.pdf

	and creatinine.
Essential medicines	Amitriptyline, amoxicillin, atenolol, captopril, ceftriaxone, ciprofloxacin, co-trimoxazole, diazepam, diclofenac, glibenclamide, omeprazole, paracetamol, salbutamol, simvastatin.

1.1. BASIC AMENITIES

The BPEHS outlines the minimum amenities and equipment required at each category of service delivery point of the health care delivery system. Figure 2 shows the percentage of facilities with basic amenities tracer items in 2011 and 2012.

Figure 2: Percentage of facilities that had basic amenities in 2011 (N=207) and 2012 (N=106)[6].



Almost no facilities (1%) had all seven items in 2012; on average facilities had four of the seven tracer items for an overall readiness score of 59%. These are similar to the results from 2011. Most facilties had sanitation facilties (94% in 2012), emergency transport (87%), a consulation room (83%); but only 15% had a power source[7] and 5% had a computer with internet. There appeared to be an increase in the availability of sanitation facilties (from 78% to 94%) and improved water source (from 62% to 79%).

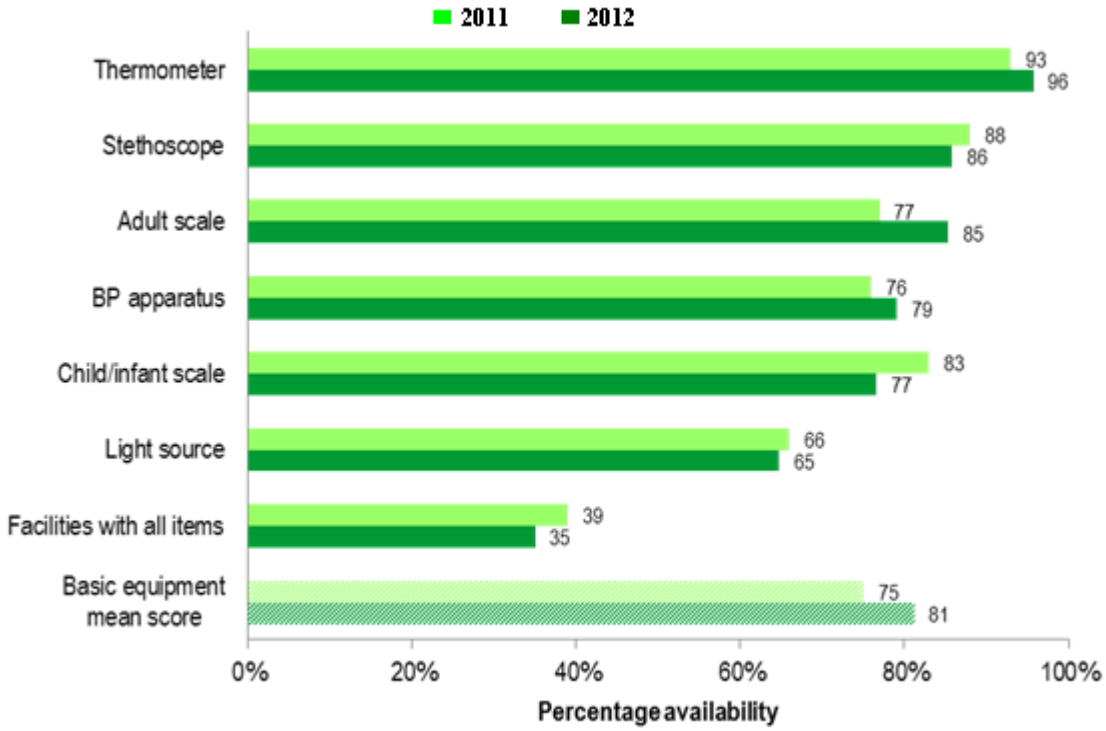
[6] Throughout this document N refers to sample size

[7] Includes grid power or generator as a general power source for the facility; solar power for vaccine storage refrigerators are not included.

1.2. BASIC EQUIPMENT

Figure 3 shows the percentage of facilities with basic equipment tracer items in 2011 and 2012.

Figure 3: Percentage of facilities that had basic equipment in 2011 (N=207) and 2012 (N=106).

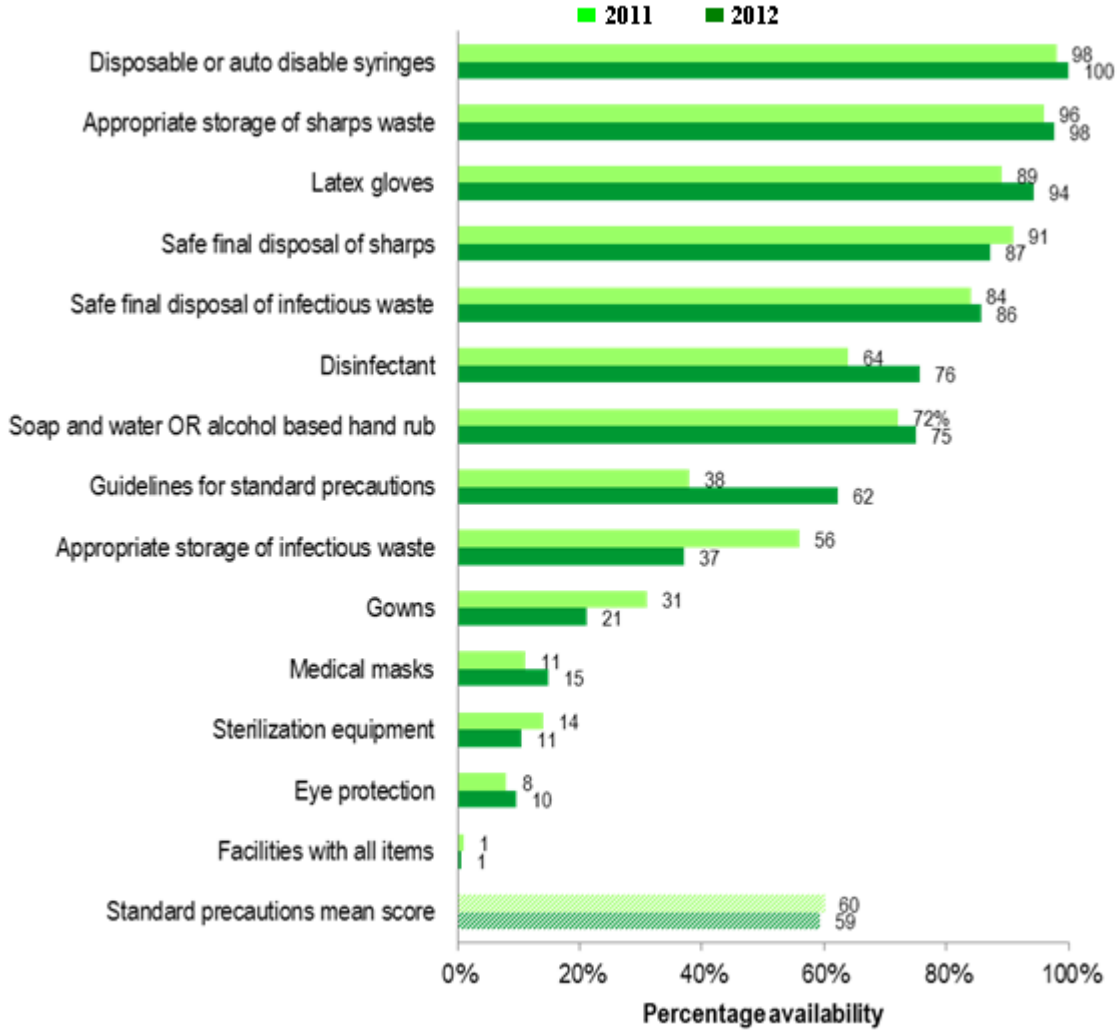


One in three facilities had all six items in 2012; on average facilities had five of the six tracer items for an overall readiness score of 81%. Most equipment items showed relatively high availability, with a light source being the least common item, available in 65% of facilities. The overall score and results for individual equipment items remained stable from 2011.

1.3. STANDARD PRECAUTIONS

Figure 4 shows the percentage of facilities with standard precautions tracer items in 2011 and 2012.

Figure 4: Percentage of facilities that had standard precautions items in 2011 (N=207) and 2012 (N=106).

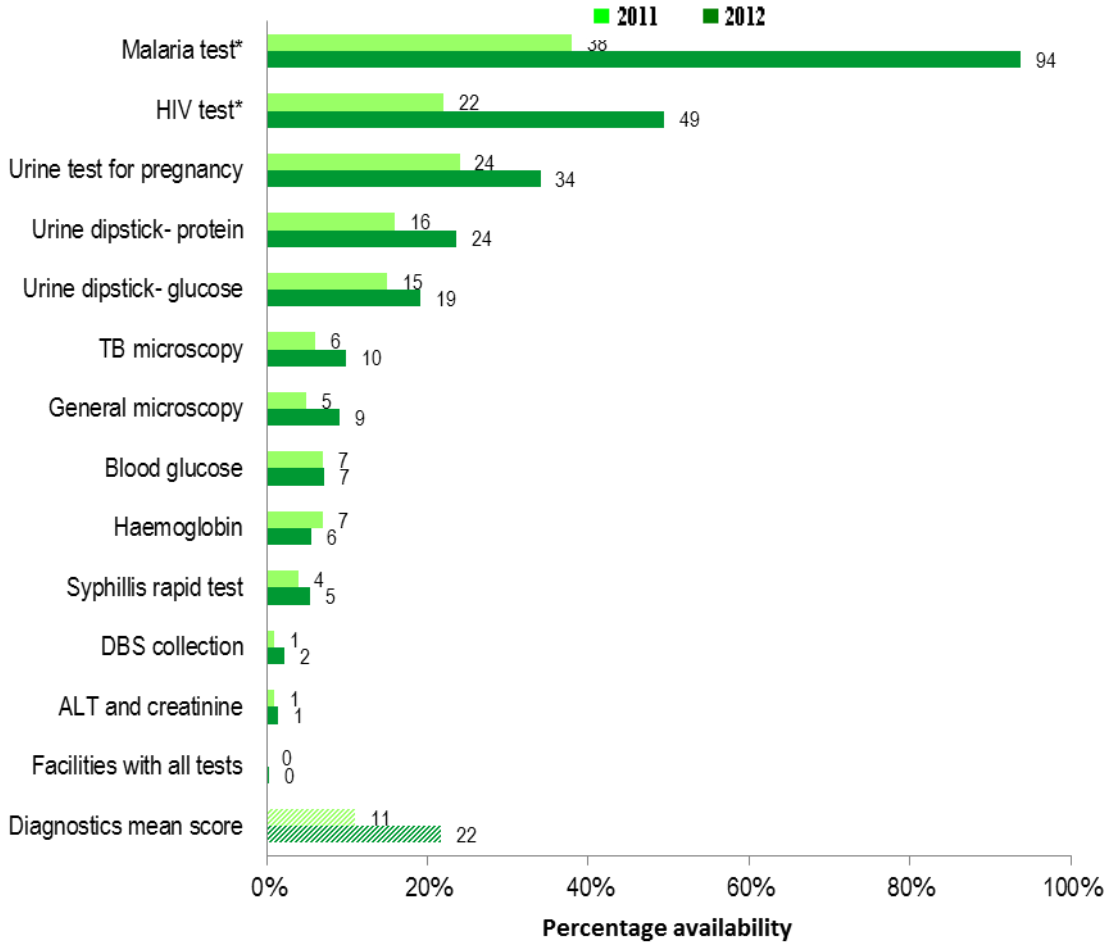


Almost no facilities had all 13 items in 2012; on average facilities had eight of the 13 tracer items for an overall readiness score of 59%. Nearly all health facilities had disposable or auto diable syringes, appropriate storage of sharps waste, and latex gloves. However, less than 20% of facilities had medical masks, sterilization equipment, and eye protection. The overall score and the availability of most items remained stable from 2011. Availability of guidelines for infection control increased, while appropriate storage of infectious wastes appeared to show a decrease.

1.4. DIAGNOSTICS

Figure 5 shows the percentage of facilities that were able to conduct the tracer diagnostic tests on site in 2011 and 2012.

Figure 5: Percentage of facilities that were able to conduct Level 1 diagnostic testing on site in 2011 (N=207) and 2012 (N=106).



* Availabilities of RDTs were underestimated in 2011.

Almost no facilities were able to conduct all 12 diagnostic tests on site in 2012; on average facilities were able to conduct three of the twelve tests for an overall readiness score of 22%. Malaria and HIV were the most commonly available tests: almost all facilities were able to conduct a malaria test on site (94%), while half were able to conduct an HIV test (49%)[8]. One in three facilities could conduct a urine pregnancy test. Most other tests were available in very few facilities overall: only 5% of facilities had syphillis rapid testing, 2% had DBS collection and 1% had ALT and creatinine.

1.5. ESSENTIAL MEDICINES

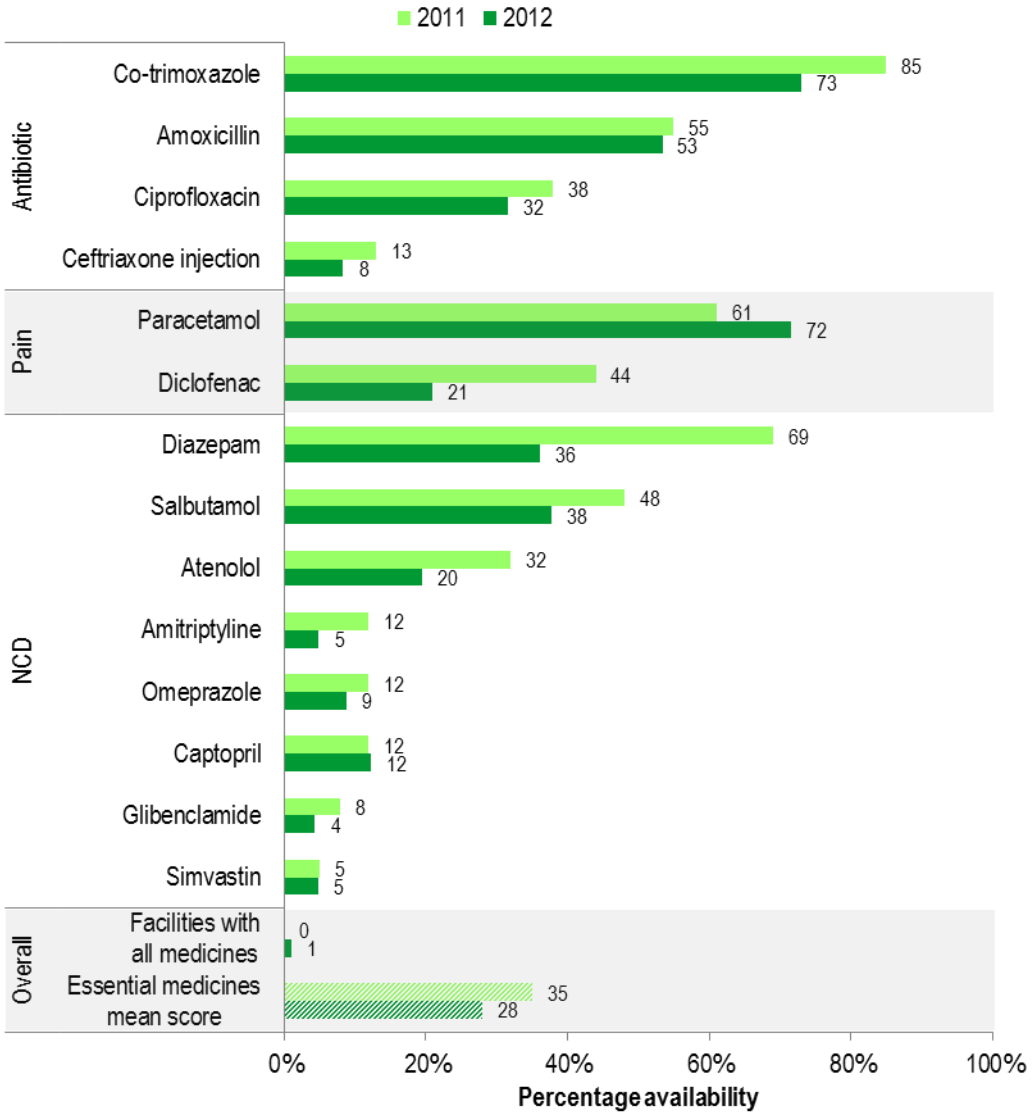
Access to essential medicines and supplies is fundamental to the good performance of the health care delivery system. Availability of medicines is commonly cited as the most important element of quality by health care consumers, and the absence of medicines is a key factor in the underuse of government health services. In Sierra Leone, there was an increase in the procurement of drugs for health facilities in 2010 and 2011to respond to extra demand due to the Free Health Care Initiative.

[8]Since RDT availability was underestimated in 2011, it is not clear if this represents an increase from last year.

However, challenges remained 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 6 shows the percentage of facilities with these tracer drugs in stock in 2011 and 2012. 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.

Figure 6: Percentage of facilities that had essential medicines observed in stock and valid in 2011 (N=207) and 2012 (N=106).



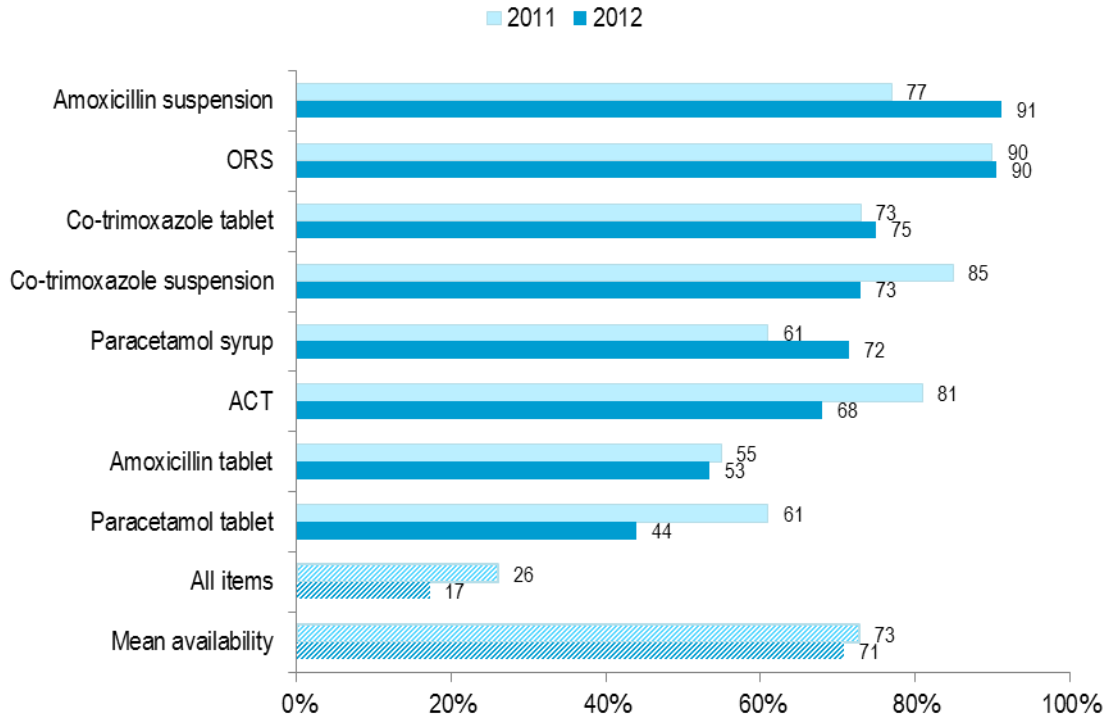
There were almost no facilities that had all 14 essential medicines; on average facilities had 4 of the 14 medicines in stock on the day of the assessment in 2012. The overall readiness score in 2012 was 28%, compared to 35% in 2011. The availability of most drugs was stable from 2011, except Diclofenac and Diazepam that showed decreases from the previous year. Antibiotics such as Co-

trimoxazole and Amoxicillin and pain medication such as paracetamol continued to show much higher availability compared to drugs for NCDs. All NCD medicines had availabilities below 40%. Overall, it does not appear that the availability of essential medicines has increased since 2011.

NATIONAL PRIORITY MEDICINES

Figure 7 shows the percentage of facilities that had the eight national priority medicines: Amoxicillin suspension and tablets/capsules, Co-trimoxazole suspension and tablets/capsules, Paracetamol syrup and tablets/capsules, ORS, and ACT. Generally, these medicines were more widely available than the list of 14 essential medicines; however, only 17% of facilities had all eight medicines in stock on the day of the assessment in 2012. Amoxicillin suspension and ORS had the highest availability in 2012, present in nine in ten facilities overall. Amoxicillin and paracetamol tablets had the lowest availability, and were present in about half of all facilities. Most medicines did not show a big change in overall availability from 2011.

Figure 7: Percentage of facilities that had national priority medicines in 2011 (N=207) and 2012 (N=106).

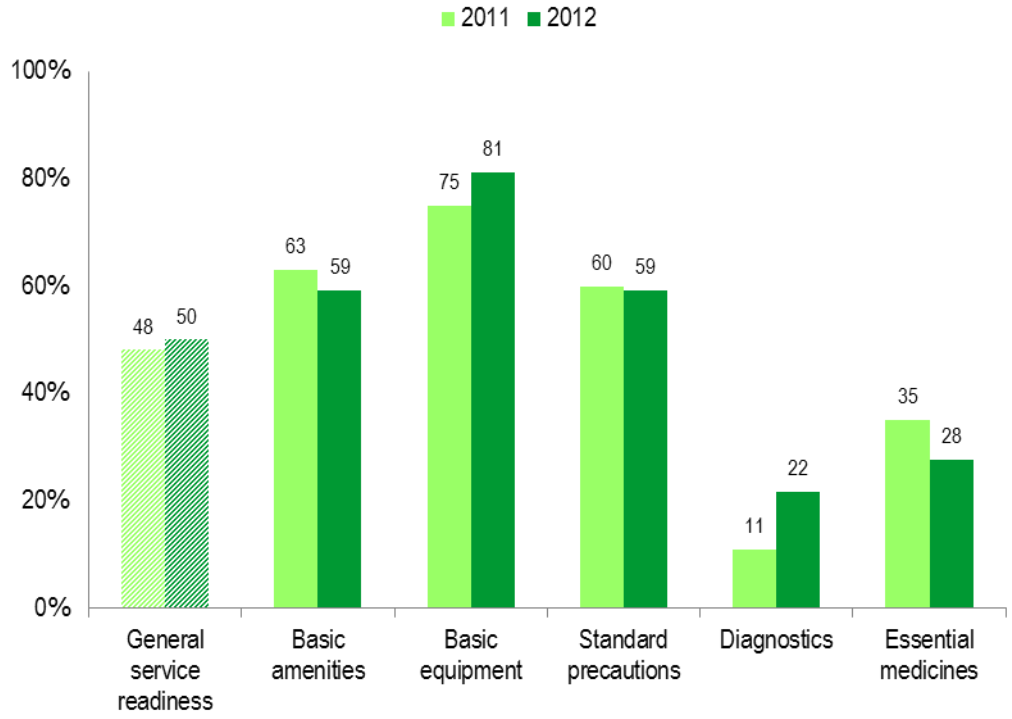


1.6. GENERAL SERVICE READINESS SUMMARY SCORE

The General service readiness index is a composite measure that combines information from the five general service readiness domains: basic amenities, basic equipment, standard precautions, diagnostics, and essential medicines. For each domain, the average availability of tracer items is shown as the domain score.Figure 8 shows the general service readiness index and domain scores for the 2011 and 2012 assessments. The general service readiness index score remained stable from 2011 to 2012, at 49%. Across the five domains, the basic equipment score was the highest, and the laboratory diagnostics score was the lowest for both years. The essential medicines score decreased

from 35% to 28%, while the basic equipment score appears to have increased slightly from 75% to 81%. The diagnostics score increased from 11% to 22%, but this is partly due to the availability of RDTs being underestimated in 2011, and it is not clear if this indicates a true increase in on-site diagnostic capacity.

Figure 8: General service readiness and domain scores, Sierra Leone 2011 & 2012.



2. SERVICE SPECIFIC AVAILABILITY AND READINESS

In addition to assessing the readiness of health facilities to provide general health services, the SARA also measured the availability and readiness of health facilities to offer the following key health services:

- Maternal and reproductive health: basic and comprehensive obstetric care, antenatal care, essential medicines for maternal health, family planning, adolescent health
- Child health: Curative and preventive care and growth monitoring, child immunization, essential medicines for child health
- HIV/AIDS services: HIV counseling and testing, preventing mother-to-child transmission (PMTCT), antiretroviral therapy (ART), HIV/AIDS care and support services
- Sexually transmitted infections (STIs)
- Tuberculosis services

- Malaria services
- Non-communicable disease (NCD) services: cardiovascular conditions, chronic respiratory disease, diabetes
- Surgery and blood transfusion

For each service, the percentage of facilities offering the service was computed as a measure of the availability of the service. In addition, for facilities offering the service, readiness to provide the service was assessed based on the presence of a number of tracer items for trained staff, guidelines, equipment, diagnostic capacity, and medicines and commodities. The tracer items are considered to be a minimum set of items that are a prerequisite for the facility to be able to offer an adequate level of care. Service readiness is a key indicator for assessing and monitoring improvements and investments in service delivery. An overall score summarizing service readiness was computed for each health service by taking the mean of the availabilities of the tracer items for that service.

2.1. MATERNAL HEALTH

BASIC OBSTETRIC CARE

Nine in ten health facilities provide delivery services, the same percentage as in 2011. Five of the seven BEmOC interventions are offered in over 80% of facilities, including neonatal resuscitation, parenteral administration of antibiotics, oxytocin, anti-convulsants, and manual removal of placenta. The percentage of facilities providing all seven BEmOC interventions remained stable from 2011 at 27%.

Table 3: Percentage of facilities providing basic obstetric care in 2011 (N=207 facilities) and 2012 (N=106). (Source: SARA 2011 & 2012)

	2011	2012
Offers Delivery Services	91%	91%
Neonatal resuscitation	85%	87%
Parenteral administration of antibiotics	77%	87%
Parenteral administration of oxytocic drugs	75%	84%
Manual removal of placenta	74%	83%
Parenteral administration of anti-convulsants	74%	82%
Manual removal of retained products	74%	58%
Assisted vaginal delivery	52%	46%
Basic emergency obstetric care (7 interventions)	28%	27%

Readiness to provide basic obstetric care was assessed based on the presence of the 19 tracer items in Table 4.

Table 4:SARA tracer items for basic obstetric care.

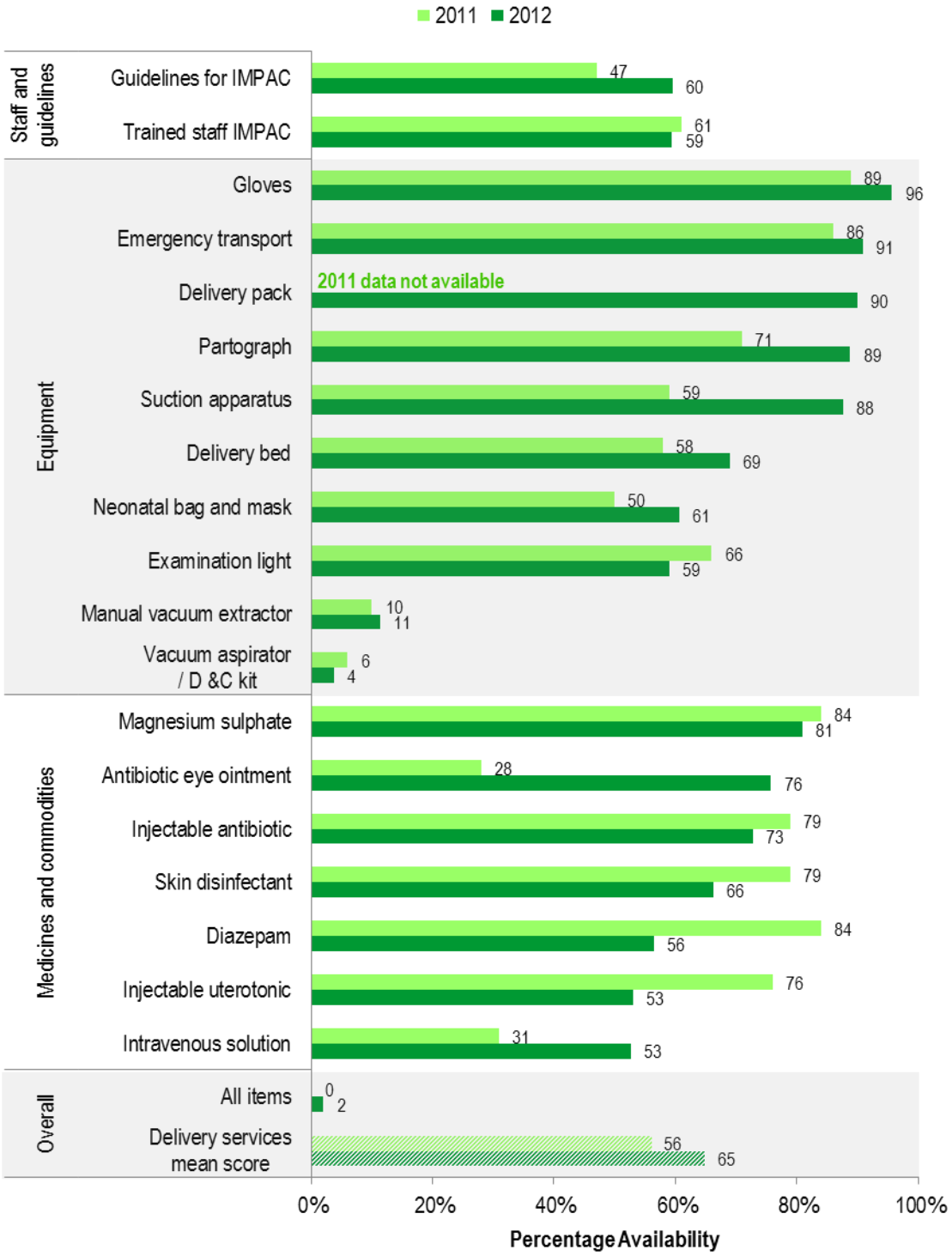
Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for Integrated management of pregnancy and childbirth (IMPAC) • Staff trained in IMPAC in the past two years
Equipment	• Emergency transport • Examination light • Delivery pack • Suction apparatus (mucus extractor) • Manual vacuum extractor

	• Vacuum aspirator or D&C kit • Neonatal bag and mask • Delivery bed • Partograph • Gloves
Medicines & commodities	• Antibiotic eye ointment • Injectable uterotonic • Injectable antibiotic • Magnesium sulphate (injectable) • Diazepam (injectable) • Skin disinfectant • Intravenous solution with infusion set

Figure 9shows the percentage availability of these tracer items in facilities that offered delivery care in 2012 and in 2011. Almost no facilities had all 19 tracer items. On average, facilities had 12 of the 19 items in 2012, for an overall readiness score of 65 out of 100, a slight increase from 2011 (56 out of 100). Availability of antibiotic eye ointment increased substantially, from 28% in 2011 to 76% in 2012. In addition, availability of suction apparatus, intravenous solution with infusion set, partograph, and guidelines for IMPAC also increased from 2011. Availability of injectable uterotonic appears to have decreased from 76% to 53%.

Almost all facilities providing delivery services had gloves; nine in ten had access to emergency transportation, delivery pack, partograph, and suction apparatus. Few facilities had a manual vacuum extractor or vacuum aspirator / D&C kit: this is likely to be because the smaller facilities (HPs and MCHPs) are not expected to provide assisted deliveries and manual vacuum aspiration. Over seven in ten facilities had magnesium sulphate, antibiotic eye ointment, and injectable antibiotic. While the percentage of facilities with intravenous solution with infusion kit has increased since 2011, still only half of facilities had this item available on the day of the assessment in 2012. Similarly, injectable uterotonic was available in only half of facilities providing delivery care. Six in ten facilities had a neonatal bag and mask.

Figure 9: Percentage of facilities that have tracer items for basic obstetric care among facilities that provide delivery services (N_{2011}=188, N_{2012}=92). Source: SARA 2011 & 2012



COMPREHENSIVE OBSTETRIC CARE

Sierra Leone had a very high institutional maternal mortality rate of 951 per 100,000 live births in 2010[9], which has been attributed to women arriving very late at facilities, and/or poor quality of care. Caesarean sections represented just 1.1% of all births in 2010, indicating that there may still be significant unmet need (HMIS, 2011). It is thought that increasing access to high quality emergency obstetric care will lead to reduced maternal and infant mortality. 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.

Approximately eight in ten hospitals provided blood transfusion and caesarean section; very few primary care facilities provided these services (mostly private clinics); seven in ten hospitals provided all nine comprehensive emergency obstetric care interventions. The 2012 results are not comparable to those from 2011 due to changes in the questionnaire wording and analysis methodology.

Table 5: Percentage of facilities providing comprehensive obstetric services in 2012 by facility type and managing authority (N=106 facilities). (Source: SARA 2012)

	Hospital	Primary care facilities	2012
Blood transfusion	85%	2%	5%
Caesarean section	82%	2%	5%
Comprehensive emergency obstetric care (9 interventions)	69%	2%	4%

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.Readiness to provide comprehensive obstetric care was assessed based on the presence of the 10 tracer items in Table 6, for facilities that provide C-section (primarily hospitals).

Table 6: SARA tracer items for comprehensive obstetric care.

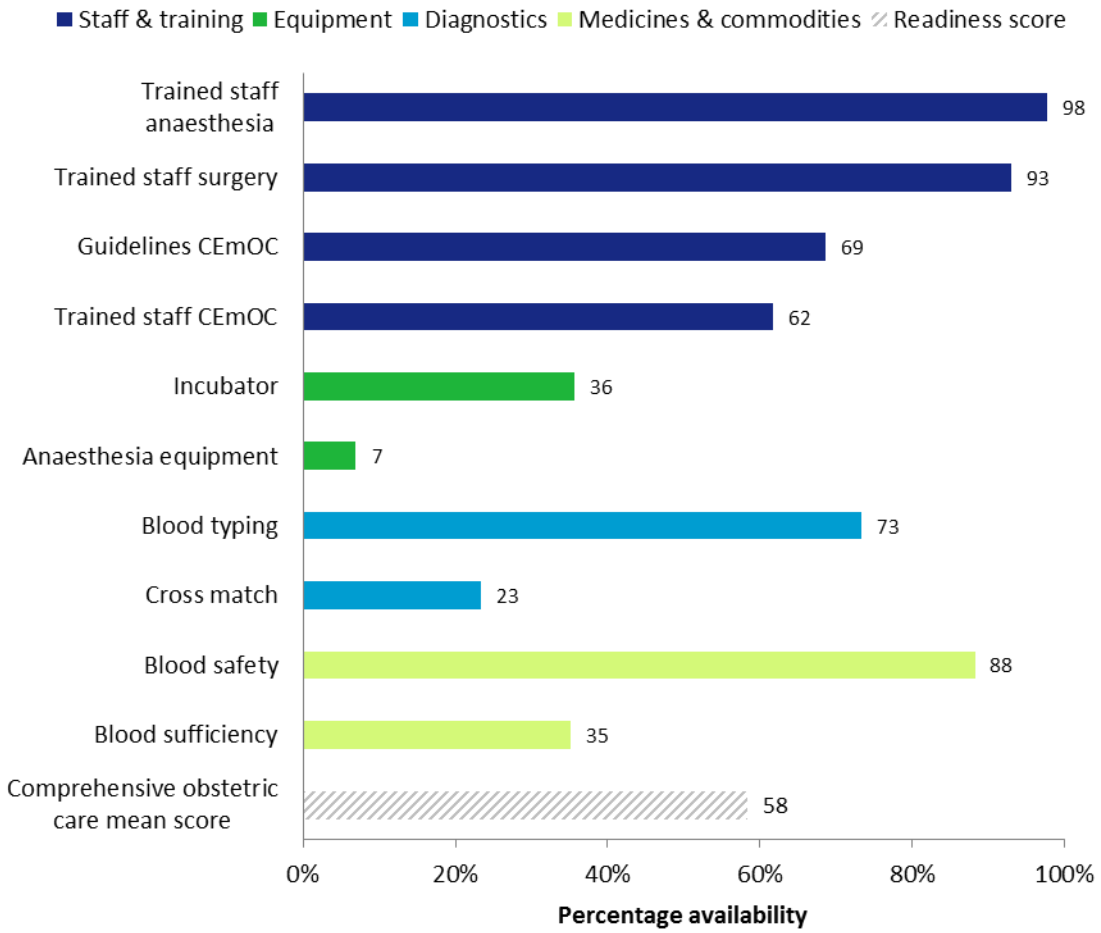
Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for CEmOC • Staff trained in CEmOC in the past two years • Staff trained in surgery • Staff trained in anaesthesia
Equipment	• Anaesthesia equipment • Incubator
Diagnostics	• Blood typing • Cross match testing
Medicines & commodities	• Blood supply sufficiency (no interruption in blood availability in past 3 months) • Blood supply safety (blood obtained from national/regional blood bank OR all blood screened for transfusion transmissible diseases)

Figure 10 shows the percentage availability of these tracer items in 2012 for facilities that provide C-sections. Due to the small sample size (N=16), the results are considered indicative. Very few

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

facilities providing C-section had all the equipment required for anaesthesia[10]. Due to modifications to the questionnaire and analysis methodology, results from 2012 are not comparable to those from the 2011 SARA survey.

Figure 10: Percentage of facilities that have tracer items for comprehensive obstetric care services among hospitals that provide delivery care (N=16). Source: SARA 2012



ANTENATAL CARE

The Basic Package of Essential Health Services (BPEHS) in Sierra Leone specifies that facilities at all levels should provide antenatal care. Table 7 shows the percentage of facilities providing antenatal care services in 2011 and 2012. Almost all facilities provided antenatal care services, including monitoring for hypertensive disorder, IPT, tetanus vaccination, and iron and folic acid supplementation. Availability of these services remained stable from 2011.

Table 7: Percentage of facilities providing antenatal care services in 2011 (N=207 facilities) and 2012 (N=106). (Source: SARA 2011 & 2012)

	2011	2012
Offers Antenatal Care	93%	95%

[10]Anaesthesia machine, tubings and connectors for endotracheal tube, adult and paediatric resuscitator bag and mask, adult and paediatric intubation set (oropharyangeal airway, endotracheal tubes, laryngoscope, Magill's forceps, stylet).

Monitoring for hypertensive disorder of pregnancy	87%	94%
IPT	93%	92%
Tetanus Toxoid Vaccination	92%	91%
Iron Supplementation	93%	91%
Folic Acid supplementation	86%	81%

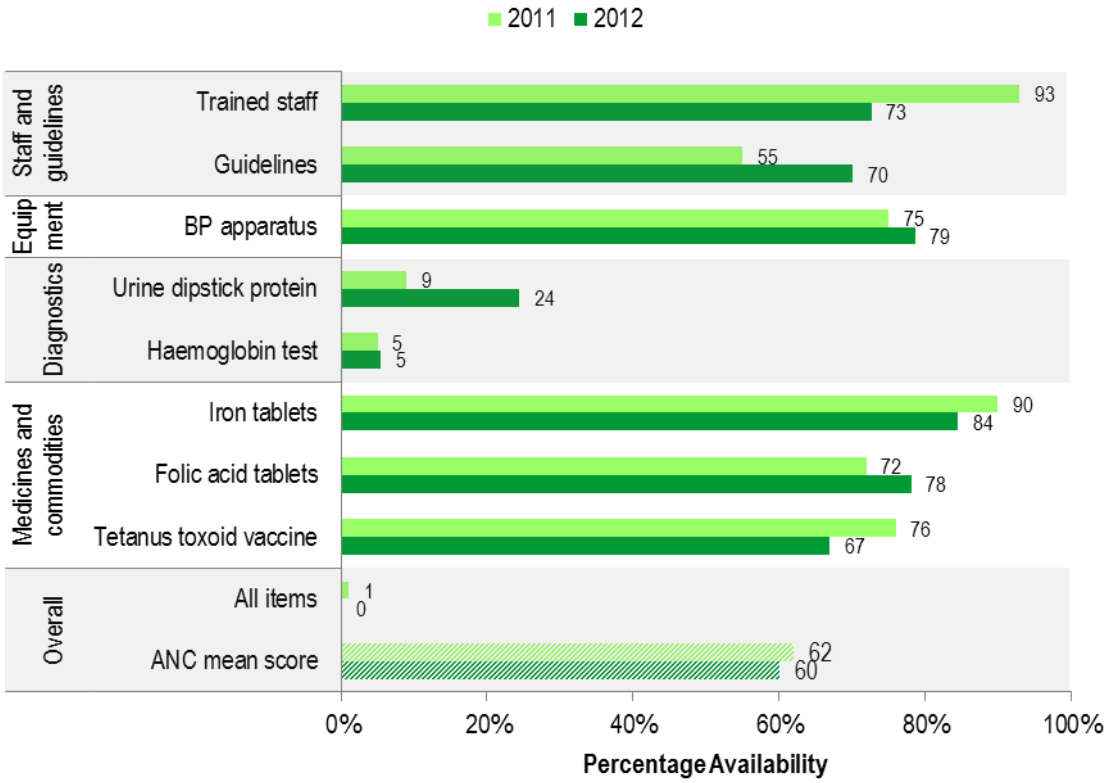
While a high percentage of facilities offer antenatal services such as tetanus vaccination and iron supplementation, lack of essential items at the health facility may hamper delivery of these services. Readiness to provide antenatal care services was assessed based on the presence of the eight tracer items in Table 8.

Table 8: SARA tracer items for antenatal care services.

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for ANC • Staff trained in ANC in the past two years
Equipment	• Blood pressure apparatus
Diagnostics	• Haemoglobin test • Urine dipstick protein
Medicines & commodities	• Iron tablets • Folic acid tablets • Tetanus toxoid vaccine

Figure 11 shows the percentage availability of these tracer items in facilities that offered antenatal care services in 2011 and 2012. None of the facilities had all eight items in 2012; on average facilities had five of the eight tracer items. There was no change in the overall readiness score between 2011 and 2012. Diagnostic capacity remained low: less than a quarter of facilities were able to conduct urine protein or haemoglobin testing on site. Urine protein testing capacity appeared to show a slight improvement from 9% in 2011 to 24% in 2012. Availability of staff trained in ANC in the past two years appeared to show a decrease from 93% to 73%, while the availability of guidelines showed a slight increase. Although eight in ten facilities had a blood pressure apparatus, this indicates that two in ten facilities providing ANC did not, indicating gaps in some of the very basic equipment required to deliver health services.

Figure 11: Percentage of facilities that have tracer items for antenatal care services among facilities that provide this service (N_{2011}=193, N_{2012}=97). Source: SARA 2011 & 2012

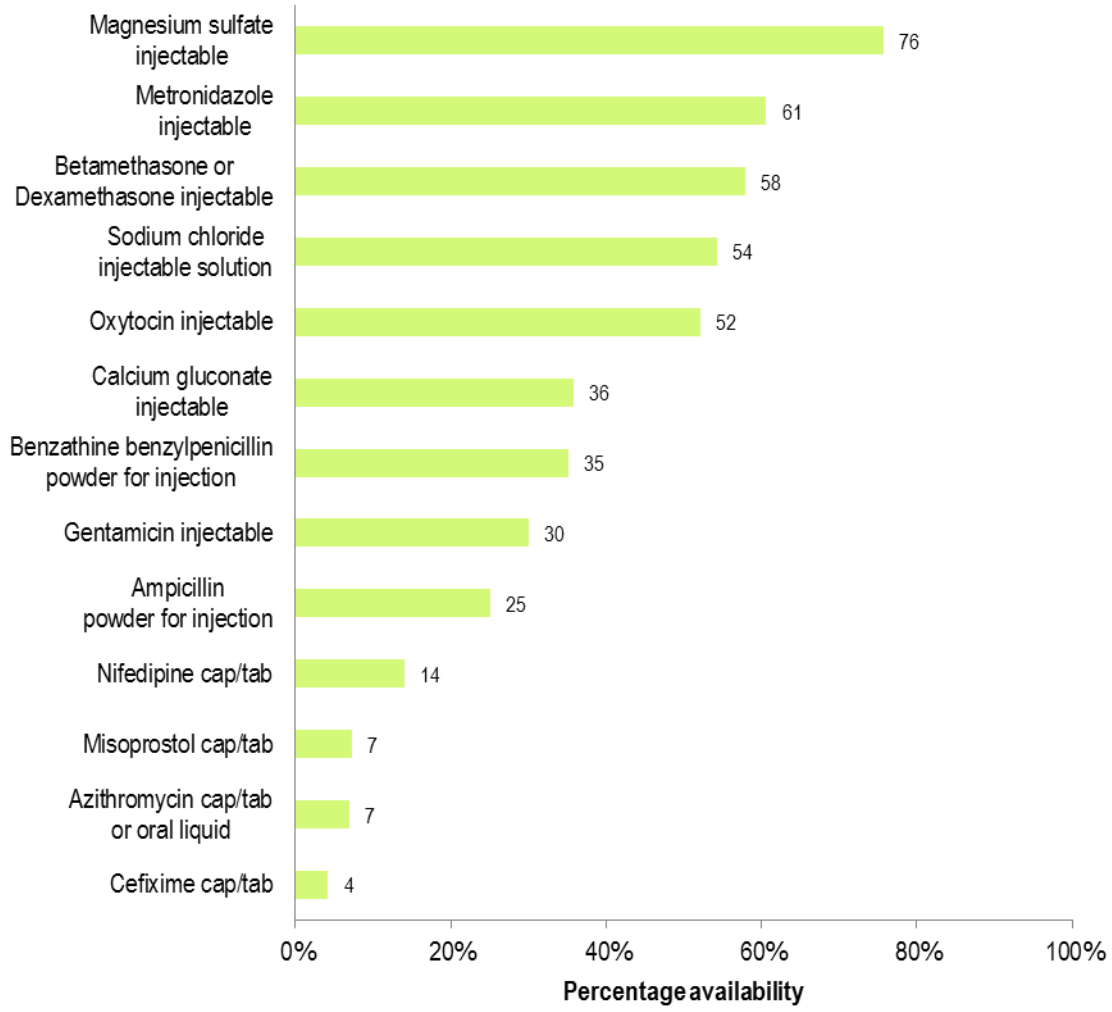


ESSENTIAL MEDICINES FOR MATERNAL HEALTH

Figure 12 shows the percentage of facilities that had essential medicines for maternal health[11] in 2012. Injectable magnesium sulphate, used to treat eclampsia in pregnant women, showed the highest availability at 76%. However, only 36% of facilities had injectable calcium gluconate for treatment of magnesium toxicity. Metronidazole, used to treat maternal sepsis, and betamethasone/dexamethasone, used to prevent preterm births, was available in six in ten facilities. Only half of facilities had injectable sodium chloride and oxytocin, for treatment of postpartum haemorrhage. Benzathinebenzylpenicillin, azithromycin, and cefixime, used to treat STIs such as syphilis, chlamydia, and gonorrhoea, were available in 35% of facilities or less. Overall, essential medicines for maternal health were not available in many facilities, which may contribute to the high levels of maternal mortality in the country.

[11] http://www.who.int/medicines/publications/A4prioritymedicines.pdf

Figure 12: Percentage of facilities that had essential medicines for maternal health in 2012 (N=106). Source: SARA 2012



FAMILY PLANNING

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. Male condoms (92%) and combined oral contraceptive pills (86%) were the most common methods of family planning provided. Table 9 shows the percentage of facilities providing family planning services for 2011 and 2012. Overall, availability of family planning services remained stable between 2011 and 2012. Provision of female condoms appears to have doubled from 35% in 2011 to 68% in 2012.

Table 9: Percentage of facilities providing family planning services in 2011 (N=207 facilities) and 2012 (N=106). Source: SARA 2011 & 2012

	2011	2012
Offers family planning services	89%	96%
At least 2 modern methods of FP	88%	94%
Male condoms	86%	92%
Combined oral contraceptives	84%	86%

Combined injectable contraceptives	76%	75%
Female condoms	35%	68%
Progestin-only contraceptives	52%	61%
Progestin-only injectable contraceptives	29%	35%
IUCD	5%	15%
Implant	7%	12%
Emergency contraceptive pills	12%	11%
Male sterilization	--	4%
Female sterilization	--	4%
Cycle beads for standard days method	6%	2%

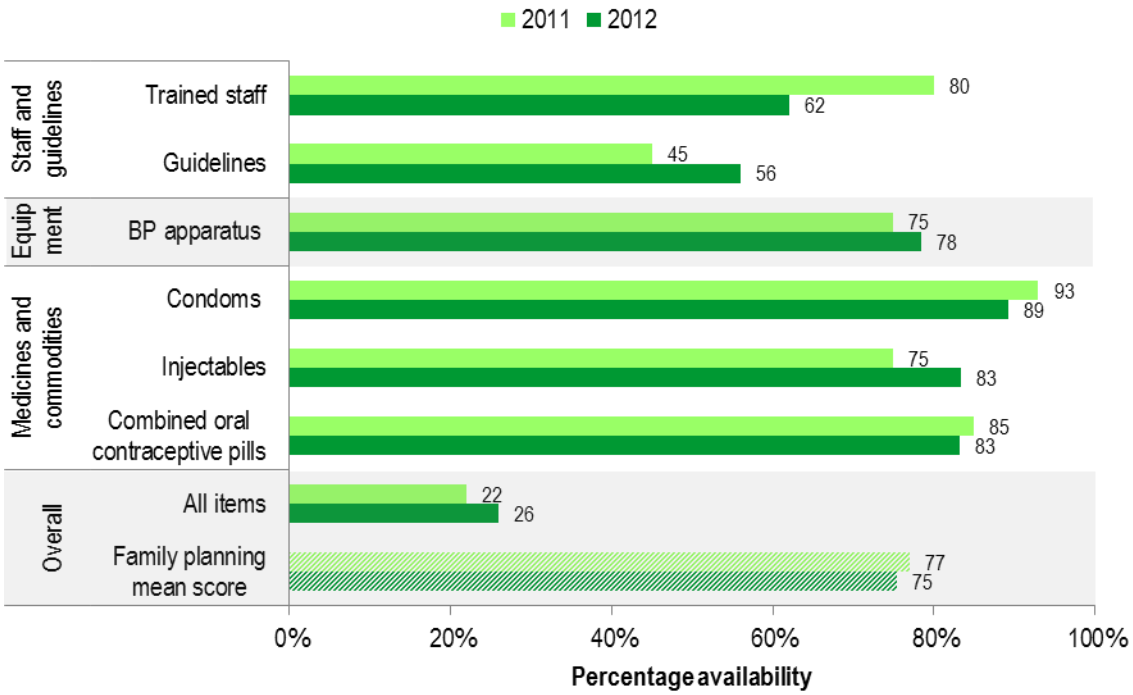
According to the BPEHS, all facilities should have contraceptives such as male and female condoms, oral contraceptive pills, and injectable contraceptives, in addition to information on contraceptive methods and counselling. Readiness to provide family planning services was assessed based on the presence of the six tracer items shown in Table 10.

Table 10: SARA tracer items for family planning services.

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for family planning • Staff trained in family planning in the past two years
Equipment	• Blood pressure apparatus
Medicines & commodities	• Combined oral contraceptive pills • Injectable contraceptives • Male condoms

Figure 13 shows the percentage availability of these tracer items in facilities that provide family planning services. One in four facilities had all six tracer items in 2012; the overall readiness score was 75%, indicating that on average facilities had 4-5 of the six items. Availability of equipment and contraceptives was stable from 2011, and the overall readiness score showed no change. Presence of staff trained in family planning in the past two years showed a decrease between the two years.

Figure 13: Percentage of facilities that have tracer items for family planning services among facilities that provide this service (N_{2011}=184, N_{2012}=95). Source: SARA 2011 & 2012



ADOLESCENT HEALTH

The rate of teenage pregnancies remains high in parts of the country. Due to societal pressures, adolescents are frequently barred from reproductive health services, resulting in unwanted pregnancies and low antenatal care attendance. Unmarried adolescents are more likely to engage in unprotected sex, which can result in pregnancy and STIs such as HIV. The Basic Package of Essential services encourages efforts to educate young people in family planning and life skills, and will teach health staff to have a more considerate and patient attitude towards young people who are seeking help for reproductive health.

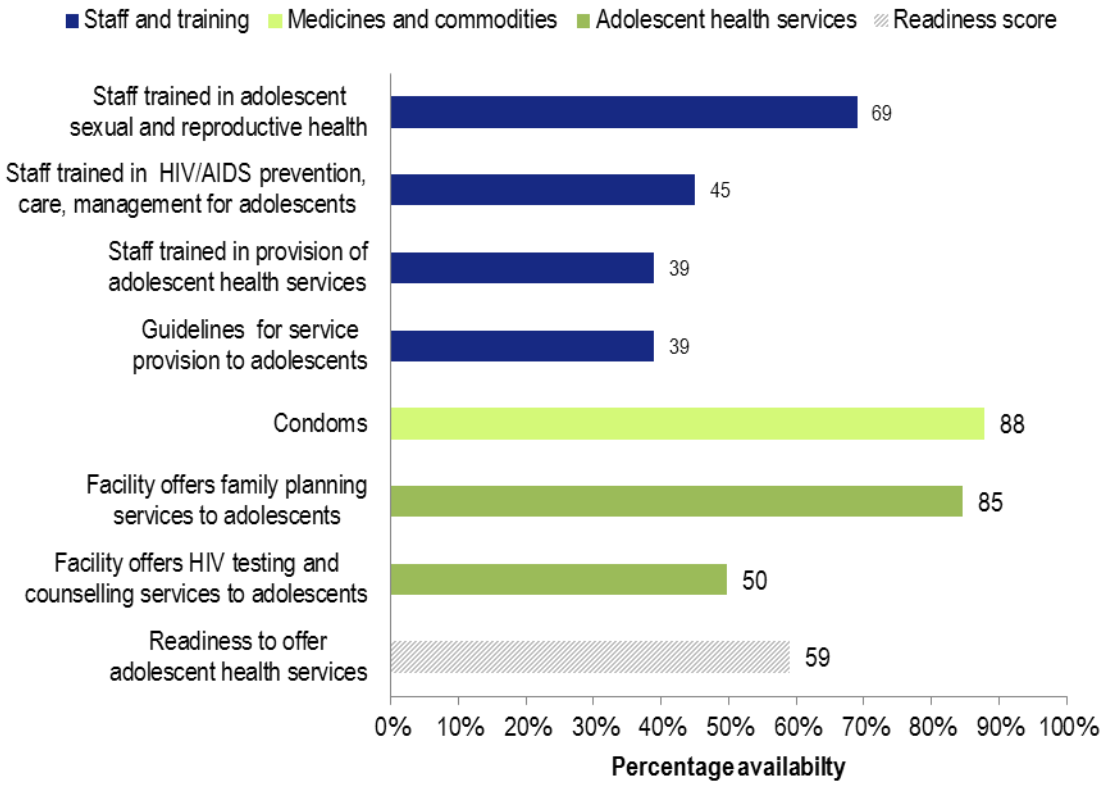
In 2012, 72% of facilities reported offering adolescent health services.Table 11 lists the tracer items used to assess readiness to provide such services.

Table 11: SARA tracer items for adolescent health

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for service provision to adolescents • Staff trained in provision of adolescent health services in the past two years • Staff providing family planning services trained in adolescent sexual and reproductive health in the past two years • Staff providing HIV testing and counselling services trained in HIV/AIDS prevention, care, and management for adolescents in the past two years
Medicines & commodities	• Male condoms
Adolescent health services	• Facility offers family planning services to adolescents • Facility offers HIV testing and counselling services to adolescents

Figure 14 shows the percentage availability of these tracer items in facilities that provided adolescent health services in 2012. On average facilities had four of the seven items, for an overall readiness score of 59%. Most facilities (85%) offered family planning services to adolescents, while half provided HIV testing and counselling services to adolescents. Seven in ten facilities had staff trained in adolescent sexual and reproductive health, while half had staff trained in HIV prevention and care for adolescents. Only four in ten facilities had guidelines for service provision to adolescents.

Figure 14: Percentage of facilities that had tracer items for adolescent health services among facilities that provided these services in 2012 (N=79)



2.2. CHILD HEALTH

CURATIVE AND PREVENTIVE CARE, AND GROWTH MONITORING

To improve health outcomes, it is necessary for the target population to be able to access health services at services at health facilities, and for the health facilities to be in a state of "readiness" to provide these health these health services.

Table 12 shows the percentage of facilities offering key child curative care and growth monitoring services. In 2012, almost all facilities (97%) offered preventive and curative care for children under the age of five, and the percentage of facilities providing key child health services was generally high. Availability of Vitamin A supplementation was slightly lower at 82%. Facilities providing child health services remained stable overall from 2011.

Table 12: Percentage of facilities providing key child curative and preventive care and growth monitoring services in 2011 (N=207 facilities) and 2012 (N=106). (Source: SARA 2011 & 2012)

	2011	2012
Offers preventive and curative care for U5s	96%	97%
ORS and zinc supplementation to children with diarrhoea	93%	97%
Child growth monitoring	90%	94%
Iron supplementation	92%	91%
Diagnose/treat malnutrition	81%	86%
Vitamin A supplementation	91%	82%

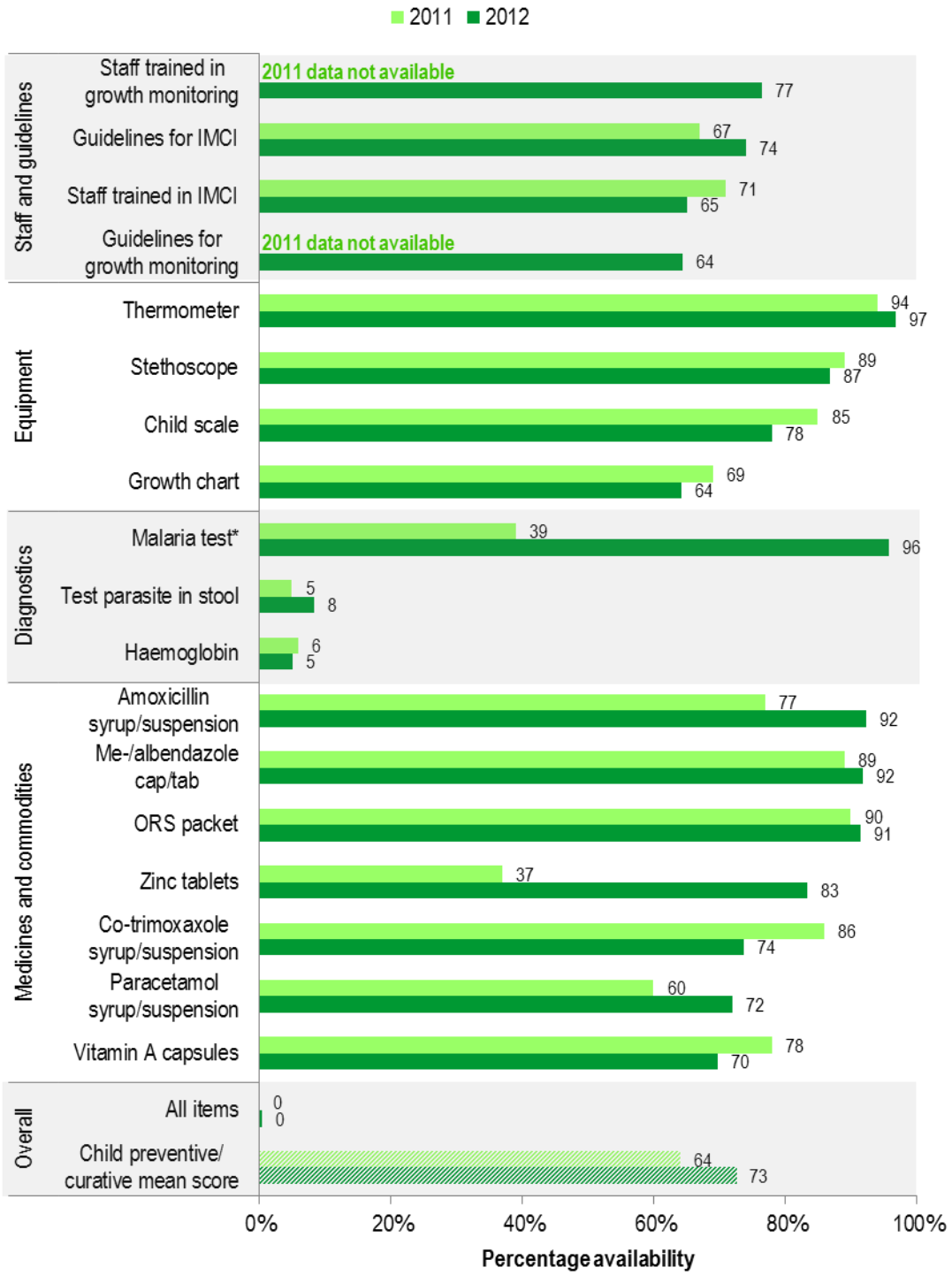
Even if a facility offers these child health services, it is possible that they do not have the trained staff, equipment, diagnostic capacity, and medicines required to provide a minimum level of care ("service readiness"). For example, if a facility that regularly provides Vitamin A supplementation has a stock out of Vitamin A capsules, they would not be able to provide this service to any children until stocks are replenished. Readiness to offer child curative care and growth monitoring services was assessed based on the presence of the 18 tracer items shown in Table 13.

Table 13: SARA tracer items for child curative & preventive care and growth monitoring services.

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for Integrated Management of Childhood Illness (IMCI) • Staff trained in IMCI in the past two years • Guidelines for growth monitoring • Staff trained in growth monitoring in the past two years
Equipment	• Child scale • Infant scale • Thermometer • Growth chart
Diagnostics	• Malaria test • Haemoglobin test • General microscopy (for stool parasite testing)
Medicines & commodities	• ORS • Albendazole/mebendazole • Co-trimoxazole suspension • Vitamin A • Amoxicillin • Paracetamol suspension • Zinc

Figure 15 shows the percentage availability of these tracer items in facilities that offered child curative and preventive care services in 2012, as well as in 2011 where comparable results are available. No facilities had all 18 tracer items; on average, facilities had 13 of the 18 tracer items for an overall readiness score of 73% in 2012, an increase from 2011 (64%). Approximately nine in ten facilities had amoxicillin, albendazole/mebendazole, and ORS in stock on the day of the assessment, and eight in ten had zinc tablets. Availability of zinc tablets appears to have increased considerably since 2011, from 37% to 83%. Diagnostic capacity remains weak, with fewer than one in ten facilities able to conduct a haemoglobin test or general microscopy for stool parasite testing. These tests are generally performed by secondary health services. Notably, availability of malaria testing in 2012 was very high at 96%, confirming that the 2011 results (39%) were a significant underestimation.

Figure 15: Percentage of facilities that have tracer items for child curative and preventive care services among facilities that provide these services (N_{2011}=199, N_{2012}=97). Source: SARA 2011 & 2012



* Availability of malaria RDTs underestimated in 2011.

CHILD IMMUNIZATION

Ninety-two percent of facilities provided child immunization services. Almost all facilities that offered child immunization services provided routine immunization for all four antigens: measles, DTP-HiB-HepB, polio, and BCG. Overall, service provision has been maintained at 2011 levels, and shows a remarkably consistent provision of immunization services over time and across antigens.

Table 14: Percentage of facilities providing child immunization services in 2011 (N=207 facilities) and 2012 (N=106). (Source: SARA 2011 & 2012)

	2011	2012
Offers child immunization services	92%	92%
Routine polio immunization	92%	92%
Routine measles immunizaiton	92%	91%
Routine BCG immunization	92%	92%
Routine DPT-Hib+HepB immunization	92%	91%

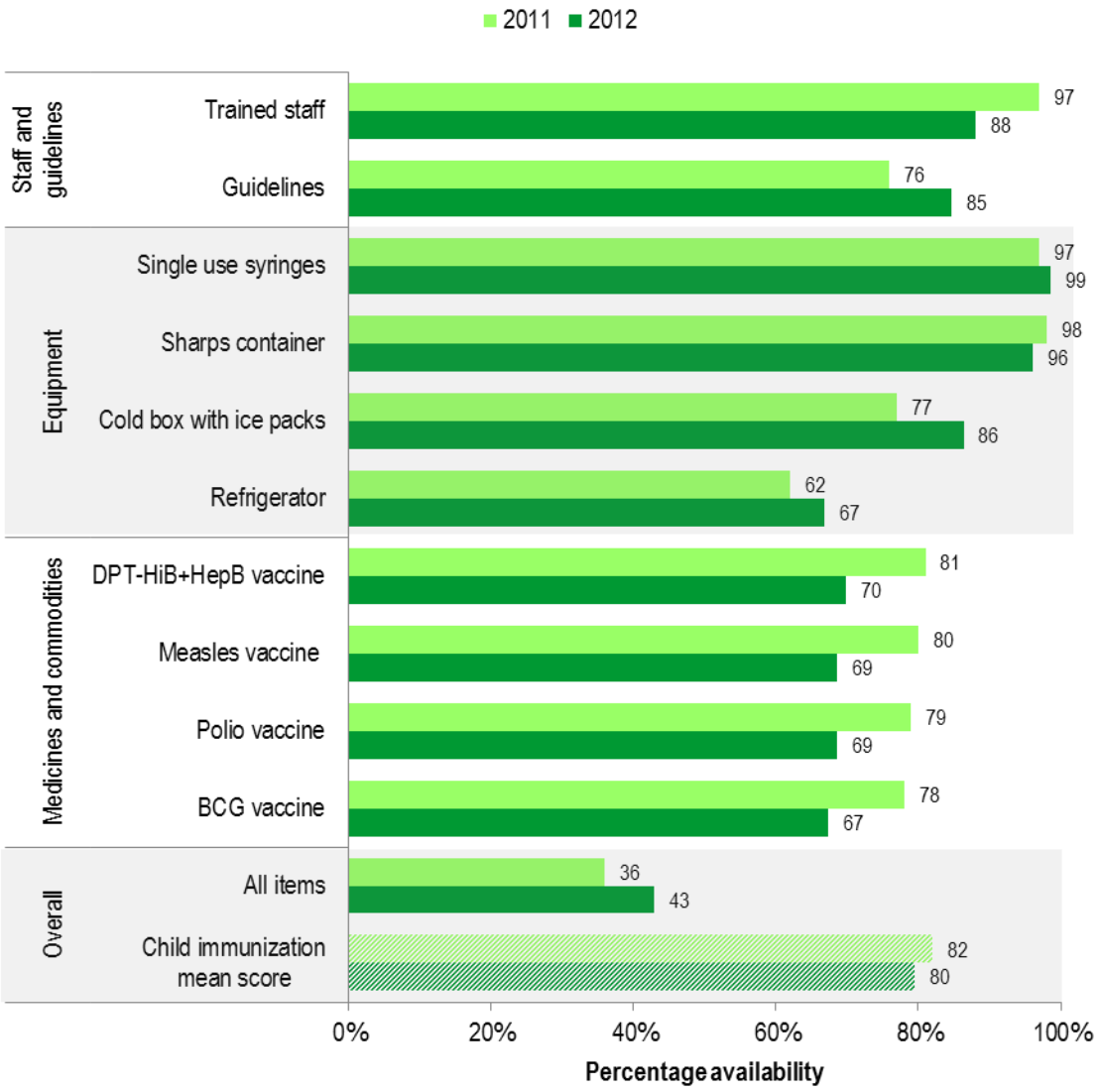
While the percentage of facilities offering routine immunization services is high overall, this does not preclude the possibility of stock-outs of vaccine and other essential commodities and equipment needed to provide the service. Readiness to provide child immunization services was assessed based on the presence of the 10 tracer items shown in Table 15.

Table 15: SARA tracer items for child immunization services.

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for EPI • Staff trained in EPI in the past two years
Equipment	• Cold box or vaccine carrier with ice packs • Refrigerator • Sharps container • Single use syringes (standard disposable or auto-destruct)
Medicines & commodities	• Measles vaccine • DTP-Hib-HepB vaccine • Polio vaccine • BCG vaccine

Figure 16shows the percentage availability of these tracer items in facilities that offered child immunization services in 2012 and in 2011. Forty -three percent of facilities had all ten items in 2012; on average, facilities had eight of the ten tracer items. Availability of tracer items for immunization was generally high overall. Almost all facilities had single-use syringes (99%) and a sharps container (96%). There was however an important reduction in the availability of all vaccines on the day of visit. For instance, pentavalent vaccine availability went from 80% to 71%. Availability of antigens on the day of the assessment (observed with valid expiration date) was around 70% for all antigens compared to 80% in 2011.

Figure 16: Percentage of facilities that have tracer items for child immunization services among facilities that provide this service (N_{2011}=190, N_{2012}=90). Source: SARA 2011 & 2012

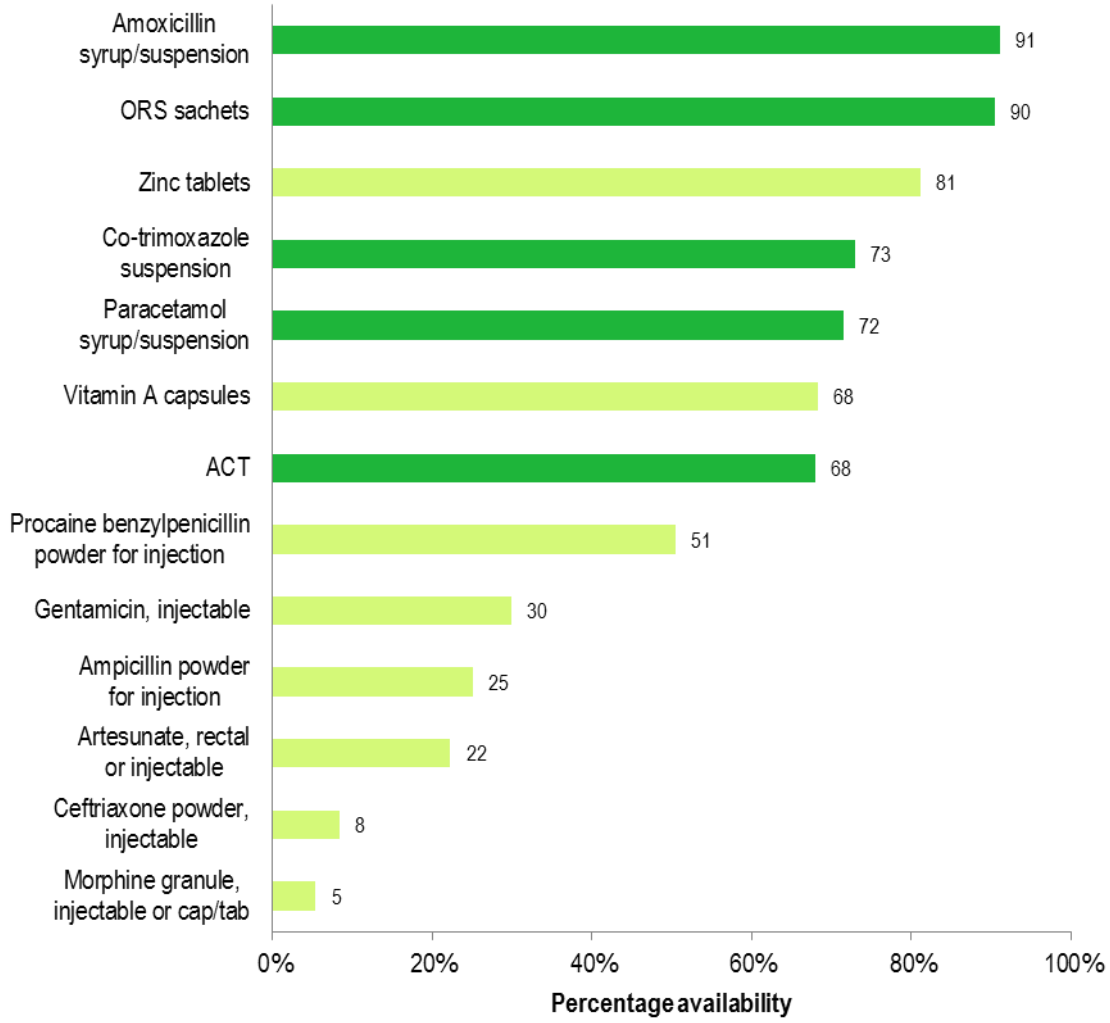


ESSENTIAL MEDICINES FOR CHILD HEALTH

Figure 17shows the percentage of facilities that had essential medicines for child health[12] in 2012. There were five drugs from the list of national priority medicines that were also included here, shown with the darker coloured bars. They tended to be more widely available than drugs that are not on the list: all five drugs were present in at least two thirds of facilities in 2012, and four of the top five drugs were national priority medicines. Amoxicillin syrup/suspension and ORS sachets were the most widely available, at 90% availability. Zinc tablets were present in eight in ten facilities, while co-trimoxazole suspension, paracetamol syrup/suspension, Vitamin A capsules, and ACT were present in seven in ten facilities. However, ceftriaxone, gentamicin, and procaine benzylpenicillin for treatment of neonatal sepsis were available in half of facilities or less.

[12]http://www.who.int/medicines/publications/A4prioritymedicines.pdf

Figure 17: Percentage of facilities that had essential medicines for child health in 2012 (N=106). Darker shaded bars represent medicines on the national priority list. Source: SARA 2012



2.3. HIV/AIDS

HIV COUNSELLING AND TESTING

HIV counselling and testing services are currently being expanded in a phased manner to include all health facilities. The number of Voluntary Counselling and Testing sites increased from 351 in 2009 to 511 in 2010[13]. Based on results from the 2012 SARA, 56% of health facilities provide HIV counselling and testing services. This appears to be a moderate increase in availability from 2011, when 42% of facilities provided this service.

Readiness to provide HIV counselling and testing services was assessed based on the presence of the five tracer items shown in Table 16.

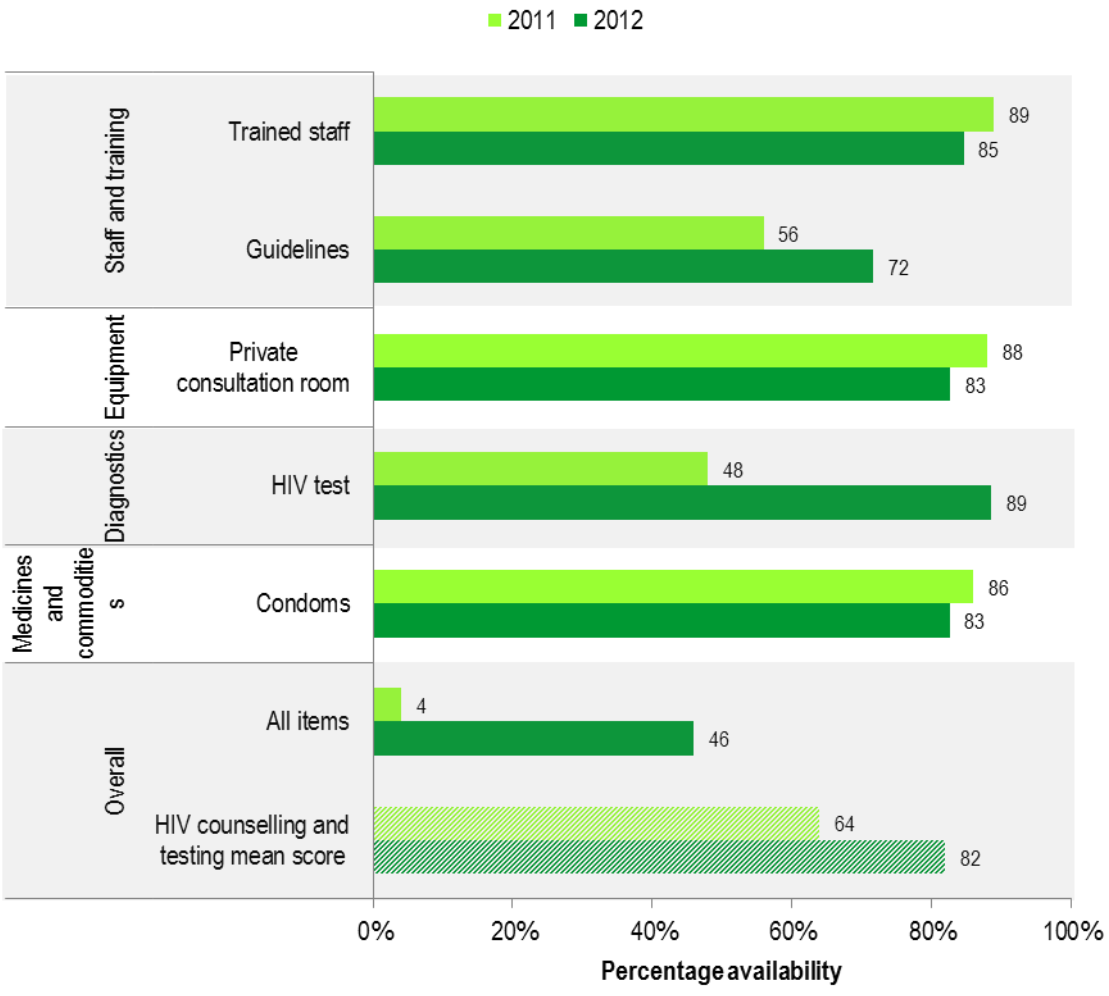
[13] Ministry of Health and Sanitation, Government of Sierra Leone. 2010 Health Sector Performance Report.

Table 16: SARA tracer items for HIV counselling and testing services.

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for HIV counselling and testing • Staff trained in HIV counselling and testing in the past two years
Equipment	• Consultation room with visual and auditory privacy
Diagnostics	• HIV diagnostic capacity
Medicines & commodities	• Male condoms

Figure 18 shows the percentage availability of these tracer items in facilities that provide HIV counselling and testing services. Half of facilities had all five items in 2012; on average, facilities had four of the five tracer items. This shows a substantial increase since 2011. The percentage of facilities with HIV diagnostic capacity increased from 48% to 89%; however, it is thought that the availability of HIV RDTs was underestimated in the 2011 assessment so this may not reflect a true increase. Availability of male condoms was 83%, showing no change from last year. This indicates that approximately two in ten facilities providing HIV counselling and testing services did not have male condoms available on the day of the assessment.

Figure 18: Percentage of facilities that have tracer items for HIV counselling and testing services among facilities that provide this service (N_{2011}=87, N_{2012}=68). Source: SARA 2011 & 2012



PREVENTION OF MOTHER-TO-CHILD TRANSMISSION

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 ARV prophylaxis. The BPEHS specifies that PMTCT should be provided at health facilities of all levels.

Table 17 shows the percentage of facilities providing a number of PMTCT services in 2011 and 2012. There was an increase in facilities providing PMTCT since last year, from 37% in 2011 to 57% in 2012. However, facilities providing ARV prophylaxis to HIV-positive women or to newborns remained stable from 2011, at only three out of ten facilities.

Table 17: Percentage of facilities providing PMTCT services in 2011 (N=207 facilities) and 2012 (N=106). Source: SARA 2011 & 2012

	2011	2012
Offers services for PMTCT	37%	57%
HIV counselling & testing to HIV+ pregnant women	33%	56%
Family planning counselling to HIV+ women	32%	47%
Nutritional counselling for HIV+ women & their infants	27%	41%
HIV counselling & testing to infants born to HIV+ pregnant women	25%	39%
Infant & young child feeding counselling	26%	36%
ARV prophylaxis to HIV+ women	27%	30%
ARV prophylaxis to newborns born to HIV+ pregnant women	25%	28%

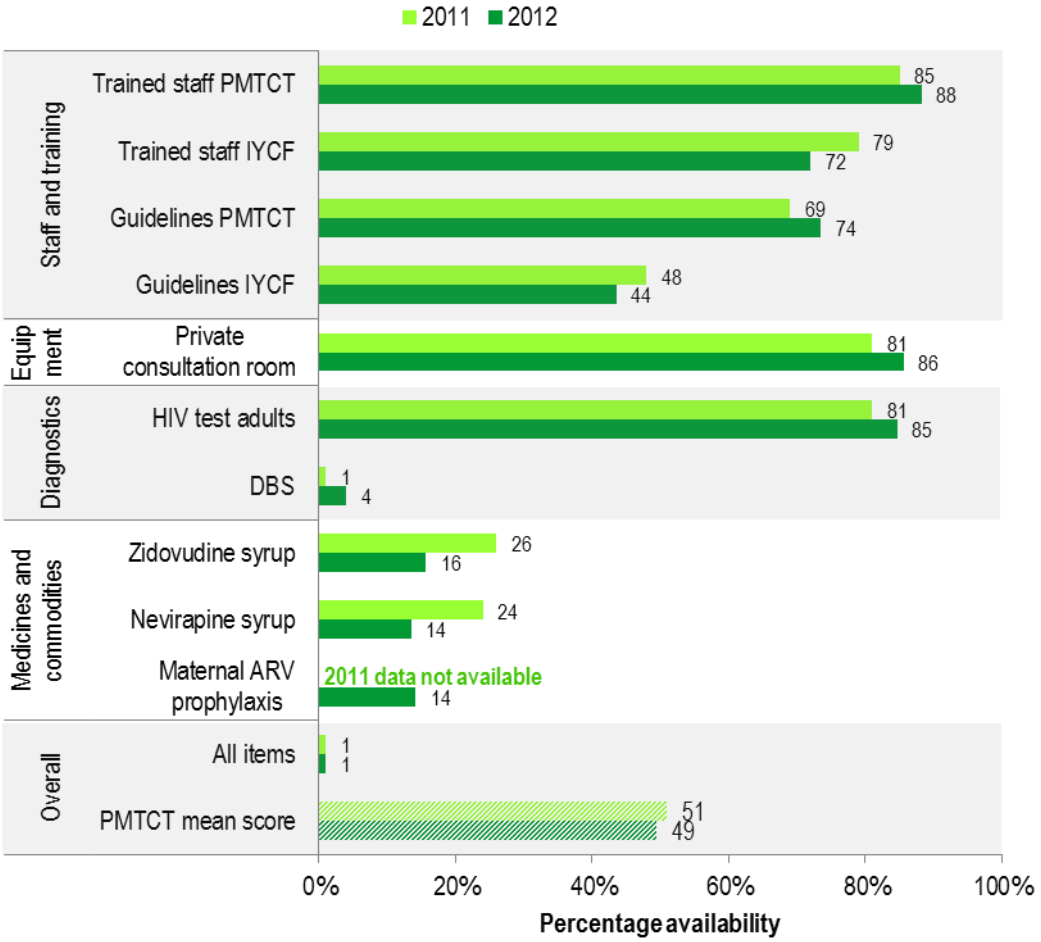
Readiness to provide PMTCT services was assessed based on the presence of the ten tracer items shown in Table 18.

Table 18: SARA tracer items for PMTCT.

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for PMTCT • Guidelines for infant and young child feeding counselling • Staff trained in PMTCT in the past two years • Staff trained in infant and young child feeding in the past two years
Equipment	• Consultation room with visual and auditory privacy
Diagnostics	• HIV diagnostic capacity for adults • Dried blood spot filter paper for HIV diagnosis in newborns
Medicines & commodities	• Zidovudine syrup • Nevirapine syrup • Maternal ARV prophylaxis

Figure 19 shows the percentage availability of these tracer items in facilities that offer PMTCT services. Almost no facilities had all ten items; on average, facilities had five of the ten tracer items in 2012. While the results above show that more facilities are providing PMTCT services, the overall readiness score and availabilities of individual tracer items remained stable between 2011 and 2012. Availability of DBS paper for HIV testing of newborns remained very low, and only one in ten facilities providing PMTCT had ARVs for prophylaxis in stock.

Figure 19: Percentage of facilities that have tracer items for PMTCT services among facilities that provide this service (N_{2011}=77, N_{2012}=65). Source: SARA 2011 & 2012



ANTIRETROVIRAL THERAPY

According to the BPEHS, facilities at all levels are expected to provide supervision of ART, including home-based care. Table 19 shows the percentage of facilities providing ART services in 2011 and 2012. Approximately two facilities in ten prescribe ARVs, and a similar number provide ART treatment follow-up services. Availability of these services remained stable from 2011.

Table 19: Percentage of facilities providing ART services in 2011 (N=207) and 2012 (N=106). Source: SARA 2011 & 2012

	2011	2012
Offers ARV prescription or ARV treatment follow-up services	20%	22%
Prescription of ARVs	18%	21%
Treatment follow-up services for persons on ART	18%	20%

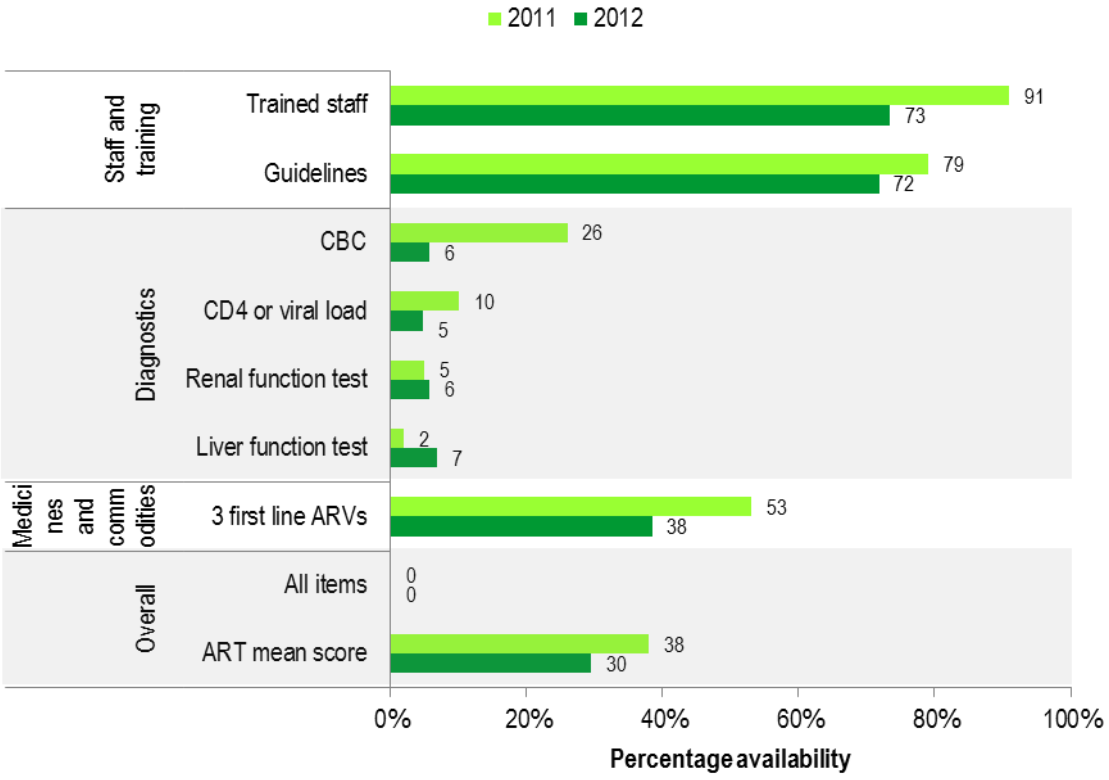
Readiness to provide ART services was assessed based on the presence of the seven tracer items in Table 20.

Table 20: SARA tracer items for ART

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for ART • Staff trained in ART in the past two years
Diagnostics	• Complete blood count (off or on site) • CD4 or viral load (off or on site) • Renal function test (off or on site) • Liver function test (off or on site)
Medicines & commodities	• Three first-line antiretrovirals

Figure 20 shows the percentage availability of these tracer items at facilities that offered ART services in 2011 and 2012. No facility had all seven items; on average, facilities had two of the seven tracer items in 2012. This appears to be a slight decrease in overall readiness score compared to 2011, from 38% in 2011 to 30% in 2012. Fewer facilities had first line ARVs in stock in 2012 (38%) compared to 2011 (53%), and fewer facilities had staff trained in ART in the last two years (73% in 2012 compared to 91% in 2011). Complete blood count testing appears to show a decrease as well; however this may be due to changes in the questionnaire and indicator definition to take into account the availability of functioning equipment and reagents for on site testing.

Figure 20: Percentage of facilities that have tracer items for ART services among facilities that provide the service (N_{2011}=41, N_{2012}=35). Source: SARA 2011 & 2012



HIV/AIDS CARE AND SUPPORT

HIV/AIDS care and support services include treatment of opportunistic infections and palliative care. According to the BPEHS, treatment of opportunistic infections should be provided by facilities of all levels. Table 21 shows the percentage of facilities that provide a number of HIV/AIDS care and support services. Overall, few facilities provide these services (16%), and the data showed no change from 2011.

Table 21: Percentage of facilities providing HIV/AIDS care and support services in 2011 (N=207 facilities) and 2012 (N=106). Source: SARA 2011 & 2012

	2011	2012
Offer HIV/AIDS care and support services	18%	16%
Provide condoms	17%	14%
Family planning counselling	17%	14%
Treatment of opportunistic infections	17%	13%
Preventative treatment for opportunistic infections	16%	13%
Provide/prescribe micronutrient supplementation	17%	13%
Provision of palliative care	13%	13%
Care for paediatric HIV/AIDS patients	11%	11%
Nutritional rehabilitation services	11%	10%
Provide/prescribe preventative treatment for TB	8%	10%
Provide/prescribe fortified protein supplementation	8%	8%
IV treatment of fungal infections	8%	7%
Treatment for Kaposi's sarcoma	5%	4%

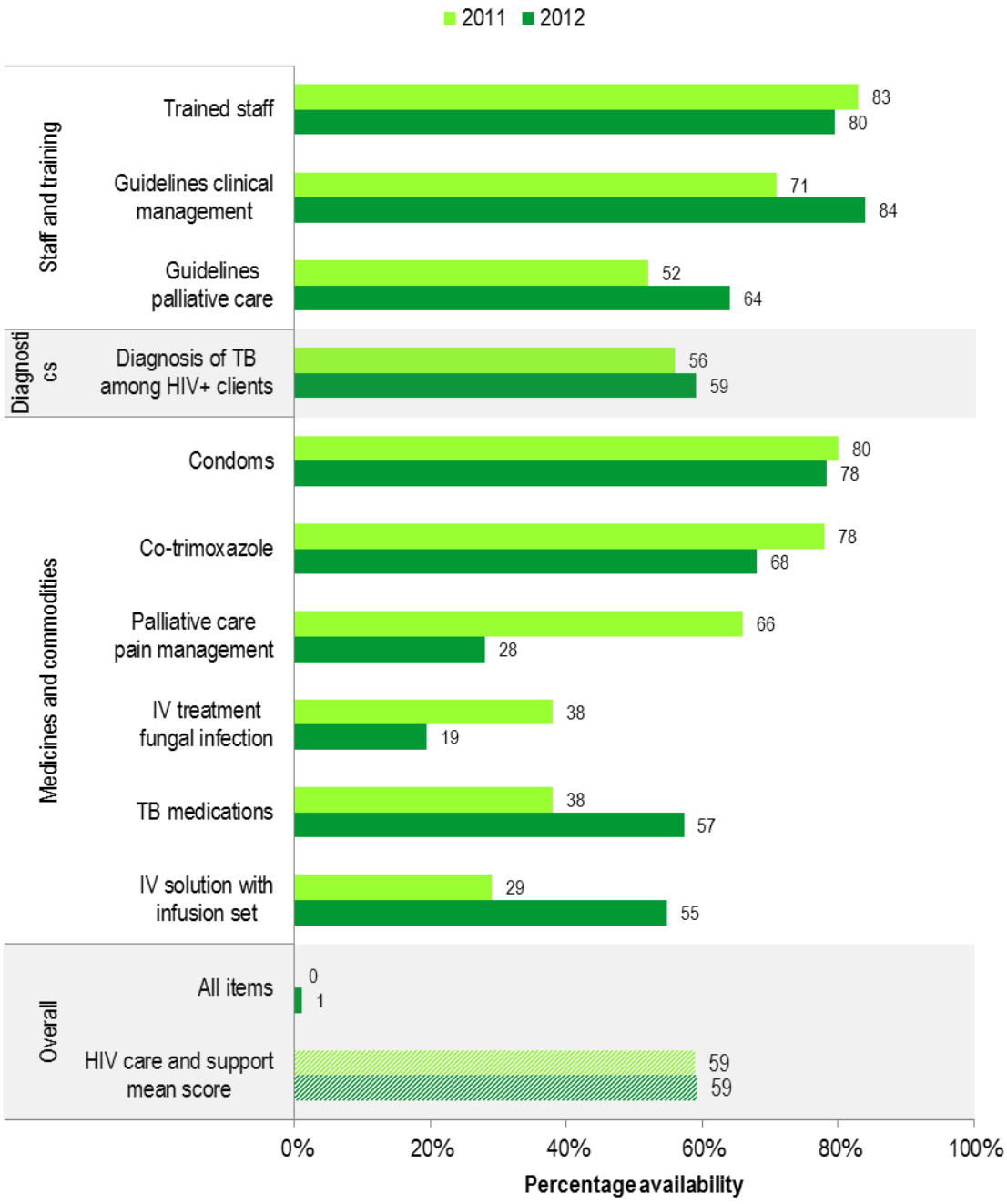
Readiness to provide HIV/AIDS care and support services was assessed based on the presence of the ten tracer items shown in Table 22.

Table 22: SARA tracer items for HIV/AIDS care and support services.

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for clinical management of HIV/AIDS • Guidelines for palliative care • Staff trained in clinical management of HIV/AIDS in the past two years
Diagnostics	• System for diagnosis of TB among HIV-positive clients
Medicines & commodities	• Intravenous solution with infusion set • IV treatment for fungal infections • Co-trimoxazole • First-line TB treatment medications • Palliative care pain management • Male condoms

Figure 21 shows the percentage availability of these tracer items in facilities that provided HIV/AIDS care and support services in 2011 and 2012. Almost no facilities had all ten items; on average, facilities had six of the ten tracer items in 2012. The overall readiness score remained stable from 2011. Availability of first line TB treatment medications and IV solution with infusion kit appeared to show an increase between 2011 and 2012, while availability of palliative care pain management medication and IV treatment for fungal infections showed a decrease. However, given the small number of facilities providing these services, these results should be taken to be indicative.

Figure 21: Percentage of facilities that have tracer items for HIV/AIDS care and support services among facilities that provide this service (N_{2011}=37, N_{2012}=27). Source: SARA 2011 & 2012



2.4. SEXUALLY TRANSMITTED INFECTIONS

The BPEHS promotes regular enquiries about STI symptoms at family planning, antenatal and general outpatient clinics at health facilities of all levels.Table 23 shows the percentage of facilities providing STI diagnosis and treatment services in 2011 and 2012. Almost all facilities (96%) provided STI services in 2012. Facilities offering diagnosis and treatment of STIs did not show a change from 2011.

Table 23: Percentage of facilities providing STI services in 2011 (N=207) and 2012 (N=106). Source: SARA 2011 & 2012

	2011	2012
Offers services for STIs	96%	96%
Prescribe treatment for STIs	96%	96%
Diagnosis of STIs	95%	94%

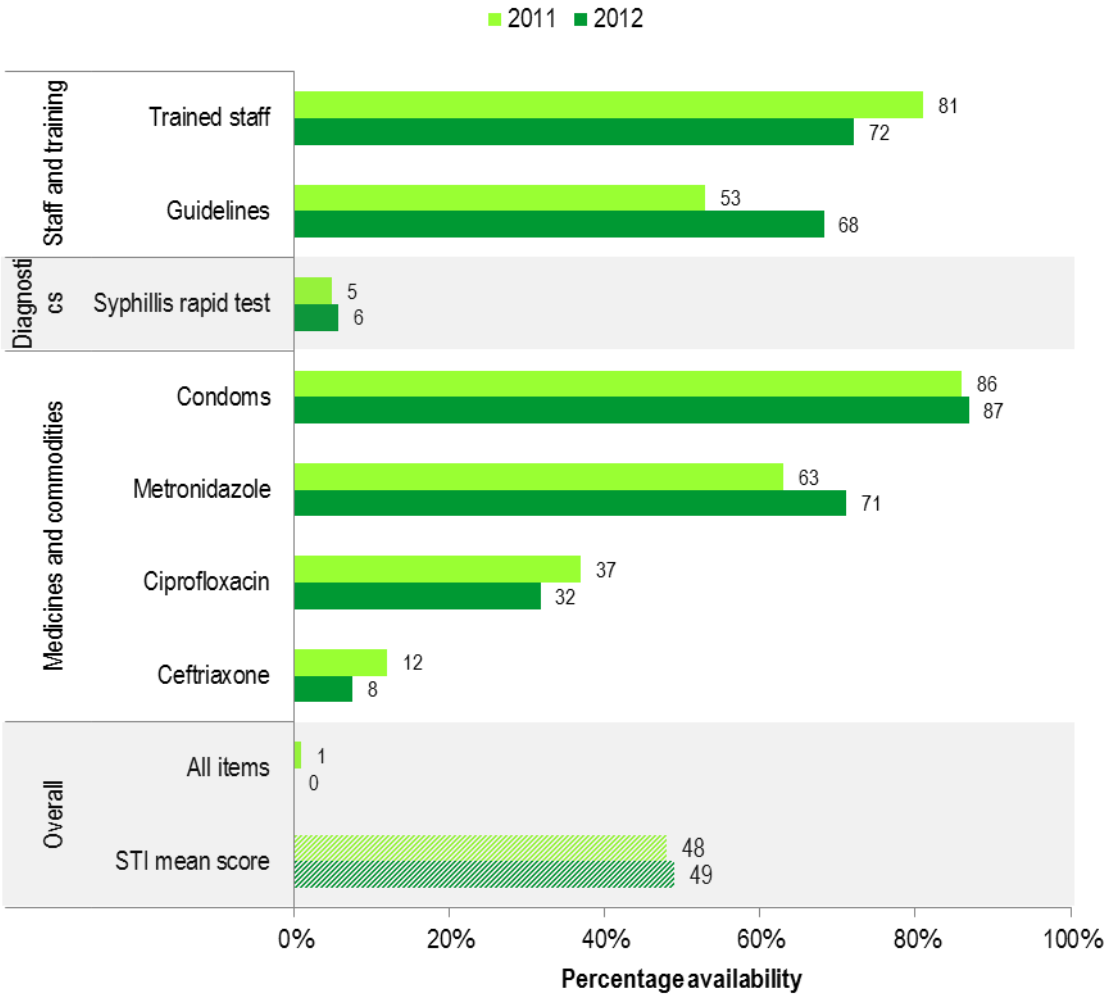
Readiness to provide STI services was assessed based on the presence of the seven tracer items shown in Table 24.

Table 24: SARA tracer items for STIs

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for diagnosis and treatment of STIs • Staff trained in diagnosis and treatment of STIs in the past two years
Diagnostics	• Syphilis rapid test
Medicines & commodities	• Male condoms • Metronidazole cap/tab • Ciprofloxacin cap/tab • Ceftriaxone injectable

Figure 22 shows the percentage availability of these tracer items in facilities that provided STI services in 2011 and 2012. No facility had all seven items; on average, facilities had 3-4 of the 7 tracer items in 2012. The overall readiness score remained stable from 2011. The availability of guidelines appeared to show a slight increase from last year, but all other tracer items did not show a change in availability.

Figure 22: Percentage of facilities that have tracer items for STI services among facilities that provide this service (N_{2011}=199, N_{2012}=101). Source: SARA 2011 & 2012



2.5. TUBERCULOSIS

Table 25 shows the percentage of facilities providing TB diagnosis and treatment services in 2011 and 2012. Approximately two in ten facilities provide TB services, showing no change from 2011. The percentage of facilities diagnosing TB was approximately equal to the percentage providing TB treatment, indicating that availability of TB treatment was no more widespread than diagnostic services.

Table 25: Percentage of facilities providing TB services in 2011 (N=207) and 2012 (N=106). Source: SARA 2011 & 2012

	2011	2012
Offers TB services	17%	19%
TB diagnosis	15%	18%
TB treatment	15%	16%

Readiness to provide TB services was assessed based on the presence of the twelve tracer items shown in Table 26.

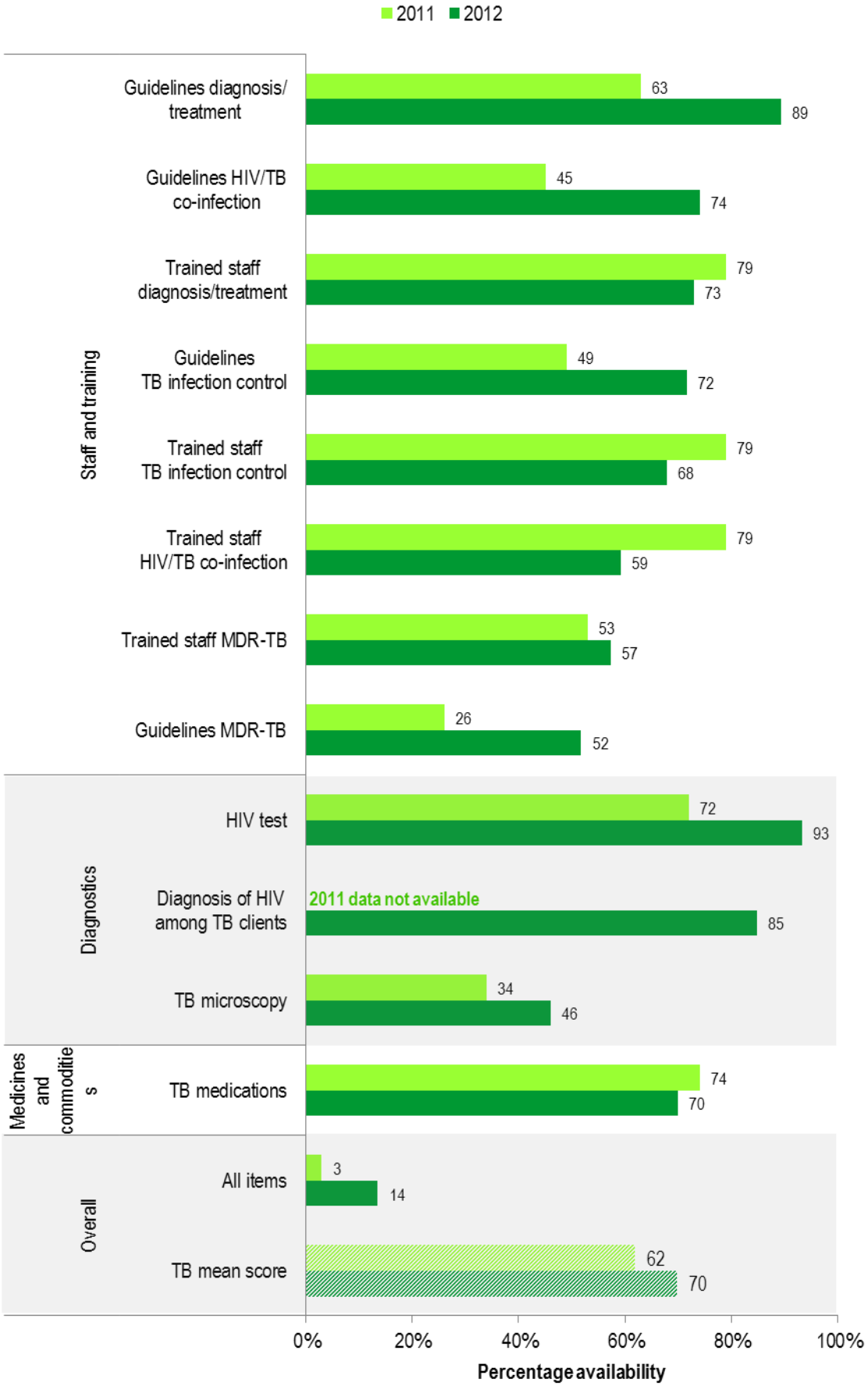
Table 26: SARA tracer items for TB

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for diagnosis and treatment of TB • Guidelines for management of HIV and TB co-infection • Guidelines for MDR-TB (treatment or need for referral) • Guidelines for TB infection control • Staff trained in diagnosis and treatment of TB in the past two years • Staff trained in management of HIV and TB co-infection in the past two years • Staff trained in MDR-TB (treatment or need for referral)in the past two years • Staff trained in TB infection control in the past two years
Diagnostics	• TB microscopy • HIV diagnostic capacity • System for diagnosis of HIV among TB clients
Medicines & commodities	• First-line TB medications

Figure 23 shows the percentage availability of these tracer items in facilities that offered TB services in 2011 and 2012. Fourteen percent of facilities had all twelve items in 2012; on average, facilities had eight of the twelve tracer items. The overall readiness score appears to show a slight increase since 2011 (62% in 2011 to 70% in 2012). Availability of all four guidelines shows an increase since last year, as well as HIV diagnostic capacity[14]. Presence of staff trained in HIV/TB co-infection in the past two years appeared to show a decrease.

[14]Availability of HIV RDTs was thought to be underestimated in the 2011 assessment, thus it is not clear if this shows a true increase.

Figure 23: Percentage of facilities that have tracer items for TB services among facilities that provide this service (N_{2011}=35, N_{2012}=30). Source: SARA 2011 & 2012



2.6. MALARIA

Table 27 shows the percentage of facilities providing malaria services in 2011 and 2012. Basically all facilities provide malaria diagnosis and treatment services, while nine in ten facilities provide IPT. Availability of malaria services remained stable from 2011. Nine in ten facilities reported verifying clinical malaria diagnosis using a blood test (RDT or blood smear); however, this does not necessarily indicate how frequently and consistently this verification is performed.

Table 27: Percentage of facilities providing malaria services in 2011 (N=207) and 2012 (N=106). Source: SARA 2011 & 2012

	2011	2012
Offer diagnosis or treatment of malaria	100%	100%
Malaria diagnosis	100%	98%
Malaria treatment	99%	98%
IPT	93%	92%
Malaria diagnosis verification	--	91%

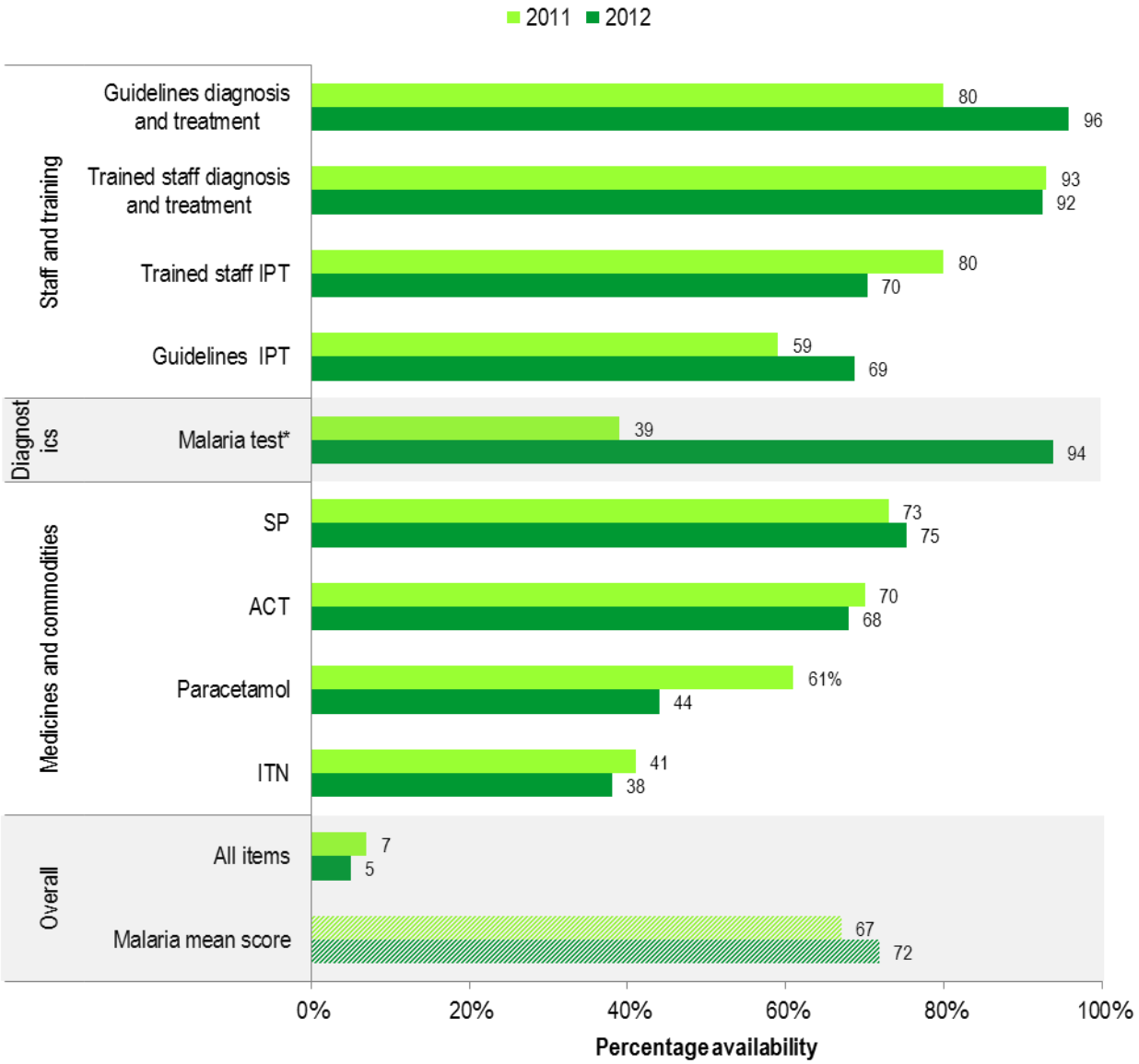
Readiness to provide malaria services was assessed based on the presence of the nine tracer items in Table 28.

Table 28: SARA tracer items for malaria

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for diagnosis and treatment of malaria • Guidelines for IPT • Staff trained in diagnosis and treatment of malaria in the past two years • Staff trained in IPT in the past two years
Diagnostics	• Malaria diagnostic capacity
Medicines & commodities	• First-line antimalarial (ACT) • Paracetamol cap/tab • IPT drug (SP) • ITN (or vouchers)

Figure 24 shows the percentage availability of these tracer items in facilities that offered malaria services in 2011 and 2012. Only 5% of facilities had all nine items; on average facilities had 6 to 7 of the nine tracer items. On site malaria diagnostic testing was available in 94% of facilities in 2012 compared to 39% in 2011; however, it is not clear if there has been a true increase as the 2011 availability is thought to be an underestimate. Availability of guidelines for malaria diagnosis and treatment appears to show a slight increase between 2011 and 2012. Availability of most other tracer items remained stable between the two years. Three quarters of facilities had ACT in stock on the day of the assessment, and about seven in ten facilities had SP in stock for IPT. Only four in ten facilities had paracetamol available for relief of pain and fever.

Figure 24: Percentage of facilities that have tracer items for malaria services among facilities that provide this service (N_{2011}=207, N_{2012}=106). Source: SARA 2011 & 2012



* Availability of malaria RDTs was an underestimate in 2011.

2.7. NON-COMMUNICABLE DISEASES

The results from the 2012 SARA show that not many facilities provide diagnosis or treatment services for non-communicable diseases: 38% of facilities offered diagnosis and/or management of cardiovascular diseases (such as hypertension), 33% for chronic respiratory diseases, and only 12% for diabetes.

CARDIOVASCULAR CONDITIONS

Readiness to providehealth services for cardiovascular conditions was assessed based on the presence of the twelve tracer items inTable 29.

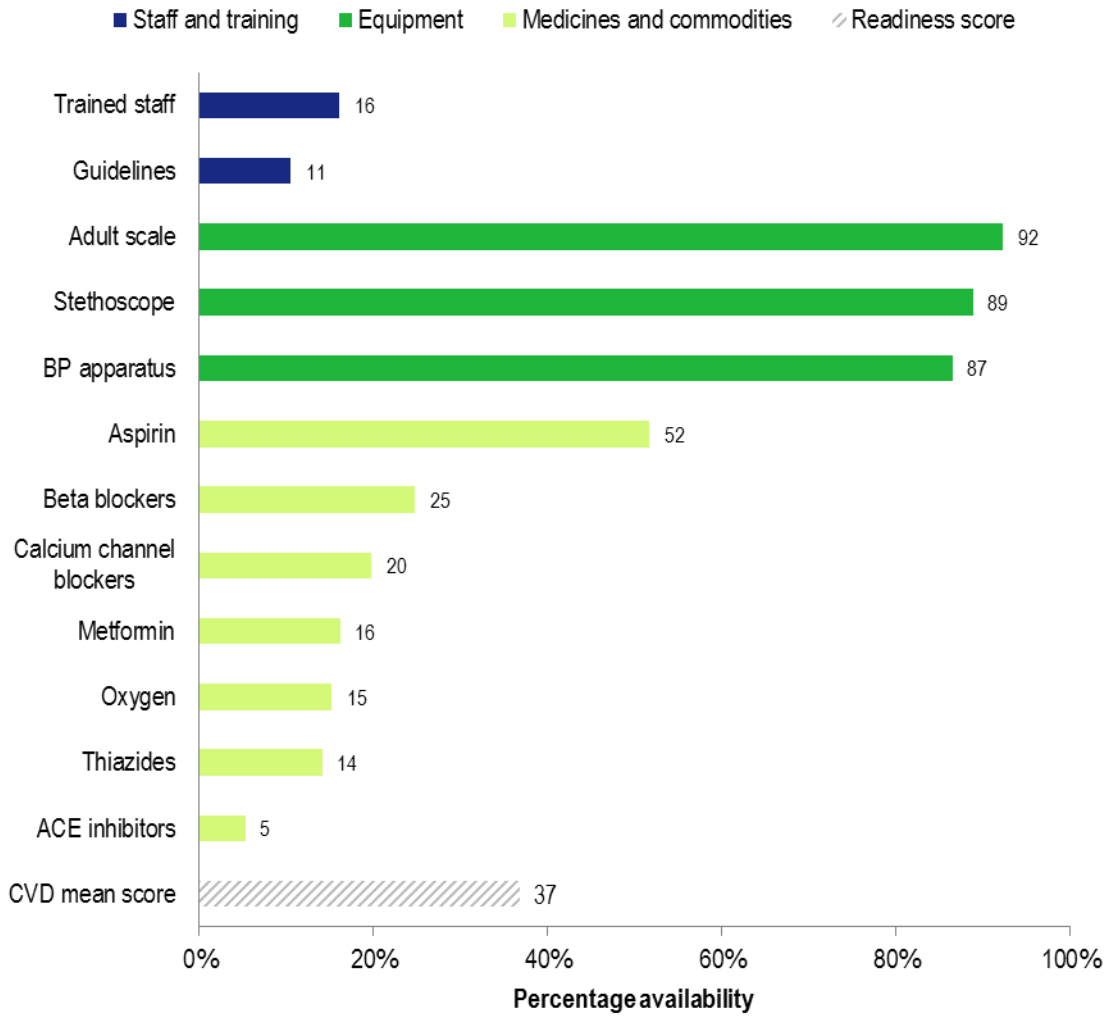
Table 29: SARA tracer items for cardiovascular conditions

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for diagnosis and treatment of chronic cardiovascular conditions • Staff trained in diagnosis and treatment of chronic cardiovascular conditions in the past two years
Equipment	• Stethoscope • Blood pressure apparatus • Adult scale
Medicines & commodities	• ACE inhibitors • Thiazides • Beta blockers • Calcium channel blockers • Aspirin cap/tab • Metformin cap/tab • Oxygen cylinders/concentrators

Figure 25 shows the percentage availability of these tracer items at facilities that offer diagnosis and/or management of cardiovascular conditions in 2012[15]. No facility had all twelve items; on average, facilities had four of the twelve items. Few facilities had guidelines (11%) or staff trained in the past two years (16%) in diagnosis and treatment of chronic cardiovascular conditions. Availability of medicines was also low: only half of facilities providing health services for cardiovascular conditions had aspirin in stock on the day of the assessment, and availability of other medicines was even lower. Availability of equipment items (stethoscope, blood pressure apparatus, and adult scale) was high; however, these items are not specific to diagnosing and managing cardiovascular conditions and were most likely available for other purposes.

[15]SARA tracer indicators for cardiovascular conditions had not yet been defined for the 2011 survey.

Figure 25: Percentage of facilities that had tracer items for cardiovascular disease services in 2012 among facilities that provided this service (N=46). Source: SARA 2012



CHRONIC RESPIRATORY DISEASE

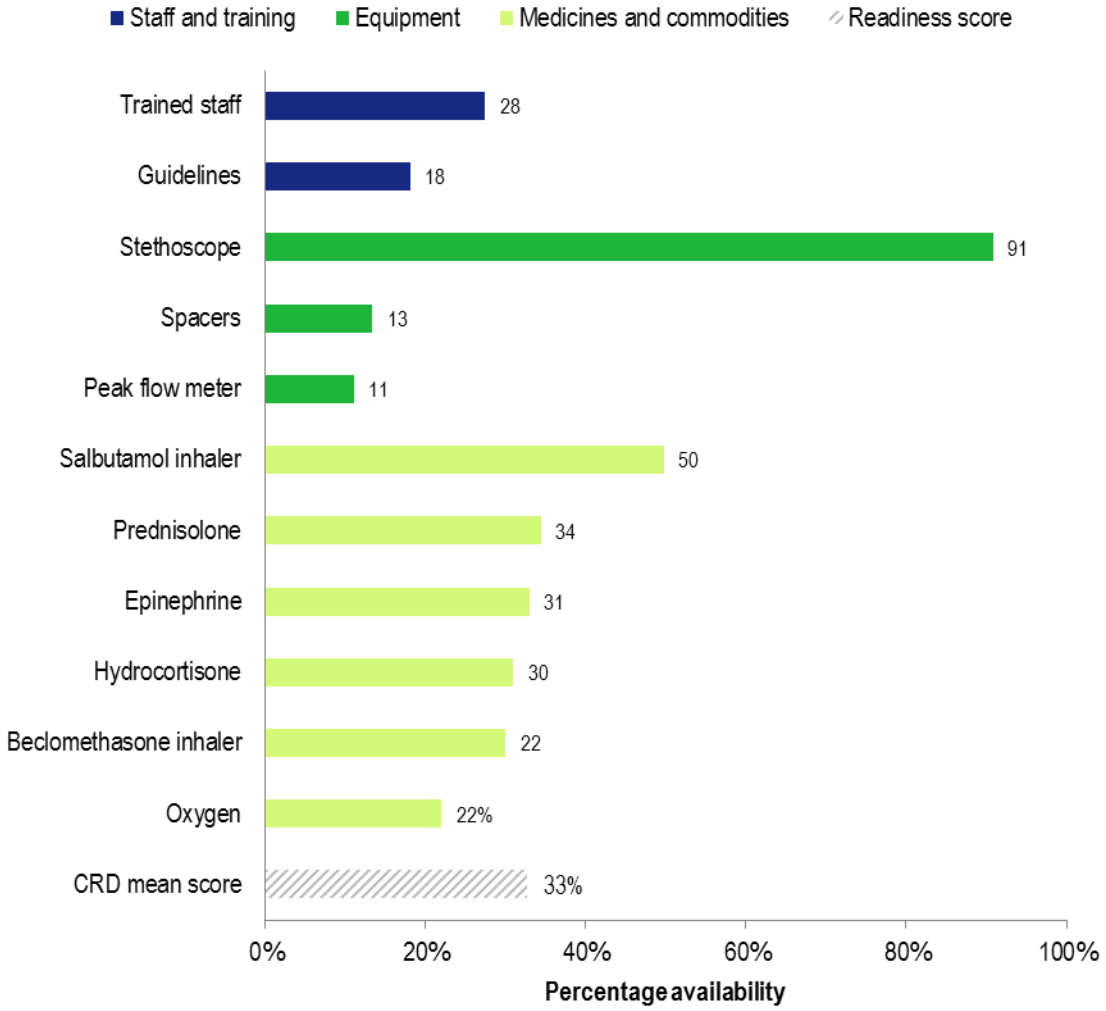
Readiness to provide health services for chronic respiratory disease (CRD) was assessed based on the presence of the eleven tracer items inTable 30.

Table 30: SARA tracer items for chronic respiratory disease

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for diagnosis and management of CRD • Staff trained in diagnosis and management of CRD in the past two years
Equipment	• Stethoscope • Peak flow meter • Spacers for inhalers
Medicines & commodities	• Salbutamol inhaler • Beclomethasone inhaler • Prednisolone cap/tab • Hydrocortisone cap/tab • Epinephrine injectable • Oxygen cylinders/concentrators

Figure 25 shows the percentage availability of these tracer items at facilities that offered diagnosis and/or management of chronic respiratory disease in 2012[16]. No facility had all eleven items; on average, facilities had four of the eleven items. Availability of medicines was low: beclomethasone inhalers had the highest availability in this category, but were present in only half of facilities providing CRD services. Nine of ten facilities had a stethoscope, but equipment items more specific to treating CRDs such as spacers for inhalers and peak flow meters had low availability.

Figure 26: Percentage of facilities that had tracer items for chronic respiratory disease services in 2012 among facilities that provided this service (N=42). Source: SARA 2012



DIABETES

Readiness to provide diabetes services was assessed based on the presence of the twelve tracer items in Table 31.

Table 31: SARA tracer items for diabetes

Domains	Tracer items (% of facilities with item)

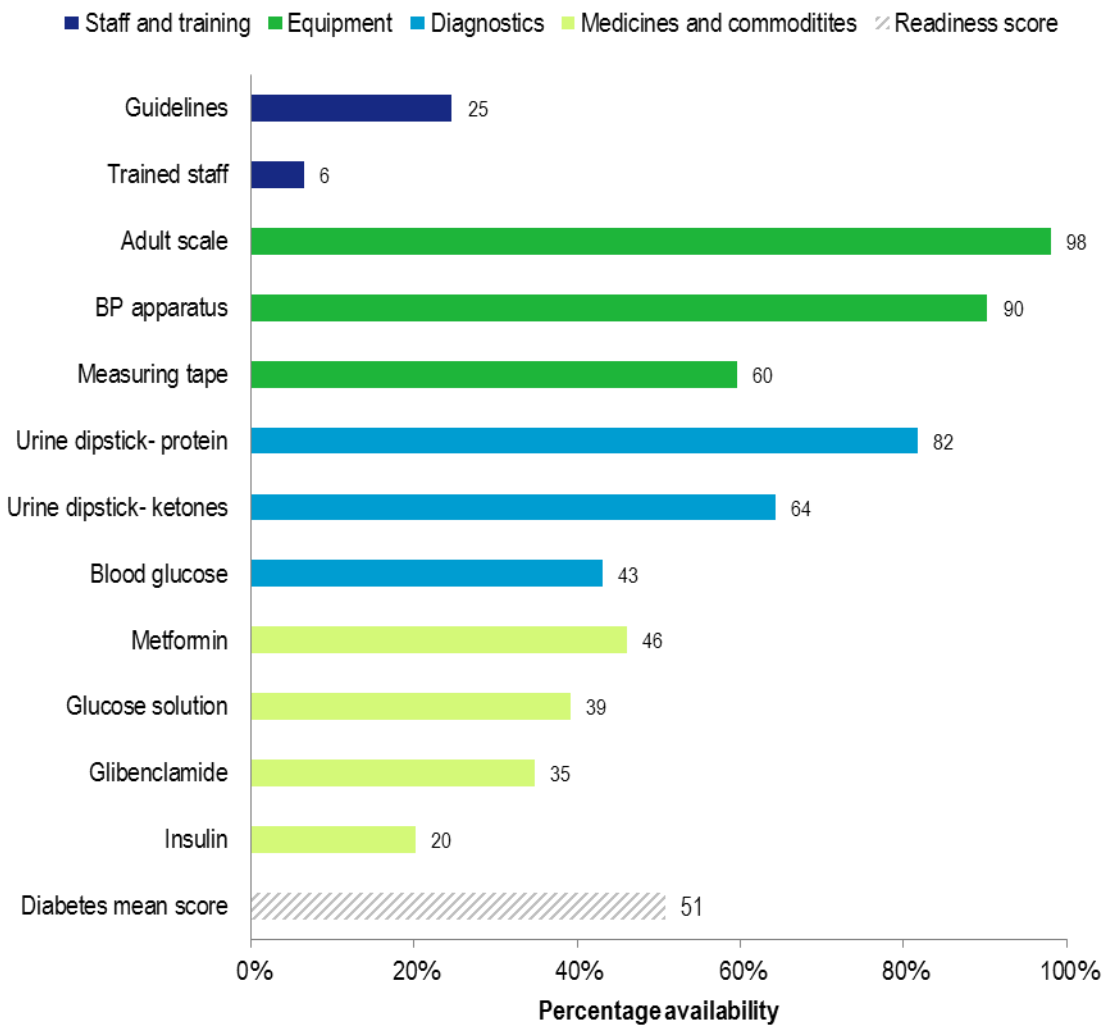
[16]SARA tracer indicators for chronic respiratory disease had not yet been defined for the 2011 survey.

Staff & training	• Guidelines for diagnosis and treatment of diabetes • Staff trained in diagnosis and treatment of diabetes in the past two years
Equipment	• Blood pressure apparatus • Adult scale • Measuring tape (height board/stadiometre)
Diagnostics	• Blood glucose test • Urine dipstick – protein • Urine dipstick – ketones
Medicines & commodities	• Metformin cap/tab • Glibenclamide cap/tab • Insulin injectable • Glucose injectable solution

Figure 27shows the percentage availability of these tracer items at facilities that offered diabetes diagnosis and/or management services in 2012[17]. No facility had all twelve items; on average, facilities had six of the twelve items. Few facilities had guidelines (25%) or staff trained in the past two years (6%) in diabetes diagnosis and treatment. Availability of medicines was also low, with only 20% of facilities providing diabetes services having injectable insulin in stock on the day of the assessment. Given the small sample size (23 facilities offering diabetes services), these results should be interpreted with caution.

[17]SARA tracer indicators for diabetes had not yet been defined for the 2011 survey.

Figure 27: Percentage of facilities that had tracer items for diabetes services in 2012 among facilities that provided this service (N=23). Source: SARA 2012



2.8. SURGERY & BLOOD TRANSFUSION

BASIC SURGERY

Table 32 shows the percentage of facilities providing basic (minor) surgery in 2011 and 2012, 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. Approximately half of facilities provided basic surgical care in 2012. Suturing and incision and drainage of abscesses were the most common surgical interventions, available in half of facilities. The percentage availabilities in 2012 are approximately 10% lower than in 2011; however, this is not considered to be a significant difference.

Table 32: Percentage of facilities providing basic surgery in 2011 (N=207) and 2012 (N=106). Source: SARA 2011 & 2012

	2011	2012
Offers basic surgical services	65%	54%
Suturing	63%	53%
Incision and drainage of abscesses	61%	51%
Acute burn management	52%	43%
Wound debridement	55%	35%
Male circumcision	40%	33%
Closed treatment of fracture	18%	12%
Hydrocele reduction	7%	11%
Cricothyroidotomy	3%	1%
Chest tube insertion	4%	1%

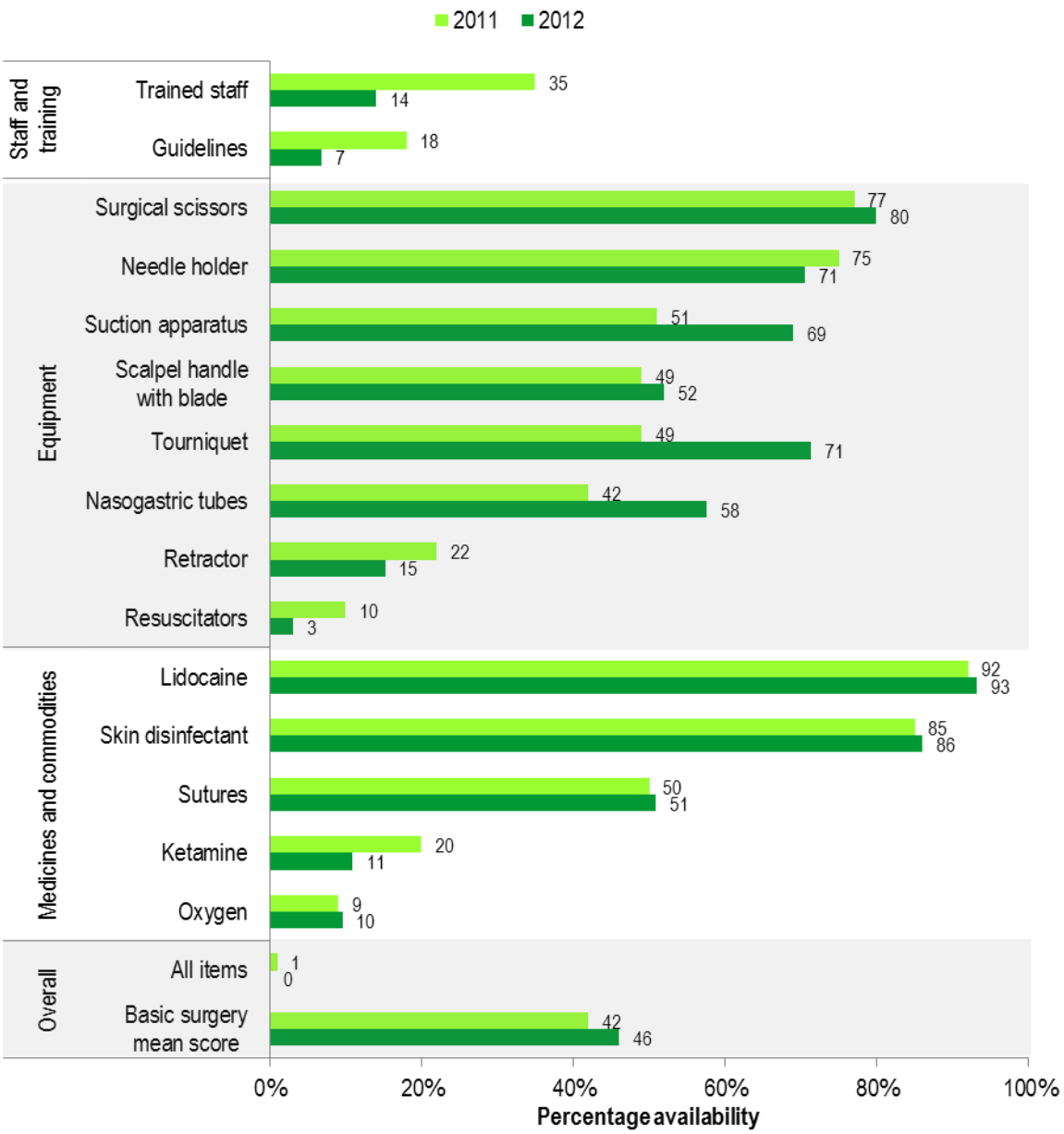
Readiness to provide basic surgical care was assessed based on the presence of the fifteen tracer items in Table 33.

Table 33: SARA tracer items for basic surgery

Domains	Tracer items (% of facilities with item)
Staff & training	• Guidelines for Integrated Management for Emergency and Essential Surgical Care (IMEESC) • Staff trained in IMEESC in the past two years
Equipment	• Needle holder • Scalpel handle with blade • Retractor • Surgical scissors • Nasogastric tubes (10-16 FG) • Tourniquet • Resuscitators (adult and paediatric) • Suction apparatus
Medicines & commodities	• Oxygen (cylinders or concentrators) • Skin disinfectant • Sutures (absorbable and non-absorbable) • Ketamine (injectable) • Lidocaine (1% or 2% injectable)

Figure 28 shows the percentage availability of these tracer items in facilities that offered basic surgery in 2011 and 2012. No facility had all 15 items; on average, facilities had seven of the 15 tracer items. While 86% of facilities providing basic surgery had skin disinfectant in stock on the day of the assessment, only half had sutures. Availability of ketamine and oxygen was low, as these items are generally only used in hospitals. The overall readiness score was stable from 2011. Availability of some equipment items such as tourniquet appears to show an increase since 2011, while presence of trained staff shows a decrease.

Figure 28: Percentage of facilities that have tracer items for basic surgery among facilities that provide this service (N_{2011}=135, N_{2012}=61). Source: SARA 2011 & 2012



BLOOD TRANSFUSION

The results of the SARA show that blood transfusion services were available at 6% of all health facilities in 2012, including 88% of hospitals. This is comparable to 2011 levels (74%). Due to the small sample of hospitals in 2012, it is not clear whether this represents a true increase. All district-level hospitals are expected to be able to provide blood transfusions. Readiness to provide blood transfusion services was assessed based on the presence of the seven tracer items shown in Table 34.

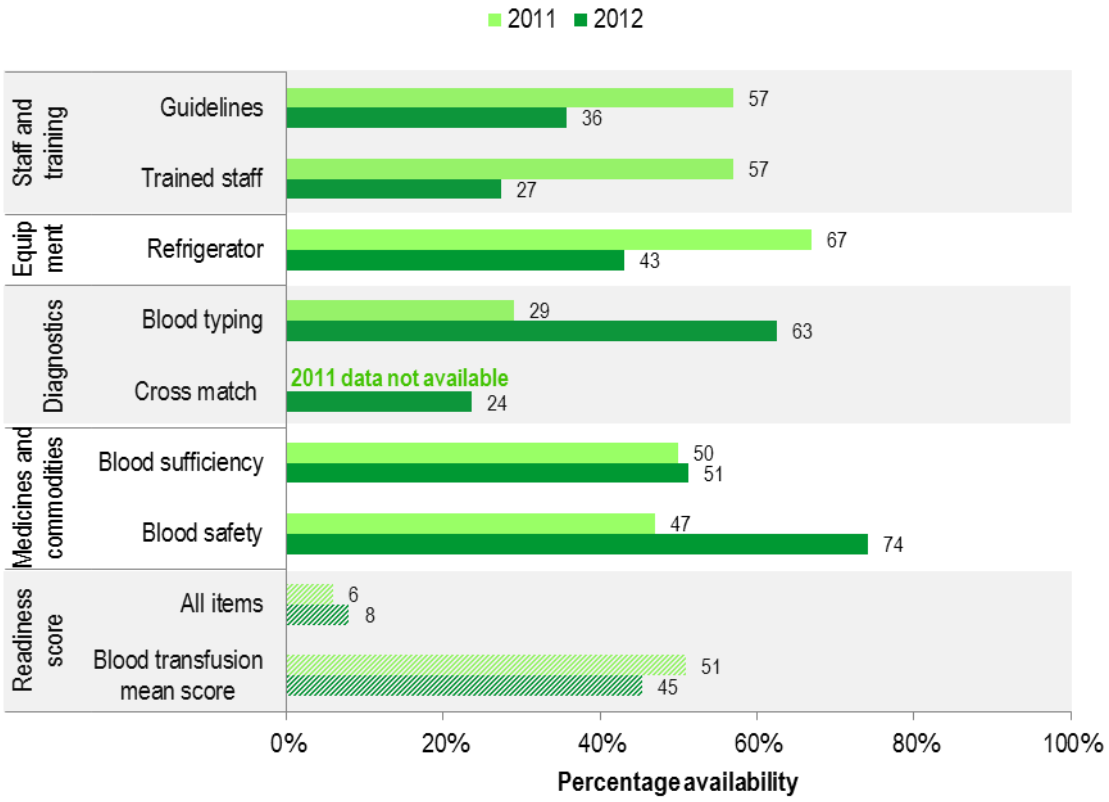
Table 34: SARA tracer items for blood transfusion

Domains	Tracer items (% of facilities with item)

Staff & training	• Guidelines for appropriate use of blood and safe blood transfusion • Staff trained in appropriate use of blood and safe blood transfusion in the past two years
Equipment	• Blood storage refrigerator
Diagnostics	• Blood typing • Cross match testing
Medicines & commodities	• Blood supply sufficiency (no interruption in blood availability in past 3 months) • Blood supply safety (blood obtained from national/regional blood bank OR all blood screened for transfusion transmissible diseases)

Figure 29 shows the percentage availability of these tracer items in facilities that offered blood transfusion services in 2011 and 2012. Approximately one in ten facilities providing blood transfusions had all seven items; on average facilities had 3 of the seven tracer items. The overall readiness score remained stable from 2011. The results appear to show an increase in blood typing capacity (from 29% in 2011 to 63% in 2012) and in blood supply safety (from 47% to 74%), and a decrease in the presence of trained staff, guidelines, and a blood storage refrigerator. However, given that the total number of facilities in the sample providing blood transfusion is so low, these results should be interpreted with caution. As in 2011, approximately half of blood transfusion units had experienced a shortage of blood in the previous 3 months.

Figure 29: Percentage of facilities that have tracer items for blood transfusion among facilities that provide this service (N_{2011}=39, N_{2012}=18). Source: SARA 2011 & 2012



2.9. SERVICE SPECIFIC AVAILABILITY AND READINESS

Comparing service specific availability and readiness across health interventions can provide additional insight into the relative accessibility and service delivery capacity. Figure 30 shows the percentage of facilities providing various maternal and child health services in the 2011 and 2012 assessments. The results show a consistently high proportion of facilities (over 90%) providing key maternal and child health services across both years. Child preventative and curative care and growth monitoring were offered in almost all facilities, while child immunization and delivery care were provided in nine in ten facilities. Adolescent health services were somewhat less widely available, provided in seven in ten facilities overall.

Figure 30: Percentage of facilities providing maternal and child health services, 2011 (N=207) and 2012 (N=106).

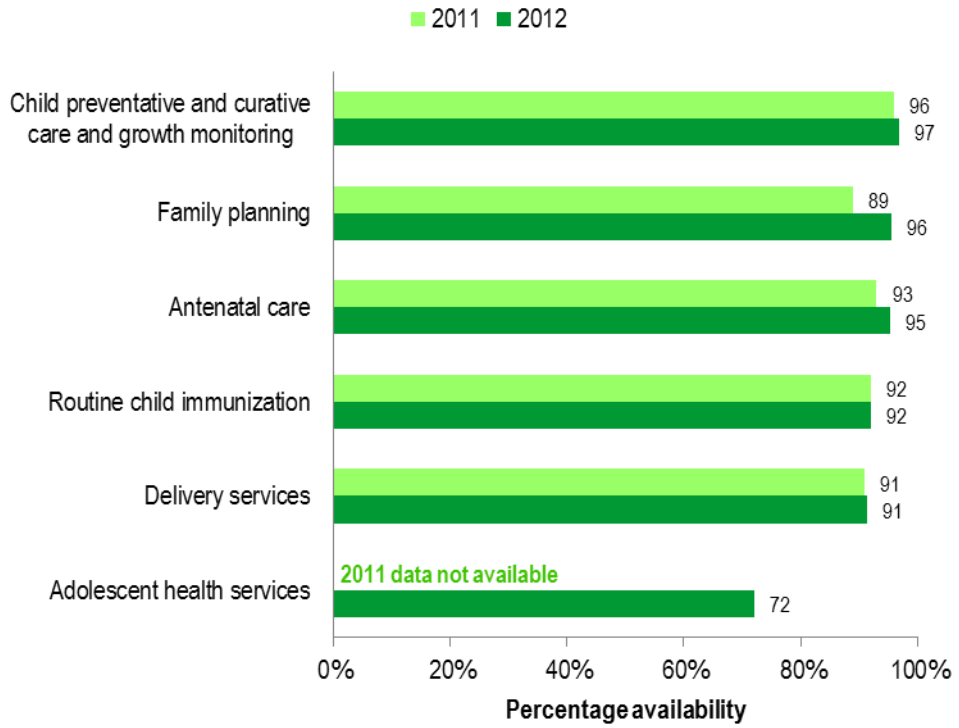


Figure 31 shows an overview of readiness scores (summary mean scores) for MNCH services for the 2011 and 2012 assessments. The results show little change in readiness score for child immunization, family planning, and antenatal care, while there appears to be a slight increase in the scores for child preventive and curative care and for delivery/basic obstetric care services between 2011 and 2012.

Figure 31: Readiness scores for MNCH services in 2011 and 2012.

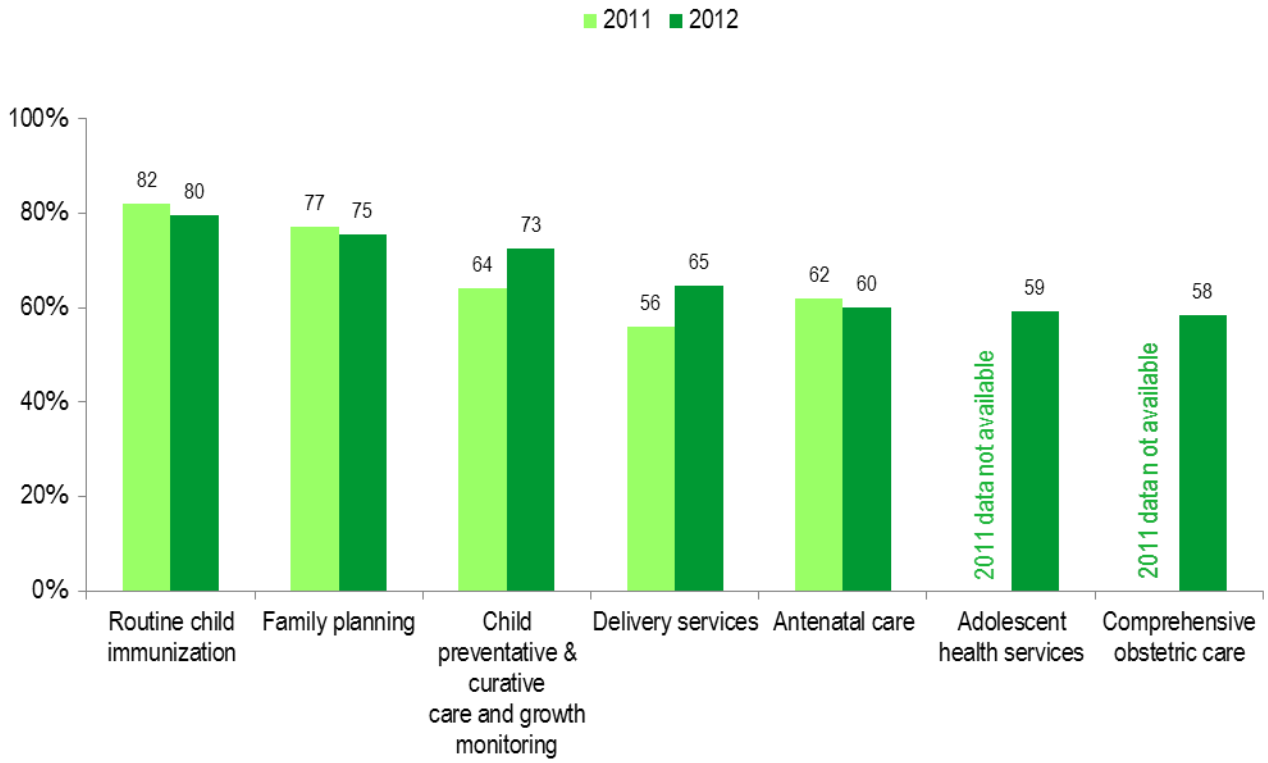


Figure 32 shows a more detailed comparison across MNCH services from the 2012 assessment, including domain scores for trained staff and guidelines, equipment, diagnostics, and medicines and commodities. Child immunization had the highest readiness score, at 80%. Diagnostic scores were low for child care and antenatal care, while the equipment score was low for comprehensive obstetric care.

Figure 32: Overall readiness scores and domain scores for MNCH services in 2012.

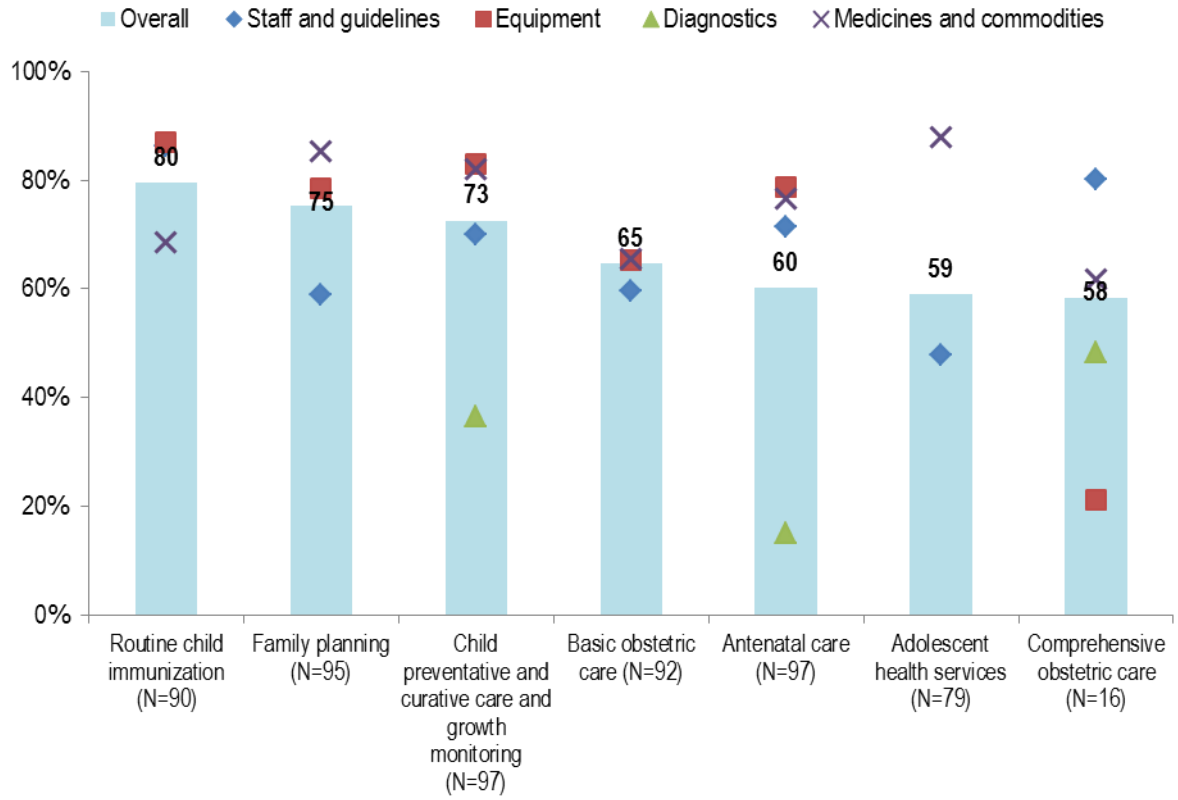


Figure 33shows the percentage of facilities providing infectious and non-communicable disease services in 2011 and 2012. The proportion of facilities providing PMTCT and HIV counselling and testing services appears to have increased from 2011 to 2012, while it has remained constant for other services.Almost all facilities provide malaria (100%) and STI (96%) diagnosis and treatment services. The percentage of facilities providing NCD services, TB, ART, and HIV/AIDS care and support services was much lower.

Figure 33: Percentage of facilities providing infectious and non-communicable disease services, 2011 (N=207) and 2012 (N=106).

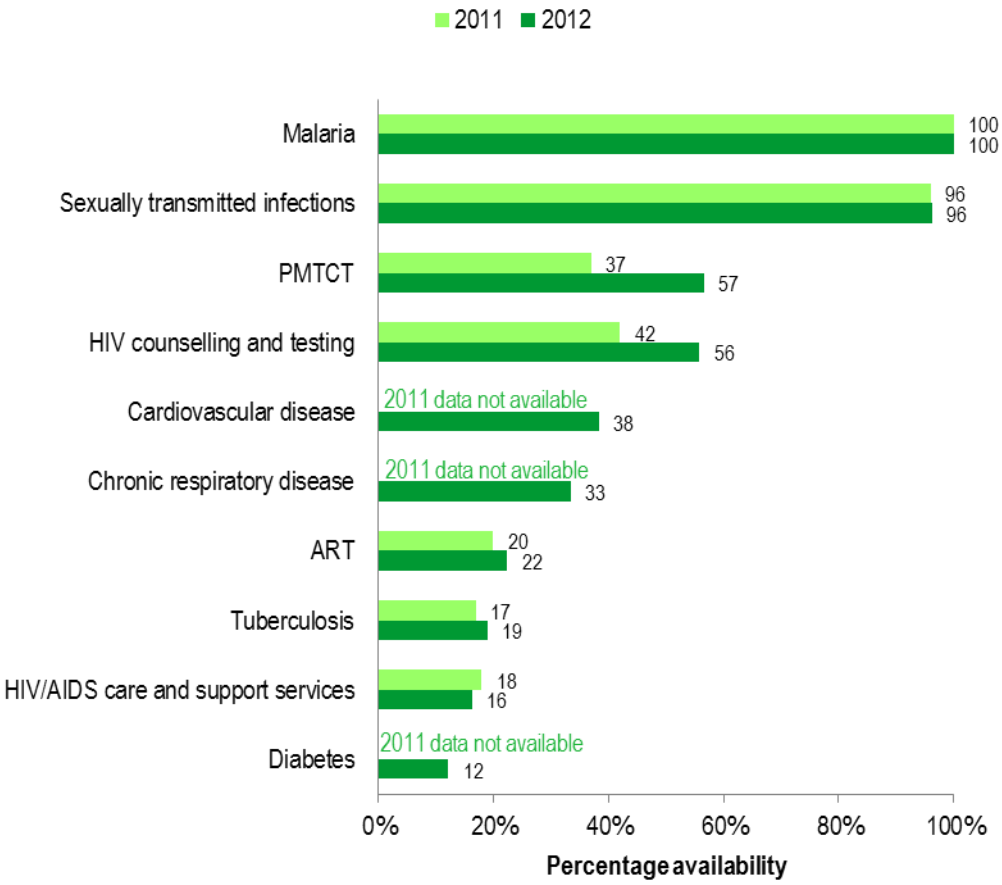


Figure 34shows an overview of readiness scores (summary mean scores) for infectious and non-communicable disease services for the 2011 and 2012 assessments. While PMTCT showed the greatest increase in facilities providing the service in Figure 33(from 37% of facilities in 2011 to 57% of facilities in 2012), there was no change in the readiness score (49-51% in the two years). However, HIV counselling and testing showed an increase in the readiness score (from 64% to 82% in Figure 34) as well as in the percentage of facilities providing the service (from 42% to 56% of facilities in Figure 33). TB and malaria services appear to show a small increase in readiness, while ART shows a small decrease in readiness.

Figure 34: Readiness scores for infectious and non-communicable disease services in 2011 and 2012.

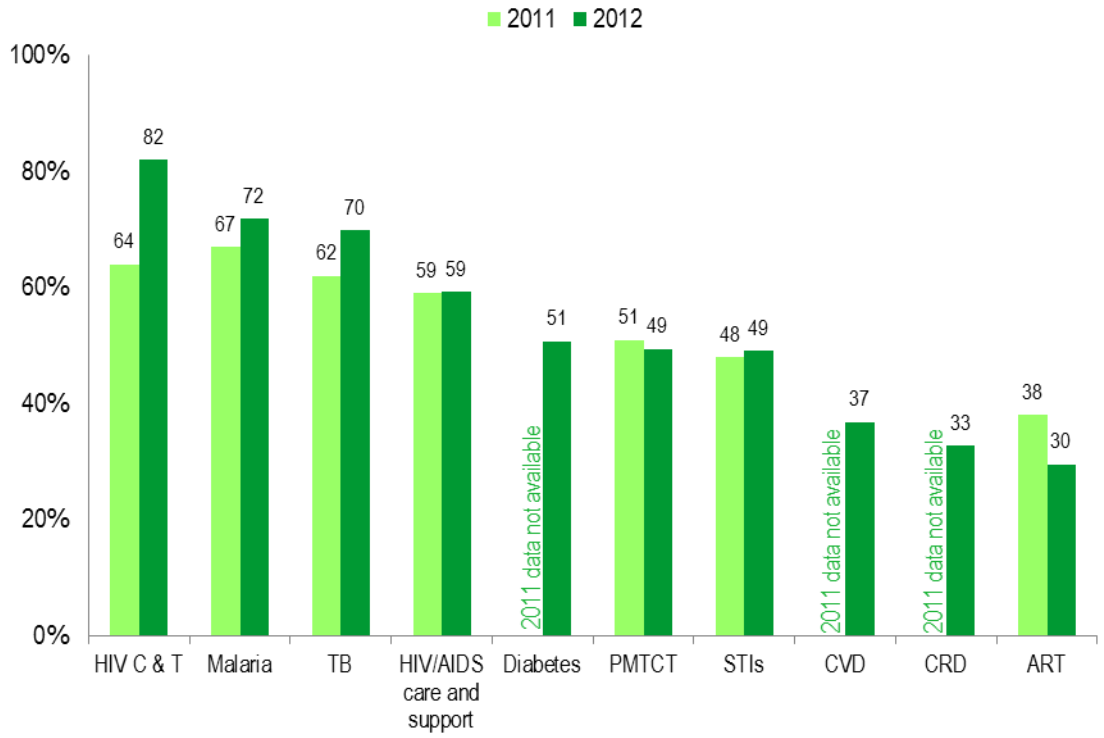


Figure 35 shows more a detailed comparison across infectious and non-communicable disease services from the 2012 assessment, including domain scores for trained staff and guidelines, equipment, diagnostics, and medicines and commodities. The medicines domain showed a tendency to lower readiness scores, such as for PMTCT, malaria, diabetes, and cardiovascular disease. The three non-communicable diseases had the lowest domain scores for trained staff and guidelines; availability of medicines was poor as well. For NCD services, both the percentage of facilities offering the service as well as the readiness of these facilities to provide the service were low.

While only one in five facilities provided TB services, the readiness of the facilities that do provide them was moderately high. In contrast, ART services, which were also offered in one in five facilities on average, had the lowest readiness score as well across all services. Both ART and STI services were affected by very low diagnostic scores.

Figure 35: Overall readiness scores and domain scores for infectious and non-communicable disease services in 2012.