SERVICE AVAILABILITY AND READINESS ASSESSMENT [SARA]

2023 REPORT

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Service Availability and Readiness Assessment (SARA) 2023 REPORT

SUBMITTED TO THE MINISTRY OF HEALTH (MoH), DODOMA – TANZANIA in March 2024

This technical report was prepared by the Ministry of Health (MoH) and President's Office - Regional Administration and Local Government (PO-RALG) in the United Republic of Tanzania in collaboration with Ifakara Health Institute (IHI) with financial support from the Global Fund.

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Contact Information:
Permanent Secretary, Ministry of Health: Mtumba Government Town, P.O. Box 743 Dodoma. Telephone: +255 22 2342000/5, Email: ps@afya.go.tz.
Tanzania SARA Report 2020 Consultant: Ifakara Health Institute – Dar es Salaam Office #5 Ifakara Street Plot 463 Mikocheni P.O. Box 78,373 Dar es Salaam. Telephone: +255 22 2774756, Email: hmasanja@ihi.or.tz

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Foreword

This is the 4th round of the Service Availability and Readiness Assessment (SARA). SARA is a health facility assessment designed to assess and monitor the service availability and readiness of the health sector and to generate evidence to support the planning and management of a health system in a country. What is new in the 4th survey? SARA 2023 has considered Service Availability and Readiness at Referral Hospitals, and primary healthcare facilities (Council/District Hospital, Health Centre and Dispensary) for both the public and private for and not for profit. Specific dental and eye care services have been incorporated.

The SARA has six main components which provide information on the availability of medically trained healthcare workers, healthcare facility physical infrastructure, basic equipment (such as transport for emergencies, power supply, infection control, waste management, and basic equipment), availability of specific services (such as family planning, antenatal care, immunization, tuberculosis, malaria, non-communicable diseases, dental, and eye care), diagnostic capacities, medicines and medical supplies. Furthermore, the assessment provides information on healthcare governance and management.

The MoH, Local Government Authorities, and other stakeholders have the potential to use information generation to improve equity in access and use of healthcare services for citizens, especially marginalised population groups. In the last decade, the government has made substantial investments in the healthcare sector which is in line with Sustainable Development Goals 2030 and the Agenda 2063 goals of "Healthy and well-nourished citizens". Improvements in the health sector within the country cannot be grasped and sustained without the use of evidence in informing decision-making processes, including strategic planning, priority resource allocation, monitoring, and evaluation ofhealth system interventions with a focus on reducing the growing burden of diseases. The government is committed to achieving Universal Health Coverage, ensuring healthy lives, and promoting well-being for all at all ages; hence, undertaking the SARA survey is important.

Finally, on behalf of the Ministry of Health, I would like to express my sincere appreciation to the Global Fund for providing the financial support required for undertaking this study and to Ifakara Health Institute for implementing the SARA survey 2023. These efforts were led by the Monitoring and Evaluation Unit of the Department of Policy and Planning of the Ministry of Health.

Dr. John A. K. Jingu
Permanent Secretary, Ministry of Health Dodoma, Tanzania
March 2024.

Acknowledgement

The implementation of the SARA 2023 survey was participatory, it started with an inception meeting between the Ministry of Health (MoH) and Ifakara Health Institute (IHI), followed by a workshop on Survey Design & Planning & Tools adaptation; recruitment of research assistants and training; field testing of the questionnaire; and data analysis & report writing workshop. In each step, there were representatives from the MoH, and the President's Office - Regional Administration and Local Government (PO-RALG). We sincerely appreciate the representatives from the National Bureau of Statistics (NBS) for technical support in the sampling of the councils/districts and healthcare facilities visited during the implementation of the SARA 2023 survey. Sincere appreciation to IHI SARA 2023 evaluation team (Dr. Honorati Masanja, Dr. Esther Elisaria, Dr. August Joachim, Mr. Samwel Lwambura, Mr. Selemani Mmbaga and Madam Mary Irema).

It was a wonderful experience to work closely with the MoH, PO-RALG, NBS and IHI. A huge appreciation to the Ministry of Health on logistics and field work led by Mr. Claud Kumalija, Mr. Edwin Chalila, Dr. Msafiri Kabulwa, Dr. Erick Kinyenje, Ms. Editha Nkupama, Dr. Fadhili Kibaya, Ms. Lucy Cornel Iria, Mr. Ephraim Magafu, Ms. Khadja Kigotp, Mr. Dickson Kisonga, Ms. Esther Shija, Ms. Peter Kaja, Mr. Ferdinand Ngesha and Ms. Anna Mahendeka and the entire Monitoring and Evaluation team. Thanks to the representatives from the PO-RALG Dr. James T. Kengia, Mr. Ignas Josephat Siame, Ms. Mary Shadrack, Mr. Pius K. Kamana and Dr. Mshana Dastan. We sincerely appreciate the Regional and Council Health Management Teams, District Executive Directors, District Medical Officers and facility-incharges from the sampled facilities for their support during the implementation of the SARA survey

I acknowledge the team of technical staff in the MOH who convened to review and provide comments on the draft report before finalization, these include Dr. Elias Kwesi, Dr. Minyikondo Amir, Dr. Omary Ubuguyu, Dr. Pius Horumpembe, Mr. Claud Kumalija, Dr. Inzibet Rugangila, Mr. Edwin Chalila, Ms. Trust Nyondo, Ms. Beshuu Salehe, Ms. Prisca Jackson, Mr. Khalifa Munisi, Ms. Lucy Iriya, Mr. Gisbeti Msigwa, Mr. Hussein Mavunde, Ms. Evamary Ludovick, Mr. Frankline Fredrick, Ms. Juliana Mawala, Ms. Editha Nkupama, Mr. Kiiza, Kilanilwa and the members of Chief Medical Officer management team in the Ministry those provided written inputs.

The MoH is indebted to the Global Fund for continued financial and technical support to conduct the SARA survey 2023. The 4th periodic evaluation provides invaluable information on the investments made by the Government of the United Republic of Tanzania in the health sector. The government is committed to using evidence generated and recommendations to improve health delivery in the country.

Prof. Tumaini Nagu

Chief Medical Officer, Ministry of Health, Dodoma, Tanzania

March 2024

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Acronyms

AIDS	Acquired immune deficiency syndrome
ANC	Antenatal care
BEmONC	Basic emergency obstetric and newborn care
CRD	Chronic respiratory disease
DED	District Executive Directors
DMOs	District Medical Officers
FBOs	Faith Based Organizations
FBOs	Faith Based Organizations
GF	Global Fund
GSR	General Service Readiness
HMIS	Health Management Information System
IHI	Ifakara Health Institute
IMCI	Integrated Management of Childhood Illness
IPC	Infection prevention and control
KCMC	Kilimanjaro Christian Medical Centre
M&E	Monitoring and Evaluation
MoH	Ministry of Health
MoHCDGEC	Ministry of Health Community Development Gender, Elderly and Children
NBS	National Bureau of Statistics
NEMLIT	National Essential Medicines List
NGO	Non-government organization
ODK	Open Data Kit
PC	Personal computer
PORALG	President's Office – Regional Administration and Local Government
PPS	Probability Proportional to Size
RAs	Research Assistants
RHMIS	Regional Health Management Information System
RMNCAH	Reproductive, Maternal, Newborn, Child and Adolescent Health services

RRH	Regional Referral Hospital
RSSH	Resilient Sustainable Systems for Health
SARA	Service Availability and Readiness Assessment
SDGs	Sustainable Development Goals
TB	Tuberculosis
USD	United States Dollar
WHO	World Health Organization

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Executive Summary

Introduction: Service Availability and Readiness Assessment (SARA) 2023 is the 4th wave of national healthcare facility surveys in Tanzania. The survey is designed to assess and monitor the service availability and readiness of the health sector and to generate evidence to support the planning and managing of a health system in a country.

What is new in the fourth SARA survey? SARA 2023 has considered Service Availability and Readiness at the referral hospitals, national specialized healthcare facilities and primary healthcare facilities (district hospitals, health centres and dispensaries) for both the public and private for and not for profit in Tanzania. Eye and dental care services were included.

Why SARA survey? In Tanzania, the initial SARA 2012 survey established a baseline data following the investments which were done by the government as well as technical support provided by various stakeholders. The survey provides important information into both improvements and gaps, thereby informing program managers, technical partners and donors, as well as officials of the Ministry of Health at District, Regional and National levels.

The estimates of service availability and readiness highlights gaps that are obstacles to universal access to health services which should be addressed by all stakeholders. Generally, the SARA surveys fill an important information gap in monitoring health system performance and universal health coverage by providing objective and regular information on all major health programmes that feeds into country planning cycles.

Methods: All hospitals and health centres in each of the selected councils were included in the study. In total 661 facilities (365 dispensaries, 193 health centres and 103 hospitals) were sampled for the survey in 2023. The facilities constituted 251 private and 410 public facilities. Out of 661, 107 (16.2%) are Faith Based Organizations (FBOs), 101 (15.3%) are private for profit, 384 (58.1%) are owned by Local Government Authorities, 8 (1.2%) military based, 14 (2.1%) under MoH.

MoH facilities were purposively selected and these included, one national hospital [Muhimbili National Hospital], two specialized hospitals [Milembe Hospital & Ocean Road], three zone hospitals [Mtwara Hospital, Benjamin Mkapa Hospital & KCMC Hospital] and eight regional referral hospitals Njombe RRH, Morogoro RRH, Tumbi RRH, Geita RRH, Seketure RRH, Kitete RRH, Bombo RRH & Dodoma RRH), 1 (0.2%) are under Police, 3 (0.5%) under investor (for foreigners). Sampling of healthcare facilities was conducted in collaboration with the National Bureau of Statistics (NBS). The response rate was 95% (n=628).

Key Findings:

- **General Service readiness**: The SARA 2023 survey findings on general service readiness show that healthcare facilities are ready by 71% to provide the basic services. This is 2% higher compared to the general service readiness in SARA 2020 (69%). Generally, over the past 11 years, since 2012, there has been an improvement of over 30% in the readiness of facilities to provide basic services.

- **MNCAH Services**: The overall availability of MNCAH services was higher than 80% for antenatal care (88%), child preventive and curative services (86%), child immunization (86%), adolescent health services (84%), and family planning (84%). Facility readiness to provide such services was high, except for adolescent health services (32%), family planning (45%), basic obstetric care (66%), and comprehensive obstetric care (63%). Less than 10% of the facilities had experienced stock out of the vaccines within 3 months prior to the survey.
- **HIV, TB, and Malaria Services**: Service availability for malaria was 99%; for tuberculosis, 53%; HIV counselling and testing, 91%; ARV prescription and client management, 59%; and PMTCT, 81%. Service readiness was 62% for malaria, 52% for tuberculosis, 51% for HIV counselling and testing, 29% for ARV prescription and client management, and 52% for PMTCT. Malaria services were available at 99% of the facilities, indicating near-universal coverage.
- **Non-communicable Diseases Services**: Availability of services was below 50% (diabetes diagnoses/management was 45%, cardiovascular disease was 41%, chronic respiratory disease was 24%, and cervical cancer was 20%), whereas service readiness was high for non-communicable diseases (diabetes diagnoses/management, 58%; cardiovascular disease, 54%; chronic respiratory disease, 50%; and cervical cancer, 69%). Availability and readiness were higher in hospitals than in health centres and dispensaries.
- **Other services:** Overall, the availability of basic surgery services was at 44%, with a readiness of 53%. The availability of primary eye healthcare services stood at 10%, with a readiness of 46%. Meanwhile, dental services were available in 11% of facilities, with a readiness of 35%.

	Facility Level	Hospitals		Health Centers		Dispensaries		Overall	
	Availability (A)/Readiness (R)	A	R	A	R	A	R	A	R
MNCAH Service	Antenatal care	92	86	96	85	87	72	88	74
	Child preventative and curative care	93	85	94	81	85	73	86	75
	Routine child immunization	93	81	93	82	84	75	86	76
	Adolescent health services	90	48	92	47	82	29	84	32
	Family planning	82	69	87	57	83	42	84	45
	Basic obstetric care	93	85	89	78	66	62	71	66
	Comprehensive obstetric care**	88	74	54	70	-	-	63	71
HIV, TB, and Malaria	Malaria	99	76	100	73	99	60	99	62
	Tuberculosis	79	73	81	72	47	44	53	52
	HIV counselling and testing	95	80	96	68	89	46	91	51
	HIV care and support services	82	80	71	82	40	63	46	68
	ARV prescription & client management services	85	57	81	42	54	24	59	29
	PMTCT	93	69	92	63	78	48	81	52
	STI services	98	78	96	80	80	66	83	69
Non-communicable diseases	Diabetes diagnosis/management	93	79	87	73	35	48	45	58
	Cardiovascular diagnosis/management	87	80	79	71	32	43	41	54
	Chronic respiratory diagnosis/management	57	76	62	62	16	35	24	50
	Cervical cancer diagnosis	74	77	59	78	10	57	20	69
Other services	Basic surgery	94	88	77	75	36	39	44	53
	Comprehensive surgery	87	66	-	-	-	-	87	66
	Primary Eye Health care services	72	83	20	42	5	28	10	46
	Dental services	79	75	33	34	3	13	11	35

** Hospitals and health centres only.

Conclusion: There has been improvement in general service availability and readiness from 2012 to 2023. Some of the services such as malaria and immunization have shown more improvement over time. Readiness for the healthcare facilities to provide non-communicable services is high, but availability is low. There is a need to capacitate the facilities ensuring healthcare professionals are available and are capable of providing such services.

1.0 Background

The Service Availability and Readiness Assessment (SARA) is a health facility assessment tool designed to assess and monitor the service availability and readiness of the health sector and to generate evidence to support the planning and managing of a health system. SARA is designed as a systematic survey to generate a set of tracer indicators of service availability and readiness. The survey objective is to generate reliable and regular 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.

The Service availability and readiness assessment is designed to function as a systematic tool to support annual verification of data and service delivery at the facility level. It intends to cover public as well as private and faith-based health facilities. The goal of the survey is to provide evidence-based data on health system progress to inform the annual health sector review, identify gaps and weaknesses responsible for sub-optimal service provision and intervention coverage that need to be addressed, and provide a baseline for planning and monitoring scale-up intervention for service delivery improvement. From that perspective, SARA serves as an M&E tool of the national health strategy and provides key information on progresses of the health system strengthening over time (World Health Organization, WHO, 2015).

In Tanzania, three waves of SARA surveys have been conducted in 2012, 2017 and 2020. In 2012 there were 1.5 health facilities per 10,000 population, ranging from a minimum of 0.6 in Geita to a maximum of 6.0 in Sumbawanga. Of the sampled 1,297 facilities there were 8,838 professional health workers, equivalent to 7.1 core health personnel per 10,000 population. Whereas medical doctors made up 6% of the workforce sampled, non-physician clinicians accounted for 32%, nurses 48% and midwifery professionals made up the remaining 14% (SARA, 2012). The overall general service readiness (GSR) index score was 42. In 2017, the GSR index score was 57%. Basic amenities domain was the highest with a mean score of 82 out of 100 while essential medicines scored the lowest with a mean score of 38 out of 100 (MoHCDGEC, 2017). Whereas the 2020 SARA results indicated improvement in service availability for several indicators when compared to the 2017 SARA results. The total number

of physicians, nursing and midwifery personnel per 10,000 population increased from 7.6 reported in 2017 to 10.4, still lower in comparison to the 23 health professions per 10,000 population recommended by the WHO. Irrespective of facility ownership type, 1.5 health facilities are currently used by 10,000 people on average. General Service Readiness: The overall capacity of health facilities to provide general health services increased from 57% in 2017 to 69% in 2020 (MoHCDGEC, 2020).

The overall objective of the Service Availability and Readiness Assessment is to assess on a regular basis service delivery (availability and readiness) and conduct data verification in public and private facilities. This evidence-based information collected as an independent verification aims to provide regular and reliable information on progress and performance of the health system. It is intended to be conducted according to the country planning cycle to provide a one-time key information on service delivery and data quality of the Health Management Information Systems (HMIS) (data verification and DQRC) to inform the health sector review

The Service Availability and Readiness Assessment tool are 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. Tracer indicators aim to provide objective information about whether a facility meets the required conditions to support provision of basic or specific services with a consistent level of quality and quantity. Summary or composite indicators, also called indices, can be used to summarize and communicate information about multiple indicators and domains of indicators. Indices can be used for general and service-specific availability and readiness.

1.1 Focus Areas

There are three focus areas of SARA:

1. Service availability refers to the physical presence of the delivery of services and encompasses health infrastructure, core health personnel and aspects of service utilization.
2. 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 amenities, basic equipment, standard precautions for infection prevention, diagnostic capacity and essential medicines.
3. Service-specific readiness refers to the ability of health facilities to offer a specific service, and the capacity to provide that service measured through consideration of

tracer items that include trained staff, guidelines, equipment, diagnostic capacity, and medicines and commodities.

1.2 Main Objective and Specific Objectives

Main Objective

The overall goal of SARA is to establish general and specific service availability and readiness scores for the health system in Tanzania.

Specific Objectives

1. To detect change and measure progress in the health system strengthening over time.
2. To plan and monitor the scale-up of interventions that are key to achieving the Sustainable Development Goals (SDGs).
3. To generate the evidence-base to feed into the country annual health reviews.
4. To support national planners in planning and managing health.

1.3 Specific Questions

1. What is the availability of basic packages of essential health services offered by public and private health facilities (Dispensaries, Health Centres, Council Hospitals, Regional Referral Hospitals and, Specialised Hospitals)?
2. How many clinically trained staff currently assigned to, employed by, or seconded to Dispensaries, Health Centres, Council Hospitals, Referral Hospitals and Specialised Hospitals?
3. Are there resources and support systems available to assure a certain quality of services?
4. How well prepared are Dispensaries, Health Centres, Council Hospitas and Referral Hospitals to provide high-priority services such as reproductive health services, maternal and child health services, and infectious disease diagnosis and treatment?
5. What are the strengths and weaknesses in the delivery of key services at health-care facilities?

1.4 Rationale of SARA

In the last decade, the government of Tanzania has made substantial investment in the healthcare sector which is in line with the Agenda 2063 goals of the "Healthy and well-nourished citizens". Improvements in the health sector within the country cannot be grasped and sustained without the use of evidence in informing decision-making processes, including

strategic planning, priority resource allocation, monitoring and evaluation of the health system interventions with a focus on reducing the growing burden of diseases. The government is committed to achieving Universal Health Coverage (UHC), ensuring healthy lives and promoting well-being for all at all ages. The SARA survey generates evidence and recommendations that will support strategic planning and subsequent planning in the improvement of health service delivery in the country. Furthermore, information generated will be used to inform the ongoing initiatives to strengthen the Health Management Information System to ensure timely and quality data that can be used in the informed decision-making process.

2.0 Methods

2.1 Planning process

A consultative meeting was held with the MoH, Monitoring and Evaluation Section and the Health System Strengthening Coordination Unit to discuss progress on planning for adaptation of the SARA tools (2012, 2017 & 2020) to the Tanzanian context. The meeting took place on 25th – 27th September 2023 in Morogoro. The tool was amended, through inclusion of the new items as per the ministry guidelines.

2.2 Selection of Health Facilities

A list of all the operating healthcare facilities was extracted from the MoH health facility portal (http://hfrportal.moh.go.tz/), in September 2023. Health laboratories and specialized clinics were excluded in the sampling frame because they do not follow the national health management reporting system. The final validated master list had 9,221 facilities (431 Hospitals, 1,104 Health Centres enters and 7,686 Dispensaries). The health facility selection took into consideration urban and rural, ownership and management authority. Health facilities located in towns, cities and municipal councils were considered urban, otherwise rural.

A two-stage sampling design was adopted in sampling of primary and secondary level facilities. The first stage involved a Probability Proportional to Size (PPS) sampling of councils based on number of facilities in the council. Among 184 councils with operating facilities 26 councils were selected. The second stage involved systematic random sampling of dispensaries within each of the selected councils, while all hospitals and health centres within these selected

councils were included in the sample. Referral facilities were purposively sampled to ascertain the representativeness.

A total of 661 facilities (365 dispensaries, 193 health centres and 103 hospitals) were sampled for survey 2023 (Table 1). The facilities constituted 251 private and 410 public facilities. Out of 661, 107 (16.2%) are Faith Based Organizations (FBOs), 101 (15.3%) are private for profit, 384 (58.1%) are owned by Local Government Authorities, 8 (1.2%) military based, 14 (2.1%) under MoH. MoH facilities included one national hospital [Muhimbili National Hospital], two specialized hospitals [Milembe Hospital & Ocean Road (*were included in few areas this is reflected in the denominator of various indicators*)], three zone hospitals [Mtwara Hospital, Benjamin Mkapa Hospital & KCMC Hospital] and eight regional referral hospitals Njombe RRH, Morogoro RRH (*pilot site, data was not incorporated in the main analysis/report*), Tumbi RRH, Geita RRH, Sekou-Toure RRH, Kitete RRH, Bombo RRH & Dodoma RRH), 1 (0.2%) under Police and 3 (0.5%) under investor (for foreigners). Sampling of healthcare facilities was conducted in collaboration with the National Bureau of Statistics (NBS). Figure 1 presents information on the distribution of the surveyed healthcare facilities in Mainland Tanzania.

Table 1: Health Facility Level and Ownership

Ownership Authority	Dispensary	Health Centre	Hospital	Total	%
Faith Based Organization (FBO)	55	29	23	107	16.2
For Profit	63	21	17	101	15.3
Investor (For Foreign)	0	1	2	3	0.5
Local Government Authority	230	129	25	384	58.1
Military	0	2	6	8	1.2
Referral Facilities			14	14	2.1
National Hospital			1		
Specialized Hospitals			2		
Zone Hospitals			3		
Regional Referral Hospitals			8		
Non-governmental organizations	4	1	4	9	1.4
Parastatal	0	2	1	3	0.5
Police	0	0	1	1	0.2
Company/Business Name	13	8	10	31	4.7
Total	365	193	103	661	100

2.3 Sample and Sample Weights

The baseline value for sample size calculation was the General Service Readiness Index (p=0.66), as determined by the 2020 SARA survey. The sample size was jointly discussed with the IHI, MoH and NBS while assuming a marginal error of 0.15, 95 % confidence interval and design effect of 1.2. The sample size was calculated separately for each facility ownership, facility type and rural/urban and final sample obtained by summing domain samples. For the primary and secondary health care facilities, the sample weights were calculated as the reciprocal of the product of the probability of selecting councils with that of selected health facilities from each of the sampled councils. Referral hospitals weights were constructed separately by facility type (National, Zonal, Special and RRH) each selected facility assigned weight based on representativeness from total number of facilities.

2.4 Data Collection and Analysis

Training of Research Assistants (RAs)

A comprehensive training program was conducted from October 10th to October 13th, 2023, at VETA Morogoro where a total of 81 skilled RAs were trained. This training initiative was established through a collaborative effort between the IHI and MoH. The training program spanned three days of intensive classroom instruction, followed by an additional day dedicated to the piloting of data collection tools in nine healthcare facilities. These facilities include the Morogoro Regional Referral Hospital, 4 Health Centers, and 4 Dispensaries. Data from the pilot sites was not incorporated in the main analysis/report. During the pilot exercise, RAs encountered certain challenges related to tool administration. Notable issues included translation errors in some textual content and difficulties in understanding the skips inherent in certain questions. However, these challenges were promptly identified and rectified. Subsequently, all trained teams were allocated to their respective regions.

Data Collection

Data collection took place from 16th – 27th October 2023 using electronic devices **(**Samsung tablets) pre-programmed with ODK application. Trained research assistants were allocated based on the number of sampled healthcare facilities across the council. Interview were administered to each department representative, most of data collection items required response from interviewee and verification of physical existence of items. This was followed by study monitors data verification. All data were uploaded to the IHI central data server daily

during fieldwork allowing instant data quality control and assurance. Data quality check was performed every day through the duration of data collection, any identified errors, missing information was fixed before moving to another healthcare facility.

Field Supervision

This was done jointly with the team from IHI and Monitoring and Evaluation department of the MoH to ensure accurate data collection and adherence to ethical standards. The supervisors accompanied RAs to the field and in some instances revisited health facilities to correct or verify information collected by the enumerator. Supervisors were responsible for daily logistics, such as paying a courtesy visit to regional and council authorities before the team arrived, while a statistician/data manager was checking the quality of incoming data and addressing all inconsistencies daily.

Validity and Reliability

To ensure validity and reliability, subject matter experts from MoH and PO-RALG reviewed the tool before training of RAs and during training and piloting of the tool. The tool was translated to Swahili and back translated to English to ensure the meaning is maintained. The survey team went through each element of the questionnaire to check the contents and consistency of questions. Research Assistants were trained to reduce inter and intra-personal variability.

Data Analysis

Data cleaning and analysis was performed using STATA version 18 software (Stata Corp, College Station, TX, USA) for Windows adjusting for the survey design. The SARA WHO data analysis protocol guided the analysis with general results for each module presented by facility type, managing authority, and residence (rural/urban).

3.0 Results

3.1 Response Rate and Distribution of Visited Healthcare Facilities

The targeted sample size was 661 healthcare facilities across the Mainland Tanzania. The response rate was 95% (628) (Table 2). SARA 2023 survey team could not manage to collect information from 8 healthcare facilities which were under military authority because of the delay in getting permission from the responsible authorities. Other reasons for not achieving the target included logistical challenges (transportation and infrastructure barriers) to reach

the facilities (15), newly constructed healthcare facilities (7) and service provision suspended after inspection from the healthcare managers (3).

Table 2: SARA 2023 Response Rate and Distribution of Visited Facilities

	Referral hospital	Hospital	Health Center	Dispensary	Total
Urban/rural					
Urban	13	38	60	80	191
Rural	0	39	130	268	437
Managing authority					
Government/public	12	25	130	227	394
NGO/not-for-profit	0	5	2	3	10
Private-for-profit	0	27	33	78	138
Mission/faith based	1	20	25	40	86
Total interviewed	13	77	190	348	628
Sampled	13	85	196	365	661
Response rate	100	90.6	96.4	95.1	95

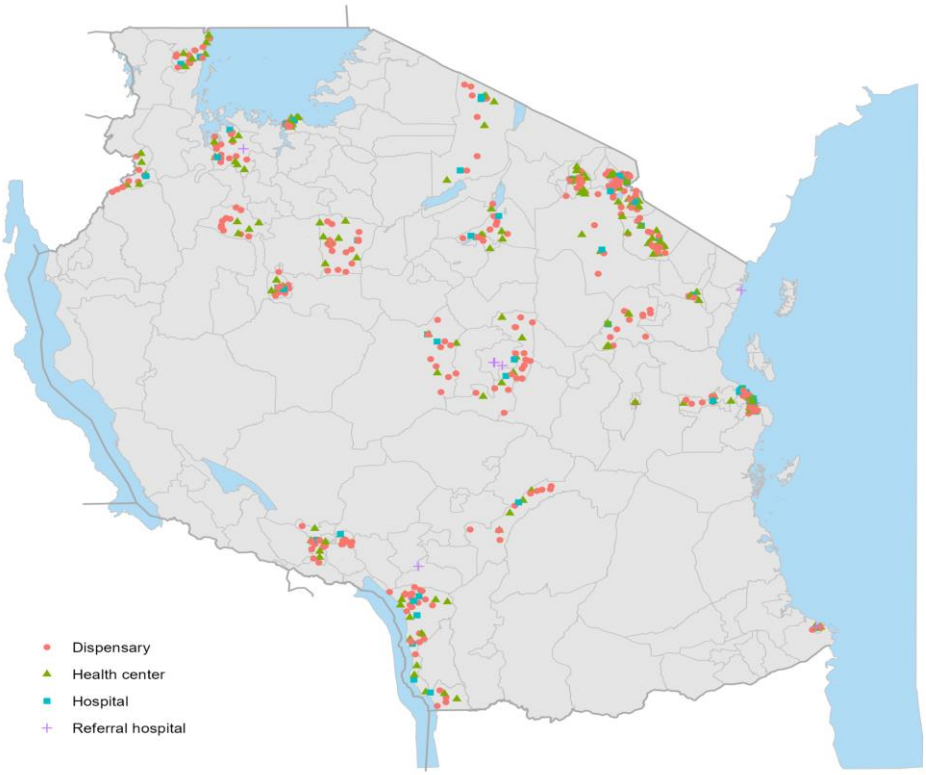


Figure 1: Map Showing the Distribution SARA 2023 Survey Facilities

3.2 Service Availability

The government of the United Republic of Tanzania prioritises health-related issues and feels that every Tanzanian has the right to a healthy life. A nation's ability to realise faster development and the SDGs, which have been agreed upon by other countries worldwide, depends on its population's health. The availability of healthcare outlets is accessed using the facility density. Table 3 describes the healthcare facility density from the sampled districts/councils/municipalities. Of the councils visited, Geita DC, Temeke MC, and Ushetu DC had the lowest facility density per 10,000 population of 0.7, 1and 1 facility per 10,000 population, respectively. In contrast, whereas the Kibaha DC, Mwanga DC, and Ludewa DC had the highest facility density of 3.1, 4.2 and 5.3 per 10,000 population, respectively. On the national scale, the mean number of facilities per 10,000 population was 1.9, which is 0.4 higher than the reported facility density in SARA 2020. This underscores the improved availability of healthcare outlets.

Table 3: Healthcare Facility Density

Council	Population (2022)	Number of facilities	Facility density per 10,000 population
Babati DC	375,200	59	1.6
Bukoba DC	322,448	45	1.4
Chamwino DC	486,176	76	1.6
Geita DC	1,035,214	73	0.7
Igunga DC	546,204	78	1.4
Ilemela MC	509,687	55	1.1
Kakonko DC	178,419	35	2.0
Kibaha DC	123,367	38	3.1
Kilindi DC	398,391	51	1.3
Kinondoni MC	982,328	146	1.5
Korogwe TC	86,551	19	2.2
Ludewa DC	151,361	80	5.3
Manyoni DC	279,069	43	1.5
Mbeya DC	371,259	86	2.3
Meru DC	331,603	68	2.1

Council	Population (2022)	Number of facilities	Facility density per 10,000 population
Mlimba DC	292,536	45	1.5
Moshi DC	535,803	115	2.1
Mtwara MC	146,772	29	2.0
Mwanga DC	148,763	62	4.2
Ngorongoro DC	273,549	40	1.5
Nyasa DC	191,193	37	1.9
Same DC	300,303	75	2.5
Simanjiro DC	291,169	50	1.7
Tabora MC	308,741	52	1.7
Temeke MC	1,346,674	132	1.0
Ushetu DC	390,593	40	1.0
Total	10,403,373	1,629	1.9

Note: DC – District Council; MC – Municipal Council; TC – Town Council

3.3 Density of Healthcare Professionals

It is widely acknowledged that a minimum density threshold of 2.3 professional health workers (doctors, nurse and midwives) per 1,000 is required to at least offer effective health service delivery (MoHSW, 2013). The SARA 2023 survey collected information on the number of generalist medical doctors, specialist medical doctors, generalist medical doctors - part time, specialist medical doctors - part time, non-physician clinicians, nursing professionals, and midwifery professionals (Table 4).

Of the councils visited it was noted that core health personnel including physicians, non-physician clinicians, nursing professionals, and midwifery professionals per 10,000 population was 1.3 for dispensaries, 3.0 for health centres and 4.1 for hospitals. Furthermore, it was realized that core health personnel per 10,000 population was 2.9 for government/public, 2.3 for mission/faith based, 0.3 for NGO/not-for-profit and 2.8 for private-for-profit. Also, for the rural settings it was 3.9 while for the urban settings it was 4.4. Overall, it was 8.8 health personnel per 10,000 population (Table 4). Nationally, there were 8.4 health professionals per 10,000 population. This is likely an underestimate, as the total population of sampled districts was used in the calculation, but not all facilities from the respective councils were visited.

Table 4: Density of Healthcare Professionals

Background characteristics	Population	Generalist medical doctors	Specialist medical doctors	Generalist medical doctors - part	Specialist medical doctors - part	Non-physician clinicians	Nursing professionals	Midwifery professionals	Core health personnel per 10,000 population (1), (2)
Level of care									
Dispensary	10,403,373	44	0	13	0	1,020	123	107	1.3
Health center	10,403,373	343	0	17	12	1,126	1,243	341	3.0
Hospital	10,403,373	541	43	29	45	1,262	1,930	384	4.1
Managing authority									
Government/public	10,403,373	443	11	2	0	168	1,900	491	2.9
Mission/faith based	10,403,373	132	8	5	1	1,625	414	158	2.3
NGO/not-for-profit	10,403,373	43	0	4	0	100	176	31	0.3
Private-for-profit	10,403,373	310	24	49	55	1,516	806	152	2.8
Rural/Urban									
Urban	10,403,373	547	34	50	55	1,816	1,773	258	4.4
Rural	10,403,373	381	9	9	1	1,593	1,523	574	3.9
Total	10,403,373	928	43	59	56	3,408	3,296	832	8.3

(1) Core health personnel include physicians, non-physician clinicians, nursing professionals, and midwifery professionals. This includes part-time physicians who are given the value of 0.5 in the scoring.
(2) Figures exclude national, referral and specialist hospitals

Service Readiness

Basic Amenities

As stipulated with the MoH health quality assurance division basic standards for health facilities, volume 2, 3 & 4 healthcare services should have reliable supply of adequate, clean and safe water, adequate space, effective ventilation, and adequate lighting system for the rooms offering different kinds of services (MoHCDGEC, 2017a; MoHCDGEC, 2017b; MoHCDGEC, 2017c). Furthermore, the management should ensure that waste disposal is done in compliance to respective regulations and principles of Infection Prevention and Control (IPC). There should be final waste disposal facilities such as high-tech/ demontfort incinerator, ash pit, and placenta pit. Transport is a vital resource for a health centre due to

its multiple roles. To adequately manage referral services, a health centre must have at least one ambulance (preferably a four-wheeler). Seven elements were assessed during the 2023 SARA survey including power source, improved water source within 500 metres of facility, consultation room with auditory and visual privacy for patient consultations, access to adequate sanitation facilities for clients, communication equipment (telephone or short-wave radio), computer with email/Internet access, and emergency transportation. Figure 2 below shows the percentage of facilities with basic amenities items available (for additional information please see supplementary Table S1). Findings on amenities indicated that: -

- Mean availability of amenities tracer items for dispensaries was 55%, 70% health centre, 81% council/district hospitals and 90% referral hospitals.
- In terms of managing authorities for the government/public mean availability was 55%, 76% for non-governmental organization (NGO)/not-for-profit, private-for-profit was 67% and mission/faith based was 68%.
- Only 3% of all the surveyed healthcare facilities had all the 7 amenities tracer items (Figure 2). Detailed analysis showed that only 1% of dispensaries, 10% of health centres, 20% of district hospitals and 51% of all the referral hospital had all the items.
- 90% of the facilities' waste disposal is done in compliance with respective regulations and IPC, whereas 84% have a reliable supply of adequate, clean and safe water. This was distributed as 88% dispensaries, 96% health centres, 99% district hospitals and 100% referral hospitals.
- 34% of the facilities had a computer with internet. It was observed that only 27% of dispensaries, 61% health centres, 87% for district hospitals and 100% for referral hospitals have computers with internet.
- 13% of facilities have at least one ambulance to adequately manage referral services.

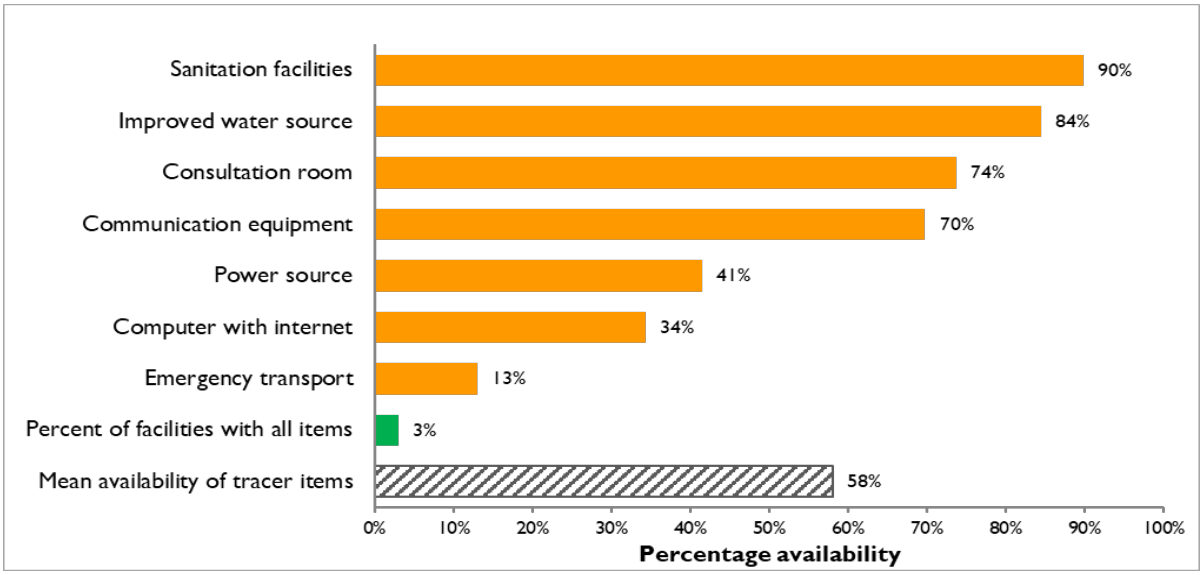


Figure 2: Percentage of Facilities with Basic Amenities (N=628)

Basic Equipment

A health facility must have essential equipment before offering different kinds of services. Also, it shall ensure periodic calibration, verification, validation and maintenance of all medical equipment (MoHCDGEC, 2017a; MoHCDGEC, 2017b; MoHCDGEC, 2017c). The following six basic equipment were considered during the survey (adult scale, child scale, thermometer, stethoscope, blood pressure apparatus and light source) (Figure 3, & supplementary Table S2). Findings on essential equipment indicates that: -

- On average, facilities had 5 of 6 tracer basic equipment, for an average basic equipment readiness score of 87 out of 100. Mean availability of amenities tracer items for dispensaries was 82%, 92% for health centres, 97% for district hospitals and 96% for referral hospitals. In terms of managing authorities, government/public (83%), NGO/not-for-profit (90%), private-for-profit (85%) and mission/faith based (89%).
- Only 40% of all the surveyed healthcare facilities had all the 6-basic equipment (Figure 2). Detailed analysis showed that only 22% of dispensaries, 65% of health centres, 82% of district hospitals and 75% of all the referral hospitals had all the items.
- 98% of the facilities had blood pressure apparatus, whereas 96% had a stethoscope and 91% had a thermometer and 86% had a child scale.

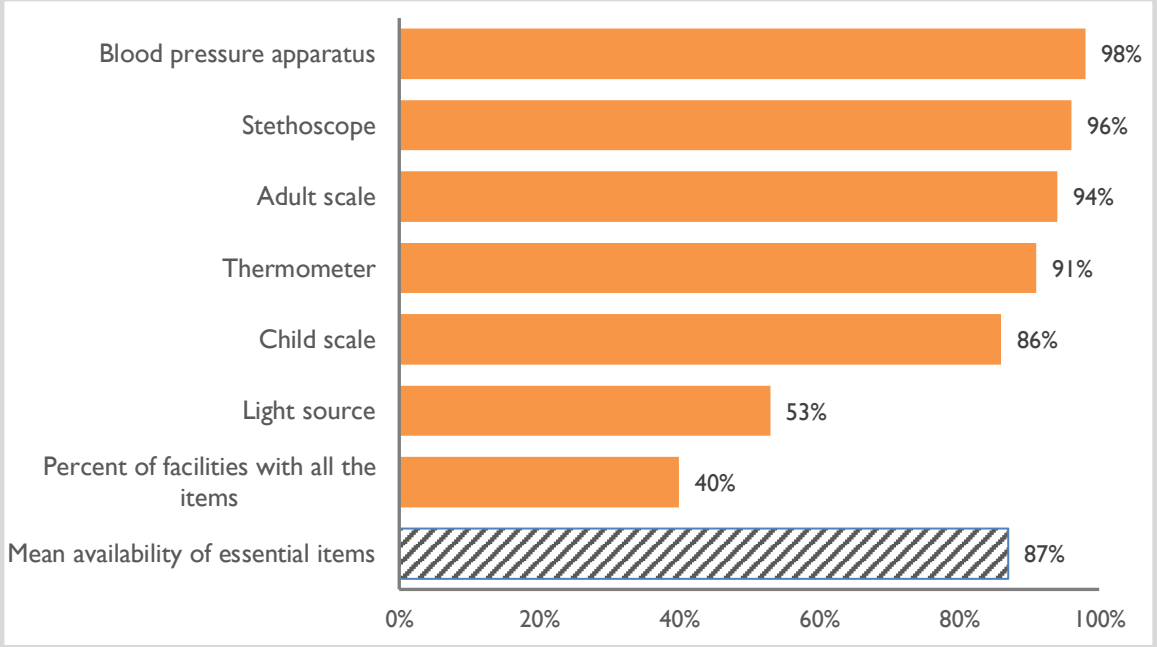


Figure 3: Percentage of Facilities with Basic Equipment Available (N=628)

Standard Precautions for Infection Control

All healthcare facilities should ensure that all the activities performed for infection prevention comply with the National Infection Prevention guidelines. Furthermore, healthcare facilities shall provide regular education on infection prevention and control practice to staff, patients, and as appropriate, to family, visitors and caregivers (MoHCDGEC, 2020). The SARA 2023 survey assessed nine items including: - safe final disposal of sharps, afe final disposal of infectious waste, appropriate storage of sharps waste, appropriate storage of infectious waste, disinfectant, single use – standard disposable or auto-disable syringes, soap and running water or alcohol-based hand rub, latex gloves, guidelines for standard precautions (Figure 4 & supplementary Table S3). Findings on standard precautions for infection control revealed that: -

- Facilities had an average IPC preparedness score of 82 out of 100, or 7 out of 9 tracer IPC.
- In dispensaries, 81% of IPC were available on average, compared to 84% in health centres, 87% in council hospitals, and 91% in referral hospitals.
- IPC for the government/public facilities was 82%, non-governmental organisations (NGOs/not-for-profit) was 85%, private for profit was 82% and mission/faith-based was 82%.

- Only 23% of all the surveyed healthcare facilities had all the 9 IPC items (Figure 3). Whereas 21% dispensaries, 30 % of health centres, 40% of council hospitals and 57% of all the referral hospitals had all the IPC items.
- 99% of the facilities had disinfectant, whereas 96% had latex gloves and 72% had guidelines for standard precautions, and 93% had soap and water or alcohol-based hand rub.

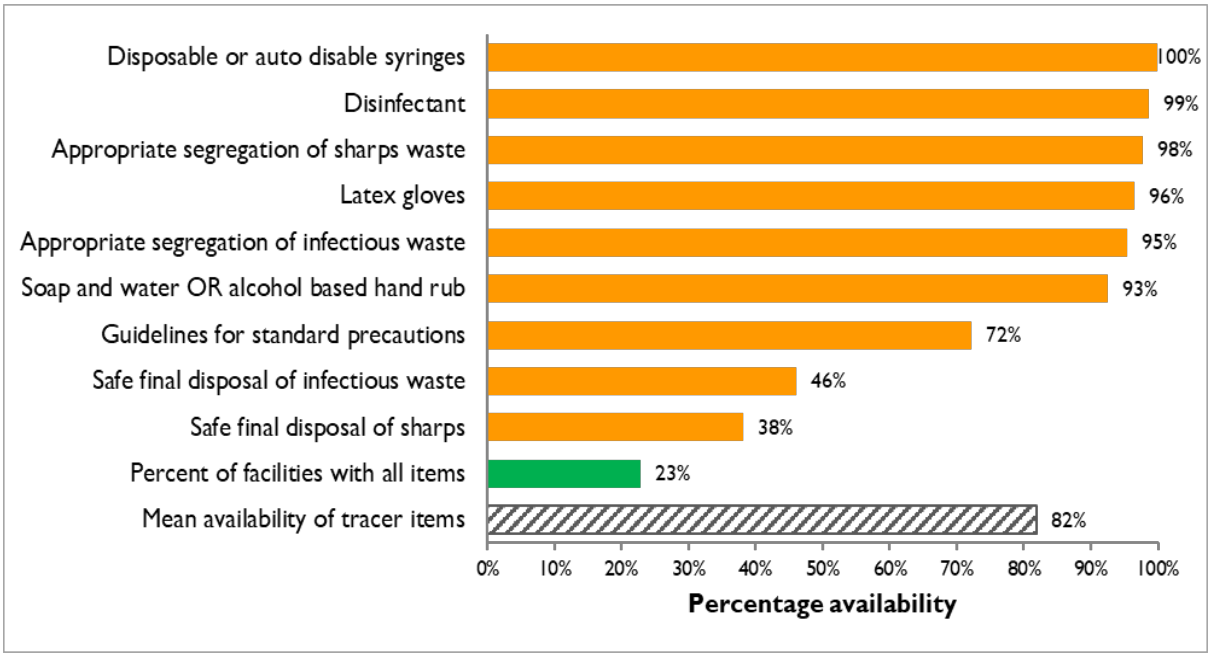


Figure 4: Percentage of facilities with Standard IPC (N=628)

Diagnostic Capacity

As stipulated within the Health Sector Strategic Plan July 2021 – June 2026, all health facilities should have the diagnostic capacity appropriate to their level of care (for laboratory, radiology, and medical imaging) to enable provision of services according to the requirements of the essential package per level (MoHCDGEC, 2021). Eight diagnostic tracer items were included during the survey (malaria diagnostic capacity, HIV diagnostic capacity, urine test for pregnancy, syphilis rapid test, urine dipstick- protein, urine dipstick- glucose, haemoglobin, and blood glucose) (Figure 5 & supplementary Table S4). Findings on health facility diagnosis capacity indicates that**: -**

- On average, facilities had 4 of 8 tracer diagnosis items, for an average diagnosis readiness score of 68 out of 100.

- Mean availability of diagnosis items for dispensaries was 63%, for health centres was 88%, 92% for council/district hospitals and 91% for referral hospitals.
- In terms of managing authorities, government/public (63%), NGO/not-for-profit (89%), private-for-profit (74%) and mission/faith based (89%).
- Only 24% of all the surveyed healthcare facilities had all the 8 diagnosis items. Whereas 15% dispensaries, 57% of health centres, 64% of district hospitals and 84% of all the referral hospitals had all the diagnosis items.
- 98% of the facilities had malaria diagnostic capacity, whereas 92% had HIV diagnostic capacity, 73% had urine test for pregnancy, 64% haemoglobin capacity, and 43% had blood glucose diagnosis capacity.

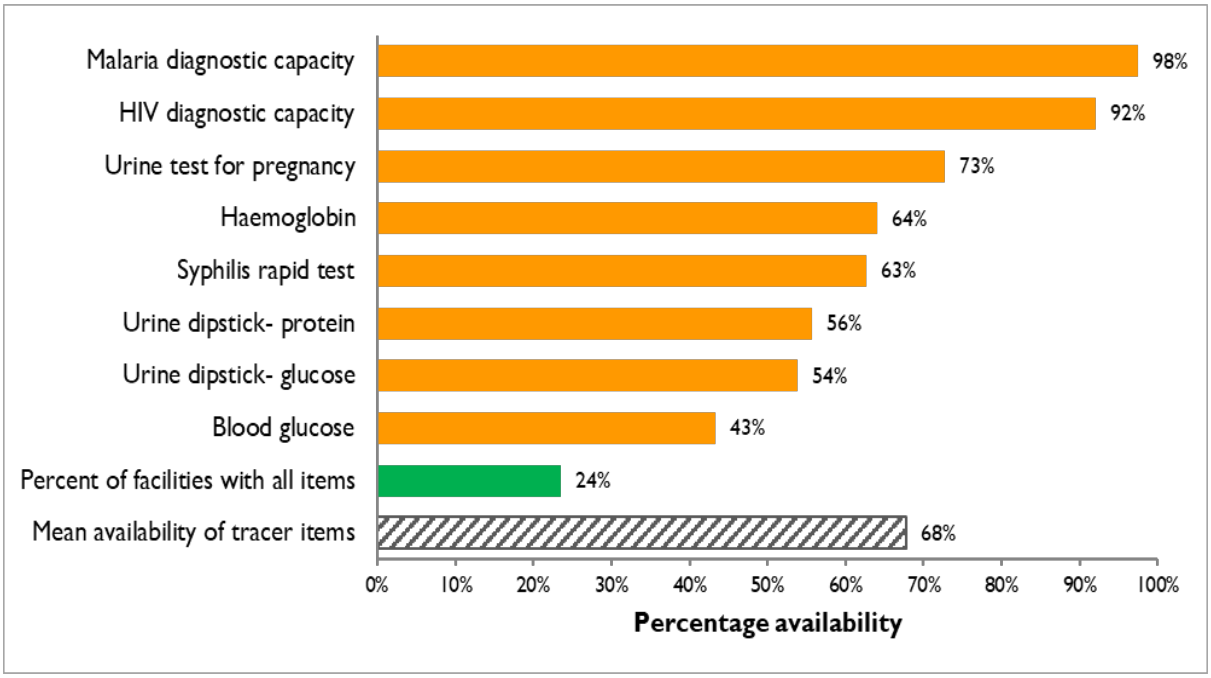


Figure 5: Percentage of Facilities with Health Facility Diagnosis Capacity (N=628)

Essential Medicines

The government of Tanzania is committed to improving sustainable availability and access to affordable, quality, safe, efficacious essential medicines (MoHCDGEC, 2021). According to the National Essential Medicines List (NEMLIT) 2017 guideline 15 essential medicines needed at all facility levels including medicines for acute infectious diseases, pain relief, and non-communicable diseases: ampicillin injection, amoxicillin tablet, ceftriaxone injection, amoxicillin syrup or suspension, gentamicin injection, carbamazepine tablet, insulin regular

injection, magnesium sulphate injectable, metformin tablets, oral rehydration salt, oxytocin injection, zinc sulphate tablets or syrups, salbutamol inhaler, glibenclamide tablets, and omeprazole tablets. Essential medicine assessed at hospital level includes beclomethasone inhaler, fluoxetine tablets and haloperidol tablets (Figure 6 & supplementary Table S5). Findings on National Essential Medicines List revealed that: -

- On average, facilities had 9 of 15 National Essential Medicines, for an average medicine's readiness score of 55 out of 100.
- Mean availability of essential medicines for dispensaries was 60%, 83% for health centres, 89% for council hospitals and 89% for referral hospitals.
- In terms of managing authorities, government/public (67%), NGO/not-for-profit (69%), private-for-profit (51%) and mission/faith based (67%).
- Only 4% of all the surveyed healthcare facilities had all the 15 essential medicines. Whereas 0% dispensaries, 14 % of health centres, 41% of council hospitals and 18% of all the referral hospitals had all the diagnosis items.
- 89% of the facilities had amoxicillin tablets, whereas 86% had oral rehydration solution, 84% had gentamicin injection, while 6% had carbamazepine tablets, 4% had haloperidol tablets and 2% had fluoxetine tablets.

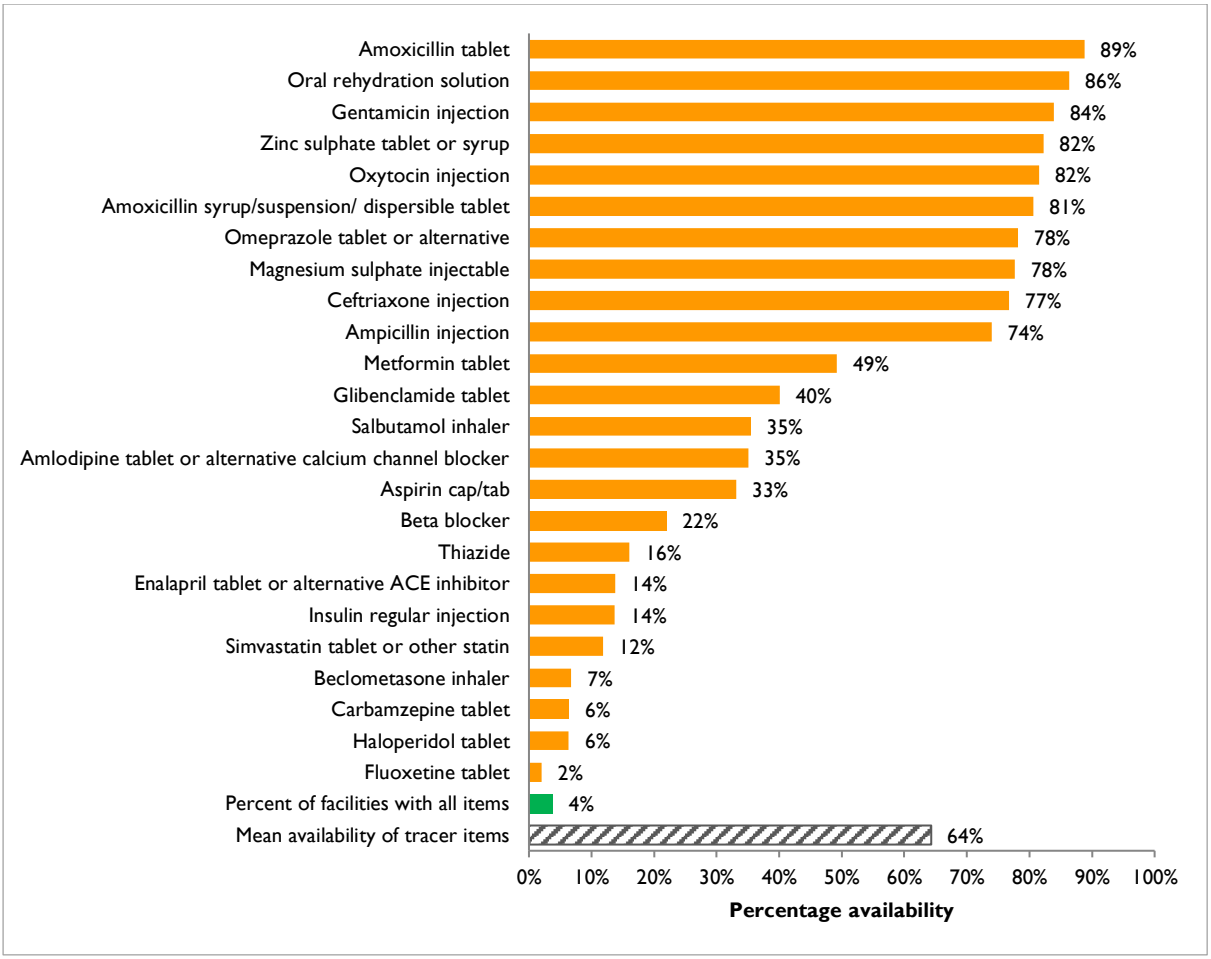


Figure 6: Percentage of Facilities with all the Essential Medicines (N=628)

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 in the following five domains: basic amenities, basic equipment, standard precautions for infection prevention, diagnostic capacity and essential medicines (Figure 7 & supplementary Table S6). The general service readiness index is a useful measure that summarizes the situation of health services. Below are the Findings on general service readiness:

- The SARA 2023 survey findings on general service readiness show that healthcare facilities are ready by 71% to provide the basic services.
- Looking by the facility level, readiness of dispensaries was 68%, health centre 84%, council/district hospitals 89% and referral hospitals 91%.
- Whereas the government/public were ready by 70%, NGO/not-for-profit by 72%, private-for-profit by 72% and mission/faith based by 79%.

- Compared to SARA 2020, the general service readiness index score for the facilities increased by 2% from 69% in SARA 2020.

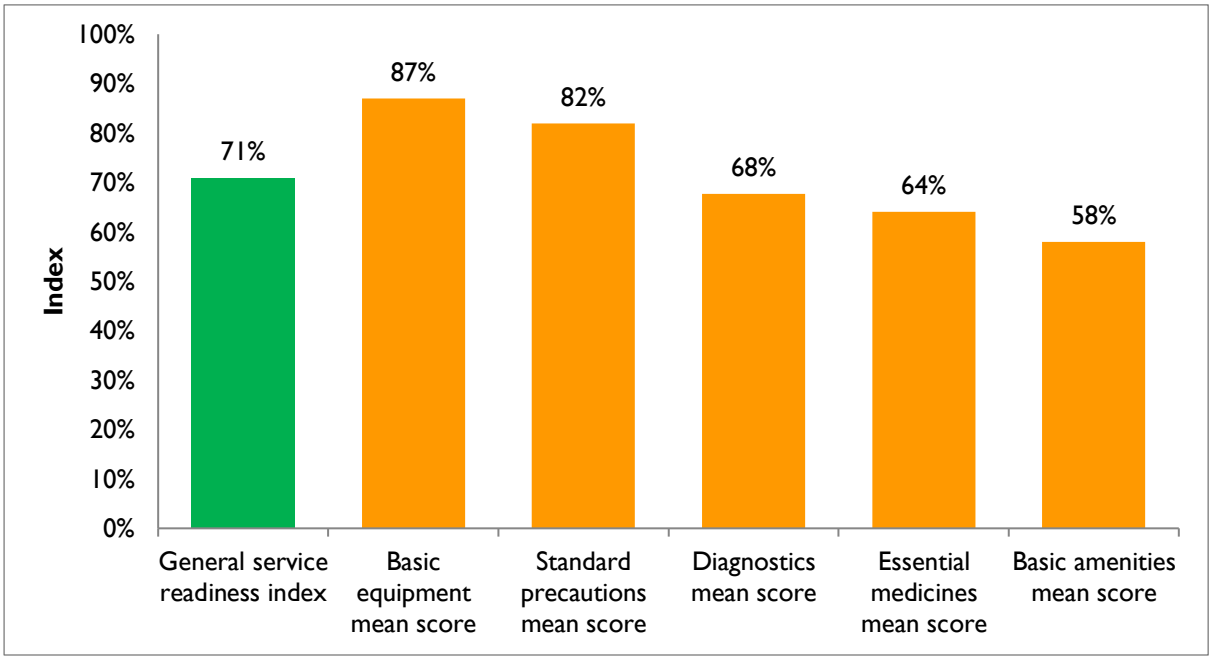


Figure 7: General Service Readiness (N=628)

Comparison of General Service Readiness Across 3 Waves of SARA Surveys

Figure 8 presents a comparison of three waves of SARA surveys conducted in Mainland Tanzania. General healthcare facility readiness remained unchanged from the previous 2020 survey.

- Compared to the previous SARA 2012, 2017, 2020 and 2023 surveys there is an improvement in the general healthcare facility readiness from 42%, 57%, 69% and 71% respectively. The difference for 2023 is highly attributable by the improvement in readiness of standard precautions for infection control and essential medicines availability.
- A 7% decline in the basic amenities has been observed from 65% to 58%, the change might be relatively related to the increase in number of facilities following government investment in increasing service availability.
- There was a marginal increase in basic equipment by 2%, from 85% in 2020 to 87%.
- 12% improvement in the standard precautions for infection control (IPC) was observed from 70% (2020) to 82%. This improvement is even more significant

compared to 2012 where there is a 36% increase. This underscores the efforts of the government and various actors in ensuring access to IPC measures.

- Health facility diagnostic capacity declined from 72% (2020) to 68%. Decline in diagnostic, might have been attributed by the government investment in construction of new healthcare facilities, renovation and upgrading of lower facilities.
- There was improvement in the essential medicines from 54% to 64%.

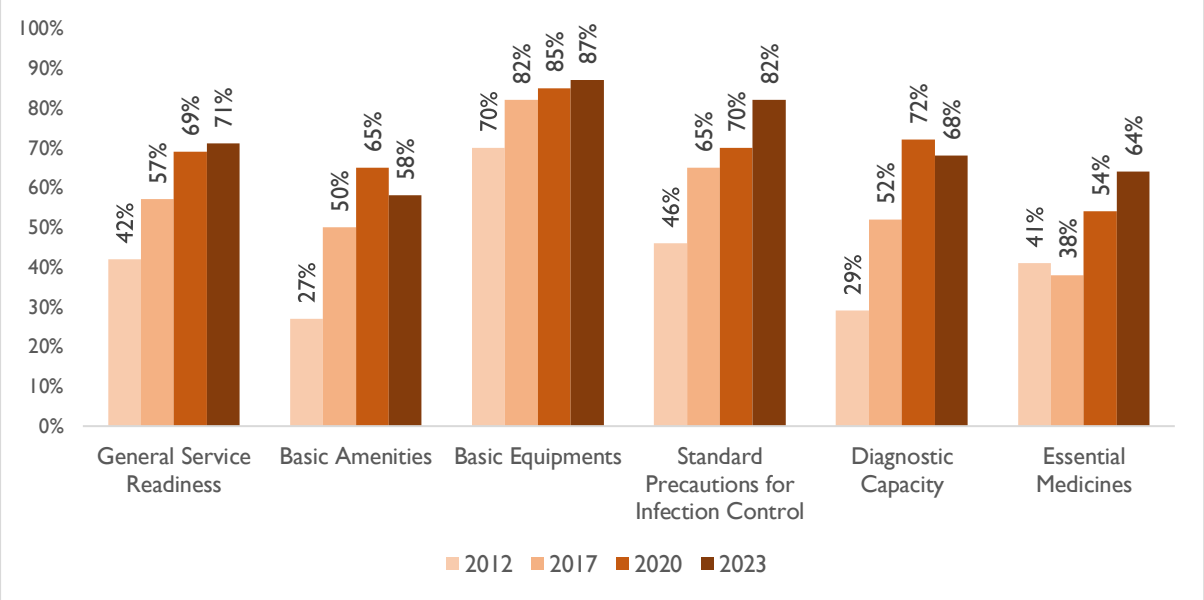


Figure 8: General Service Readiness 2012, 2017, 2020 & 2023

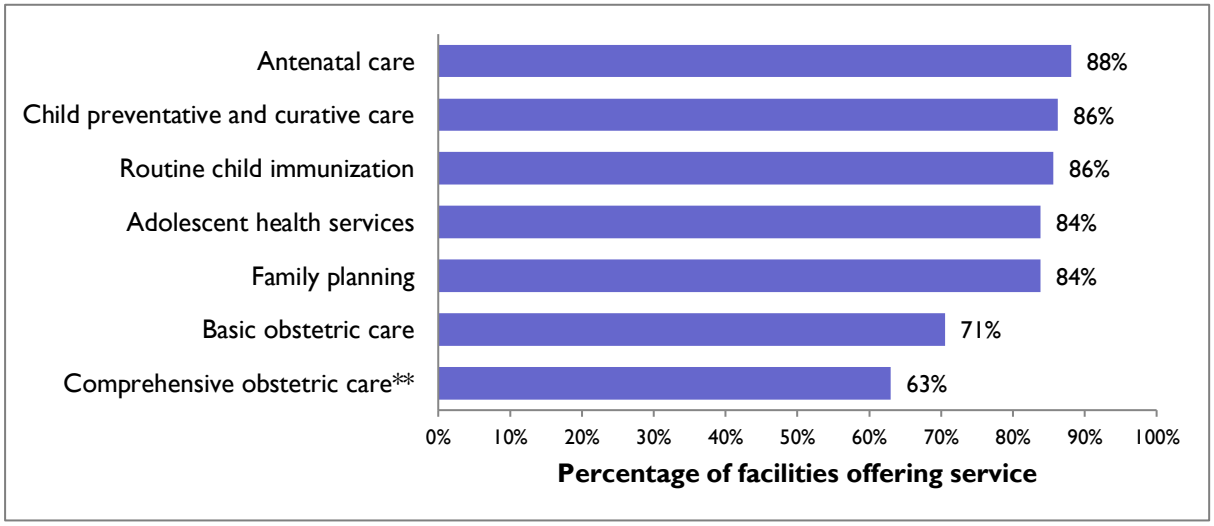
Service Specific Availability and Readiness

Service Specific Readiness refers to the availability and readiness of health facilities to offer a specific service and the capacity to provide that service measured through selected tracer items that include trained staff, guidelines, equipment, diagnostic capacity, and medicines and commodities. Number of facilities that offer and meet tracer criteria for specific services: family planning, antenatal care, prevention of mother-to-child transmission of HIV, obstetric and newborn care, caesarean section, immunization, child preventative and curative care, adolescent health, HIV counselling and testing, HIV treatment, HIV care and support, sexually transmitted infections, tuberculosis, malaria, non-communicable diseases, surgery, blood transfusion and eye care.

Maternal, Newborn, Child, and Adolescent Health (MNCAH)

The Government of the United Republic of Tanzania has made some efforts to improve MNCAH as stipulated within the One Plan 11. Among the services assessed included antenatal care, child preventative and curative care, basic obstetric care, routine child immunization, adolescent health services, family planning, basic obstetric care and comprehensive obstetric care.

- Overall findings on Maternal, Newborn, Child, and Adolescent Health in Tanzania: 88% of the facilities were ready to offer ANC care, 86% for child preventative and curative care, 84% family planning whereas 71% had basic obstetric care and only 63% had comprehensive obstetric care (Figure 9).



** Only includes hospitals and health centres only.

Figure 9: Percentage of Facilities with MNCAH

Readiness of healthcare facilities to provider MNCAH in the country. The readiness included availability of the staff and guidelines, equipment, diagnostic, medicines and healthcare commodities (Figure 10). The 2023 SARA survey divulge that: -

- A total of 506 healthcare facilities were offering family planning with overall readiness of 76%. The readiness for staff and guidelines was lower, estimated at 54%. While

readiness for equipment was higher around 99%. The readiness for medicine and commodities is around 87%.

- For antenatal care assessed within 541 facilities, the overall readiness was 50%. The readiness for staff and guidelines was estimated at 50%. While readiness for equipment was higher around 99%. Diagnostics readiness was estimated at about 50%. The readiness for medicine and commodities is around 50%.
- For routine child immunization assessed within 529 facilities, the overall readiness was 76%. The readiness for staff and guidelines was estimated at 66%. While readiness for equipment was higher around 87%. The readiness for medicine and commodities is around 67%.
- A total of 451 healthcare facilities were offering basic obstetric care with overall readiness of 66%. The readiness for staff and guidelines was lower estimated at 41%. While readiness for equipment was higher around 69%. The readiness for Medicine and Commodities is around 93%.

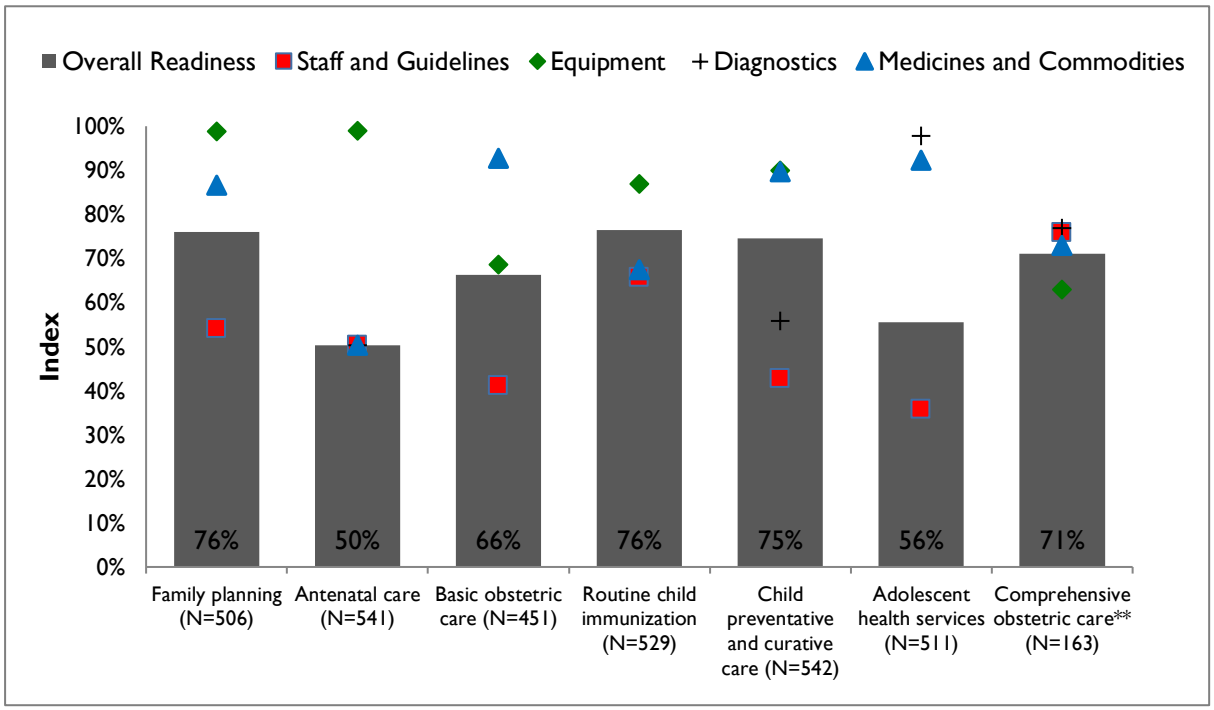


Figure 10: Maternal, Newborn, Child, and Adolescent Health (MNCAH)

Family Planning

The government of Tanzania is committed towards achieving SDG 3 global targets, ensuring universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes (MoHCDGEC, 2021). The government was committed to ensuring 60% of the family planning uptakes by 2020 for women in need. SARA 2023 survey considered availability of 12 family planning services including: - combined oral contraceptive pills, progestin-only contraceptive pills, combined injectable contraceptives, progestin-only injectable contraceptives, male condoms, female condoms, intrauterine contraceptive device, implant, cycle beads for standard days method, Emergency contraceptive pills, male sterilization, and female sterilization (Figure 11 & supplementary Table S7). Findings on availability of family planning indicates that: -

- 84% of all the healthcare facilities visited offered family planning services.
- Male condoms were available in 82% of all facilities, 79% had combined oral contraceptives, 78% had implants and 70% had progestin-only injectable contraceptives.
- Furthermore, 64% of facilities had progestin-only contraceptives, 54% emergency contraceptive pills and 42% Intrauterine contraceptive devices (IUCD).
- It was observed that on average availability of family planning was 47% for dispensaries, 60% for health centres, 58% for council hospitals, 71% for referral hospitals.
- Availability at the government/public was 58%, 27% for the NGO/not-for-profit, 26% for the private-for-profit and 24% for the mission/faith based.

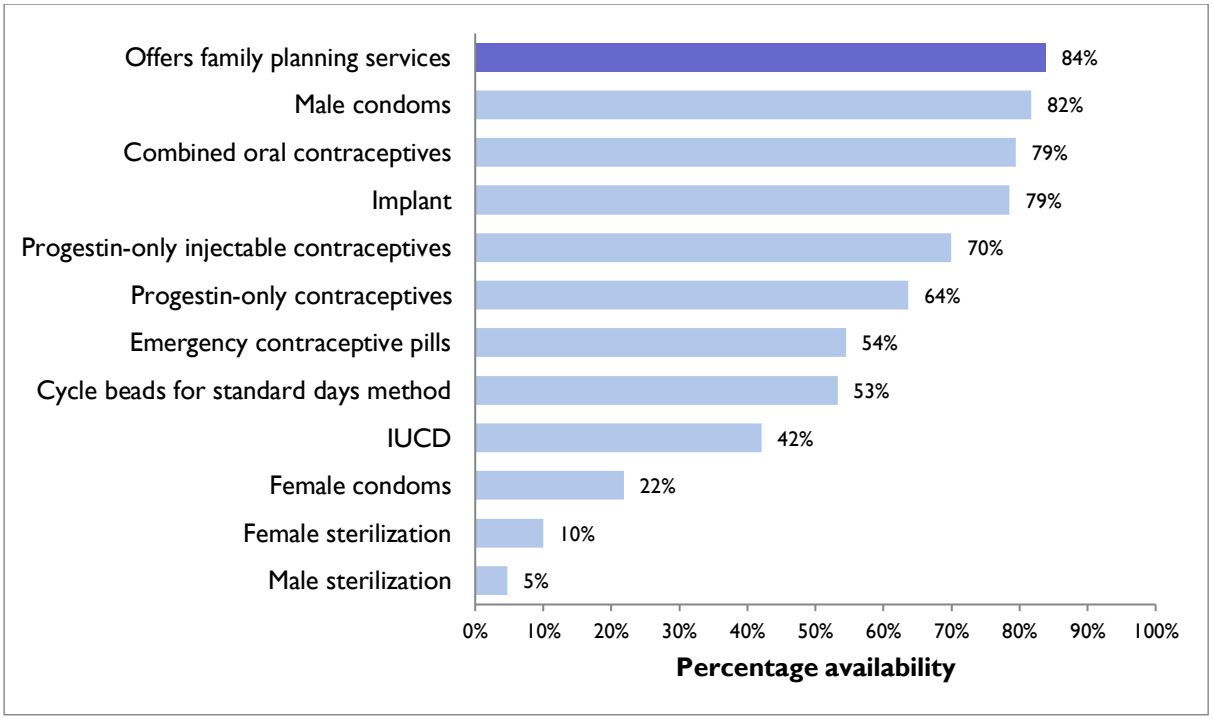


Figure 11: Availability of Family Planning

The government of Tanzania has demonstrated its commitment to family planning by increasing its budget allocation for reproductive health services and developing policies and guidelines to guide family planning programming. Tanzania has also taken steps to improve the availability of contraceptives, by increasing the number of trained health care providers who can offer family planning services and expanding the range of contraceptive methods available. Visited healthcare facilities were assessed in terms of readiness to provide family planning. Findings on Facility Readiness to Provide Family Planning revealed that: -

- The mean availability of tracer items was 76%. 411 health facilities had tracer items for family planning services on the day of the survey among facilities that offered family planning services (Figure 12).
- In terms of health care facility level, the mean availability was 74% for dispensaries, 82% for health centres, 86% for council hospitals, and 85% for referral hospitals.
- Family planning readiness for the government/public was 77%, NGO/not-for-profit was 62%, private-for-profit was 68%, and mission/faith-based was 71%.

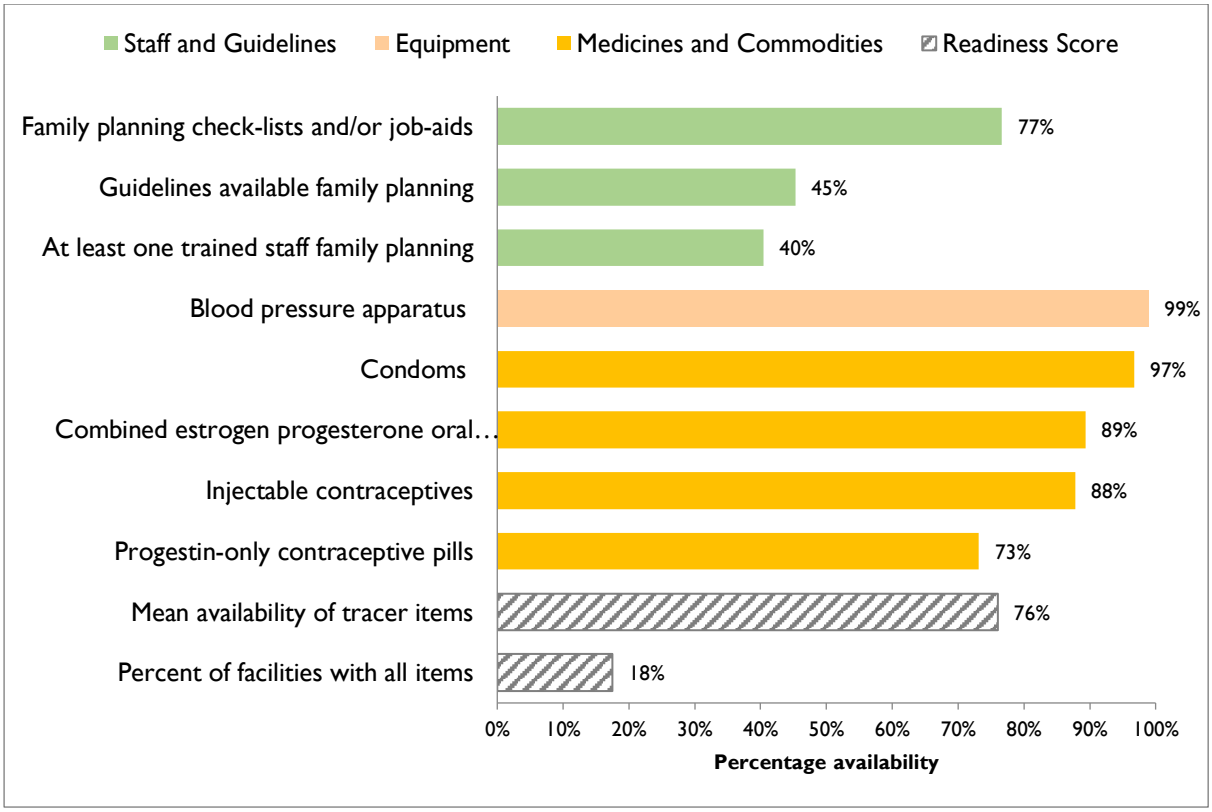


Figure 12: Facility Readiness to Provide Family Planning

Maternal, neonatal and child health

The provision of reproductive, maternal, newborn, child and adolescent health services has continued to be a priority over the past decade. The number of health facilities providing RMNCAH services have increased from 3,369 in 2007 to 7,268 in 2019 (MoHCDGEC, 2021). SARA 2023 survey considered the following services: - antenatal care services, iron supplementation, folic acid supplementation, intermittent Preventive Treatment in Pregnancy (IPTP) for malaria, tetanus toxoid vaccination, monitoring for hypertensive disorder of pregnancy, and provision of misoprostol tablets for home births (Figure 13).

- Availability was 87% for folic acid supplementation, 87% for IPTP, 87% for Tetanus toxoid vaccination, 87% for monitoring for hypertensive disorder of pregnancy, and 76% for iron supplementation (Figure 13).
- In the SARA 2020 survey, 87% of facilities offered IPTI, 83% monitored for hypertensive disorders of pregnancy, and 83% provided Tetanus toxoid vaccination services. These percentages are somewhat like those observed in the SARA 2023 results. We, however, noted an increase in facilities offering iron and folic acid

supplementation services. Folic acid supplementation services have increased to 87% in 2023 from 78% in 2020.

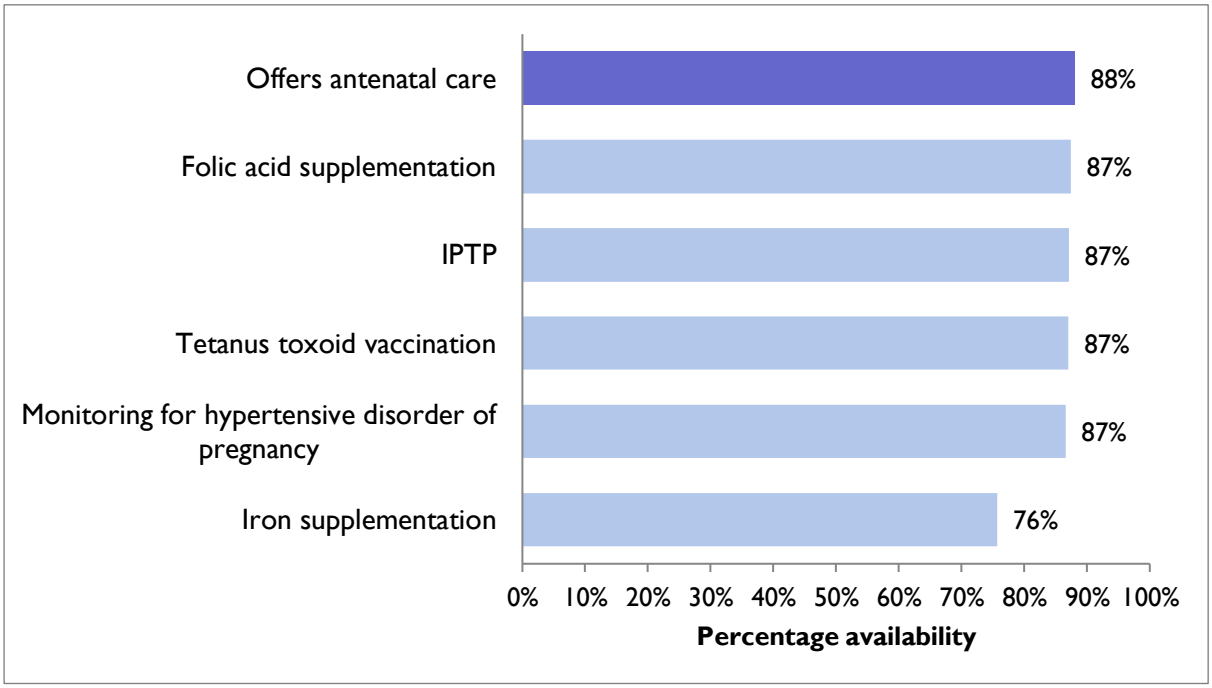


Figure 13: Availability of ANC Services

Women seeking antenatal care (ANC) should receive health promotion, screening and diagnosis, and disease prevention within the field of reproductive health. Adherence to ANC care provision guidelines to the healthcare providers and subsequent caregiver observation on all the instructions given during ANC visits leads to improved maternal and neonatal outcomes. In Tanzania, ANC services are offered in all health facilities including hospitals, health centres and dispensaries. Assessment of ANC service readiness was based on: - trained staff and guidelines (guidelines on antenatal care services (ANC), staff trained in ANC in the past two years, equipment, (blood pressure apparatus); diagnostics (haemoglobin and urine-dipstick-protein); medicines and commodities (iron tablets, folic acid tablets and tetanus toxoid vaccine) (Figure 14 & supplementary Table S8). Findings on Antenatal Care Services Readiness revealed that: -

- Mean availability of tracer items was 68%, and only 1% of all health facilities had all the tracer items (Figure 14).
- In the context of health care facilities, the average availability was reported as 66% for dispensaries, 76% for health centres, 84% for council hospitals, and 80% for referral hospitals.

- Regarding the management authorities, the availability was as follows: 68% for government/public facilities, 73% for NGO/not-for-profit organizations, 70% for private-for-profit entities, and 71% for mission/faith-based organizations.
- In SARA 2023, 49% of facilities reported having at least one staff member trained in providing antenatal care (ANC) services (see supplementary material Table S8: ANC availability in percentage). This is an increase from 2020, as per the SARA report, where only 43% of facilities had at least one employee trained in ANC services.
- In the SARA 2023 survey, 15% of facilities had all the items, representing a 5% increase from the SARA 2020 survey, where the percentage was 10%.
- In the SARA 2023 survey, 92% of facilities had available ITNs, showing a 9% increase from the SARA 2020 survey, where the availability was 83%.

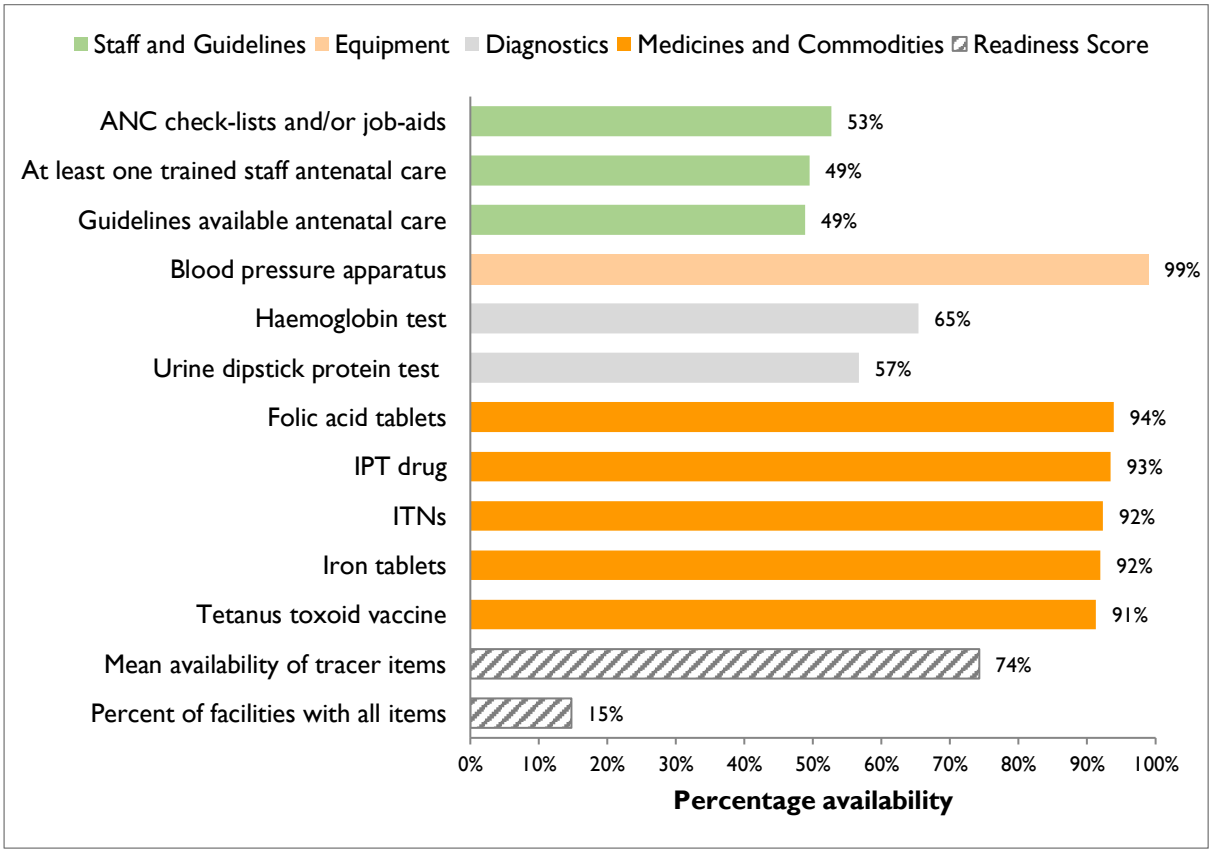


Figure 14: Antenatal Care Services Readiness

Basic Obstetric and Newborn Care Service Availability

The coverage of basic emergency obstetric and newborn care is low with only 20 per cent of dispensaries and 39 per cent of health centres offering delivery services that provide all signal functions. Availability of basic emergency obstetric and newborn care (BEmONC) services in each health facility is a key strategy to narrow disparities in global maternal and newborn deaths. BEmONC is an integrated strategy that aims to equip health facilities to deal with major causes of direct obstetric emergencies which account for the vast majority of maternal and newborn deaths, particularly in high mortality countries. This strategy comprises a package of seven key obstetric services or 'signal functions' including: delivery services, parenteral administration of antibiotics, parenteral administration of oxytocic drug, parenteral administration of anticonvulsants, assisted vaginal delivery, manual removal of placenta, manual removal of retained products, neonatal resuscitation, and basic emergency obstetric care (Figure 15). Findings on basic obstetric care service shows that: -

- 71% of all the facilities do offer delivery services.
- The health services with the highest percentage availability are immediate and exclusive breastfeeding, thermal protection, administration of oxytocin, hygienic cord care, and monitoring and management of labour, all at 70%.
- The services with the lowest availability are Kangaroo Mother Care (KMC) for premature/very small babies at 24%, corticosteroids in preterm labour at 25%, injectable antibiotics for neonatal sepsis at 40%, and antibiotics for preterm or prolonged premature rupture of membranes (PROM) at 42%.
- Overall, the mean availability is higher for obstetric signal functions at 51% than for newborn signal functions at 31%.

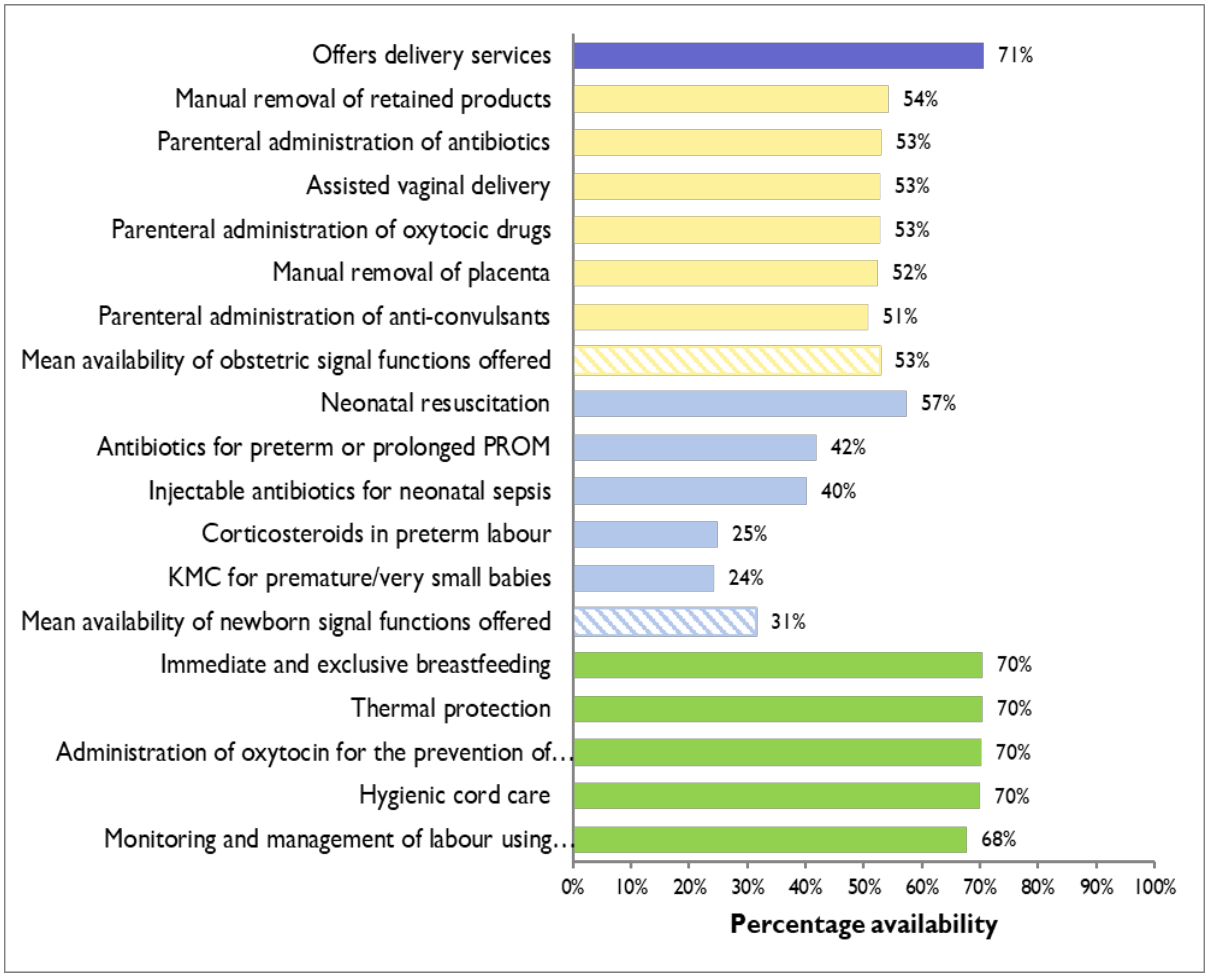


Figure 15: Health Facilities Offering Basic Obstetric Care Services

Tracer items required for basic obstetric care service delivery includes:- trained staff and guidelines (guidelines for essential childbirth care, guidelines for essential newborn care, staff trained in essential childbirth care in the past two years, staff trained in essential childbirth care in the past two years, staff trained in newborn resuscitation in the past two years, and check-lists and/or job-aids for essential childbirth care), equipment (such as emergency transport, sterilization equipment, 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, infant weighing scale, blood pressure apparatus, soap and running water or alcohol based hand rub), and medicines and commodities (antibiotic eye ointment for newborn, injectable uterotonic, injectable antibiotic, magnesium sulphate (injectable), skin disinfectant, and intravenous solution with infusion set) (Figure 16).

Findings on Basic Obstetric Care Services Readiness indicate that: -

- The average availability of tracer items was 66%, with none of the health facilities having all the tracer items (Figure 16). This situation remains unchanged from the SARA survey in 2020.
- The mean availability was 62% for dispensaries, 78% for health centres, 85% council hospitals and 92% referral hospitals.
- For the government/public it was 65%, NGO/not-for-profit 76%, private-for-profit 76% and mission/faith based 71%.
- Items with availability exceeding 90% include gloves (97%), soap and running water or alcohol-based hand sanitizer (96%), blood pressure apparatus (96%), delivery pack (95%), and delivery bed (93%).
- The availability percentages for injectable uterotonic, skin disinfectant, intravenous solution with infusion set, injectable antibiotic, and injectable magnesium sulphate are 97%, 96%, 96%, 96%, and 95% respectively.
- These figures show an improvement from the SARA 2020 survey, where the respective availability rates were 81%, 91%, 90%, 81%, and 89%.

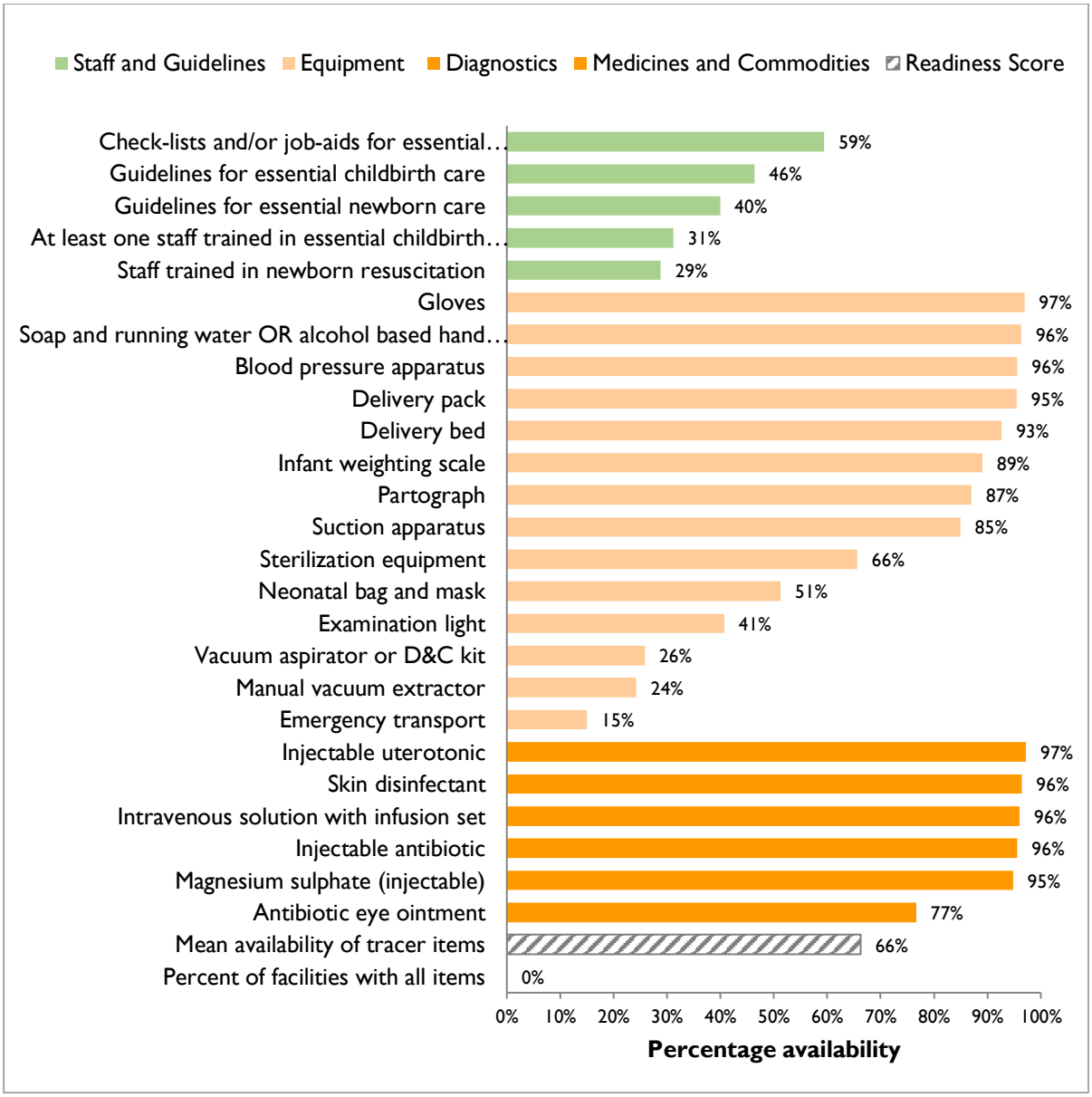
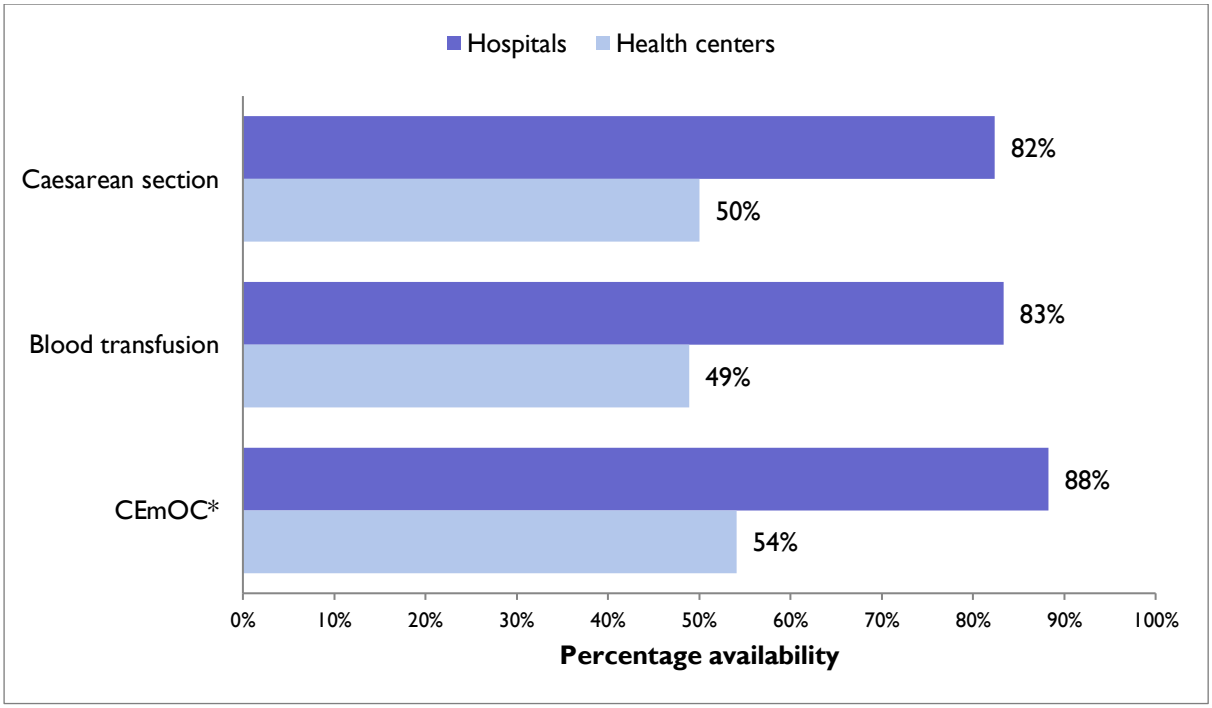


Figure 16: Basic Obstetric and Newborn Care Service Readiness

Comprehensive Obstetric and Newborn Care Service Availability

Figure 17 presents services availability on comprehensive obstetric and newborn care service availability, this indicator was accessed at the level of hospitals and health centres only.

- The SARA 2023 survey indicates that comprehensive emergency obstetric care (CEmOC) services are available 88% of the time in hospitals and 54% in health centres
- Blood transfusion services are accessible in hospitals 83% of the time, while 49% in health centres.
- Additionally, caesarean section is performed in hospitals with an availability of 82%, compared to 50% in health centres.



*Comprehensive emergency obstetric care (CEmOC) consist of the seven obstetric signal functions and the availability of blood transfusion services and caesarean section

Figure 17: Comprehensive Obstetric and Newborn Care Service Availability

Comprehensive Obstetric (CEmOC) Service Readiness

- The average availability of tracer items, now at 71%, marks an improvement from the 51% that was reported.
- Furthermore, it was noted that 95% of staff were trained in surgery, and at least one staff member trained in comprehensive emergency obstetric care (CEmOC) is present in 69% of the healthcare facilities (Figure 18).
- The proportion of facilities equipped with all items has fallen to 1%, a decrease of 1% from the previous SARA 2020 survey.
- The availability rates for oxygen and lidocaine 5% stand at 75% each, while anaesthesia equipment is at 21%, and blood supply sufficiency is at 56%.
- Notably, the availability of lidocaine 5% has risen by 25% from the 50% reported in the SARA 2020 survey.

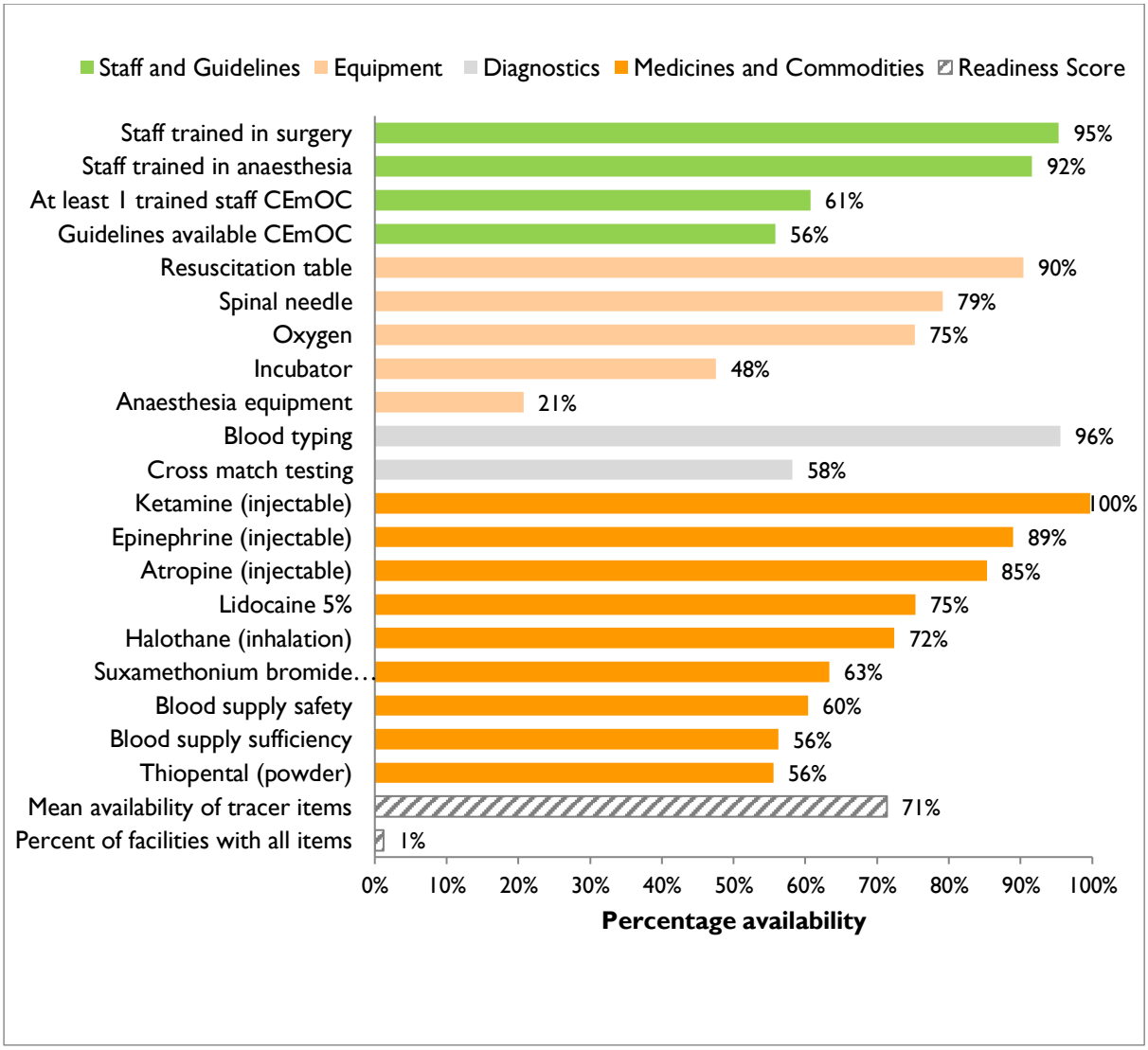


Figure 18: Comprehensive Obstetric Care Readiness

Child Immunization Service Availability

The United Republic of Tanzania provides immunization services countrywide both on routine and non-routine basis. This service is available on public and private facilities free of charge. Types of services offered includes: - routine child immunization services, routine measles immunization, routine DPT-Hib-HepB immunization, routine polio immunization, BCG immunization, rotavirus immunization and pneumococcal immunization (Figure 19). Findings on Child immunization service availability depicted that:

- The percentage of facilities providing regular child immunization services remained consistent at 86%, as indicated in the SARA survey of 2020.

- Majority (84%) of the dispensaries reported availability of immunization services, 93% for the health centres, 95% for the council hospitals and 58% for the referral hospitals.
- Immunization was available within 94% of the government/public facilities, 100% for the NGO/not-for-profit facilities, 47% private for profit and 80% for the mission/faith-based facilities.
- Vaccination services showed significant accessibility, with infant vaccines at 68%, vaccines for adolescents and adults at 67%, and birth doses at 62%.
- These figures represent an increase from the SARA 2020 survey, where infant vaccines were at 54%, adolescent/adult vaccines at 50%, and there has been a noted decrease in birth doses, which were previously at 53%.

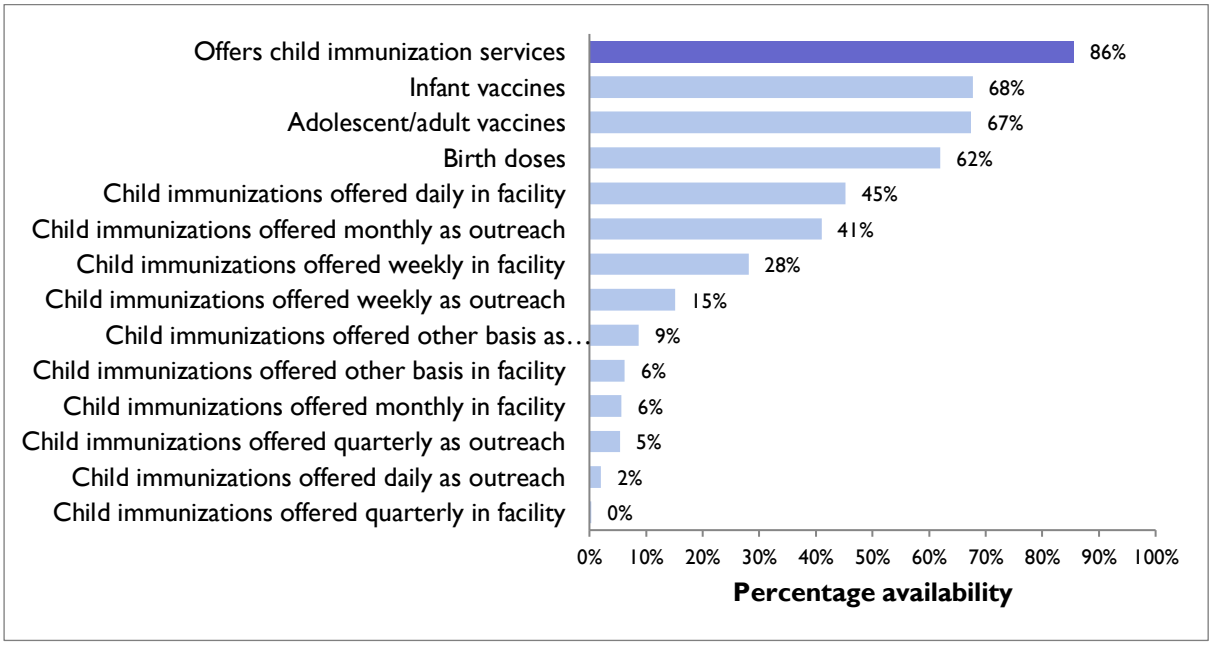


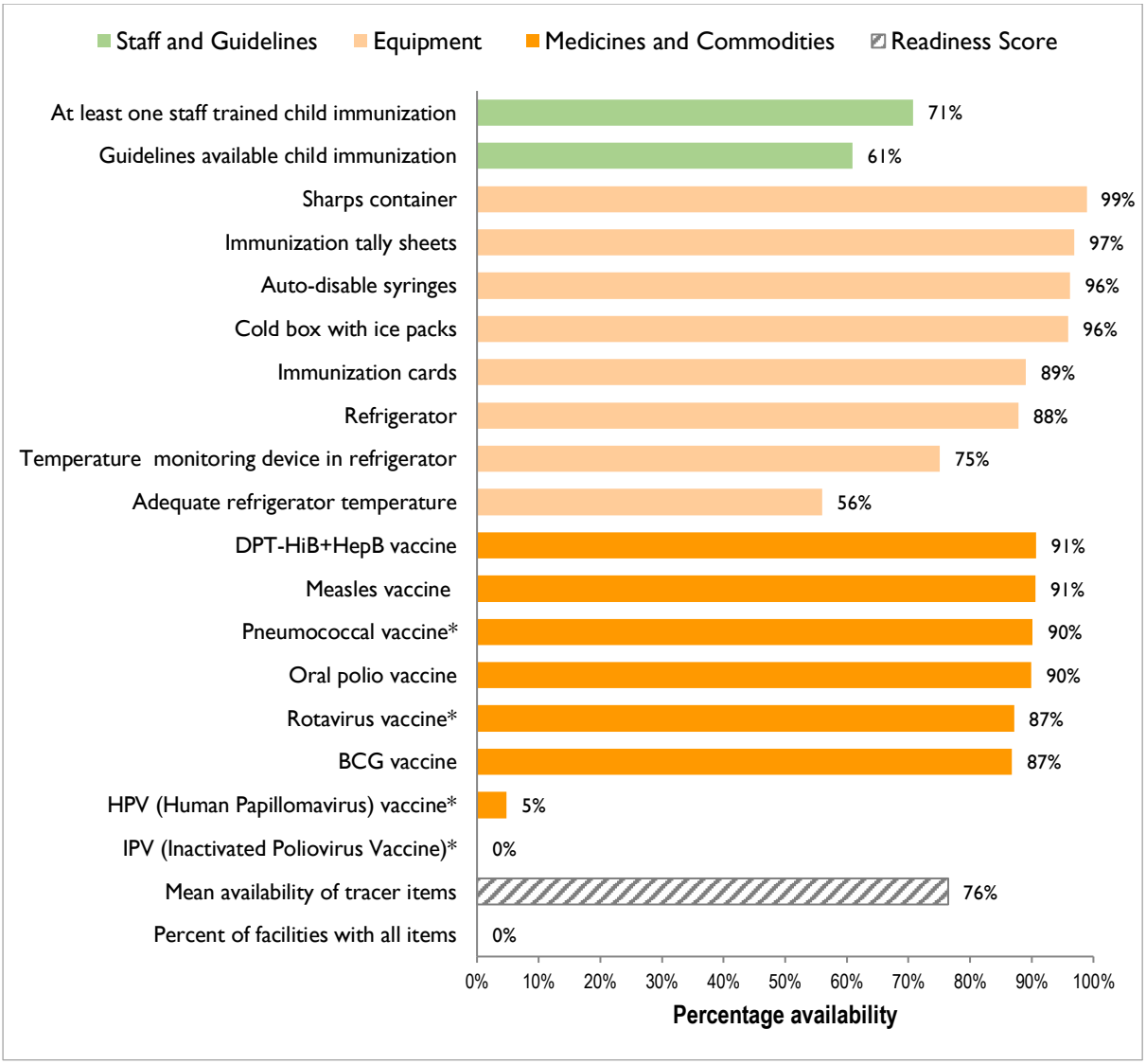
Figure 19: Child Immunization Service Availability

Child Immunization Service Readiness

Vaccines are one of the most cost-effective and lasting health investments, playing a vital role in reducing child mortality. The government of Tanzania is committed to its immunization program. Tracer indicators for child immunization readiness include staff and guidelines (such as trained staff and guidelines, guidelines for child immunization and staff trained in child immunization), equipment (such as cold box/vaccine carrier with ice packs, refrigerator, sharps container, auto-disable syringes, temperature monitoring device in refrigerator, adequate refrigerator temperature, immunization cards and immunization tally sheets) and

medicines and commodities (Measles vaccine, DPT-Hib+HepB vaccine, Oral polio vaccine, BCG vaccine, Pneumococcal vaccine, Rotavirus vaccine, Inactivated poliovirus vaccine, and Human Papillomavirus vaccine) (Figure 20). Findings on Child immunization service readiness indicates that: -

- In all the facilities that were visited, 71% have at least one staff member trained in child immunization, and 61% have guidelines available for child immunization.
- The availability of essential equipment is high, with 99% having sharps containers, 97% equipped with immunization tally sheets, and both auto-disable syringes and cold boxes with ice packs present in 96% of the facilities.
- In the surveyed facilities, the availability of vaccines such as DPT-HiB+HepB, Measles, Pneumococcal, Oral Polio, Rotavirus, and BCG surpassed 85%. In contrast, the presence of the HPV vaccine was substantially lower, < 5%.
- The average availability of essential tracer items for child immunization service readiness was 76%, which is unchanged from the previous SARA survey in 2020.



*Only included in readiness calculation if part of the national schedule

Figure 20: Child Immunization Service Readiness

Vaccine Stockout in the Last Three Months

Figure 21 presents information on whether, in the past three months, any of the surveyed healthcare facilities was unable to give any of the vaccines because of a stock-out. It was noted that: -

- Overall, less than 10% of the surveyed facilities had experienced any stock-out of the vaccines.
- Only 8% of the facilities could not render BCG and Rotavirus vaccines because of stock-outs.

- Approximately 7% of the facilities had experienced a stock-out of measles.

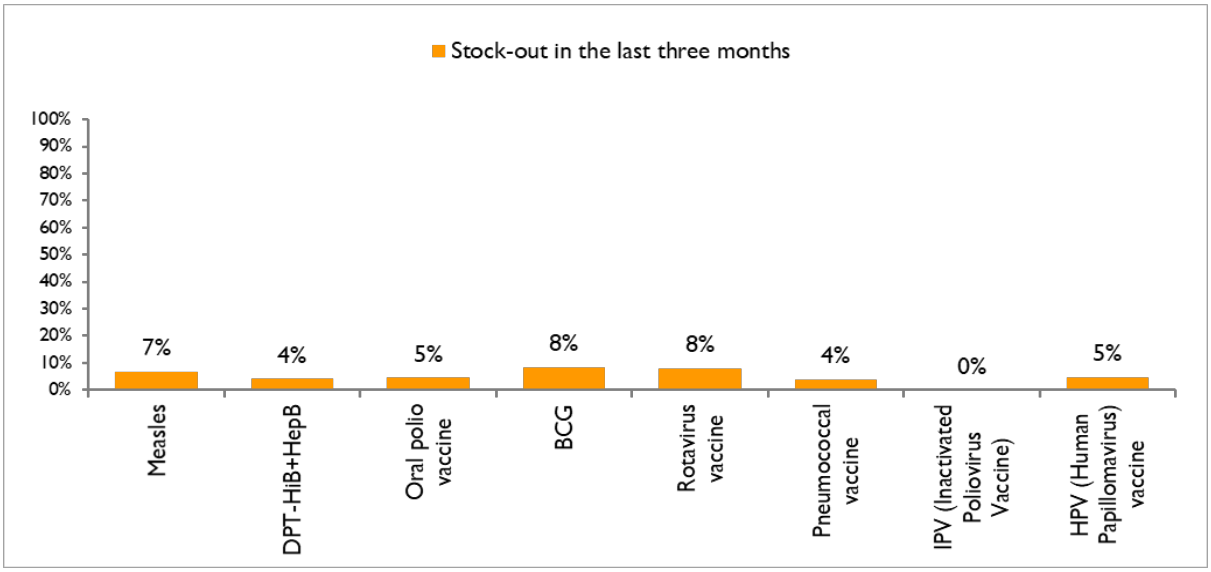


Figure 21: Vaccine Stockout in the Last Three Months

Child Health Preventive and Curative Care Service Availability

Types of services offered (preventive and curative care for children under 5, malnutrition diagnosis and treatment with vitamin A supplementation, iron supplementation, ORS and zinc supplementation, growth monitoring, treatment of pneumonia, administration of amoxicillin for the treatment of pneumonia in children, and treatment of malaria in children) (Figure 22). Findings on child health preventive and curative care service availability have shown that: -

- Preventive and curative care for under-fives is accessible in 86% of the cases. There is 80% availability of malnutrition diagnosis and treatment services. Vitamin A and malaria treatments for children are both highly accessible, at 84% availability each.
- It was observed that 85% of dispensaries offered preventive and curative care for U-5s, 94% of health centres, 96% of council hospitals, and 58% of referral facilities.
- Approximately 94% of the government/public facilities offered preventive and curative care for U-5s, 100% of the NGO/not-for-profit, 53% of the private for profit, and 80% of the mission/faith-based facilities.
- Child growth monitoring services were provided in 85% of the instances.

- Meanwhile, ORS and zinc supplementation for children with diarrhoea, and amoxicillin for paediatric pneumonia treatment, are both available 78% and 72% of the time, respectively. Finally, the provision for pneumonia treatment was at 81%.

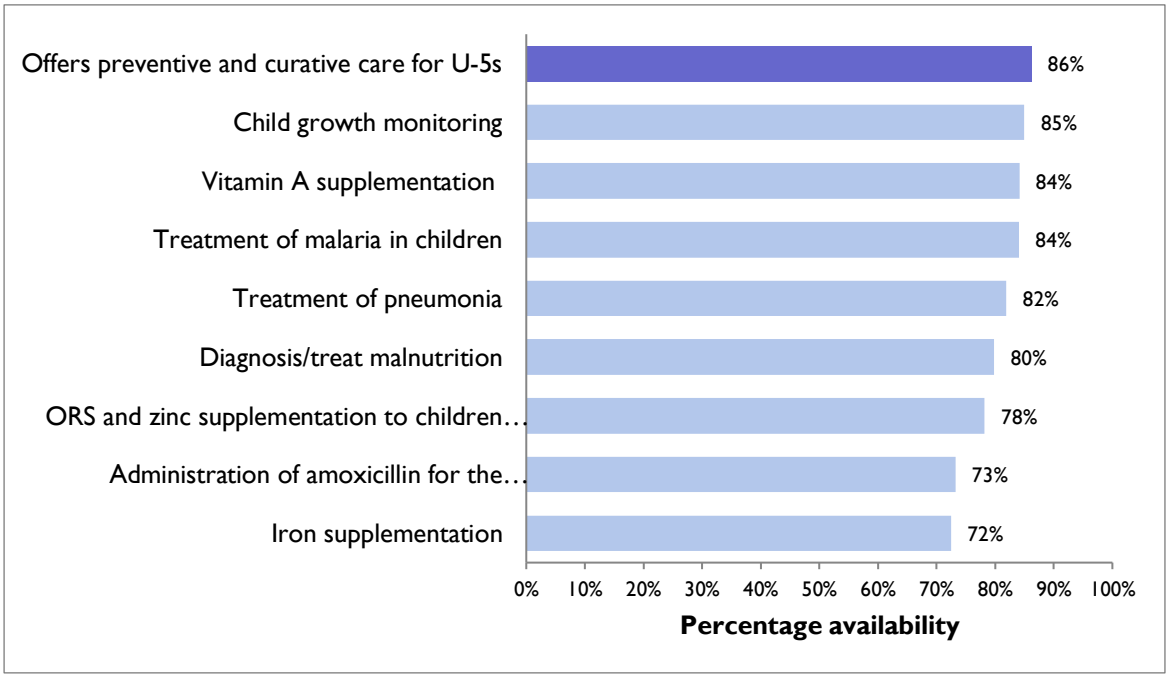


Figure 22: Child Health Preventive and Curative Care service Availability

Child Health Preventive and Curative Care Service Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for Integrated Management of Childhood Illness (IMCI), guidelines for growth monitoring, staff trained in IMCI and staff trained in growth monitoring), while for equipment (child and infant scale, length/height measuring equipment, thermometer, stethoscope and growth chart), diagnostics (haemoglobin (Hb), test parasite in stool (general microscopy), malaria diagnostic capacity) and for medicines and commodities (oral rehydration solution packet, amoxicillin (dispersible tablet 250 or 500 mg or syrup/suspension), co-trimoxazole syrup/suspension, paracetamol syrup/suspension, vitamin A capsules, me-/albendazole cap/tab, zinc sulphate tablets or syrup) (Figure 23). Findings on Child health preventive and curative care service readiness indicates that: -

- Essential guidelines and tools necessary for monitoring child growth are available in up to 60% of facilities; however, there is a significant deficiency in trained staff for growth

monitoring, with fewer than half of the facilities equipped with knowledgeable personnel by 34%.

- Most facilities are well-equipped with basic diagnostic tools such as stethoscopes and thermometers, with an impressive availability of around 97% and 92%, respectively. Additionally, the capability to diagnose malaria was high at 97%. Furthermore, the provision of essential medicines that are crucial for children's healthcare is strong, with a general availability of over 80% across facilities.
- It was noted that 68% of the dispensaries were ready to offer preventive and curative care for U-5s, 76% of the health centres, 84% of the council hospitals and 83% of the referral facilities.
- While 71% of the government/public facilities were ready to offer preventive and curative care for U-5s, 62% of the NGO/not-for-profit facilities, 65% of the private facilities, and 72% of the mission/faith-based facilities.
- Oral Rehydration Salts (ORS), crucial for treating dehydration in children, is among the best-stocked items, with an 92% availability rate, compared to SARA 2020 survey the availability was 88%.
- Overall, while many single items are commonly available, very few facilities have a complete set of all necessary health items; only 1% are fully equipped.
- The average availability of tracer items, indicative of a facility's readiness to provide child health services, was 75%, compared with the previous SARA 2020 survey which was 1% less.

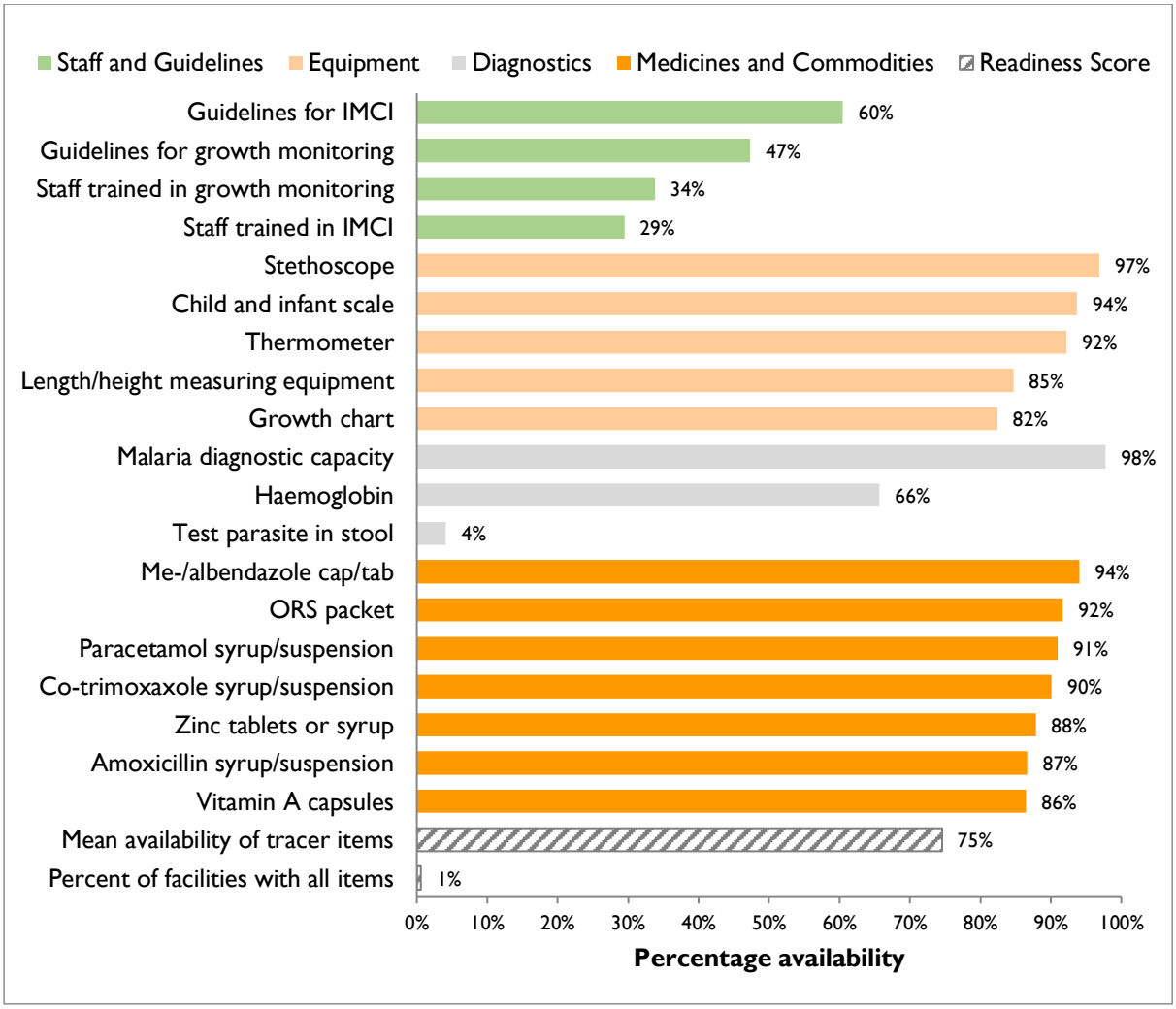


Figure 23: Child Health Preventive and Curative Care Service Readiness

Adolescent Health Service Availability

As of 2020, Tanzania's population included over 14 million adolescents. Unfortunately, Tanzania faces many challenges with adequate provision of adolescent-friendly services. In 2017 Tanzania made a Family Planning 2020 commitment to increase the number of health facilities providing youth-friendly services from 30% (2016) to 80% by 2020. In 2019, an estimated 63% of health facilities provided youth-friendly services (6); however, only 30% of health service delivery points met the national standards for Adolescent and Youth Sexual and Reproductive Health (5). At the same time, the pace of training youth-friendly service providers in Tanzania has been slow. Only 57% of the 2,400 providers scheduled to receive current youth-friendly services training in 2019 received training (7)[1]. Types of services

[1] https://www.advancefamilyplanning.org/tanzanias-ministry-health-adds-youth-friendly-services-midwifery-curriculum

offered included adolescent health services, HIV testing and counselling services to adolescents, family planning services to adolescents, provision of combined oral contraceptive pills to adolescents, provision of male condoms to adolescents, provision of emergency contraceptive pills to adolescents, provision of intrauterine contraceptive device (IUCD) to adolescents, and provision of ART to adolescents (Figure 24). Findings on Adolescent health service availability revealed that: -

- The findings show that 84% of all facilities provided adolescent health services, an increase from the 2020 SARA survey. Additionally, the provision of male condoms was reported to be 80%, which is a higher rate than that of the 2020 survey.
- Furthermore, 79% of the facilities offered HIV testing and counselling services to adolescents, an increase of 71% reported in the 2020 survey.
- HIV testing and counselling services reported in 78% of the dispensaries, 87% of the health centres, 80% of the council hospitals and 81% of the referral facilities.
- Approximately 88% of the government/public facilities reported offering HIV testing and counselling services, 75% for the NGO/not-for-profit, 38% private for profit and 73% mission/faith-based facilities.
- Additionally, the provision rates for combined oral contraceptive pills, emergency contraceptive pills, antiretroviral therapy (ART), and intrauterine contraceptive devices (IUCDs) were 67%, 48%, 48%, and 34% respectively, all of which represent increases from the 2020 SARA survey.

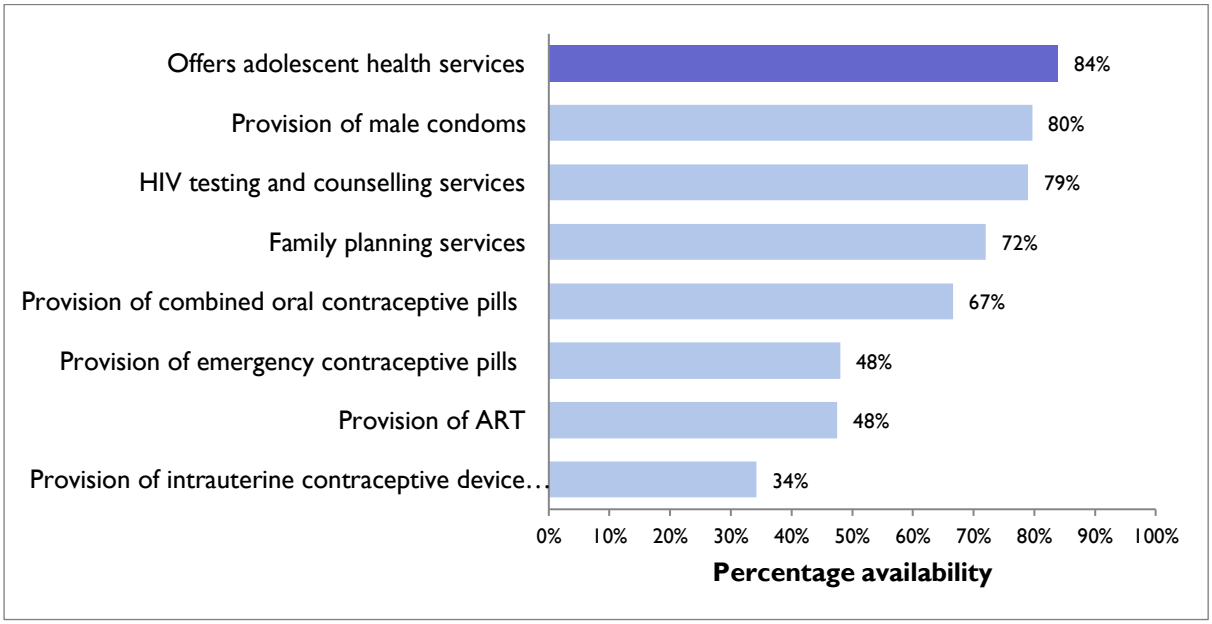


Figure 24: Adolescent Health Service Availability

Adolescent Health Service Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for service provision to adolescents, staff trained in the provision of adolescent health services, staff providing family planning services trained in adolescent sexual and reproductive health and staff providing HIV testing and counselling services trained in HIV/AIDS prevention, care, and management for adolescents), diagnostics (HIV diagnostic capacity) and medicines and commodities (condoms) (Figure 25). Findings on adolescent health service readiness portray that: -

- HIV Services Training and Diagnostic Capabilities: In 44% of facilities, the staff is equipped with training in comprehensive HIV prevention, care, and treatment, while 98% have the infrastructure necessary to conduct HIV diagnostics.
- Adolescent Health Expertise and Guidance: Approximately one-third of the facilities boast of a workforce skilled in adolescent health services; however, 32% have established guidelines tailored for the healthcare of adolescents.
- Integrated Family Planning and Adolescent Health: A total of 34% of facilities provide dual services of family planning and adolescent sexual and reproductive health, addressing multiple needs within a single setting.
- Provision of Contraceptives and Overall Readiness: Condom availability was high at 92% across facilities, indicating a strong focus on safe sex practices. Despite this, only 10% of facilities are comprehensively stocked with all the crucial health service resources.
- The average provision of key health service resources, or 'tracer items', stands at 56%, indicating that over half the facilities have essential items on hand. However, only 10% of these facilities are fully equipped with a complete set of these critical resources, highlighting a gap in overall health service preparedness.
- Adolescent health service readiness was found to be 53% at dispensaries, 64% at health centres, 66% at council hospitals, and 74% at referral hospitals.
- Readiness for adolescent health services was 57% for government/public facilities, 29% for NGO/not-for-profit, 51% for profit, and 47% for mission/faith-based facilities.

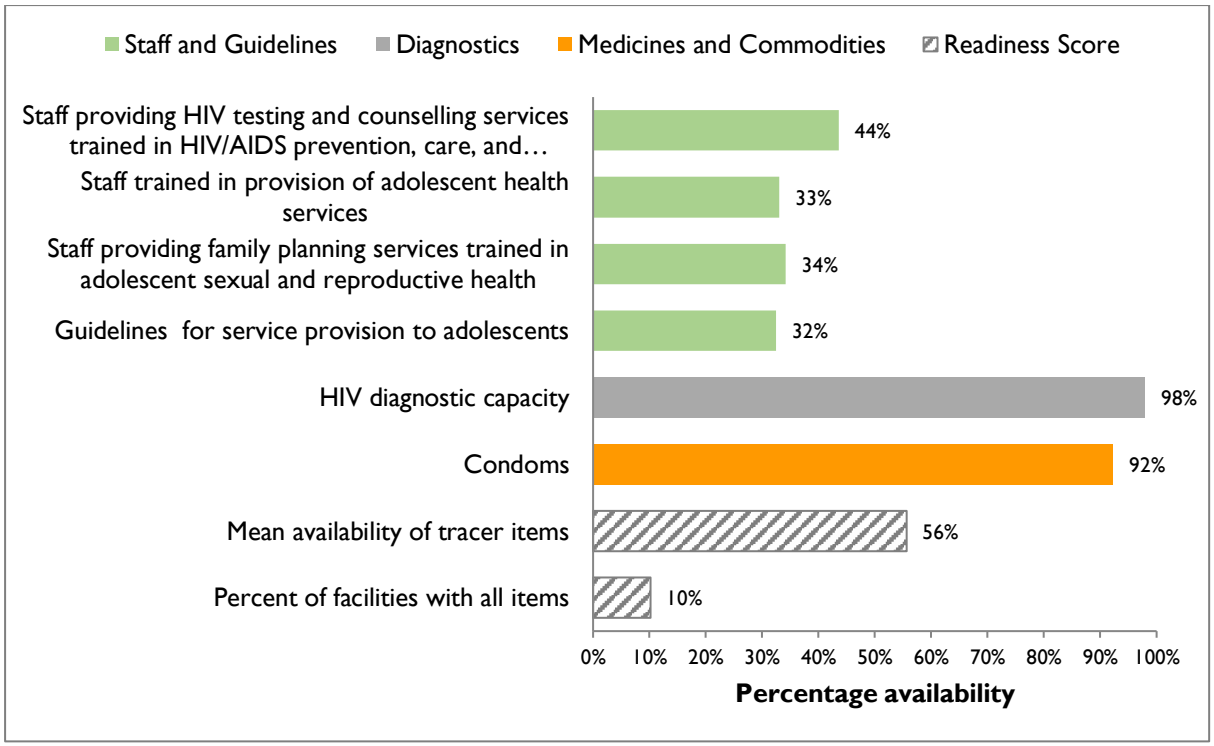


Figure 25: Adolescent Health Service Readiness

HIV, TB, and Malaria in General

Availability of communicable disease services

Figure 26 presents the general findings on HIV, TB and Malaria services availability:

- Malaria services were available at 99% of the facilities, indicating near-universal coverage.
- HIV Counselling and Testing was offered by 91% of the facilities, showing widespread accessibility.
- STI Services and PMTCT are accessible at 83% and 81% of the facilities respectively, demonstrating a strong focus on sexual health and mother-to-child transmission prevention.
- ARV Management: Prescriptions and client management services are available at 59% of the facilities, highlighting their limited availability.

- Tuberculosis services were available in 53% of facilities, and HIV care and support services were the least available at 46%, suggesting room for improvement in these areas.

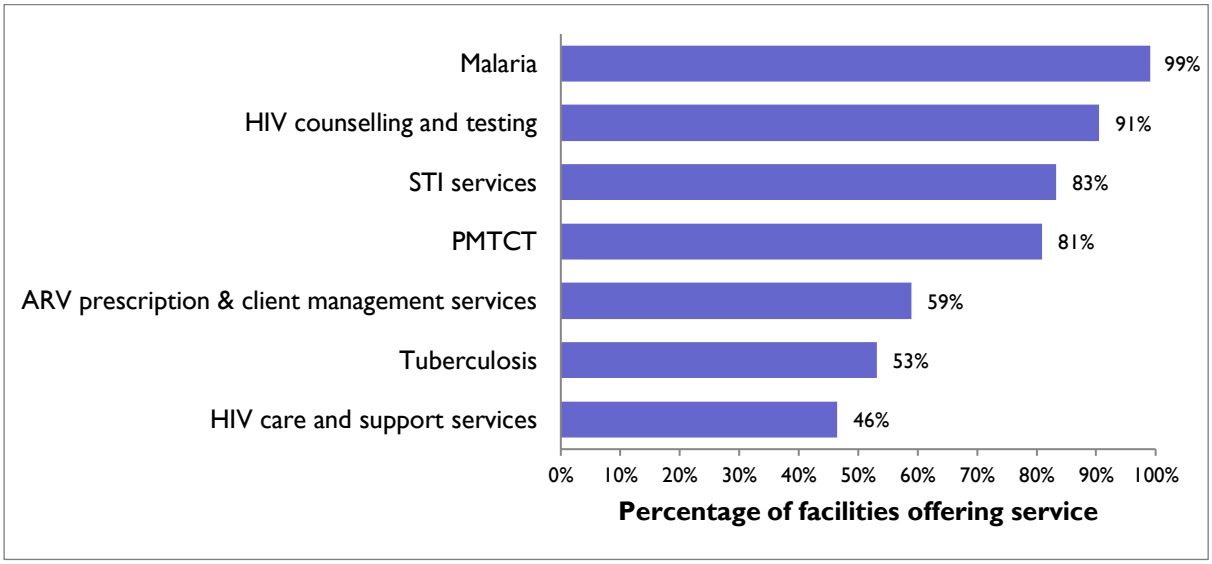


Figure 26: Availability of Communicable Disease Services (628)

Readiness to provide communicable disease services

General findings on readiness for HIV, TB and Malaria in Tanzania (Figure 27)

- For Malaria services, which were assessed across 620 facilities (N=620), the overall readiness was 62%. The readiness regarding staff and guidelines is estimated to be a bit higher, at 65%. In contrast, the readiness for equipment is lower, at around 60%. Diagnostics readiness is noted to be lower than the overall figure, at about 55%, pointing to a potential area for targeted enhancements.
- Meanwhile, the readiness for medicines and commodities is better than overall, at 70%, indicating good availability of necessary medical supplies and drugs for malaria treatment.
- For Tuberculosis, with a total of 364 facilities, the overall readiness was 52%. Readiness for Staff and Guidelines was marginally higher than overall readiness, estimated at 54%. Equipment readiness was marginally low (approximately 50 %). Diagnostics readiness is higher than overall readiness by about 58%. Readiness for Medicine and Commodities is approximately 60%.

- For HIV Counselling and Testing, with a total of 553 facilities, the overall readiness was 71%. Readiness for Staff and Guidelines exceeds overall readiness, estimated at 73%. Equipment readiness was slightly below the overall readiness of approximately 70%. Diagnostics readiness was close to the overall readiness, at approximately 71%. The readiness of medicine and commodities is higher, at approximately 85%.
- For HIV Care and Support Services, which encompass 335 facilities, the overall readiness was 68%. However, readiness for Staff and Guidelines falls slightly below this mark, estimated at around 66%. In contrast, equipment readiness aligns closely with overall readiness, at approximately 68%. Diagnostics readiness surpasses the overall figure, estimated at around 70%. On the other hand, the readiness for Medicines and Commodities is significantly lower, at approximately 29%.
- In terms of ARV Client Prescription & Management Services, which involves 394 facilities, the overall readiness level is documented at 52%. Readiness for Staff and Guidelines, however, is below this level, which is approximately 50%. In contrast, equipment readiness was higher, at 54%. The readiness level for diagnosis remains uncertain and challenging to estimate. Meanwhile, the readiness for Medicines and Commodities is markedly lower, at about 30%.
- For the PMTCT, which encompasses 494 facilities, the overall readiness is unmarked and remains challenging to estimate. The readiness for Staff and Guidelines appears to hover around the 50% mark. Similarly, readiness for Equipment and Diagnostics is not marked and is difficult to gauge. However, the readiness for Medicines and Commodities is notably higher than that of Staff and Guidelines, estimated at around 75%.
- In the area of STI Services, which is available in 547 facilities, the overall readiness stands at 69%. The readiness for Staff and Guidelines is slightly below this figure, estimated at around 67%. Conversely, Equipment readiness is a bit above the overall readiness, at about 70%. Diagnostics readiness also exceeded overall readiness, estimated at approximately 72%. The readiness for Medicines and Commodities is in line with the overall readiness, at approximately 69%.

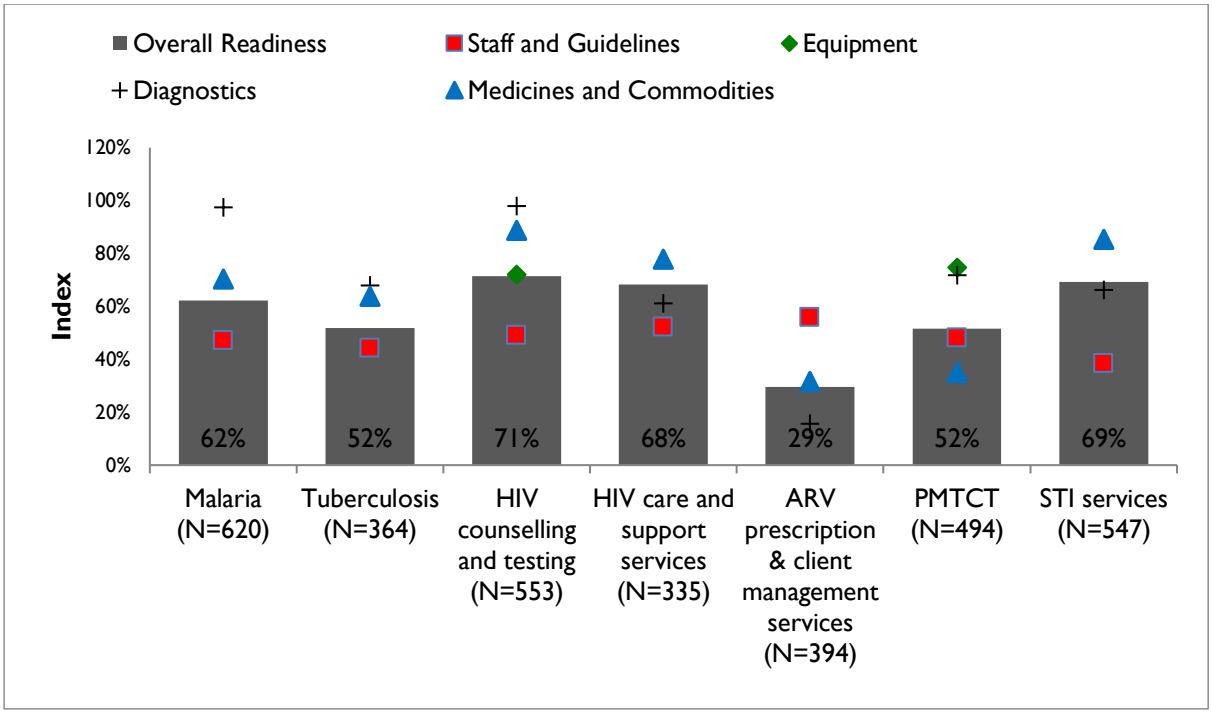


Figure 27: Readiness to Provide Communicable Disease Services (628)

Malaria Service Availability

The types of services offered included malaria diagnosis or treatment, diagnosis by clinical symptoms, rapid diagnostic tests (RDTs), microscopy, and IPT (Figure 28 & supplementary Table S10). Findings on malaria service availability indicates that: -

- The offering of diagnosis or treatment of malaria, including general diagnosis, rapid diagnostic tests (RDTs), other forms of testing, and treatment itself, has the highest availability (99%). This indicates that nearly all the surveyed facilities provide these services.
- The availability of Intermittent Preventive Treatment (IPT) is slightly lower but remains substantial at 89%. Meanwhile, diagnoses based on clinical symptoms are available in 64% of the facilities, which is lower than the services but still accessible in most of them.
- The service with the lowest availability is malaria diagnosis by microscopy, at only 33%, suggesting that fewer than one-third of facilities have the capability to utilize this diagnostic method.

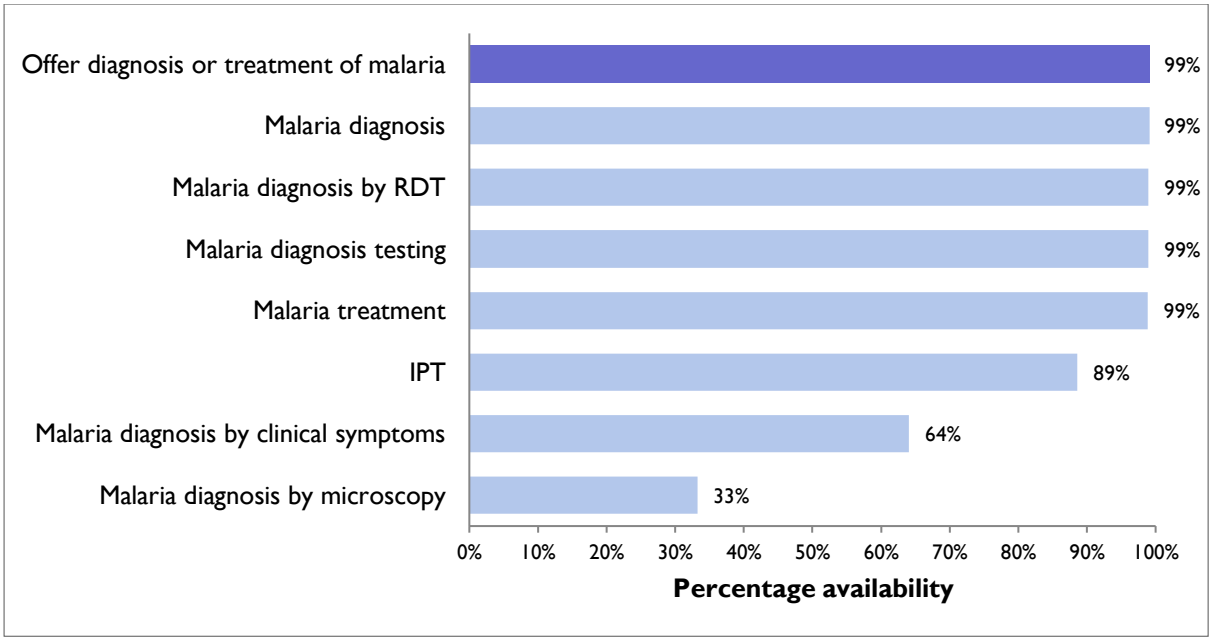


Figure 28: Malaria Service Availability

Malaria Service Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for diagnosis and treatment of malaria, staff trained in malaria diagnosis and treatment), whereas for diagnostics (malaria diagnostic capacity), while for medicines and commodities (first-line antimalarial in stock, paracetamol cap/tab, IPT drug and ITN) (Figure 29). Findings on malaria service readiness revealed that: -

- The average availability of tracer items was 62%, which remained unchanged from the SARA 2020 survey.
- Malaria service readiness was found to be 60% in dispensaries, 73% in health centres, 77% in council hospitals, and 63% in referral facilities.
- For government/public facilities malaria service readiness was 64%, NGO/not-for-profit was 63%, 50% for profit facilities and 65% for mission/faith-based facilities.
- According to the SARA 2023survey, 38% of facilities had at least one trained staff member for the diagnosis and treatment of malaria.
- The percentage of facilities equipped with Insecticide-Treated Nets (ITNs) in the SARA 2023 survey increased to 82%, an increase from the 75% reported in the SARA 2020 survey.

- In the SARA 2023 survey, the percentage of facilities equipped with all items increased to 1%, up from 5% in the SARA 2020 survey.

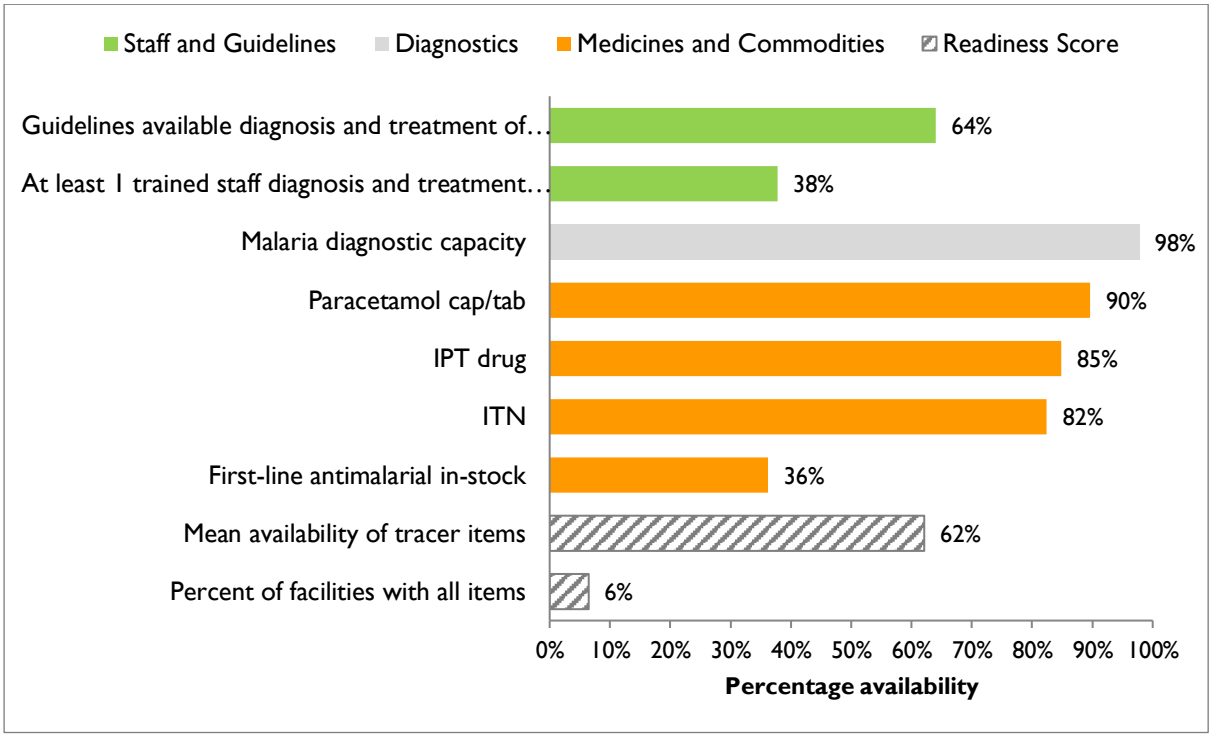


Figure 29: Malaria Service Readiness

Tuberculosis Service Availability

The TB incidence has fallen from 306 per 100,000 population in 2015 to 208 per 100,000 in 2021, indicating 32% reduction of TB incidence rate and the number of deaths. TB both in HIV positive and negative have been reduced by 55% from 58,000 in 2015 to 25,800 deaths in 2021. This makes Tanzania one of the three TB high-burden countries which reached or passed the first milestones of the end TB strategy and six high-TB burden countries that had reached or passed the first milestone of a 35% reduction in TB deaths compared with 2015. A total of 87,415 tuberculosis cases in 2021 compared to 85,597 in 2020[2]. This represented an increase of 1,818 cases (or 2.1%) compared to 2020. The number of new and relapse cases (incident cases) was 86,701, which is a 2.3% increase compared to 2020. The proportion of previously treated TB cases declined by 8.2% compared with the 2020 data.

[2] https://ntlp.go.tz/tuberculosis/tb-prevalence-in-tanzania/

The types of services offered included TB services, diagnosis (by clinical symptoms, sputum smear microscopy examination, culture, rapid test (GeneXpert MTB/RIF) and chest X-ray), prescription of drugs for TB patients, provision of drugs to TB patients, and management and treatment follow-up for TB patients (Figure 30 & supplementary Table S11). Findings on tuberculosis service availability disclose that: -

- A small majority of facilities (53%) provided services related to tuberculosis (TB), indicating a moderate level of access to TB-related healthcare.
- Approximately 47% of the dispensaries had TB services, 81% of the health centres, 78% of the council hospitals , and 93% of the referral facilities.
- TB services were reported in 59% of the government/public facilities, 50% of the NGO/not-for-profit, 22% of private for profit and 57% of mission/faith-based facilities.
- Nearly half of the facilities (46%) relied on clinical symptoms to diagnose TB, which suggests a reliance on clinical acumen for TB identification.
- Access to advanced diagnostic technology like the GeneXpert MTB/RIF rapid test is limited, with only 8% of facilities equipped with this capability.
- The most specialised diagnostic method, TB culture tests, is available in only 3% of the facilities, highlighting a significant gap in comprehensive TB diagnostic coverage.

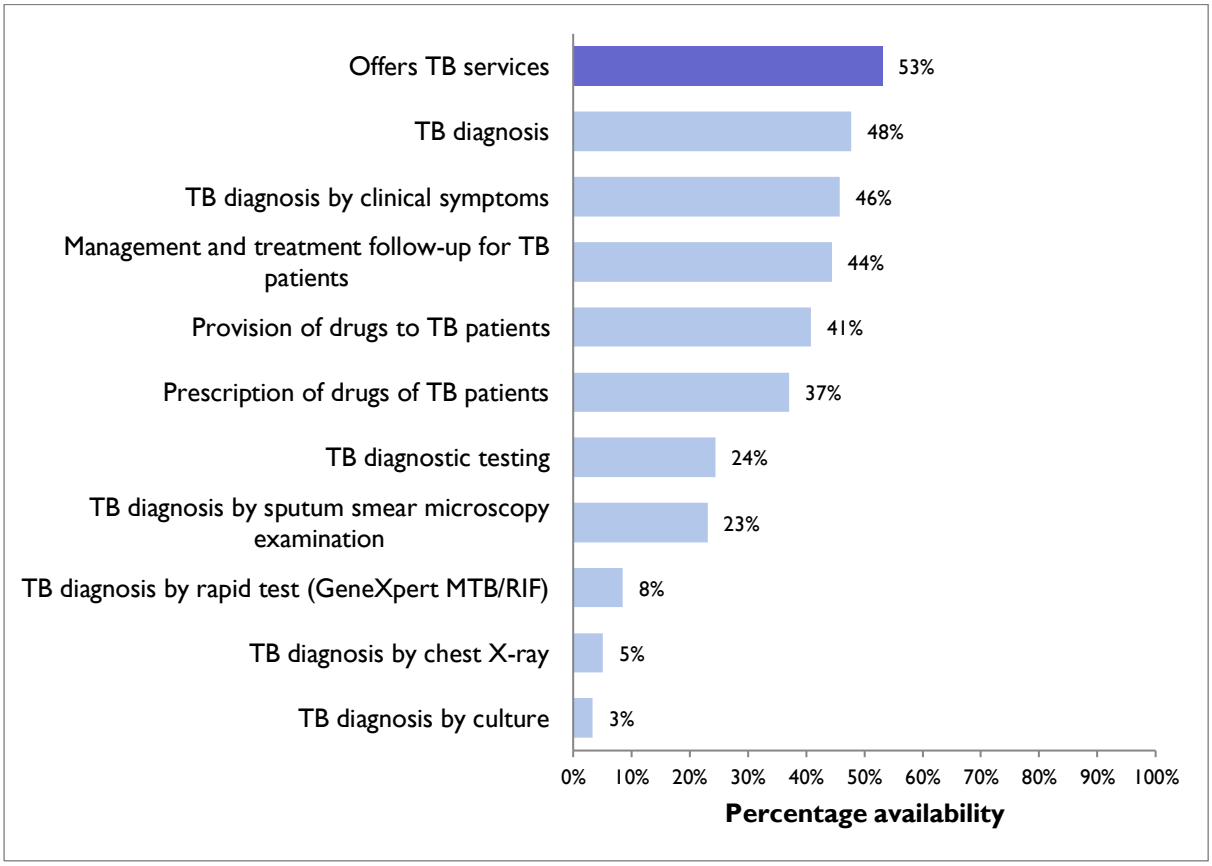


Figure 30: TB Service Availability

Tuberculosis Service Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for diagnosis and treatment of TB, guidelines for management of HIV & TB co-infection, guidelines related to MDR-TB treatment (or identification of need for referral), guidelines for TB infection control, staff trained in TB diagnosis and treatment, staff trained in the management of HIV & TB co-infection, staff trained in client MDR-TB treatment or identification of need for referral and staff trained in TB infection control) whereas diagnostics (TB microscopy, HIV diagnostic capacity and system for diagnosis of HIV among TB clients) while for medicines and commodities (first-lineTB medications) (Figure 31). Findings on tuberculosis service readiness showed that: -

- Staff and guidelines for TB diagnosis and treatment are available to 54% of facilities, which is slightly above the availability of trained staff for managing HIV & TB comorbidities (53%).
- The availability of guidelines for TB diagnosis and treatment, and the management of HIV & TB, is lower, at 47% and 42% respectively.
- Only 32% of the facilities have at least one staff member trained in Multi-Drug-Resistant Tuberculosis (MDR-TB) and the same percentage for the availability of MDR-TB guidelines. However, the percentages of facilities with at least one trained staff member for the diagnosis and treatment of tuberculosis, management of HIV and TB, and TB infection control were 54%, 53%, and 52% respectively.
- HIV diagnostic capacity is high, with 98% of facilities equipped to diagnose HIV, but only 70% of TB clients have systems to diagnose HIV. TB microscopy is available in 36% of facilities, while 64% have all first-line TB medications.
- The percentage of the mean availability for tracer items was 52%. Overall, only 6% of the facilities have all the items necessary for comprehensive TB and HIV care and treatment.
- TB service readiness was found to be 44% at the dispensaries, 72% for the health centres, 71% for the council hospitals and 93% for the referral facilities.

- For government/public facilities, TB service readiness was 51%, NGO/not-for-profit was 71%, 53% for profit facilities, and 58% for mission/faith-based facilities.

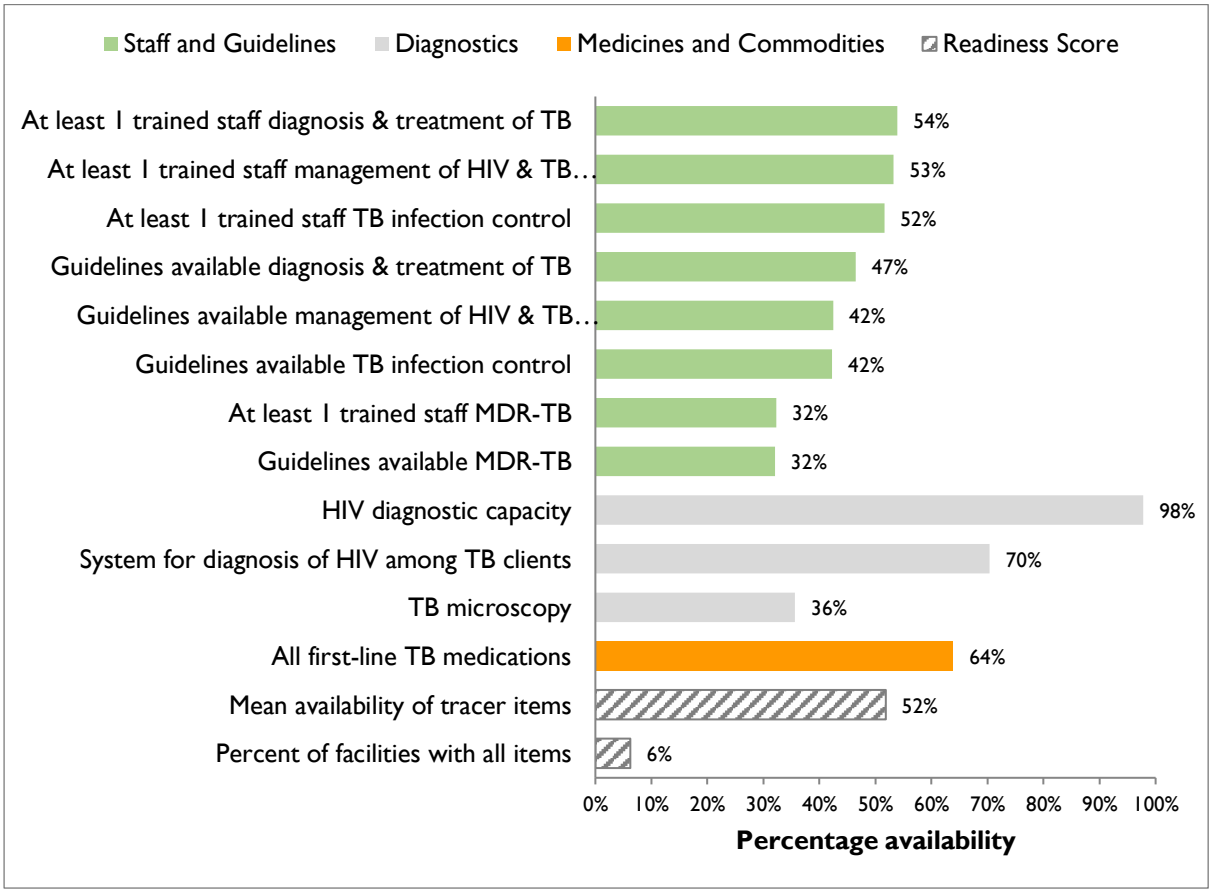


Figure 31: TB Service Readiness

HIV Counselling and Testing Service Readiness

Findings on HIV counselling and testing service readiness (Figure 32 & supplementary Table S12):

- It was noted that 91% of all the healthcare facilities visited offered HIV counselling and testing services.
- The SARA 2023 survey findings show that the mean availability of tracer items was 71%, and only 22% of all health facilities had all tracer items (Figure 22).
- In terms of healthcare facility level, the mean availability was 69% for dispensaries, 81% for health centres, 83% for council hospitals, and 91% for referral hospitals.
- In terms of managing authorities, government/public (73%), NGO/not-for-profit (62%), private-for-profit (59%) and mission/faith based (73%).

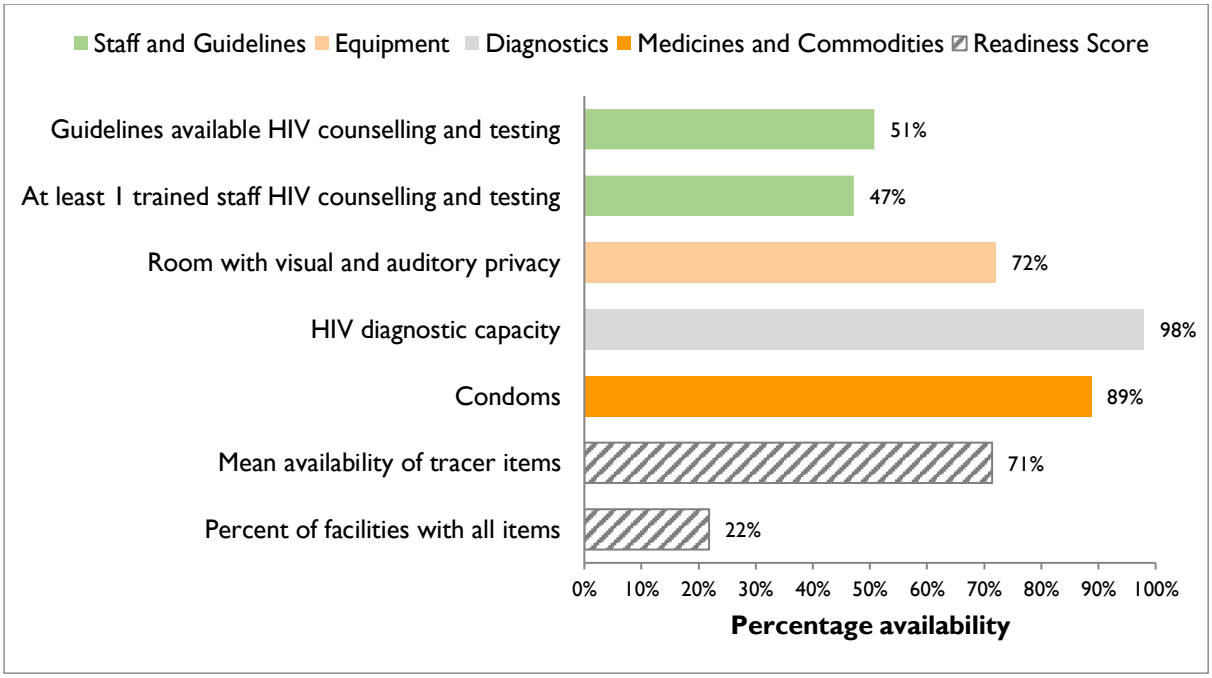


Figure 32: HIV Counselling and Testing Service Readiness (553)

HIV/AIDS Care and Support Service Availability

The following services were included during the SARA survey 2023, HIV/AIDS care and support services, treatment of opportunistic infections, provision of palliative care, intravenous treatment of fungal infections, treatment for Kaposi's sarcoma, nutritional rehabilitation services, prescribe/provide fortified protein supplementation, care for paediatric HIV/AIDS patients, provide/prescribe preventative treatment for TB, primary preventive treatment for opportunistic infections, provide/prescribe micronutrient supplementation, family planning counselling and provision of condoms (Figure 33). Findings on HIV/AIDS care and support service availability shows that: -

- HIV care and the treatment of opportunistic infections are the most accessible, with 46% of the facilities equipped to offer such care, underscoring the attention given to HIV-related services.
- Family planning counselling closely followed, available at 45% of facilities, indicating a significant emphasis on reproductive health. Treatment for opportunistic infections is available at 43%, showing a strong but slightly less prevalent service compared to direct HIV-related treatments.
- Services for paediatric HIV/AIDS patients are present in 40% of the facilities, which suggests a focus on specialized care for children affected by HIV. Micronutrient

supplementation and IV treatment for fungal infections are available in a similar range, at 39% and 38% respectively, indicating to the availability of essential services for managing malnutrition and infectious diseases.

- Palliative care is accessible in 37% of facilities, reflecting the availability of essential support for individuals with serious illnesses. Preventative TB treatment is slightly less available, with a presence in 35% of the facilities, highlighting a moderate level of service provision.
- While the nutritional rehabilitation services and treatment for Kaposi's sarcoma are among the less commonly available services, with each present in 23% of facilities. The provision of fortified protein supplements is the least available, with only 12% of facilities offering this service, although the exact nature of the service is not fully visible in the chart.

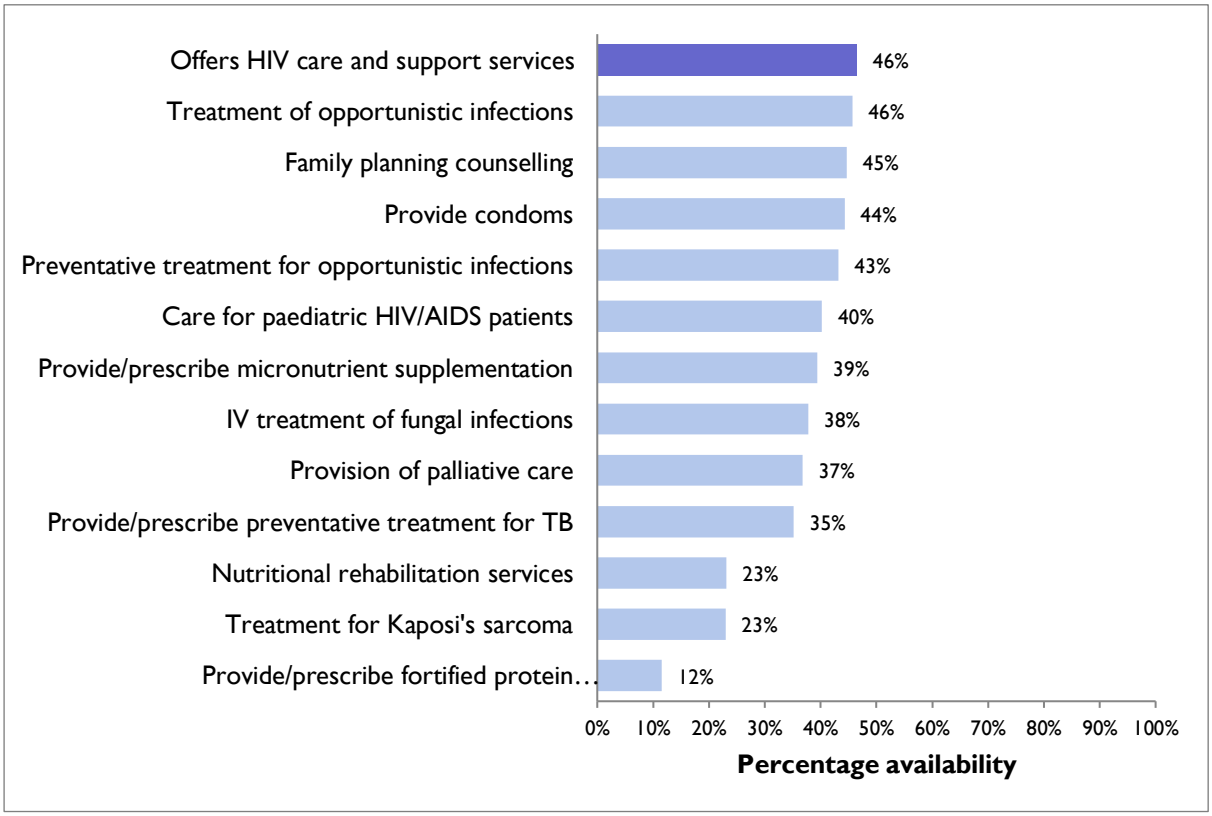


Figure 33: HIV/AIDS Care and Support Service Availability

HIV/AIDS Care and Support Service Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for clinical management of HIV & AIDS, guidelines for palliative care and staff trained in clinical management of HIV & AIDS), diagnostics (system for diagnosis of TB among HIV + clients) and medicines and commodities (intravenous solution with infusion set, IV treatment fungal infections, co-trimoxazole cap/tab, first-line TB treatment medications, palliative care pain management and condoms) (Figure 34). Findings on HIV/AIDS care and support service readiness in Tanzania showed that:

- The percentage of clinical management guidelines for HIV/AIDS and TB diagnosis among HIV+ clients are moderately available at 62% and 61%, respectively, whereas essential palliative care guidelines are significantly less accessible at 36%.
- The high availability of palliative care pain management (95%), condoms (94%), and co-trimoxazole (94%) underscores a focus on pain relief, preventive measures, and treatment of opportunistic infections in HIV care.
- Intravenous solutions with infusion sets show a high availability rate of 89%, indicating a readiness to administer treatments, however, all first-line TB medications lag behind at 57% availability.
- The availability of IV treatment for fungal infections is notably low at 37%, revealing a gap in the management of HIV-related opportunistic infections.
- The overall mean availability of tracer items is 68%, with only 9% of facilities having full availability of all assessed items, indicating room for improvement in healthcare service readiness.
- HIV/AIDS care and support service readiness was found to be 63% for the dispensaries, 82% for the health centres, 79% for the council hospitals and 93% for the referral facilities.
- For the government/public facilities HIV/AIDS care and support service readiness was 69%, NGO/not-for-profit was 64%, 63% for the profit facilities and 70% for the mission/faith-based facilities.

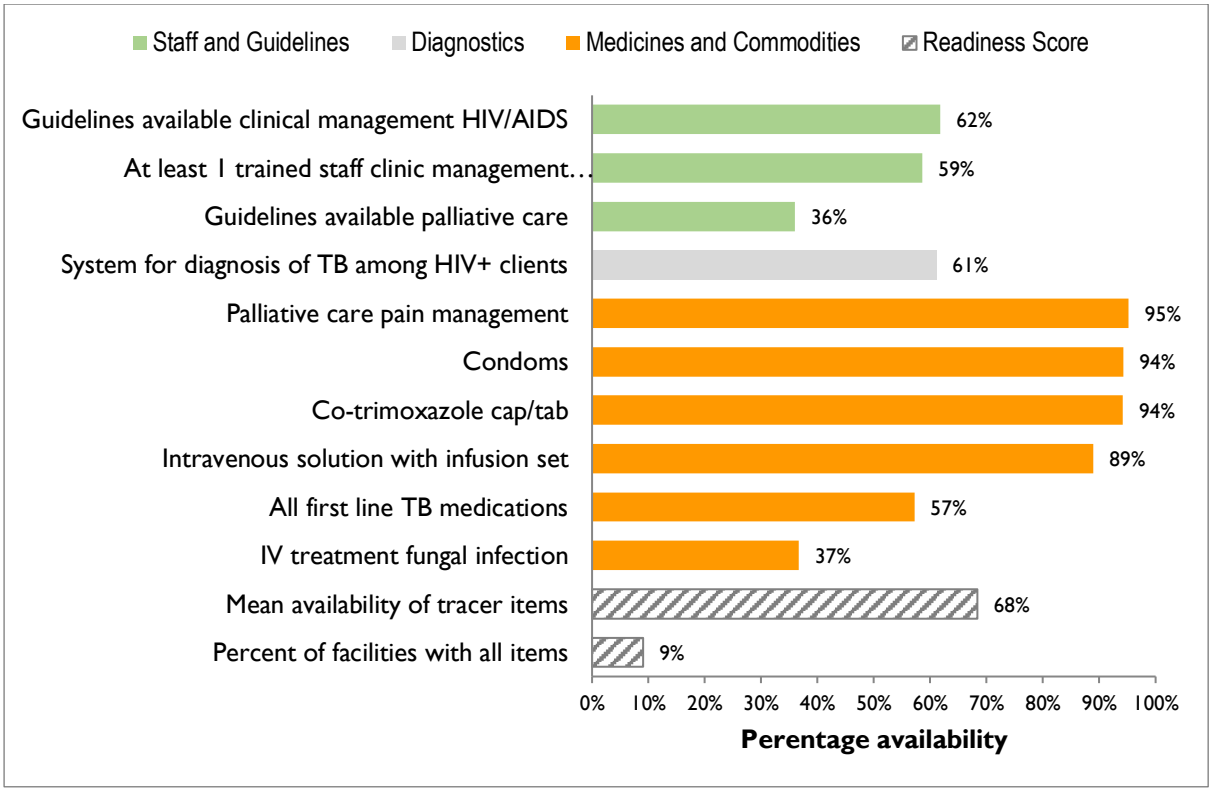


Figure 34: HIV/AIDS Care and Support Service Readiness (335)

HIV/AIDS Antiretroviral Service Availability

Types of services offered included ARV prescription or ARV treatment follow-up services, Antiretroviral prescription, and Treatment follow-up services for persons on ART (Figure 35 & supplementary Table S13). Findings on HIV/AIDS antiretroviral (ARV) service availability revealed that: -

- The percent of clinical management guidelines for HIV/AIDS and TB diagnosis among HIV and clients are moderately available at 62% and 61%, respectively, while essential palliative care guidelines are significantly less accessible at 36%.
- High availability of palliative care pain management (95%), condoms (94%), and co-trimoxazole (94%) underscores a focus on pain relief, preventive measures, and treatment of opportunistic infections in HIV care.
- Intravenous solutions with infusion sets show a high availability rate of 89%, indicating a readiness to administer treatments, yet all first-line TB medications lag at 57% availability.

- The availability of IV treatments for fungal infections is notably low at 37%, revealing a gap in the management of HIV-related opportunistic infections.
- The overall mean availability of tracer items is 68%, with only 9% of facilities having full availability of all assessed items, indicating room for improvement in healthcare service readiness.
- At the dispensary level prescription of ARV, or ARV treatment follow–up services were 54% and 81% at the health centres, 84% at the council level and 100% at the regional referral facilities.
- Approximately 68% of the government/public facilities reported offering ART services, 57% of the NGO/not-for-profit, 18% of the private for profit and 55% of the mission/faith-based facilities.

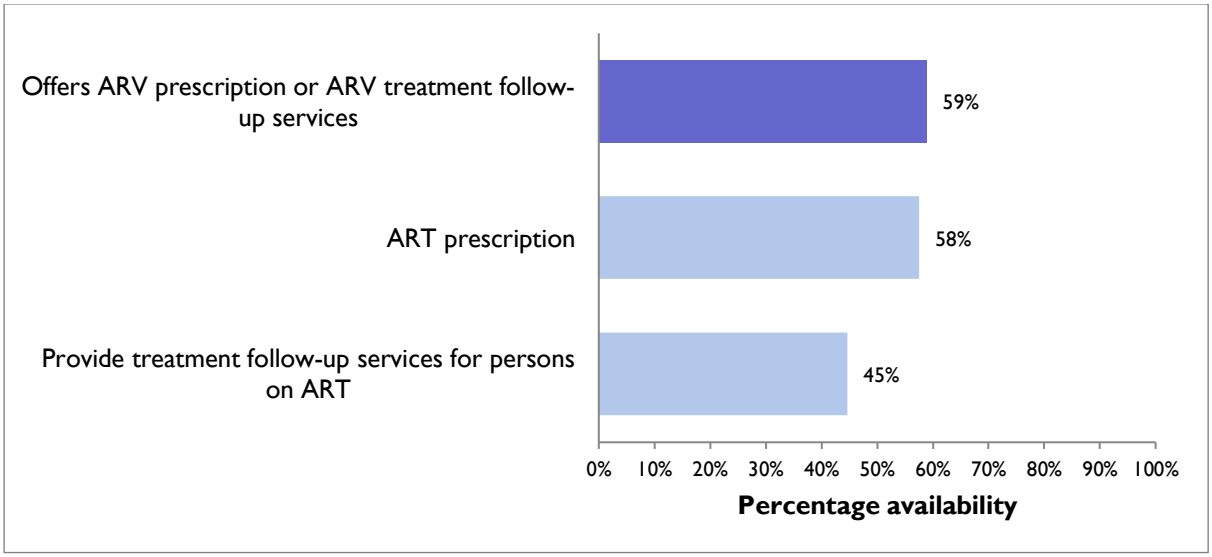


Figure 35: HIV/AIDS Antiretroviral Service Availability (628)

HIV/AIDS Antiretroviral Service Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for antiretroviral therapy and staff trained in ART prescription and management), diagnostics (full blood count, CD4 or Viral load, renal function test (serum creatinine testing or other) and liver function test (ALT or other)) as well as medicines and commodities (three first-line antiretrovirals) (Figure 36). Findings on HIV/AIDS antiretroviral (ARV) service readiness shows that: -

- The availability of guidelines for Antiretroviral Therapy (ART) is 59%, indicating that most facilities have the necessary treatment protocols.
- The percentage of facilities with at least one trained staff member for ART prescription and support was 53%. Services for CD4 or viral load tests, which are crucial for managing HIV treatment, are available in 41% of the facilities.
- Renal function tests and liver function tests were available at 8% of the facilities, and complete blood count (CBC) tests were available at 7%. The availability of first-line antiretroviral (ARV) medications is 32%.
- The mean availability of tracer items, which indicates service readiness, was 29%. Only 2% of the facilities had all assessed items available.
- ART service readiness was found to be 24% in dispensaries, 42% in health centres, 54% in council hospitals, and 92% in referral facilities.
- For government/public facilities malaria service readiness was 28%, NGO/not-for-profit was 48%, 42% for profit facilities was 39% for mission/faith-based facilities.

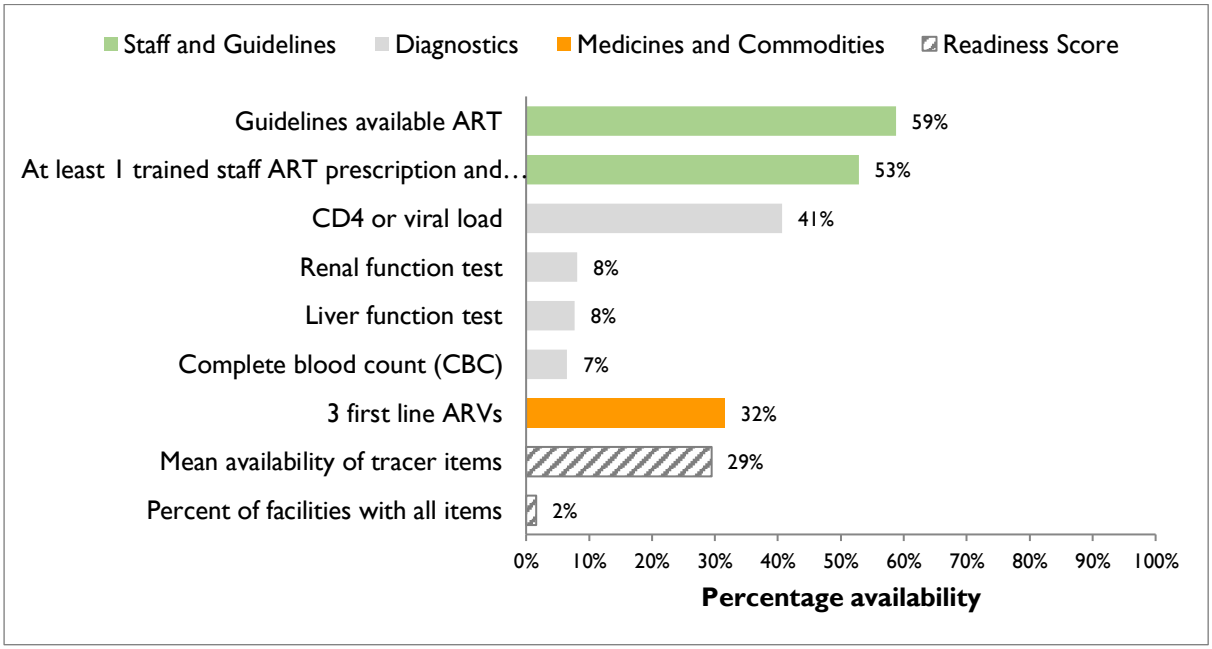


Figure 36: HIV/AIDS Antiretroviral Service Readiness (628)

HIV/AIDS: PMTCT Service Availability

Types of services offered included Preventing Mother-To-Child Transmission (PMTCT) services, counselling and testing for HIV+ pregnant women, counselling and testing for infants born to HIV+ women, ARV prophylaxis to HIV+ pregnant women, ARV prophylaxis to infants

born to HIV+ women, infant and young child feeding counselling, nutritional counselling for HIV+ women and their infants, and family planning counselling to HIV+ women (Figure 37 & supplementary Table S14). Findings on HIV/AIDS - PMTCT service availability shows that: -

- Services for Prevention of Mother-To-Child Transmission (PMTCT), HIV counselling and testing for HIV-positive pregnant women, and counselling on infant and young child feeding are accessible in 81% of the facilities.
- PMTC services were available in 78% of the dispensaries, 92% of the health centres, 93% of the council hospitals and 88% of the referral facilities.
- Most public facilities (92%) reported PMTCT services, 88% of the NGO/not-for-profit, 33% of the private facilities, and 68% of the mission/faith-based facilities.
- Nutritional counselling for HIV-positive women and infants, as well as family planning and counselling services for HIV-positive women, were both provided by 80% of the facilities.
- HIV counselling and testing for infants born to HIV-positive mothers were offered by 77% of the facilities, while 74% provided ARV prophylaxis to both HIV-positive women and their newborns.

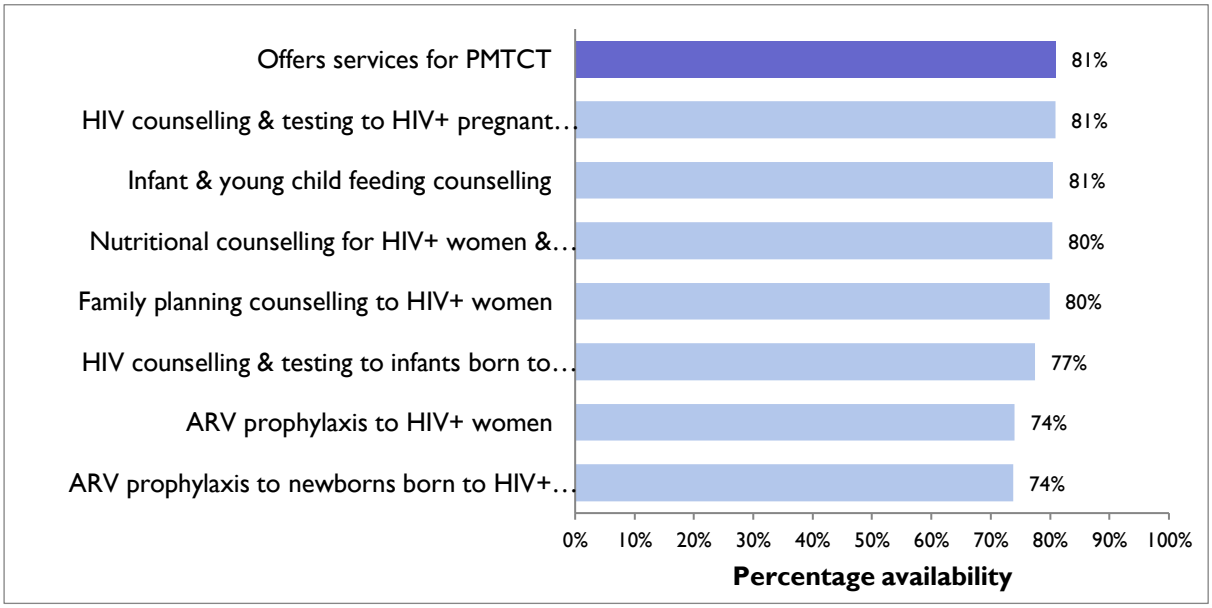


Figure 37: HIV/AIDS: PMTCT Service Availability (628)

HIV/AIDS: PMTCT Service Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for PMTCT, guidelines for infant and young child feeding counselling, staff trained in PMTCT, and staff trained in infant and young child feeding), equipment (visual and auditory privacy), diagnostics (HIV diagnostic capacity for adults, and Dried Blood Spot (DBS) filter paper for diagnosing HIV in newborns) as well as medicines and commodities (Zidovudine (AZT) syrup, Nevirapine (NVP) syrup, and Maternal ARV prophylaxis) (Figure 38). Findings on HIV/AIDS-PMTCT service readiness indicates that: -

- Guidelines for infant and young child feeding are accessible in 63% of facilities, while guidelines available for PMTCT procedures are available in 51% of facilities, showing a concerted effort to provide essential information for maternal and child health services.
- PMTCT readiness was found to be 48% in dispensaries, 63% in health centres, 68% in council hospitals, and 82% in referral facilities.
- For the government/public facilities PMTCT service readiness was 51%, NGO/not-for-profit was 55%, 50% for the profit facilities and 59% for the mission/faith-based facilities.
- The findings also show that at least one trained staff for PMTCT and infant and young child feeding are available in 45% and 33% of facilities, respectively, indicating the presence of specialized personnel in more than a third of health centres.
- Most facilities, at 75%, offer rooms that ensure visual and auditory privacy, essential for confidential health consultations.
- High diagnostic capacity for adult HIV is evident with 99% of facilities equipped to perform such tests, compared to 45% of facilities that can diagnose newborn HIV, showcasing a strong focus on adult HIV services.
- A contrast in medication availability was noted, with Nevirapine (NVP) syrup available in 65% of the facilities, maternal ARV prophylaxis in 33%, and zidovudine syrup in only 7%. Meanwhile, the mean availability of tracer items was 52%, and only 1% of the facilities were equipped with all assessed items, reflecting the overall resource availability in these health centres.

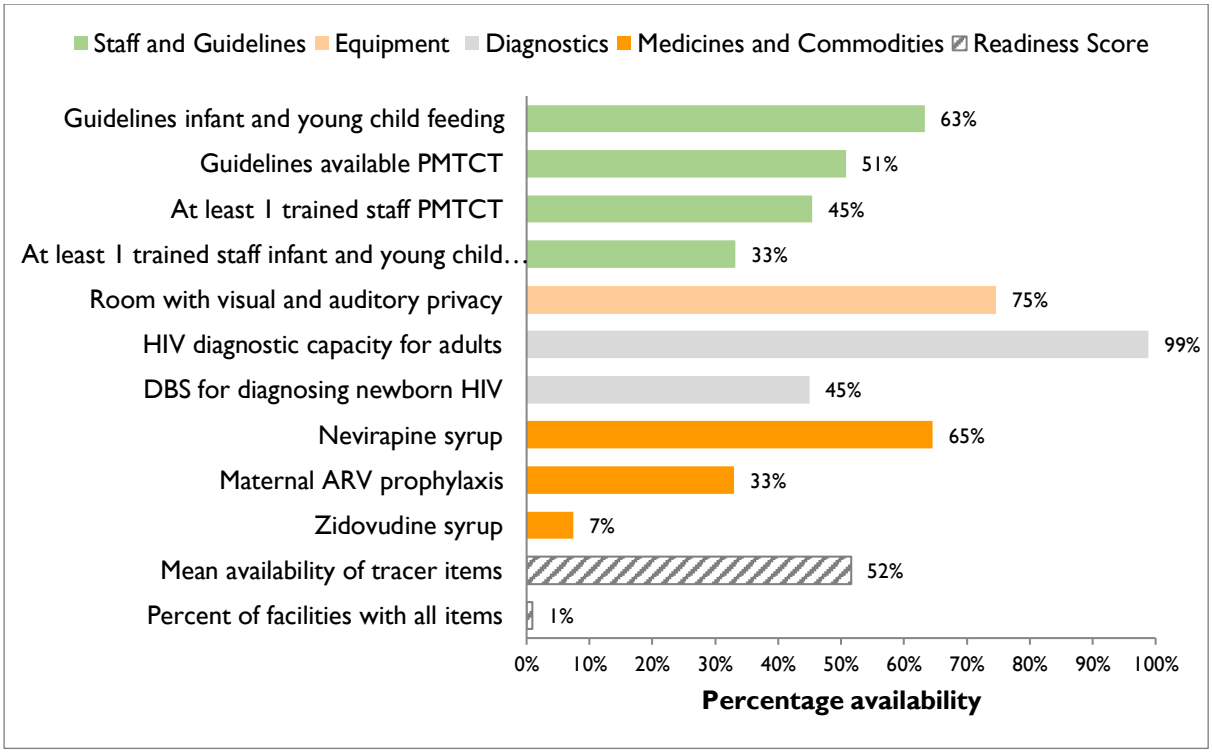


Figure 38: HIV/AIDS: PMTCT Service Readiness (628)

Sexually Transmitted Infections Service Availability

The majority of bacteria, viruses, or parasites that cause sexually transmitted infections (STIs), also known as sexually transmitted diseases (STDs), are transferred through unprotected sexual activity (such as vaginal, anal, or oral intercourse) and direct genital touch. HIV prevention, care, support, and treatment depend on appropriate counselling, testing, and early discovery. Improving the accessibility and uptake of volunteer testing and counselling services is a critical first step in enhancing public health. The types of services offered included STI services, STI diagnoses, and STI treatments (Figure 39). Findings on sexually transmitted infections service availability revels that: -

- Approximately 83% of health facilities provide services for sexually transmitted infections (STIs), and 82% of these facilities offer prescribed treatments for STIs. Additionally, the proportion of diagnosis for STIs in these facilities was 82%.
- STI services were available in 80% of the dispensaries, 96% of the health centres, 97% of the council hospitals and 100% in referral facilities.
- It was noted that 84% of the government/public facilities had STI services, 97% of the NGO/not-for-profit, 76% of the private for profit and 92% of the mission/faith-based facilities.

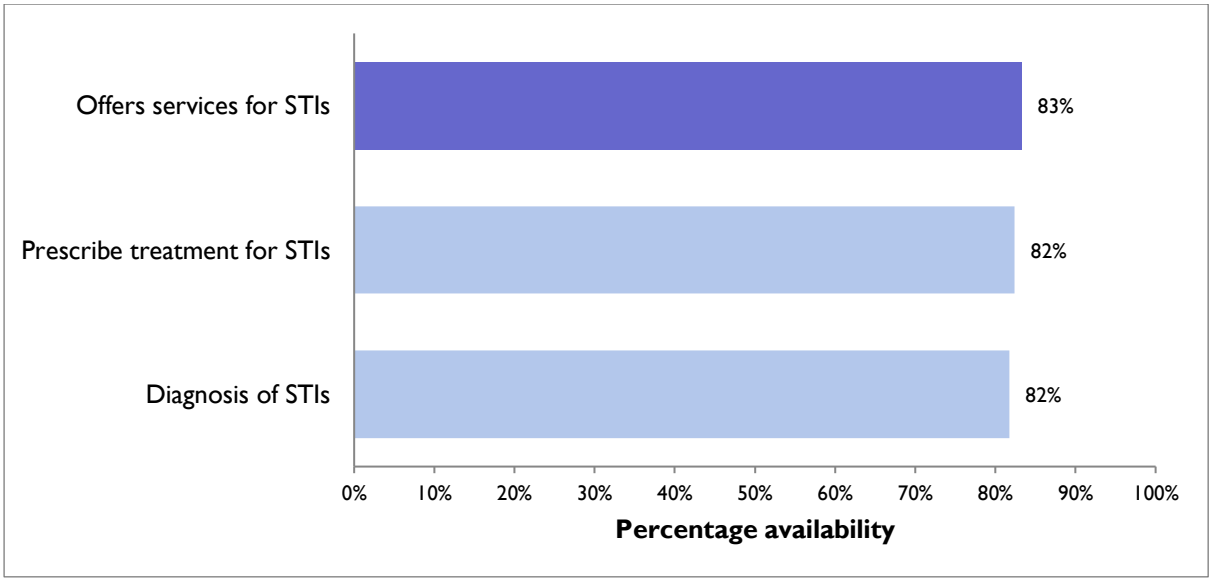


Figure 39: Sexually Transmitted Infections Service Availability (628)

Sexually Transmitted Infections Service Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for diagnosis and treatment of STIs and staff trained in STI diagnosis and treatment), also diagnostics (syphilis rapid test), and medicines and commodities (condoms metronidazole cap/tab, ciprofloxacin cap/tab, and ceftriaxone injectable) (Figure 40). Findings on sexually transmitted infections service readiness show that:

- The average availability of tracer items was at 69%, an increase of 63% reported in the SARA 2020 survey.
- STI service readiness was found to be 66% in dispensaries, 80% in health centres, 77% in council hospitals, and 90% in referral facilities.
- For government/public facilities, STI service readiness was 71%, NGO/not-for-profit was 61%, 62% for-profit facilities, and 65% for mission/faith-based facilities.
- The percentage of health facilities with at least one trained staff member for the diagnosis and treatment of sexually transmitted infections (STIs) was 26%. This represents a 4% increase from the 22% reported in the SARA 2020 survey, which indicates progress in staff training for STI management.
- The percentage of facilities equipped with all necessary items was 9%, a notable improvement over the 6% reported in the SARA 2020 survey, indicating an increase in the overall readiness of health facilities.

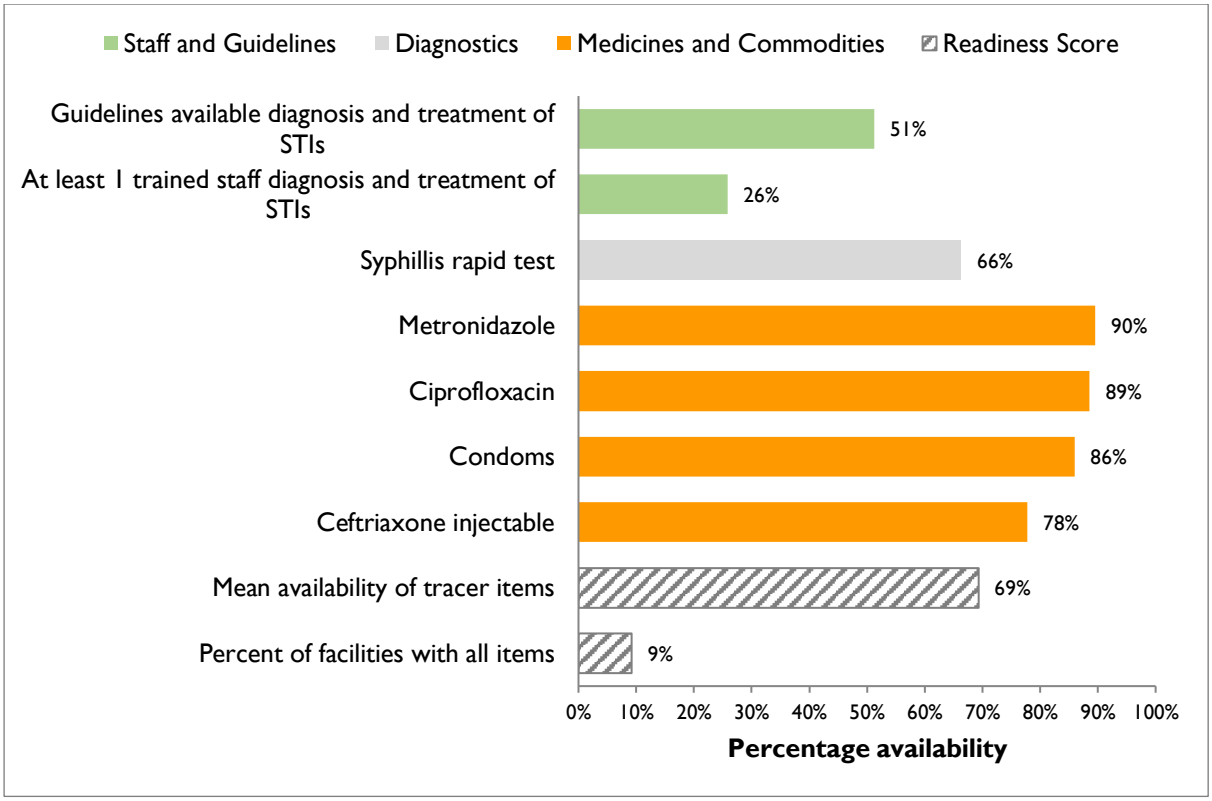


Figure 40: Sexually Transmitted Infections Service Readiness (628)

Non-Communicable Diseases (NCDs)

The government is committed to addressing the NCDs as stipulated within Tanzania's "Strategic Plan and Action Plan for the Prevention and Control of Non-Communicable Diseases in Tanzania (2016-2020) (MoHCDGEC, 2016). With the rising burden of non-communicable diseases, emphasis is now shifting from treatment or curative services to preventive services. Non-communicable diseases, such as cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases, contribute to approximately one-third of all deaths in the country and are a source of increasing disability in Tanzania. It is estimated that NCDs now account for 34% of total deaths in Tanzania (Kitole *et al*., 2023).

Non-communicable Diseases

The government has invested in non-communicable disease services at the health care facilities to boost early detection rates and decrease the cost of care for both providers and clients. Findings on non-communicable diseases availability show that: -

- The availability of non-communicable disease management in the survey was still low for diabetes (45%), cardiovascular disease (41 %), chronic respiratory disease (24 %), diagnosis and management, and cervical cancer diagnosis (20%) (Figure 41).

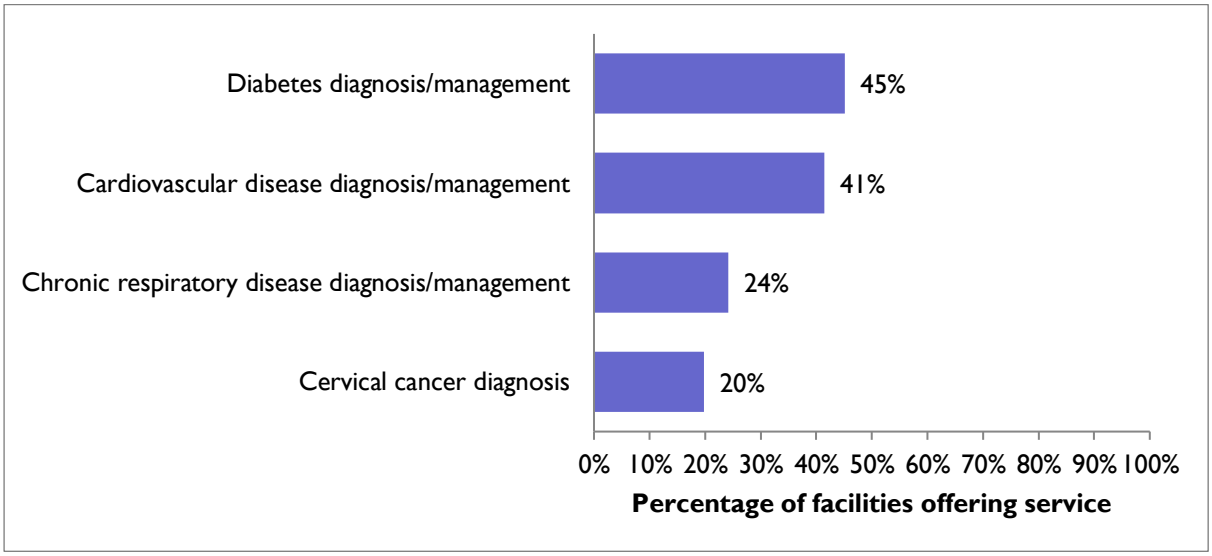


Figure 41: NCDs Services Availability

NCDs Services Readiness

Figure 42 presents findings on non-communicable disease readiness disclose that: -

- Overall, out of the 372 facilities providing diabetes services, only 53% of health facilities demonstrated readiness to deliver these services.
- Readiness was only observed in 50% of the 344 health facilities providing cardiovascular services. The availability of staff and guidelines for providing cardiovascular services was (30%) and equipment availability was high for cardiovascular services (70%).
- Readiness to provide cervical cancer diagnosis was observed in 69% of the facilities out of 210. The availability of staff and guidelines for the provision of cervical cancer was (60%) and equipment availability was high for cervical cancer (90%).

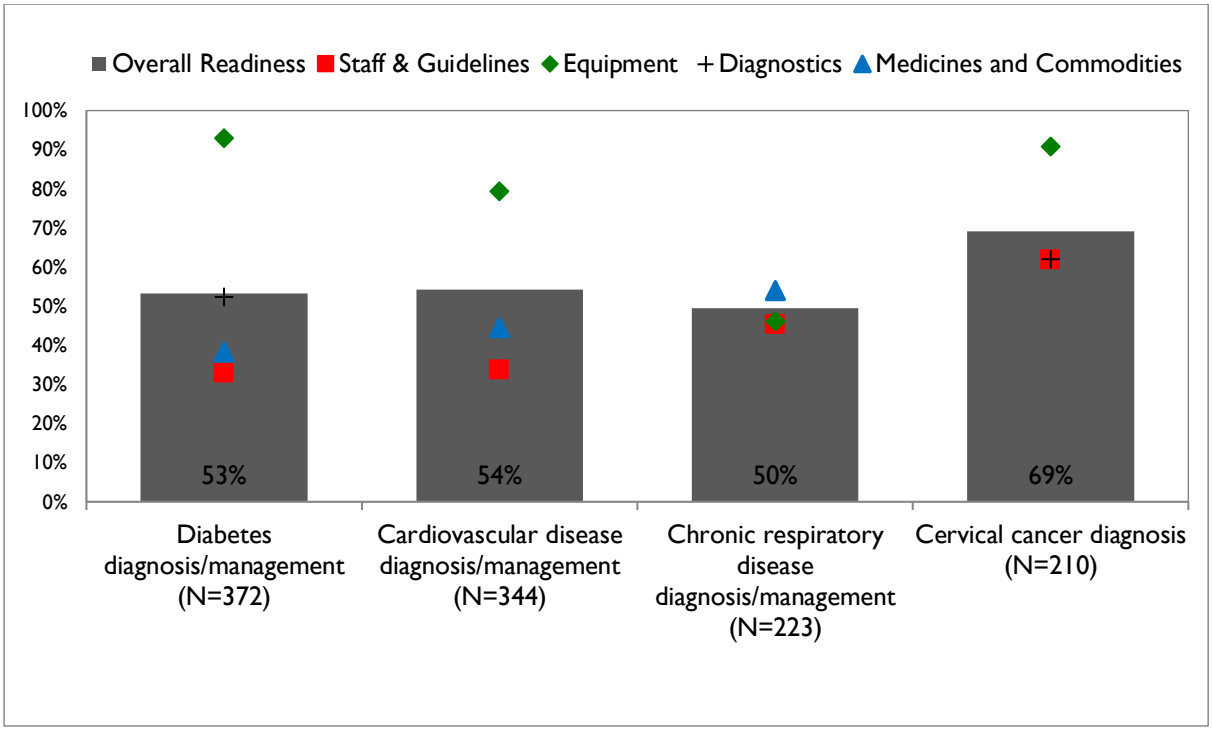


Figure 42: NCDs Services Readiness (628)

Diabetes Service Availability and Readiness

Tracer items required for service delivery include trained staff and guidelines (guidelines for diabetes diagnosis and treatment, and Staff trained in diabetes diagnosis and treatment), equipment (such as blood pressure apparatus, adult scale, measuring tape (height board/ stadiometre), diagnostics, blood glucose, urine dipstick- protein and urine dipstick- ketones) also medicines and commodities (metformin cap/tab, glibenclamide cap/tab, insulin regular injectable, glucose 50% injectable, and gliclazide tablet or glipizide tablet) (Figure 43). Findings on diabetes service availability and readiness have shown that: -

- Staff and guidelines for diabetes diagnosis and treatment were available in 37% of the facilities.
- Only 29% of the facilities had at least one staff member who was trained in diagnosis and treatment. This includes facilities in all levels of care (including private, NGO and mission-based)
- Among the healthcare facilities, 99% had a blood pressure apparatus, 98% had an adult scale, and 82% had a measuring tape.
- Medicines for the management of diabetes showed that 68% had metformin, and 58% had glibenclamide.

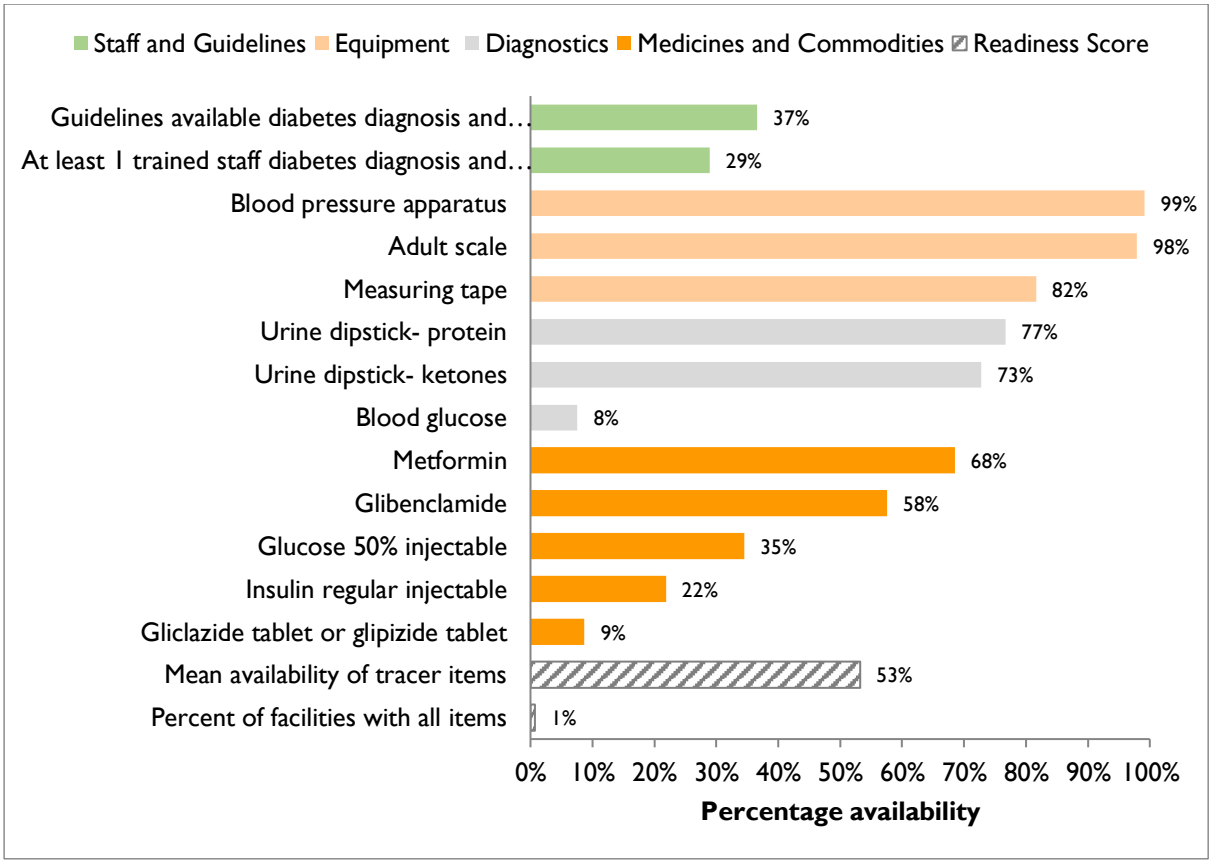


Figure 43: Readiness to Provide Diabetes Service (628)

Cardiovascular Disease Service Availability and Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for diagnosis and treatment of chronic cardiovascular conditions and staff trained in diagnosis and management of chronic cardiovascular conditions), equipment (stethoscope, blood pressure apparatus, adult scale, and oxygen), medicines and commodities (ACE inhibitors (e.g. enalapril) hydrochlorothiazide tablets or other thiazide diuretic tablets, beta-blockers (e.g. atenolol), calcium channel blockers (e.g. amlodipine), aspirin cap/tabs, and metformin cap/tabs (Figure 44). Findings on cardiovascular service availability and readiness revealed that: -

- 41% of the facilities visited offer cardiovascular disease diagnosis and/or management
- The mean availability for the cardiovascular disease tracer items was 54%, and only 5% of the healthcare facilities had all items.
- 36% of the facilities providing cardiovascular disease services had guidelines available for diagnosis and treatment and 32% had at least one staff trained on CVD diagnosis and treatment provision (see supplementary materials, Table S15: Cardiovascular disease (CVD) readiness).

- The percentage of facilities equipped with blood pressure apparatus was 100%, while for the adult scale, it was 96%, similar to the stethoscope which was 96%.
- The availability of medicines showed that 72% had metformin, 57% had calcium channel blockers, and 37% had beta-blockers.

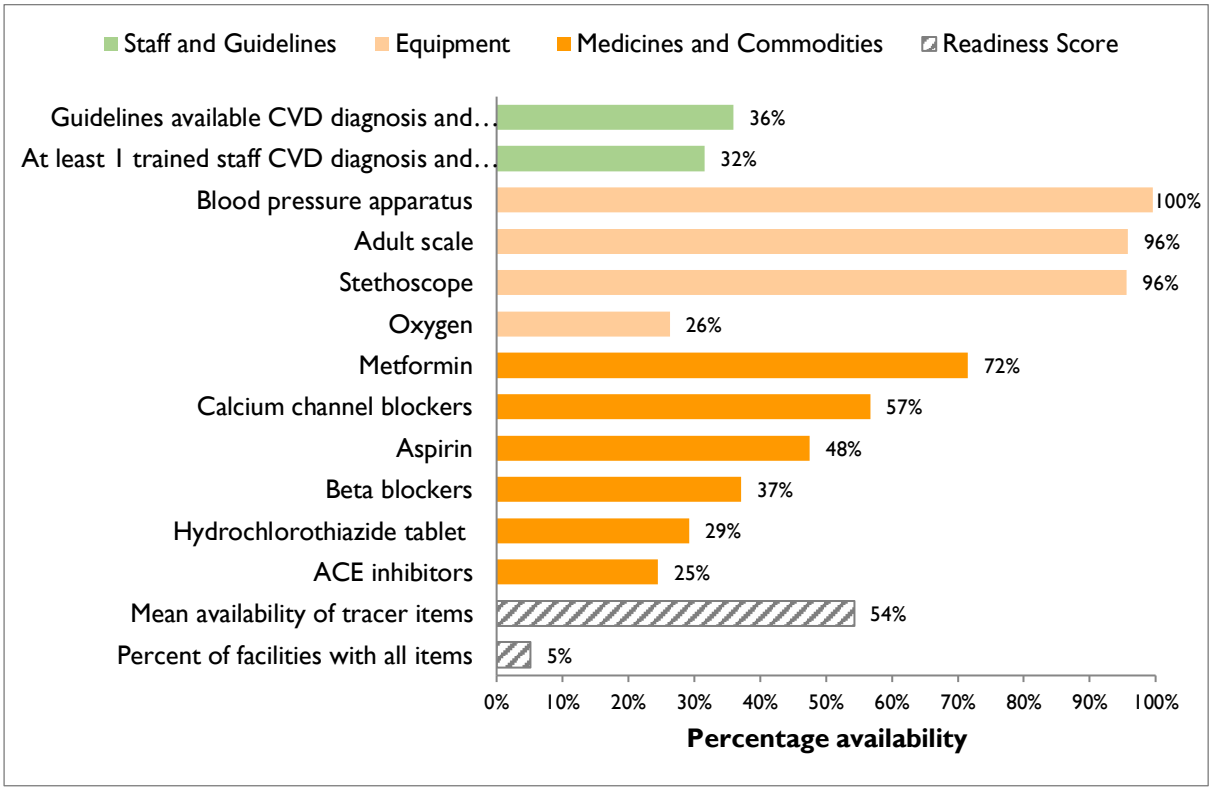


Figure 44: Readiness to Provide Cardiovascular Service (628)

Chronic Respiratory Disease Service Availability

Tracer items required for service delivery included trained staff and guidelines (guidelines for diagnosis and management of CRD, and Staff trained in diagnosis and management of CRD), equipment (stethoscope, peak flow meter, spacers for inhalers, and oxygen), medicines and commodities (salbutamol inhaler, beclomethasone inhaler, prednisolone cap/tabs, hydrocortisone cap/tabs, and epinephrine injectable) (Figure 45). Findings on chronic respiratory disease service availability showed that: -

- The mean availability of tracers for chronic respiratory diseases was 50%. In contrast, 47% of the healthcare facilities had guidelines available for CRD diagnosis and treatment, and 44% had at least one staff member trained in CRD.
- Majority (97%) of the facilities had stethoscope while 34% had spacers for inhalers

- It was revealed that 83% of the facilities had prednisolone for the management of CRD, 77% had hydrocortisone and 52% had salbutamol inhaler
- Only 2% of the facilities had all the tracer items for the CRD.

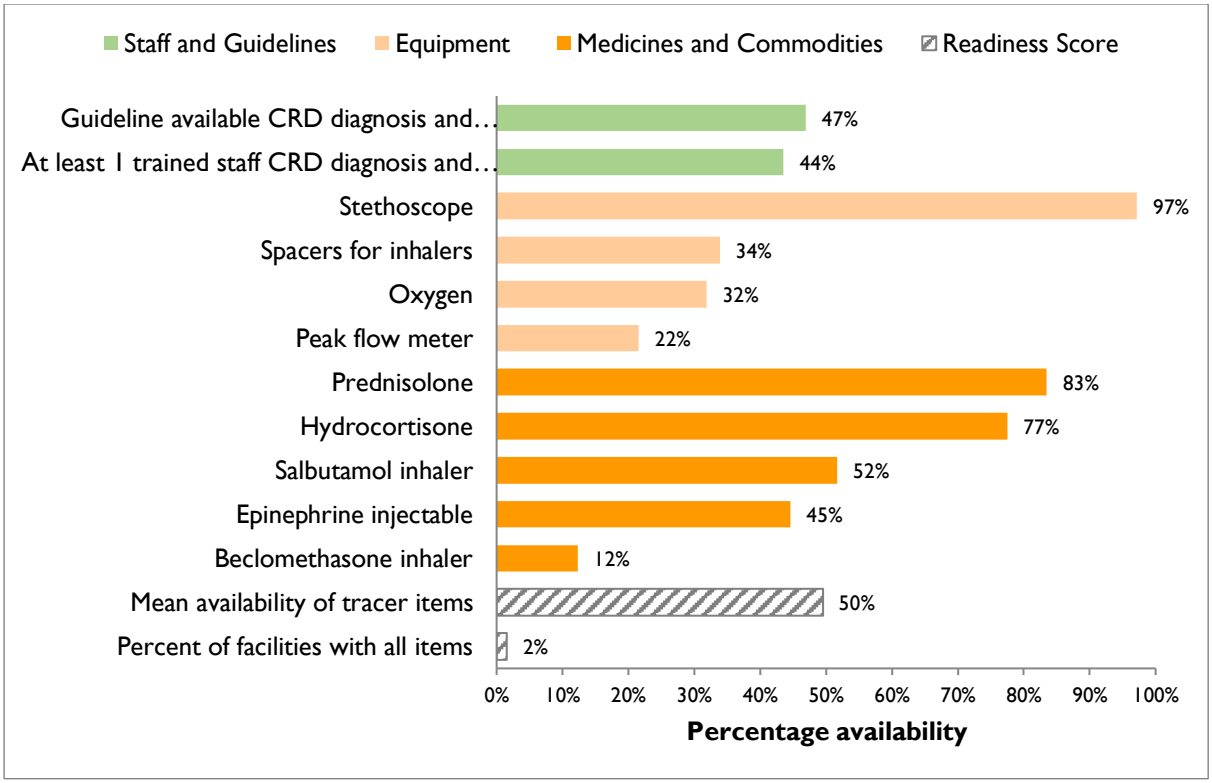


Figure 45: Readiness to Provide Chronic Respiratory Disease Service (628)

Cervical Cancer Service Availability and Readiness

Cervical cancer is the leading cause of cancer-related morbidity and mortality among women in Tanzania. Cervical cancer prevention is becoming increasingly important to the extent that councils have included such prevention plans in their comprehensive health plans. Governments in collaboration with other stakeholders have been investing in healthcare workers through training, the provision of standards and guidelines, purchasing cryotherapy machines and necessary supplies, and providing supportive supervision and clinical mentorship to reinforce trainer and provider skills. Tracer items required for service delivery included trained staff and guidelines (guidelines for cervical cancer prevention and control, staff trained in cervical cancer prevention and control), equipment (speculum), and diagnostics (acetic acid) (Figure 46).

Findings on cervical cancer service availability showed that:

- The mean availability of tracer items for cervical cancer services was 69%, whereas only 37% of the facilities providing such services had all items.
- The percentage of at least one trained staff member in the diagnosis and treatment of cervical cancer was 66% and 58% of the facilities had guidelines for cervical cancer prevention and control.
- The percentage of facilities equipped with speculum and acetic acid was 91% and 62% respectively.

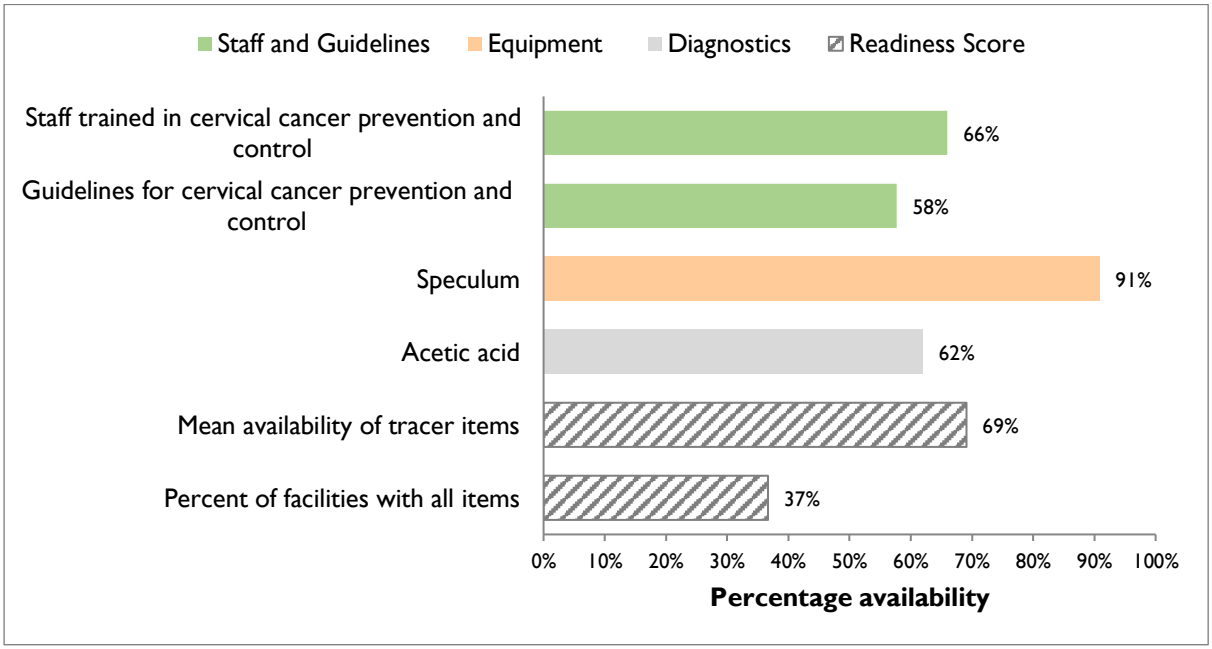


Figure 46: Readiness to Provide Cervical Cancer Diagnosis Service (628)

Basic Surgery Service Availability

Types of services offered included basic surgical services, incision and drainage of abscesses, wound debridement, acute burn management, suturing, closed treatment of fracture, cricothyroidotomy, male circumcision, hydrocele reduction, and chest tube insertion (Figure 47). Findings on basic surgery service availability revealed that:

- Services for basic surgery are accessible to 44% of the facilities.
- Suturing was available for 42%, wound debridement was 42% while male circumcision was reported in 31% facilities.
- The least available services included chest tube insertion (6%), lymph node biopsy (5%), and cricothyroidotomy (3%).

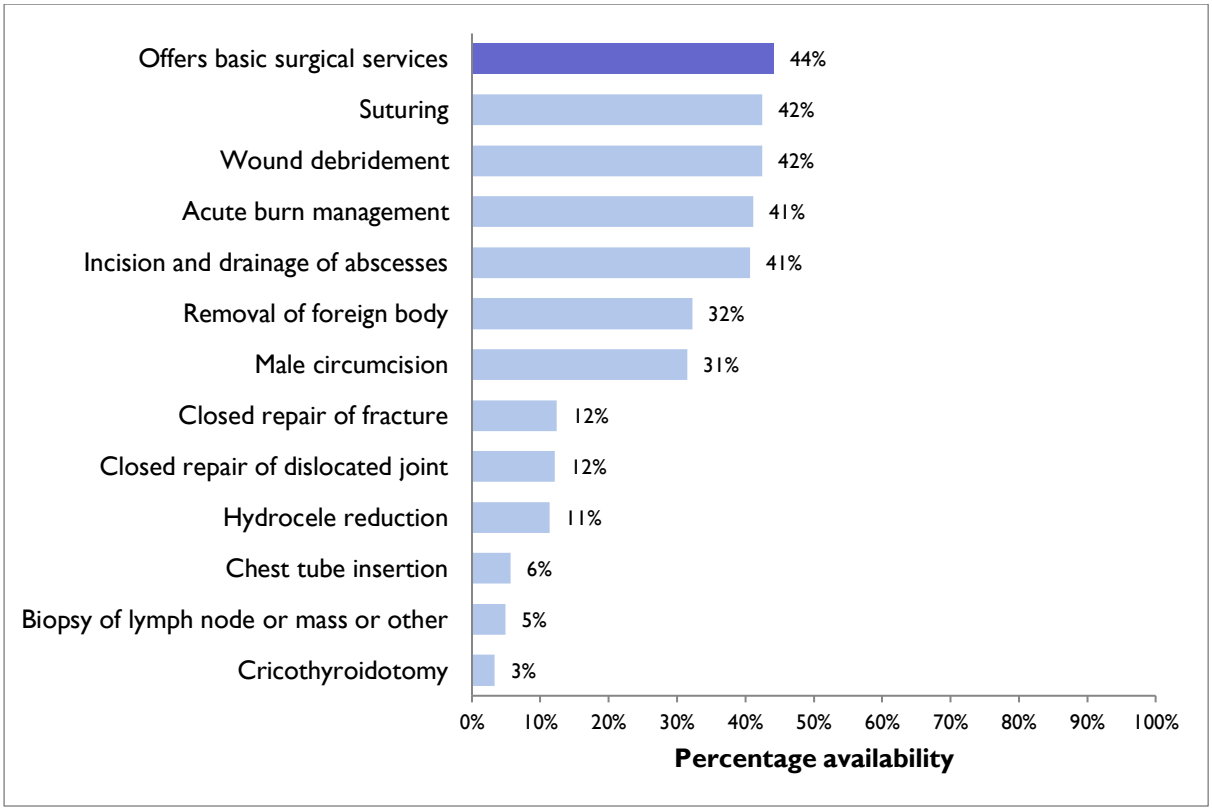


Figure 47: Basic Surgery Service Availability (628)

Basic Surgery Service Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for Integrated Management for Emergency and Surgical Care (IMEESC), and Staff trained in IMEESC), equipment (needle holder, scalpel handle with blade, retractor, surgical scissors, nasogastric tubes (10-16 FG), tourniquet, adult and paediatric resuscitators, suction apparatus (manual or electric sucker), and oxygen), medicines and commodities (skin disinfectant, Sutures (both absorbable and non-absorbable), injectable ketamine, injectable lidocaine (1% or 2%), splints for extremities, and material for cast) (Figure 48). Findings on basic surgery service readiness indicated the following:

- The availability of guidelines for basic surgery services was 16%, indicating that most facilities have the necessary protocols for surgery services.
- The percentage of facilities with at least one trained staff member for basic surgery services was 16%.
- Needle holders and surgical scissors were available for 91% and 73% of patients, respectively, with low availability of oxygen 26% and retractors (35 %).

- The mean availability of the tracer items, which indicates service readiness, was 53%. Only 4% of the facilities had all the assessed items available.

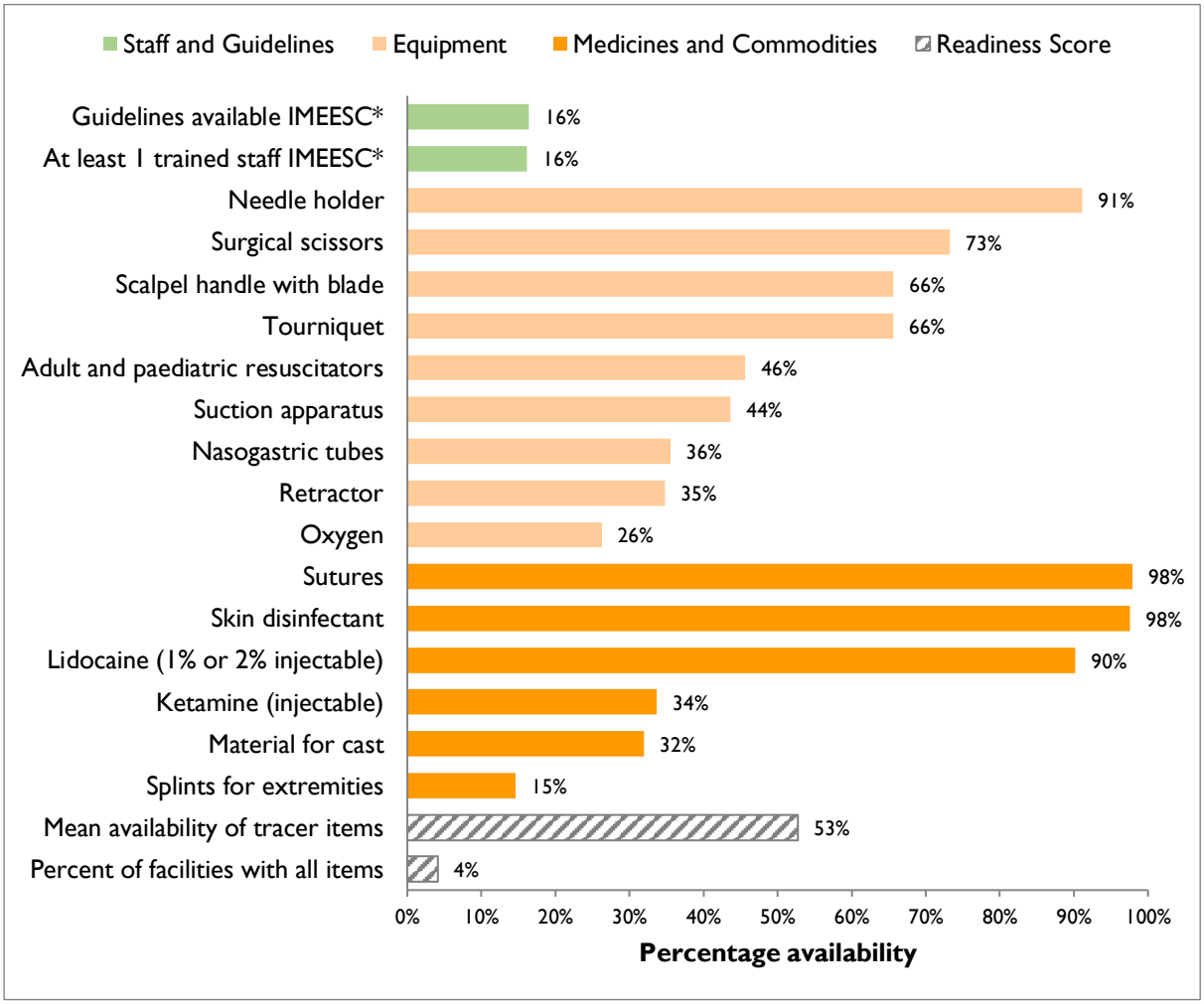


Figure 48: Basic Surgery Service Readiness (628)

Blood Transfusion Service Availability and Readiness

Basic transfusion service readiness tracer items required for service delivery includes trained staff and guidelines (guidelines on the appropriate use of blood and safe blood transfusion, and staff trained in the appropriate use of blood and safe blood transfusion), equipment (blood storage refrigerator), diagnostics (blood typing, and crossmatch testing), and medicines and commodities (blood supply sufficiency & blood supply safety) (Figure 49). Findings on blood transfusion service availability and readiness in Tanzania reveal:

- 10% of the health facilities offer blood transfusion services.
- The findings indicate that the mean availability of the blood transfusion tracer items was 56%, and only 6% of the healthcare facilities had all the items.
- Whereas 47% of the facilities providing blood transfusion services had guidelines available for the diagnostic and treatment and 41% had at least one staff trained on blood transfusion services.
- The percentage of facilities equipped with a blood storage refrigerator was 57%, while for diagnosis services it was observed that 87% were offering blood typing and 50% had cross-matching type.
- Of facilities offering blood transfusion services, 58% had blood supply safety and 54% had sufficient blood supply.

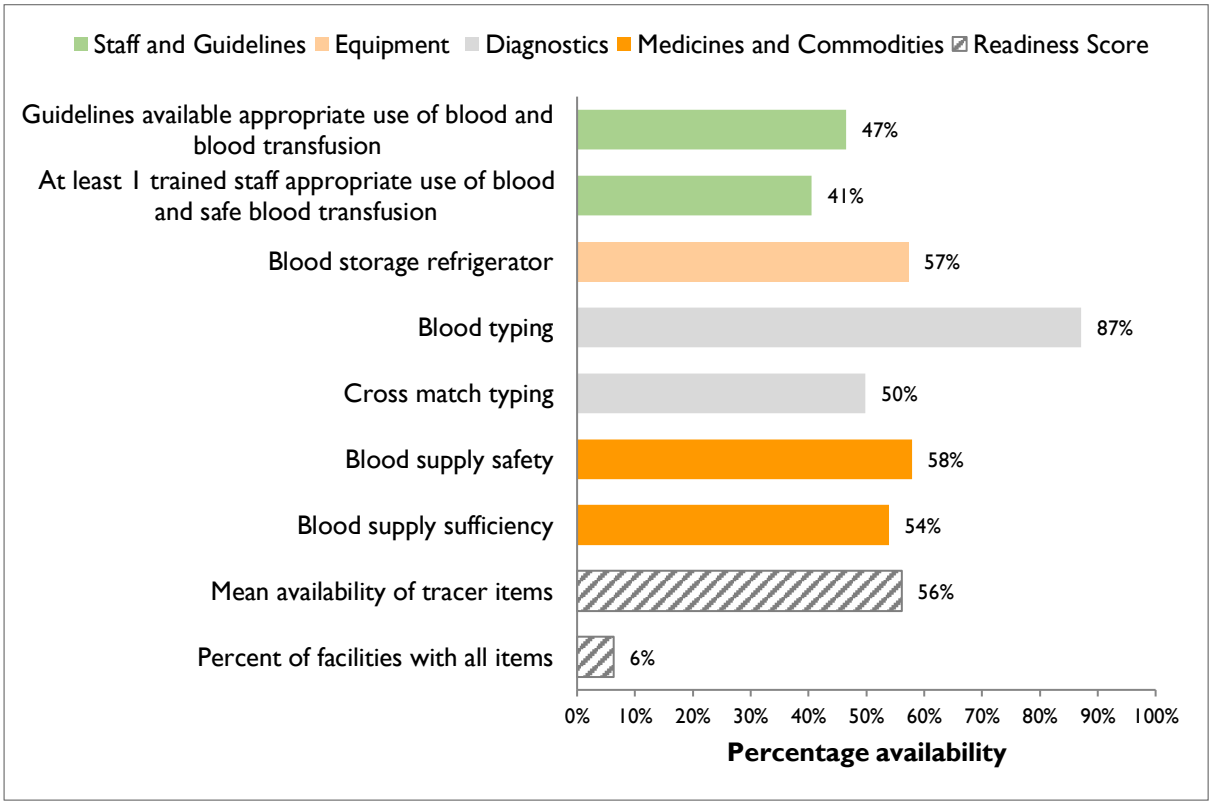


Figure 49: Blood Transfusion Service Readiness (628)

Comprehensive Surgery Service Availability

The types of services offered included comprehensive surgical services, tracheostomy tubal ligation, vasectomy, dilatation & curettage, obstetric fistula repair, episiotomy, appendectomy, hernia repair(strangulated), Hernia repair (elective), cystostomy, urethral stricture dilatation, laparotomy, congenital hernia repair, neonatal surgery, cleft palate, skin grafting and

contracture release, open reduction and fixation for fracture, amputation, cataract surgery, club foot repair, and drainage of osteomyelitis-septic arthritis (Figure 50). Findings on comprehensive surgery service availability reveal:

- 87% of hospitals offer comprehensive surgical services, making it the most available service among those listed.
- Common surgical procedures, such as appendectomy and hernia repairs (both elective and strangulated), are highly available, ranging from 59% to 73%.
- Specialized services such as cleft palate repair and club foot repair are the least available, with only 7% and 24% of hospitals equipped to provide them, respectively.
- Surgical interventions for fractures, were available approximately 62% for laparotomy and moderately available (34%) for open reduction and fixation
- Procedures associated with women's health, like obstetric fistula repair and tubal ligation, show lower availability, with 25% and 61% respectively.

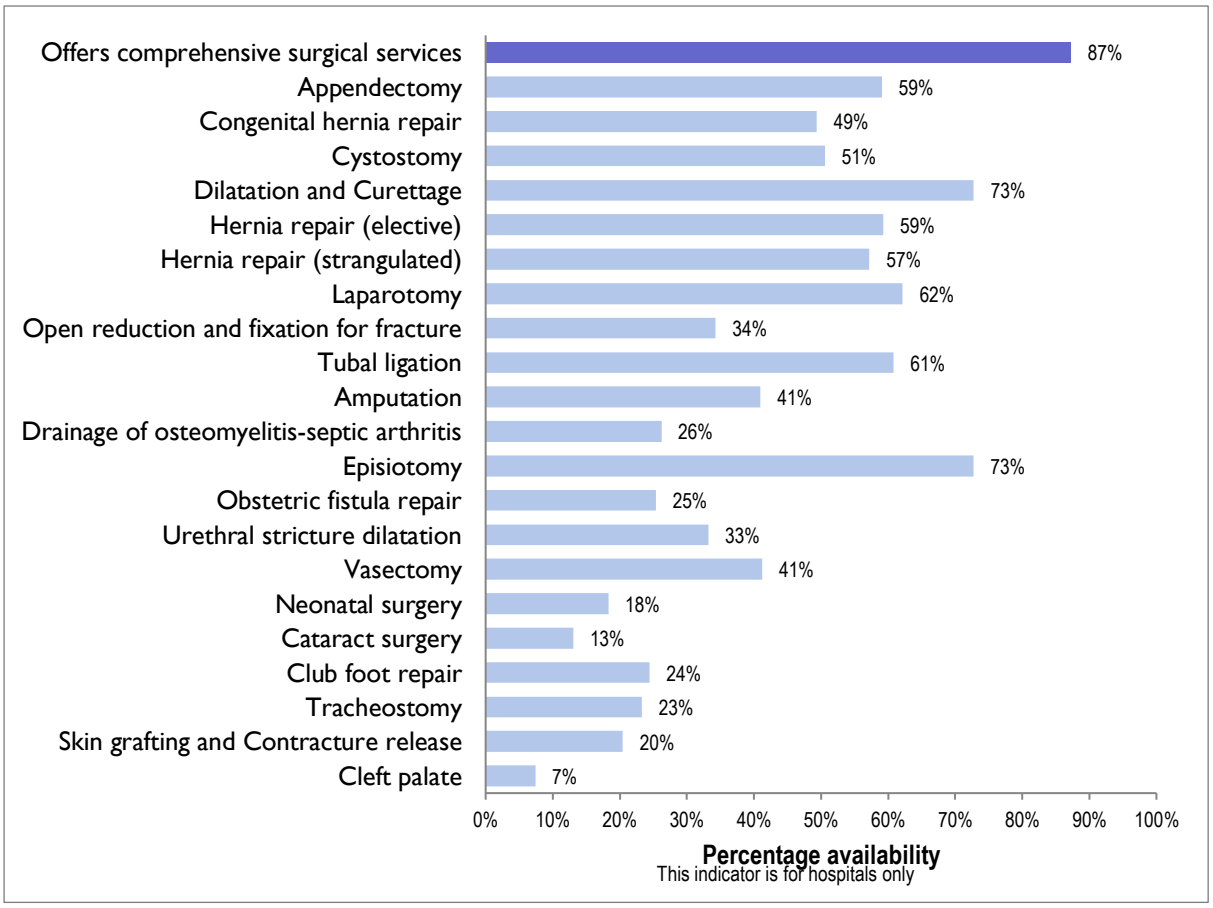


Figure 50: Comprehensive Surgery Service Availability (88)

Comprehensive Surgery Service Readiness

Tracer items required for service delivery included trained staff and guidelines (guidelines for IMEESC (WHO Integrated Management for Essential and Emergency Care), staff trained in IMEESC, staff trained in surgery, and staff trained in anesthesia), equipment (oxygen, anesthesia equipment, spinal needle, and suction apparatus), medicines and commodities (thiopental (powder), suxamethonium bromide (powder), atropine (injectable), diazepam (injectable), Halothane (inhalation), bupivacaine (injectable), lidocaine 5% (heavy spinal solution), epinephrine (injectable), and ephedrine (injectable) (Figure 51). Findings on Comprehensive Surgery Service Readiness in Tanzania:

- At least one trained staff member in Immediate Essential Emergency Surgical Care (IMEESC) and the same percentage of locations have materials available for IMEESC.
- A significantly higher percentage of locations had staff trained in anesthesia (87%) and surgery (88%), compared to the availability of anesthesia equipment (23%).
- The availability of essential injectable medicines such as diazepam, epinephrine, atropine, bupivacaine, and ephedrine ranges between 67% and 78%, with diazepam having the highest availability at 99%.
- For inhaled and spinal solutions, halothane (inhalation) and lidocaine 5% heavy spinal solution) were available in 64% of locations, while suxamethonium bromide (powder) was available in 52% of locations.
- The readiness score, which might be an aggregate measure of preparedness based on the availability of services, equipment, and medicines, is shown for only one item, oxygen, at a high percentage of 77%.
- The overall availability of tracer items is at 66%, and only 4% of the facilities have all the items listed in the chart, indicating a potential gap in the full spectrum of emergency surgical care readiness.

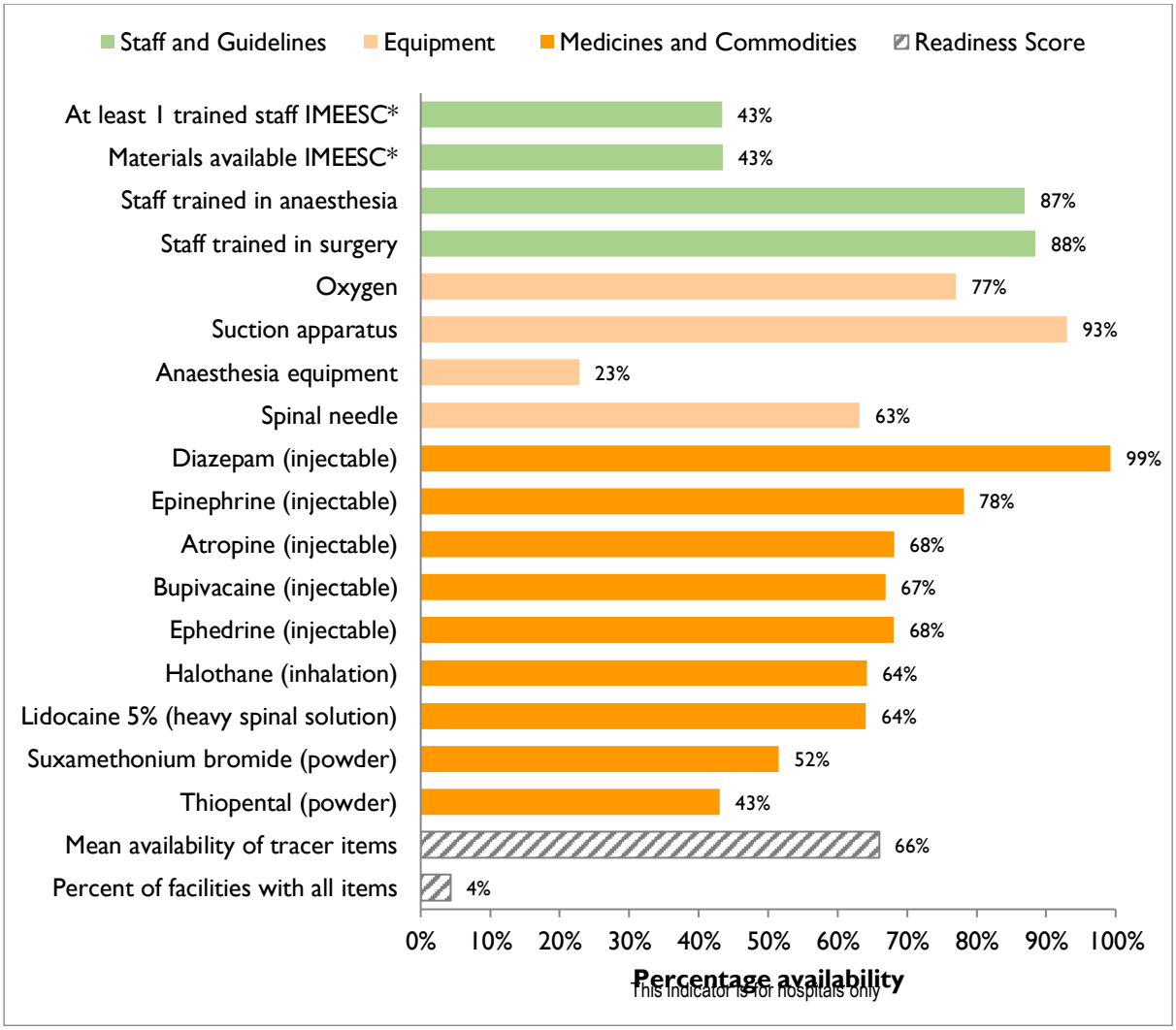


Figure 51: Comprehensive Surgery Service Readiness (75)

Advance Diagnostic Service Availability

The types of services offered included serum electrolytes, full blood count with differential, blood typing (ABO and rhesus) and cross match (by anti-globulin or equivalent), liver function test (ALT or other), renal function test (serum creatinine testing or other), CD4 count and percentage, HIV antibody testing (ELISA), syphilis serology, cryptococcal antigen, gram stain, urine microscopy testing, and CSF/body fluid counts (Figure 52). Assessment of the advanced diagnostic services availability was done in 88 facilities including council hospitals, referral hospitals, and specialize facilities. Findings on advance diagnostic service availability in Tanzania:

- The mean availability of the tracer items was 49%, and half of the facilities had the tracer items.

- Liver function tests were provided by 46% of the facilities, while renal function test was provided by 47% of the facilities, CD4 count was provided by 60% of the facilities, and urine dipstick with microscope was provided by 77% of the facilities. Other diagnostics such as gram stain, cryptococcal antigen were provided by 57% and 39% of the facilities, respectively.

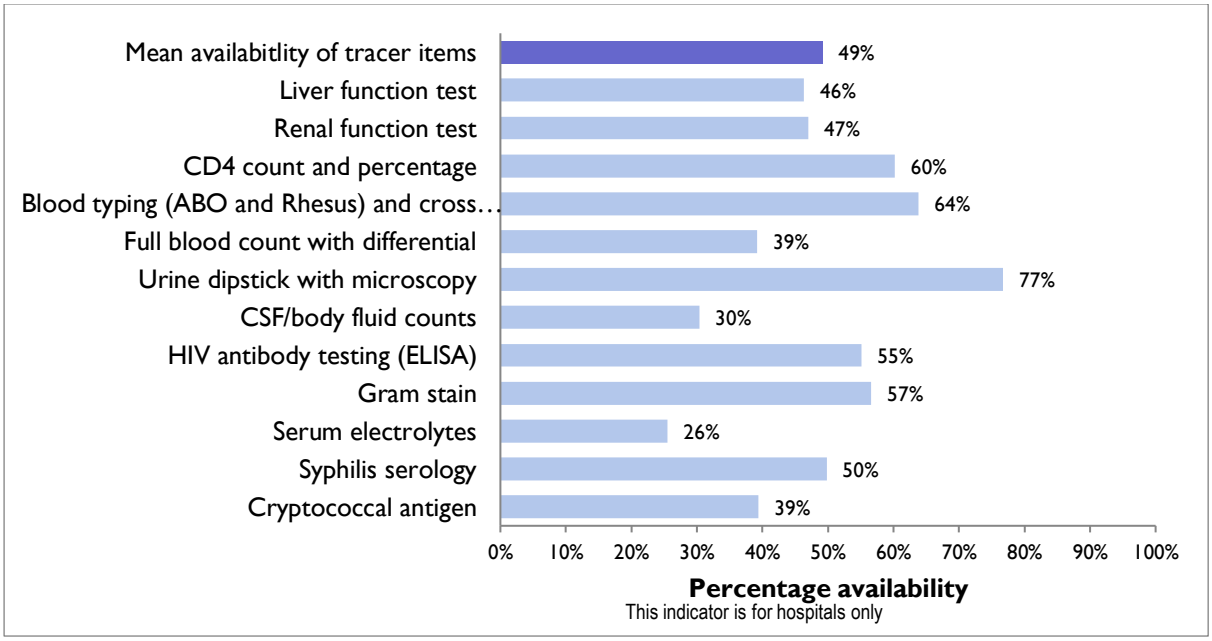


Figure 52: Advance Diagnostic Service Availability (88)

High-Level Diagnostic Equipment Service Availability

The assessment of high-level diagnostic equipment (X-ray, ECG, Ultrasound, and CT scan) was performed in 88 facilities, including council hospitals, referral hospitals, and specialised facilities (Figure 53). Findings on high-level diagnostic equipment service availability reveal:

- Services for high-level diagnostic equipment were accessible in 62% of the 88 healthcare facilities.
- CT scans were available for 14% of facilities, ultrasound was available for 91% of facilities, X-ray services were available in 81% of facilities, and ECG was available in 60% of facilities.

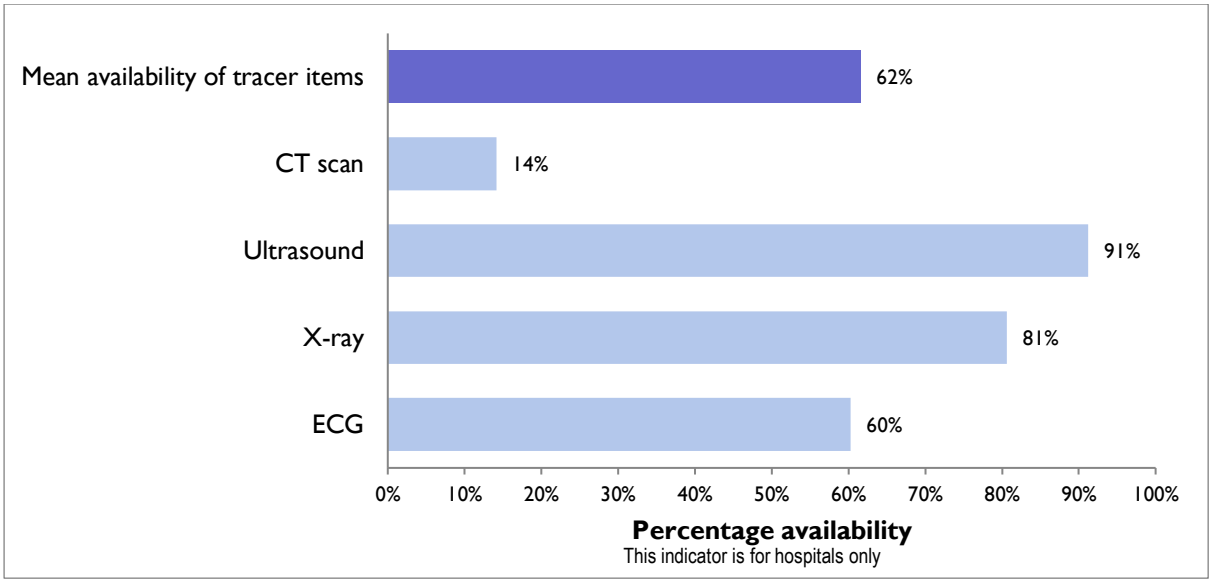


Figure 53: High Level Diagnostic Equipment Service Availability (88)

Primary Eye Care Service Availability

Primary eye care provides an entry point for patients to receive refractions and glasses or contact lenses, screening for asymptomatic eye diseases, diagnosis and treatment of most eye conditions, referral to specialists, and coordination with other aspects of medical care (Figure 54). Findings on primary eye care service availability reveal:

- Only 10% of the facilities reported providing primary eye care services to their clients. 84% were referral hospitals, 59% were council hospitals, 20% were health centres, and 5% were dispensaries.
- Of the facilities offering eye care services, 9% were government/public, 16% were NGO/not-for-profit, 8% were private-for-profit, and 16% were mission/faith-based.
- The mean availability of eye care was 46%, and only 2% of the facilities had all the required tracer items for care provision.
- 77% had a Snellen chart, 40% had a direct ophthalmoscope, and 33% had a funduscope.

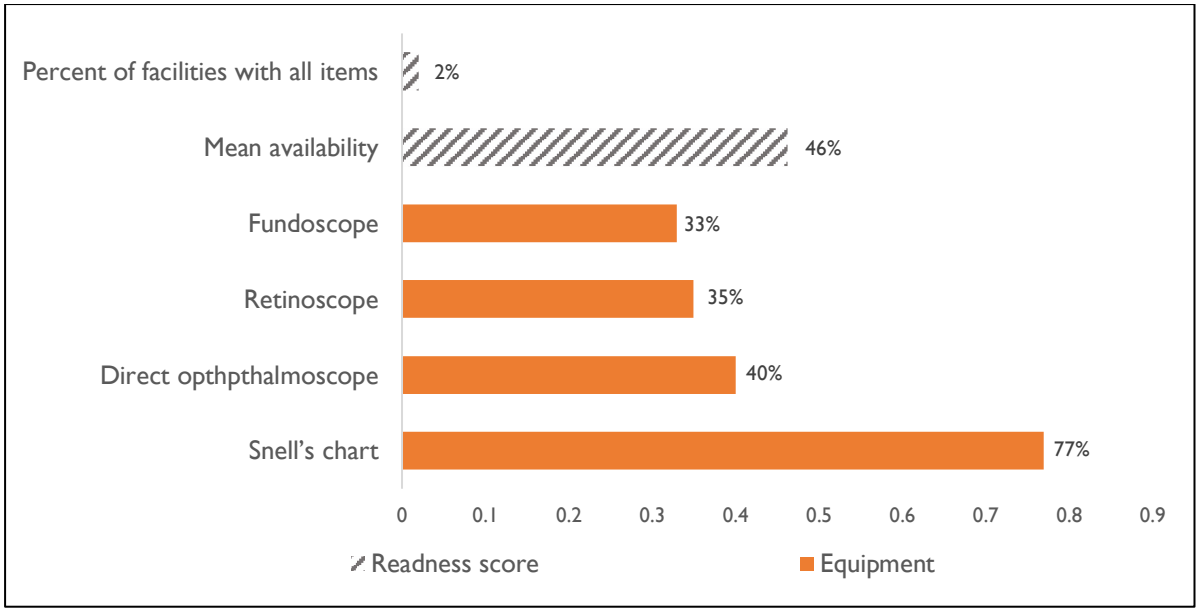


Figure 54: Primary Eye Care Service Availability

Dental Care Service Availability

Dental materials and equipment availability, practitioner skills, and the cost of services all play major roles in the provision and utilisation of comprehensive oral care (Figure 55). Findings on dental services availability revealed that:

- Only 11% of the facilities claimed to provide dental services to clients, and 96% have been offering dental extraction services.
- 84% were referral hospitals, 74% were council hospitals, 33% were health centres, and 3% were dispensaries.
- Furthermore, 53% had been offering emergency services (incision and drainage) to people with dental services.
- 28% have been providing emergency services to people with fractures of the mandible while 20% have been offering dental prosthesis.

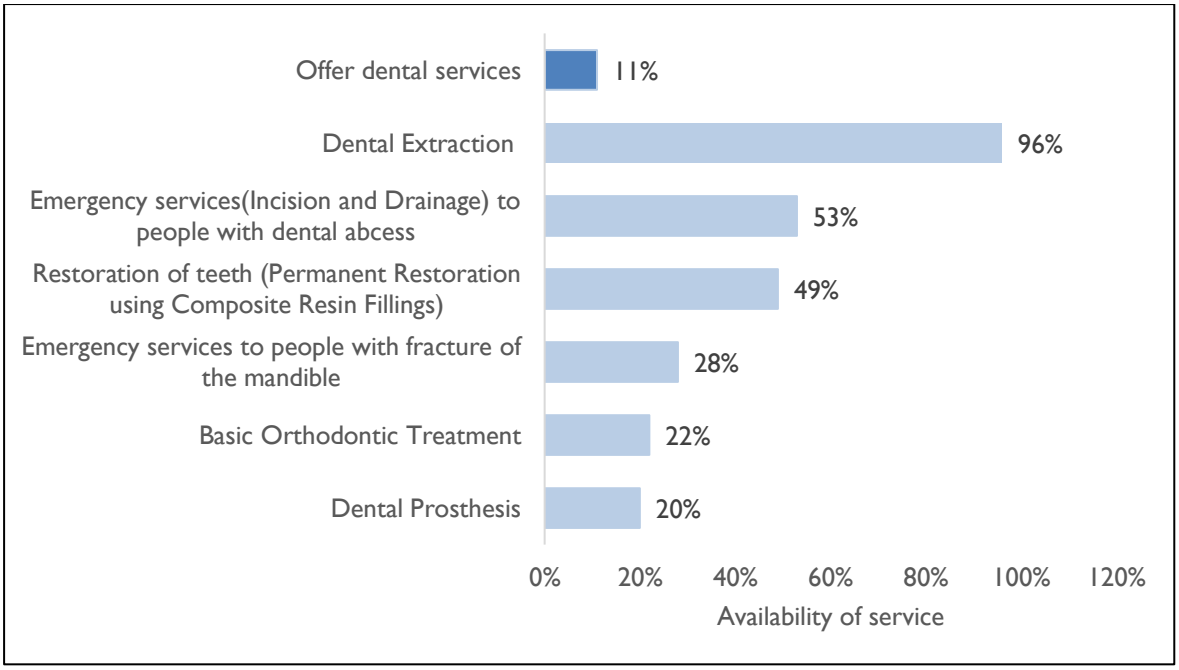


Figure 55: Dental Care Service Availability

Dental Care Service Readiness

Figure 56 presents information on dental service readiness based on the presence of guidelines, trained staff, medicines, and equipment.

- The mean availability of tracer items for dental care was 35%, with less than 1% of facilities having all the required items.
- 10% of the facilities had at least one trained dental staff
- 72% of the facilities had dental chair.
- Results from the medicines showed that 46% class ionomer cement, 44% had composite resin material and 33% had reinforced zinc oxide eugenol.

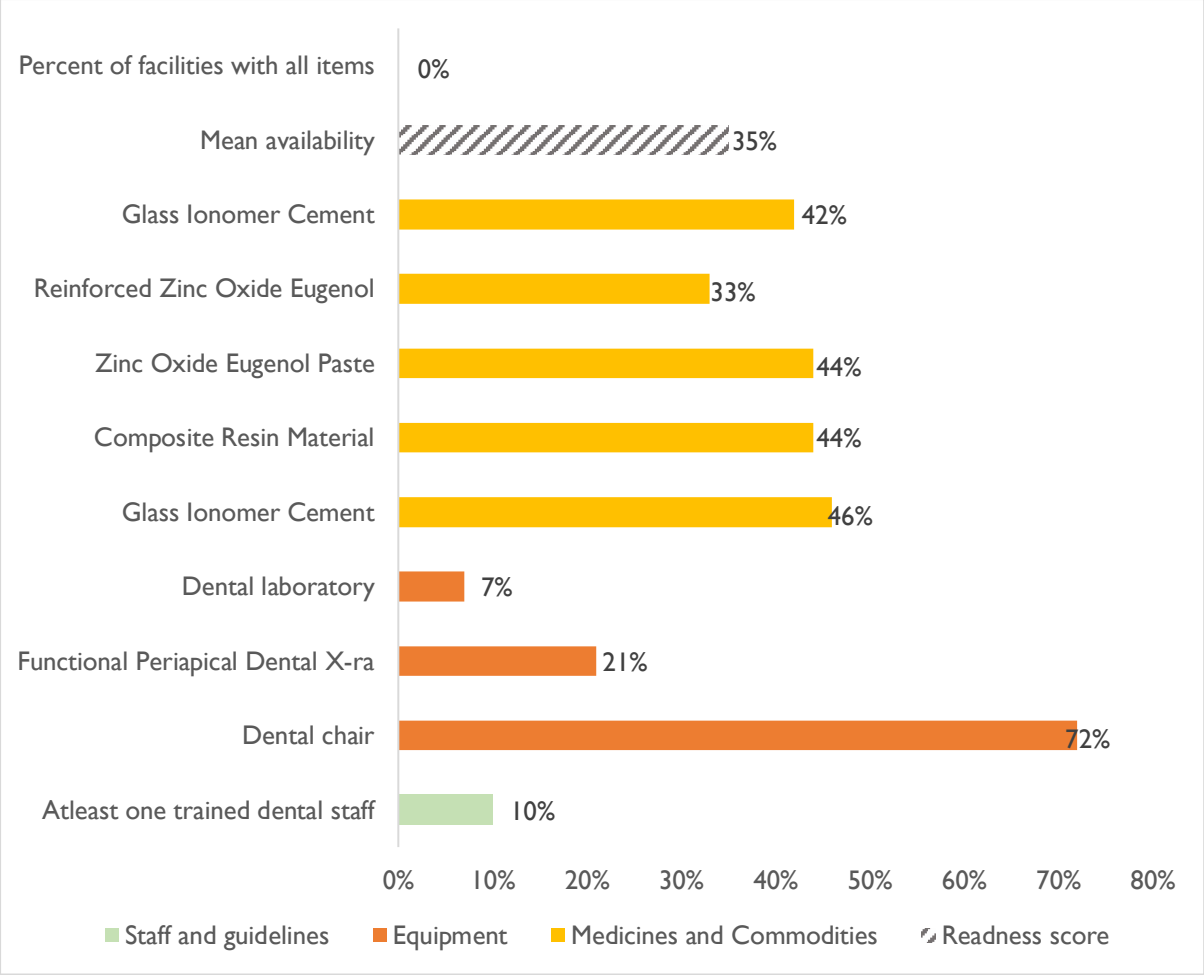


Figure 56: Dental Care Service Readiness

Tracer Medicines Availability

Infectious disease medicines availability

Seven infectious disease medicines were assessed in terms of their availability, these included me-/albendazole cap/tab, amoxicillin cap/tab, ceftriaxone injection, co-trimoxazole cap/tab, ciprofloxacin cap/tab, fluconazole cap/tab and metronidazole cap/tab (Table 5). Findings on the availability of infectious disease medicines revealed the following.

- The average availability was 83%; in terms of facility level, it was 81% for dispensaries, 93% for health centres, 91% for council hospitals, and 100% for referral hospitals.
- The overall availability of public facilities was 88%, NGO/not-for-profit was 80%, private for profit was 65%, and mission/faith based was 79%.

Table 5: Infectious Disease Medicines Availability

	Me-/albendazole cap/tab, %	Amoxicillin cap/tab, %	Ceftriaxone injection, %	Co-trimoxazole cap/tab, %	Ciprofloxacin cap/tab, %	Fluconazole cap/tab	Metronidazole cap/tab	Total number of facilities
Facility type								
Dispensary	86	87	74	86	85	65%	85%	348
Health Center	95	95	92	92	93	91%	94%	190
Council Hospital	94	94	83	89	95	93%	95%	77
Referral Hospital	100	100	100	100	100	100%	100%	13
Managing authority								
Government/public	92	94	79	95	92	72%	90%	394
NGO/not-for-profit	54	86	86	74	86	86%	86%	10
Private-for-profit	69	67	68	59	65	59%	68%	138
Mission/faith based	84	83	73	75	80	69%	86%	86
Urban/Rural								
Urban	88	90	76	89	88	70%	87%	437
Rural	84	86	80	79	84	69%	83%	191
Total	**87**	**89**	**77**	**87**	**87**	**70%**	**86%**	**628**

Non-communicable disease medicines availability

Findings on non-communicable disease medicine availability indicated the following:

- Referral hospitals have the highest availability of all drugs, with 100% across the board, which suggests that they are well-stocked or prioritized for supply chain fulfillment.
- Dispensaries had the lowest availability of ciprofloxacin and fluconazole at 74% and 65% respectively.
- However, in terms of managing authority government/public facilities have high drug availability, suggesting robust support or resource allocation for these facilities.
- NGOs/not-for-profit had the lowest availability of ceftriaxone and co-trimoxazole, at 86% and 74%, respectively.
- Urban facilities have better availability of drugs than rural ones, with a noticeable difference in ceftriaxone availability (76% in urban vs. 80% in rural).
- The overall availability of each drug provided a sense of how accessible these medications are across facilities. Mebendazole and amoxicillin had the highest overall availability, with percentages of 87% and 89%, respectively, whereas fluconazole and

ceftriaxone were less available, at 70% and 77%, respectively. This might inform drugs that need more attention in supply chain strategies.

Non-communicable Diseases Medicines Availability

Findings on non-communicable disease medicine availability revealed the following:

- Referral hospitals offer 100% availability for amlodipine or equivalent calcium channel blockers, whereas dispensaries have the lowest availability at 26%, with an overall availability of 35%.
- Aspirin capsules or tablets were available in all referral hospitals, significantly reduced to 24% in dispensaries, and had a total availability of 33%.
- Beta-blockers are accessible in 61% of referral hospitals but are scarce in dispensaries at 1%, resulting in a 7% overall availability.
- Epinephrine injectables are fully stocked in referral hospitals, but this drops to 36% in health centres and 16% in dispensaries, with an aggregate availability of 25%.
- The results indicate that essential medications for non-communicable diseases are most available in referral hospitals, with a 100% stock rate for medications like amlodipine, beclometasone, enalapril, epinephrine, and glibenclamide.
- The availability drops in dispensaries, where amlodipine is available 26% of the time, beclomethasone 3%, enalapril 12%, and epinephrine 16%. Beta blockers show a particularly low availability in dispensaries at 1%.
- Furosemide and glibenclamide are more readily available in dispensaries at 47% and 30%, respectively. Across the board, the overall availability ranges from as low as 7% for beta blockers to as high as 54% for Furosemide.
- Glibenclamide capsules or tablets are universally available in referral hospitals and widely available in other facility types, with an overall availability of 40%.
- Hydrocortisone injection has a complete stock rate in referral hospitals and is still widely available in hospitals and health centers, with a total availability of 60%.
- Ibuprofen tablets and insulin regular injections are fully available in referral hospitals, but ibuprofen has a lower total availability (31%) than insulin (78%).
- Metformin tablets show high availability in referral hospitals (100%) and hospitals (92%), but this drops significantly in dispensaries (5%), with an overall availability of 49%.

- Omeprazole tablet or alternative has the highest overall availability at 78%, indicating it's broadly stocked across facility types.

Table 6: Non-Communicable Disease Medicines Availability

	Urban/Rural		Managing authority				Facility type			
	Total	Rural	Urban	Mission/ faith based	Private-for-profit	NGO/not-for-profit	Governm ent/public	Dispensary	Health Center	Hospital	Referral Hospital
Amlodipine	35	43	33	44	49	62	31	26	72	88	100
Aspirin cap/tab	33	42	31	56	43	38	28	24	66	89	100
Beclometasone	7	10	6	10	8	28	6	3	19	34	61
Beta blocker	22	32	19	35	36	19	17	12	60	87	100
Enalapril tablet	14	20	12	20	21	7	11	7	36	61	100
Epinephrine	25	32	23	30	34	33	22	16	59	77	93
Furosemide	54	74	49	73	64	86	49	47	85	87	100
Glibenclamide	40	53	36	56	49	54	36	30	80	95	100
Gliclazide	6	11	5	7	11	21	5	3	20	25	22
Glucose 50%	25	29	23	33	26	48	23	19	47	59	88
Glyceryl	3	5	2	3	4	0	3	1	11	10	13
Hydrochloroth	16	22	14	25	18	7	14	8	44	64	76
Hydrocortison	70	76	68	82	65	86	69	67	80	88	100
Ibuprofen	60	68	58	73	64	86	57	55	79	88	100
Insulin regular	14	17	13	28	13	19	12	5	41	82	100
Isosorbide	8	17	5	21	13	19	5	3	18	61	88
Metformin	49	58	47	63	54	78	46	40	88	91	100
Omeprazole	78	83	77	73	69	86	81	75	92	96	100
Paracetamol	89	86	91	86	69	86	94	88	94	95	93
Prednisolone	73	78	71	82	65	86	73	69	89	95	100
Salbutamol	35	35	35	47	40	63	33	28	64	78	76
Simvastatin	12	21	9	21	20	16	9	3	40	69	100
Spironolactone	12	20	9	31	22	16	7	5	30	75	100
Total number	626	189	437	86	138	10	392	348	190	77	11

Mental Health and Neurological Medicines Availability

Findings on mental health and neurological medicine availability:

- Referral hospitals showed the highest availability of amitriptyline tablets at 75%, 75% for carbamazepine tablets, 75% for chlorpromazine, and 0% for dispensaries.
- Diazepam tablets are available in 60% of referral hospitals, but only in 28% of health centres and 5% of dispensaries, with overall urban and rural availability at 5% and 6%, respectively.
- The availability of phenobarbital tablets is notably high in referral hospitals at 75%, but significantly lower in dispensaries at 0%, highlighting a gap in availability between facility types.
- Levodopa + carbidopa tablets and lithium tablets are more accessible in referral hospitals at 63% and 48% respectively, compared to just 28% and 7% in health centres.
- The total availability of phenytoin is high at 8% across all facilities, with a peak availability of 75% in referral hospitals; however, it is completely absent in dispensaries.

Table 7: Mental health and neurological medicines availability

	Amitriptyline tablet	Carbamazepine tablet	Chlorpromazine	Diazepam tablet	Diazepam injection or	Fluoxetine tablet	Fluphenazine injection	Haloperidol tablet	Levodopa + carbidopa	Lorazepam injection	Lithium tablet	Phenobarbital tablet	Phenytoin tablet	Valproate sodium	Total number of
Facility type															
Referral Hospital, %	75	75	75	60	75	63	51	63	63	48	24	75	60	75	11
Hospital, %	53	56	40	47	63	19	31	52	16	17	15	57	28	18	77
Health Center, %	36	27	22	28	43	7	9	28	7	7	3	38	10	4	190
Dispensary, %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	348
Managing Authority															
Government/ public, %	7	6	4	5	7	2	3	5	2	2	1	7	2	1	392
NGO/not-for-profit, %	7	7	0	7	7	0	0	7	0	0	0	7	0	7	10
Private-for-profit, %	9	6	6	7	10	3	2	8	3	3	1	8	3	3	138
Mission/faith based, %	13	13	13	14	19	4	6	11	3	3	2	17	8	2	86
Urban/Rural															
Urban, %	6	6	4	5	7	1	3	5	1	1	1	6	2	1	437
Rural, %	13	9	9	10	15	4	3	10	5	5	2	14	6	4	189
Total, %	8	6	5	6	9	2	3	6	2	2	1	8	3	2	626

Palliative Care Medicines Availability

Findings on the availability of palliative care medicines revealed the following.

- The availability of dexamethasone injections is markedly higher in more critical healthcare facilities, with council hospitals reporting the highest availability at 97%, closely followed by referral hospitals at 92%, while health centers show a substantial availability at 71%, but it drops significantly in dispensaries, where it is only 15%.
- Haloperidol and hyoscine injections are not stocked in dispensaries; however, the availability of haloperidol increases to 39% in council hospitals and further to 63% in referral hospitals, whereas hyoscine butylbromide injection is available in 55% of council hospitals and is slightly lower in referral hospitals at 53%, indicating a tiered distribution that favours more equipped hospitals.
- Ibuprofen has the most uniform availability across all types of healthcare facilities, achieving perfect availability in referral hospitals at 100%, a high presence in council hospitals at 88%, a substantial presence in health centres at 79%, and a moderate presence in dispensaries at 55%, reflecting its widespread use and accessibility.
- Loperamide and lorazepam tablets exhibited the lowest availability across the surveyed facilities, with nonavailability in dispensaries, increasing to 63% availability for loperamide in referral hospitals and lorazepam at 53%, indicating a prioritisation of these medications in more specialised, higher-tier healthcare settings.
- Management-type variations reveal that NGOs and not-for-profit organisations have the highest availability of ibuprofen at 86%, yet do not stock lorazepam at all, in contrast to the government or public facilities, which report the lowest availability figures for these medications, underscoring potential disparities in how resources are allocated among different healthcare management entities.
- In general, urban healthcare facilities have higher availability for most medications when compared to their rural counterparts, except for ibuprofen, which is more readily available in rural areas at 68% versus 58% in urban areas, suggesting that there may be significant imbalances in the distribution of medications between urban and rural settings.

Table 8: Palliative Care Medicines Availability

	Dexamethasone injection, %	Haloperidol injection, %	Hyoscine butylbromide injection, %	Ibuprofen, %	Loperamide tab/cap, %	Lorazepam tablet, %	Metoclopramide injection, %	Morphine granule, injectable or cap/tab, %	Paracetamol, %	Senna preparation (laxative) , %	Total number of facilities
Facility Type											
Dispensary	15	0	0	55	0	0	0	0	88	0	348
Health Center	71	17	29	79	30	12	27	7	94	9	190
Council Hospital	97	39	55	88	49	24	49	20	95	16	77
Tertiary Hospital	92	63	53	100	63	53	63	43	95	20	13
Managing Authority											
Government /public	21	4	5	57	5	2	4	2	94	2	394
NGO/not-for-profit	65	3	7	86	7	0	7	3	86	0	10
Private-for-profit	39	3	10	64	11	4	9	2	69	2	138
Mission/faith based	53	6	14	73	14	6	14	4	86	5	86
Urban/Rural											
Urban	23	3	5	58	5	2	5	1	91	1	437
Rural	40	8	13	68	13	8	11	6	86	5	191
Total	27	4	7	60	7	3	6	2	90	2	628

Discussion

Healthcare facilities have been performing well in terms of IPC, implying that healthcare providers and managers have learned from the COVID-19 pandemic. It is important to work closely with healthcare workers to ensure that IPC achievement is maintained. IPC reporting is crucial for the MOH to plan supervision and mentorship activities and to promote ongoing improvements in IPC nationally. To ensure sustainability, health facilities will need to take actions such as including IPC-related monitoring and evaluation activities in budgets and comprehensive health plans.

Diagnostic services were available at the council and referral hospitals. This is similar to a recent study which found that the diagnostic capacity for cancer in Tanzania is heavily concentrated in seven zonal and national hospitals located in five major cities in Tanzania (Makene *et al.*, 2022). The availability and readiness of healthcare facilities to provide family planning services are crucial as they influence the uptake of family planning throughout the

country. 84% of all the healthcare facilities visited offered family planning services. In Tanzania, Demographic Health survey reports have shown that the uptake of family remains low, despite a slight steady increase. For instance, data from three consecutive Tanzania and Demographic Health survey reports, 2004–05, 2010, 2015–16, and 2022, show that the uptake of family planning remained low at 20%, 27%, 32%, and 38%, respectively. This is only halfway based on the national target of 60% of family planning uptake by 2020 for women in need. The uptake of family planning is much lower in rural areas than in urban ones. The use of contraceptives is still low compared with the government's target of reaching 42% (One Plan III). National development aspirations articulated in Vision 2025 are to transform Tanzania's economy into a middle-income and semi-industrialized state by 2025, with family planning as a component of public health interventions recognizing that continued rapid population growth could derail a potential demographic dividend.

The availability and readiness for vaccination were high, similar to the findings of other studies. For example, existing evidence shows that the vaccination coverage (such as 90 percent for BCG (tuberculosis), and 88 percent for DTP-Hib-HepB3) is high throughout the country (USAID, 2023). It was observed that 71% of all the facilities offered delivery services with an average availability of tracer items of 66%, and availability and readiness were higher for hospitals and referral hospitals. Similar observations were reported by Bintabara *et al*., (2019). There is a need to improve the provision of obstetric and newborn care services by ensuring the availability of tracers at all levels of care.

The facility readiness for diabetes service was 53%, while for cardiovascular services, readiness was 50%, and cancer diagnosis was 69%. This is much higher than the reported 28% of facilities considered prepared for outpatient primary care of hypertension (Bintabara and Mpondo, 2018). SARA 2023 has reported a higher number of facilities with at least one trained staff member and guidelines for hypertension. Less than 10% of the facilities had at least one staff member who had received training in the management of chronic respiratory diseases (Shayo *et al*., 2019).

Limitations

The results presented here should be considered alongside a few important limitations. First, estimates are based on data collected at one point in time and observations made during the dates of health facility visits. This might lead to potential reporting challenges compared to

routinely collected data or existing electronic reporting systems. Additionally, our study focused specifically on samples of the healthcare facilities found in the council. It is possible for the sample facilities not only that there could be over- or under-representation of public and private facilities, but also by healthcare facility levels (dispensaries, health centres, and hospitals). We recognize that there might be challenges in accurately reporting healthcare provider training. It's possible that the reported rates of training could be influenced by a bias among respondents who anticipate some benefit if they report not being trained. On another note, the SARA 2023 survey focuses only on the quantitative assessment of service availability and readiness; it is possible that a qualitative component would have additional value to the findings presented in this report. Finally, respondents provided insights based on their experiences and it is possible that responses were subject to recall bias. Given this, the study recommends among others: a close monitoring of guideline availability and use at the facilities. Supportive supervision and mentorship in service provision. Undertaking of inventory of infrastructure and medical equipment as well as maintenance and identification of staff training needs. A complete review of the SARA survey tool at least six months before its execution by healthcare providers (public and private at various levels of care), MoH, PO-RALG, Programs, etc.

Conclusion

There has been improvement in the service availability and readiness for some of the services such as malaria and immunisation. Readiness for healthcare facilities to provide non-communicable disease services is high, but availability is low. Hence, there is a need to capacitate facilities to ensure that healthcare professionals are available and capable of providing such services. The MoH has prepared guidelines for the provision of healthcare services; however, it was observed that some of the facilities have no guidelines in place, and there is a need for close monitoring to ensure facilities have guidelines and healthcare workers use them during the provision of services. Close monitoring of medical equipment ensures that they are working, and any damage must be fixed on time to ensure the continuum of care. Supportive Supervision needs to be provided and Quality Improvement plans need to be developed in line with the availability and readiness of healthcare providers to provide services to the citizens.

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Appendices I

Supplementary Tables

Table S1: Basic Amenities Domain in Percentage

	Power source	Improved water source	Consultation room	Sanitation facilities	Communication equipment	Computer with internet	Emergency transport	Percent of facilities with all items	Mean availability of tracer items
Facility Type									
Referral Hospital	72	100	69	100	100	100	90	51	90
Hospital	43	95	89	99	93	87	65	20	81
Health Center	44	90	84	96	78	61	38	10	70
Dispensary	41	83	71	88	67	27	6	1	55
Managing authority									
Government/public	39	82	72	87	65	26	10	2	55
NGO/not-for-profit	33	100	91	100	91	88	29	7	76
Private-for-profit	52	90	75	100	86	52	16	6	67
Mission/faith based	44	89	81	91	81	63	28	3	68
Urban/Rural									
Urban	38	82	72	87	65	29	10	1	55
Rural	55	94	80	100	88	54	23	9	70

Table S2: Basic Equipment Domain in Percentage

	Adult scale	Child scale	Thermometer	Stethoscope	Blood pressure apparatus	Light source	Percent of facilities with all items	Mean availability of tracer items
Facility Type								
Referral Hospital	100	84	100	95	100	97	78	96
Hospital	100	98	100	98	100	88	87	97
Health Center	99	97	96	98	99	76	69	92
Dispensary	93	83	90	96	98	47	32	82
Managing authority								
Government/public	93	90	89	96	99	48	38	83
NGO/not-for-profit	100	100	100	88	100	54	42	90
Private-for-profit	98	58	97	99	97	69	41	85
Mission/faith based	96	90	97	95	99	62	54	89
Urban/Rural								
Urban	94	86	90	97	98	47	36	83
Rural	96	84	96	95	99	73	53	87

Table S3: Standard Precautions

	Safe final disposal of sharps	Safe final disposal of infectious	Appropriate storage of sharps	Appropriate storage of infectious	Disinfectant	Disposable or auto disable	Soap and water OR alcohol	Latex gloves	Guidelines for	Percent of facilities with all items	Mean availability of tracer items
Facility type											
Referral Hospital	57	70	100	100	100	100	100	100	90	57	91
Hospital	49	49	99	97	100	100	98	100	87	40	87
Health Center	41	52	96	95	100	100	97	97	83	30	84
Dispensary	37	45	98	95	98	100	91	96	69	21	81
Managing authority											
Government/public	36	44	98	96	99	100	92	97	74	23	82
NGO/not-for-profit	41	41	100	100	100	100	100	100	84	26	85
Private-for-profit	49	54	95	93	96	100	93	99	60	20	82
Mission/faith based	40	50	100	94	99	100	92	90	74	28	82
Urban/Rural											
Urban	41	47	97	95	98	100	91	96	72	25	82
Rural	28	43	100	96	99	100	96	99	71	14	81

Table S4: Diagnostic Capacity

	Haemoglobin	Blood glucose	Malaria diagnostic capacity	Urine dipstick-protein	Urine dipstick-glucose	HIV diagnostic capacity	Syphilis rapid test	Urine test for pregnancy	Percent of facilities with all items	Mean availability of tracer items
Facility type										
Referral Hospital	92	92	100	84	84	100	84	92	84	91
Hospital	99	90	99	86	87	98	83	97	64	92
Health Center	86	75	99	90	89	98	81	89	57	88
Dispensary	58	35	97	48	46	91	58	69	15	63
Managing authority										
Government/public	58	35	98	49	46	97	57	68	18	63
NGO/not-for-profit	100	52	100	97	86	88	91	100	48	89
Private-for-profit	72	69	96	66	68	67	76	79	32	74
Mission/faith based	92	66	99	90	90	94	83	94	51	89
Urban/Rural										
Urban	61	38	98	52	49	93	60	70	19	65
Rural	77	62	95	69	71	87	72	82	40	77

Table S5: Essential Medicines

	Amlodipine	Amoxicillin	Amoxicillin	Ampicillin	Aspirin cap/tab	Beclometasone	Beta blocker	Carbamzepine	Ceftriaxone	Enalapril tablet	Fluoxetine	Gentamicin	Glibenclamide	Haloperidol	Insulin regular	Magnesium	Metformin	Omeprazole	Oral	Oxytocin	Salbutamol	Simvastatin	Thiazide	Zinc sulphate	Percent of	Mean availability
Facility type																										
Referral Hospital	100	76	100	92	92	59	100	63	100	100	53	92	100	53	100	84	100	100	86	84	80	100	80	58	18	89
Hospital	88	93	94	93	89	34	87	56	83	61	19	97	95	52	82	97	91	96	92	97	78	69	64	87	41	89
Health Center	72	93	95	92	66	19	60	27	92	36	7	95	80	28	41	93	88	92	90	93	64	40	44	91	14	83
Dispensary	26	78	87	70	24	3	12	0	74	7	0	8	30	0	5	74	40	74	85	78	28	4	9	80	0	59
Managing authority																										
Government/public	31	83	94	77	28	6	17	6	79	12	2	86	36	5	12	89	46	80	91	91	33	9	14	86	3	66
NGO/not-for-profit	62	86	86	74	38	28	19	7	86	17	0	88	64	7	29	65	66	74	50	65	51	25	17	60	17	61
Private-for-profit	49	66	67	55	43	8	36	6	68	21	3	67	49	8	13	28	54	69	65	38	40	20	18	64	6	51
Mission/faith based	44	83	83	79	56	10	35	13	73	20	4	91	56	11	28	67	63	73	81	76	47	21	25	82	10	67
Urban/Rural																										
Urban	33	83	90	74	31	6	19	6	76	12	1	83	36	5	13	82	46	76	87	84	35	9	14	82	3	64
Rural	43	72	86	72	42	10	32	9	80	21	4	84	53	10	18	62	58	83	81	70	36	21	22	81	7	64

Table S6: General Service Readiness

	Basic amenities mean score	Basic equipment mean score	Standard precautions mean score	Diagnostics mean score	Essential medicines mean score	General service readiness index
Facility type						
Referral Hospital	90	96	91	91	89	91
Hospital	81	97	87	92	89	89
Health Center	70	92	84	88	83	84
Dispensary	55	82	81	63	59	68
Managing authority						
Government/public	55	83	82	63	66	70
NGO/not-for-profit	76	90	85	89	61	72
Private-for-profit	67	85	82	74	51	72
Mission/faith based	68	89	82	89	67	79
Urban/Rural						
Urban	55	83	82	65	64	70
Rural	70	87	81	77	64	76

Table S7: Family planning availability

	Offers family planning services	Combined oral contraceptive	Progestin-only contraceptive	Progestin-only injectable contraceptive	Male condoms	Female condoms	IUCD	Implant	Cycle beads for standard days method	Emergency contraceptive	Male sterilization	Female sterilization
Facility type												
Referral Hospital	93	70	66	66	93	48	93	81	51	84	81	93
Hospital	81	76	70	70	77	24	69	78	58	64	29	56
Health Center	87	83	73	75	83	39	71	83	63	68	19	39
Dispensary	83	79	62	69	82	19	36	78	51	52	1	2
Managing authority												
Government/public	97	93	75	83	97	26	48	92	64	63	4	10
NGO/not-for-profit	56	43	36	52	23	3	21	56	30	17	3	10
Private-for-profit	46	42	33	34	39	10	22	43	25	31	5	10
Mission/faith based	43	36	24	30	35	14	27	36	20	28	6	13
Urban/Rural												
Urban	87	84	69	73	86	22	41	81	54	56	4	8
Rural	72	65	46	59	66	22	44	69	49	48	7	19

Table S8: ANC Availability

	Guidelines available for antenatal care	ANC check-lists and/or job-aids	At least one trained staff antenatal care	Blood pressure apparatus	Haemoglobin test	Urine dipstick protein test	Iron tablets	Folic acid tablets	Tetanus toxoid vaccine	IPT drug	ITNs	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Facility type														
Referral Hospital	35%	35%	100%	100%	100%	100%	100%	100%	100%	77%	58%	35%	85%	4
Hospital	62%	80%	66%	100%	100%	87%	92%	92%	88%	93%	90%	32%	86%	73
Health Center	57%	68%	64%	100%	88%	91%	95%	96%	93%	99%	93%	32%	85%	182
Dispensary	47%	48%	46%	99%	59%	49%	91%	94%	91%	93%	92%	11%	72%	282
Managing authority														
Government/public	49%	52%	47%	99%	60%	50%	93%	95%	93%	95%	95%	14%	73%	374
NGO/not-for-profit	36%	81%	64%	100%	100%	97%	86%	86%	74%	86%	73%	22%	81%	10
Private-for-profit	53%	37%	61%	100%	81%	80%	90%	92%	88%	86%	76%	16%	77%	82
Mission/faith based	43%	65%	55%	99%	94%	92%	86%	86%	84%	86%	85%	21%	79%	75
Urban/Rural														
Urban	46%	53%	45%	99%	61%	53%	92%	94%	92%	93%	93%	12%	73%	399
Rural	62%	53%	69%	99%	84%	74%	94%	96%	90%	94%	90%	25%	81%	142
Total	**49%**	**53%**	**49%**	**99%**	**65%**	**57%**	**92%**	**94%**	**91%**	**93%**	**92%**	**15%**	**74%**	**541**

Table S9: Child Health preventive and Curative care availability

	Offers preventive and curative care for U-5s	Diagnosis/treat malnutrition	Vitamin A supplementation	Iron supplementation	ORS and zinc supplementation to children with diarrhea	Child growth monitoring	Treatment of pneumonia	Administration of amoxicillin for the treatment of pneumonia in children	Treatment of malaria in children
Facility type									
Referral Hospital	58	58	58	22	58	46	46	58	58
Hospital	96	92	96	81	87	93	89	91	96
Health Center	94	91	94	82	88	93	88	89	93
Dispensary	85	78	82	71	76	83	81	70	82
Managing authority									
Government/ public	94	88	93	80	86	93	91	77	91
NGO/not-for-profit	100	97	100	47	86	100	100	100	100
Private-for-profit	53	46	46	41	44	49	43	52	52
Mission/faith based	80	70	77	65	74	76	68	79	77
Urban/Rural									
Urban	88	81	87	74	79	88	85	74	85
Rural	81	75	75	67	76	76	73	70	80

Table S10: Malaria services availability

	Offer diagnosis or treatment of malaria	Malaria diagnosis	Malaria diagnosis testing	Malaria diagnosis by clinical symptoms	Malaria diagnosis by RDT	Malaria diagnosis by microscopy	Malaria treatment	IPT
Facility type								
Referral Hospital	100	100	100	81	100	100	100	58
Hospital	99	99	99	70	99	90	99	97
Health Center	100	100	100	68	100	73	100	96
Dispensary	99	99	99	63	99	23	99	87
Managing authority								
Government/public	99	99	99	63	99	21	99	97
NGO/not-for-profit	100	100	100	66	100	69	100	100
Private-for-profit	99	99	98	63	98	75	98	50
Mission/faith based	100	100	100	75	100	55	100	85
Urban/Rural								
Urban	99	99	99	68	99	26	99	92
Rural	100	100	100	49	100	60	100	78

Table S11: Tuberculosis services availability

	Offers TB services	TB diagnosis	TB diagnostic testing	TB diagnosis by clinical symptoms	TB diagnosis by sputum smear microscopy examination	TB diagnosis by culture	TB diagnosis by rapid test (GeneXpert MTB/RIF)	TB diagnosis by chest X-ray	Prescription of drugs of TB patients	Provision of drugs to TB patients	Management and treatment follow-up for TB patients
Facility type											
Referral Hospital	93	93	93	93	81	70	93	93	93	93	93
Hospital	78	76	74	72	66	24	49	68	72	75	75
Health Center	81	79	65	76	64	7	28	12	76	78	78
Dispensary	47	41	15	39	13	1	3	0	28	32	37
Managing authority											
Government/ public	59	52	23	50	21	3	8	3	41	46	50
NGO/not-for-profit	50	50	50	50	50	0	3	1	50	50	50
Private-for-profit	22	20	16	19	16	2	4	4	13	12	14
Mission/faith based	57	56	48	55	46	11	19	17	41	44	48
Urban/Rural											
Urban	54	49	24	46	22	2	7	4	36	39	43
Rural	52	45	27	44	27	7	15	10	41	45	49

Table S12: HIV Counselling and Testing readiness

	Guidelines available HIV counselling and testing	At least 1 trained staff HIV counselling and testing	Room with visual and auditory privacy	HIV diagnostic capacity	Condoms	Percent of facilities with all items	Mean availability of tracer items
Facility type							
Referral Hospital	93	100	85	100	100	78	96
Hospital	79	70	84	100	83	39	83
Health Center	68	66	84	100	88	35	81
Dispensary	46	42	69	98	89	18	69
Managing authority							
Government/public	51	46	71	99	98	23	73
NGO/not-for-profit	59	49	90	100	12	8	62
Private-for-profit	40	43	68	91	53	16	59
Mission/faith based	61	65	86	100	54	17	73
Urban/Rural							
Urban	47	41	69	98	92	17	69
Rural	67	71	82	97	78	42	79

Table S13: Antiretroviral therapy availability

	Offers ARV prescription or ARV treatment follow-up services	ART prescription	Provide treatment follow-up services for persons on ART
Facility type			
Referral Hospital	100	100	90
Hospital	84	84	61
Health Center	81	80	68
Dispensary	54	52	40
Managing authority			
Government/public	68	66	53
NGO/not-for-profit	57	57	22
Private-for-profit	18	18	7
Mission/faith based	55	54	44
Urban/Rural			
Urban	60	59	45
Rural	53	53	44

Table S14: PMTCT Availability

	Offers services for PMTCT	HIV counselling & testing to HIV+ pregnant women	HIV counselling & testing to infants born to HIV+ pregnant women	ARV prophylaxis to HIV+ women	ARV prophylaxis to newborns born to HIV+ pregnant women	Infant & young child feeding counselling	Nutritional counselling for HIV+ women & their infants	Family planning counselling to HIV+ women
Facility type								
Referral Hospital	88	81	81	88	88	81	81	81
Hospital	93	93	92	86	90	93	93	91
Health Center	92	92	90	88	89	92	91	90
Dispensary	78	78	75	71	70	78	78	78
Managing authority								
Government/public	92	92	88	86	86	92	92	92
NGO/not-for-profit	88	88	88	65	65	88	88	79
Private-for-profit	33	33	30	26	22	32	33	32
Mission/faith based	68	68	66	57	57	68	68	61
Urban/Rural								
Urban	85	85	82	78	78	85	84	84
Rural	66	66	62	61	58	66	66	65

Table S15: Cardiovascular disease (CVD) readiness

	Guidelines available CVD	At least 1 trained staff CVD	Stethoscope	Blood pressure apparatus	Adult scale	Oxygen	ACE inhibitors	Hydrochlorothiazide tablet	Beta blockers	Calcium channel blockers	Aspirin	Metformin	Percent of facilities with all items	Mean availability of tracer items	Total number of facilities
Facility type															
Referral Hospital	66	81	93	100	100	64	100	76	100	100	100	100	30	90	10
Hospital	42	40	97	100	100	79	64	65	89	90	93	93	15	79	68
Health Center	58	60	98	100	99	62	39	45	62	73	71	92	13	71	146
Dispensary	25	18	95	99	94	4	12	17	19	45	31	60	0	43	120
Managing authority															
Government/public	37	33	95	100	94	22	23	29	33	54	42	71	5	53	198
NGO/not-for-profit	0	7	77	100	100	14	14	14	30	73	30	100	0	47	5
Private-for-profit	30	30	100	99	100	37	31	32	51	67	58	68	5	58	83
Mission/faith based	42	31	93	99	100	36	27	28	42	56	62	75	5	58	58
Urban/Rural															
Urban	35	26	97	100	95	22	22	29	35	60	47	73	5	54	215
Rural	37	43	92	99	96	35	30	29	41	50	48	69	6	56	129
Total	**36**	**32**	**96**	**100**	**96**	**26**	**25**	**29**	**37**	**57**	**48**	**72**	**5**	**54**	**344**

Additional files

Table S15: SARA 2023 Survey Design & Planning & Tools adaptation

S/N	Participant Name	Institution
1	Fadhili Kubaya	MoH
2	Lucy Cornel Iria	MoH
3	Ephraim Josia Magafu	MoH
4	Esther Shija	MoH
5	Peter Kaja	MoH
6	Salome Mvaa	DAR
7	Machimu R. Venance	MoH
8	Erick Kinyenje	MOH
9	Oscar Mwasongwe	MOH
10	Edwin Chao	MoH
11	Mary Shadrack	PO-RALG
12	Pius K. Kamana	PO-RALG
13	Kusirye Ukio	RS-MORO
14	Ferdinand Ngesha	MoH
15	Anna Mahendeka	MoH
16	Ignas Josephat Siame	PO-RALG
17	Dr. James Kengia	PO-RALG
18	Juliana Mawalla	MoH
19	Evarist Mgalle	MoH
20	Japhet Swema	MoH

Table S16: SARA Survey 2023 Training of Research Assistants

S/N	Names	Designation
1	Lucy Iriya	M&E - MoH
2	Edith Nkupama	M&E - MoH
3	Erick Kinyenje	M&E - MOH
4	Teddy P. Lwego	M&E - MoH
5	Cleopatra Mtei	RNO - MNH
6	Msafiri Kabulaa	PDO -MOH
7	Edwin Chalila Oliver	SECON- MOH
8	Tumainiel Macha	AD M&E - MOH
9	Claudi Kumalija	HMIS - MoH
10	Trust Nyondo	SST - MoH
11	Peter Ambrose	ACT - MOH
12	Dr. James Kengia	PDO-PORALG
13	Abel Nshasi	LS - MOH

Table S17: SARA Survey 2023 Data Collection Monitor – Participants

S/N	Names	Designation
1	Lucy Iriya	M&E - MoH
2	Edith Nkupama	M&E - MoH
3	Erick Kinyenje	M&E - MOH
4	Teddy P. Lwego	M&E - MoH
5	Cleopatra Mtei	RNO - MNH
6	Msafiri Kabulaa	PDO -MOH

Table S18: SARA Survey 2023 Research Assistants

S/N	Names	Institution
1	Victor Sylivand	IHI
2	George Elindede	IHI
3	Hassan Teasrish	IHI
4	Maryrose Jacob	IHI
5	Steven A Mpagama	IHI
6	Mohsin A Mohamed	IHI
7	Amina R Mbwana	IHI
8	Saada Mussa	IHI
9	Modesta Minangi	IHI
10	Shoko M. Irema	IHI
11	Brenda Godfrey	IHI
12	Shukrani Mohamed	IHI
13	Wemael Zakaria	IHI
14	Ismael Mminge	IHI
15	Kilakoze Kigadye	IHI
16	Ibrahim Senzia	IHI
17	Abdallah Bundala	IHI
18	Zaituni Ndaki	IHI
19	Malengo S. Bakari	IHI
20	Neema Munishi	IHI
21	Mussa Mdaile	IHI
22	Joel Machumu	IHI
23	Kassim J. Omar	IHI
24	Sylvia Shaluwa	IHI
25	Amiri Msangi	IHI
26	Martine Masonda	IHI
27	Thomas Erasto	IHI
28	Michael Mvaa	IHI
29	Ibrahim Chande	IHI
30	Ally Nassoro Mzui	IHI
31	Walter Lymo	IHI

S/N	Names	Institution
32	Hemed Ngwessa	IHI
33	Mukyanuzi Phylbert	IHI
34	Kelvin Luwoneko	IHI
35	Mohamed Lihundu	IHI
36	Michael Josia Maghembe	IHI
37	Muhidini Madenge	IHI
38	Alan A. Mmanyi	IHI
39	Rosemary Mlay	IHI
40	Lucy B. Mosha	IHI
41	Happiness Mbise	IHI
42	Zaharuni Daffa	IHI
43	Gasper Masanja	IHI
44	Faith E. Mandara	IHI
45	Valeria Mbunju	IHI
46	Protas Sayo	IHI
47	Emanus Rubaba	IHI
48	Anna Makwaya	IHI
49	Moshi Habibu	IHI
50	Happiness Mwaiseje	IHI
51	Euphrasia Shamba	IHI
52	Yustina Chiamba	IHI
53	Athuman Sangiwa	IHI
54	Happiness Abdalhaman	IHI
55	Mwanaidi Msangi	IHI
56	Kennedy Kunambi	IHI
57	Costantino Mapunda	IHI
58	Samwel Chale	IHI
59	Arthur Bendera	IHI
60	Masanja David	IHI
61	Boniface Muna	IHI
62	Said Juma Mgallah	IHI
63	Ramadhani Mtongwa	IHI
64	David Merere	IHI
65	Deogratius Kibona	IHI
66	Luis Mbuya	IHI
67	Bwake Mwaisemba	IHI
68	Faustina Shuma	IHI
69	Natalia Tesha	IHI
70	Michael Majja	IHI
71	Ezekiel Willium	IHI
72	Thabit Mushi	IHI
73	Joyce Msuya	IHI
74	Nancy Muze	IHI
75	Victor F. Mrema	IHI
76	Mussa Sosgteness	IHI

S/N	Names	Institution
77	David Gamasa	IHI
78	Elias Vicent	IHI
79	Gisela John	IHI
80	Salome Mvaa	IHI
81	Cleopatra Mtei	IHI

Table S19: SARA Survey 2023 Dissemination – Participants

S/N	Full Name	Institution
1	Elias Kwesi	MoH
2	Claud Kumalija	MoH
3	Edwin Chalila Oliver	MoH
4	Trust Nyondo	MoH
5	Beshuu Salehe	MoH
6	Prisca Jackson	MoH
7	Adelina Wissa	MoH
8	Mwinyikondo J Amir	MoH
9	Pius Horumpende	MoH
10	Evamary Ludovick	MoH
11	Alice J Mwandu	MoH
12	Magreth S Haule	MoH
13	Khalifa Munisi	MoH
14	Khadija Kigoto	MoH
15	Dickson Kisonga	MoH
16	Peter Mtalemwa	MoH
17	Gisbeti Msigwa	MoH
18	Stella Mpanda	MoH
19	Maige Ngeleja	MoH
20	Anaclet Kamara Lauren	MoH
21	Hussein Mavunde	MoH
22	Evance Simkoko	MoH
23	Josephine Materu	MoH
24	Arone M Aron	MoH
25	Robert Rweimamu	MoH
26	Lucy C Iriya	MoH
27	Jafari Ibwe Msangi	MoH
28	Richard Kafila	MoH
29	Juliana Mawala	MoH
30	Editha Nkupama	MoH
31	Kiza Kilanilwa	MoH
32	Adam Tende	MoH
33	Emmanuel Massawe	MoH
34	Lidya Mwaga	MoH
35	Hellen J Nzungu	MoH
36	Frenklin Fredirick	MoH
37	Beatrice Joseph	MoH
38	Teddy Rwego	MoH
39	Inzibet Rugangila	MoH

S/N	Full Name	Institution
40	Samwel Lwambura	IHI
41	Selemani Mmbaga	IHI
42	August Joachim	IHI


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