

Report on the:
Service Availability and Readiness Assessment
(SARA)
Republic of Yemen

July 2013

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LIST OF ACRONYMS

<u>Abbreviation</u>	<u>Description</u>
AWD	Acute Watery Diarrhea
CI	Child Immunization
EPI	Expanded Programme of Immunization
HC	Health Center
HF _s	Health Facilities
HIR	Health Information and Research, a department of MoPH&P
HIS	Health Information System
HU	Health Unit
ICU	Intensive Care Unit
IDP	Internally Displaced People
MoPH&P	Ministry of Public Health and Population
PHC	Primary Health Care
WHO	World Health Organization

Foreword

The Ministry of Public Health and Population (MoPH&P) of the Republic of Yemen is pleased to present this report on the Service Availability and Readiness Assessment (SARA) results for the 10 selected governorates of Yemen. I hope the findings of this report serve the perceived goal for what this important exercise was undertaken.

SARA is a globally recognized and WHO recommended tool for health assessment. The tool is especially useful in situations where regular data collection system is either weak or non-existent. Therefore, the findings of this report will reveal the current status of health services and resources availability and readiness. It will also provide planners and decision makers with the necessary information for informed decisions for health services streamlining and further improvement. All health partners are encouraged for wider use of this report.

There is no doubt that the MoPH&P and its partner agencies and NGOs have invested tremendous effort for the health services improvement in Yemen. The emergency response to the crises in Sa'ada and Abyan governorates is well acknowledged. But, we should also admit that our engagement in the field of regular monitoring and reviewing the situations has not been very commendable so far. It is, therefore, strongly recommended to strengthen the regular monitoring and reporting system as part of service delivery policy.

Obviously, the SARA assessment for assessing the existing situations was the first step toward strategic planning. This assessment report will be used as the basis for prioritizing investments and contribute to enabling national health development strategy.

I would like to extend my gratitude to the Health Cluster for initiating SARA exercise and also the World Health Organization (WHO) for provision of technical assistance and supporting the whole process. I would also like to acknowledge the support of the various departments of MoPH&P which contributed to assessment.

Let us commit ourselves and join our hands together to achieve the noble cause of establishing a responsive and effective health care system in Yemen.

Dr Ahmed Qasem Al-Ansi

Minister of Public Health and Population

ACKNOWLEDGEMENT

This assessment report is the result of the collaborative efforts between WHO and the Ministry of Public Health and Population (MoPH&P) in Yemen.

The assessment has been supported by WHO aimed at responding to the data needs for planning and streamlining health services delivery system in Yemen. The efforts of Dr. Mohammad Dauod Altaf for initiating the SARA exercise and recruiting the necessary expertise for undertaking the assessment are highly commendable.

The SARA assessment enjoyed the full support of the MoPH&P, particularly H.E Dr. Ghazi Ismail, Deputy Minister for Curative Medicine; Dr. Ali Saryah, Director General for Emergency Department; and Dr. Abdul Jabbar Al Ghaithi, General Director of Information & Researches.

Dr. Osan Ghazi Ismail, EHA Operations Officer of WHO, played an instrumental role in the whole process of SARA. Without his active involvement the SARA exercise would have been difficult, if not impossible.

All participants of the SARA assessment gave their time and efforts and have contributed greatly to the findings of the assessment. Without their valuable contributions the assessment would have not been possible.

Tremendous efforts were made by the staff of Health Information and Researches (HIR) Department in Ministry of Health to study the assessment tool and guide participants through it. The data of the assessment were entered in the computer and compiled. They also gave their time and efforts to use the formal documents that related to the health resources database..

Technical support from WHO consultant Mr. Khan Aqa Aseel was provided in the form of adapting the SARA tools, training of the assessment implementing team, supervising the field work and developing the final report. His contribution to the SARA process and developing this report is acknowledged.

EXECUTIVE SUMMARY

The objective of the Service Availability and Readiness Assessment (SARA) survey is to generate **reliable and regular information** on service delivery such as the availability of key human and infrastructure resources, basic equipment, basic amenities, essential medicines, and diagnostic capacities; and on the readiness of health facilities 'capacity for providing basic health-care interventions relating to family planning, child health services, basic and comprehensive emergency obstetric care, TB, malaria, and non-communicable diseases.

The SARA targeted 10 governorates including: 1- Abyan; 2- Sa'ada; 3- Sana'a (capital city); 4- Al-Bayda; 5-Taiz; 6-Hajjah; 7- Aden; 8-Lahaj; 9-Amran; 10- Al-Jawf.

The governorates of Sa'ada and Abyan, being enormously affected by protracted conflicts, were fully assessed. All the Hospitals and Health Centers (HC) were included in the SARA assessment, in order to measure the current capacities and also the level that those services can cover the needs of the population.

For the remaining eight governorates all central/governorate level Public Hospitals, 10% of the District Hospitals and 15% of the Health Centers were randomly selected for the assessment.

Health Units (HU), due to their limited health services delivery capacity, were not included in the SARA assessment.

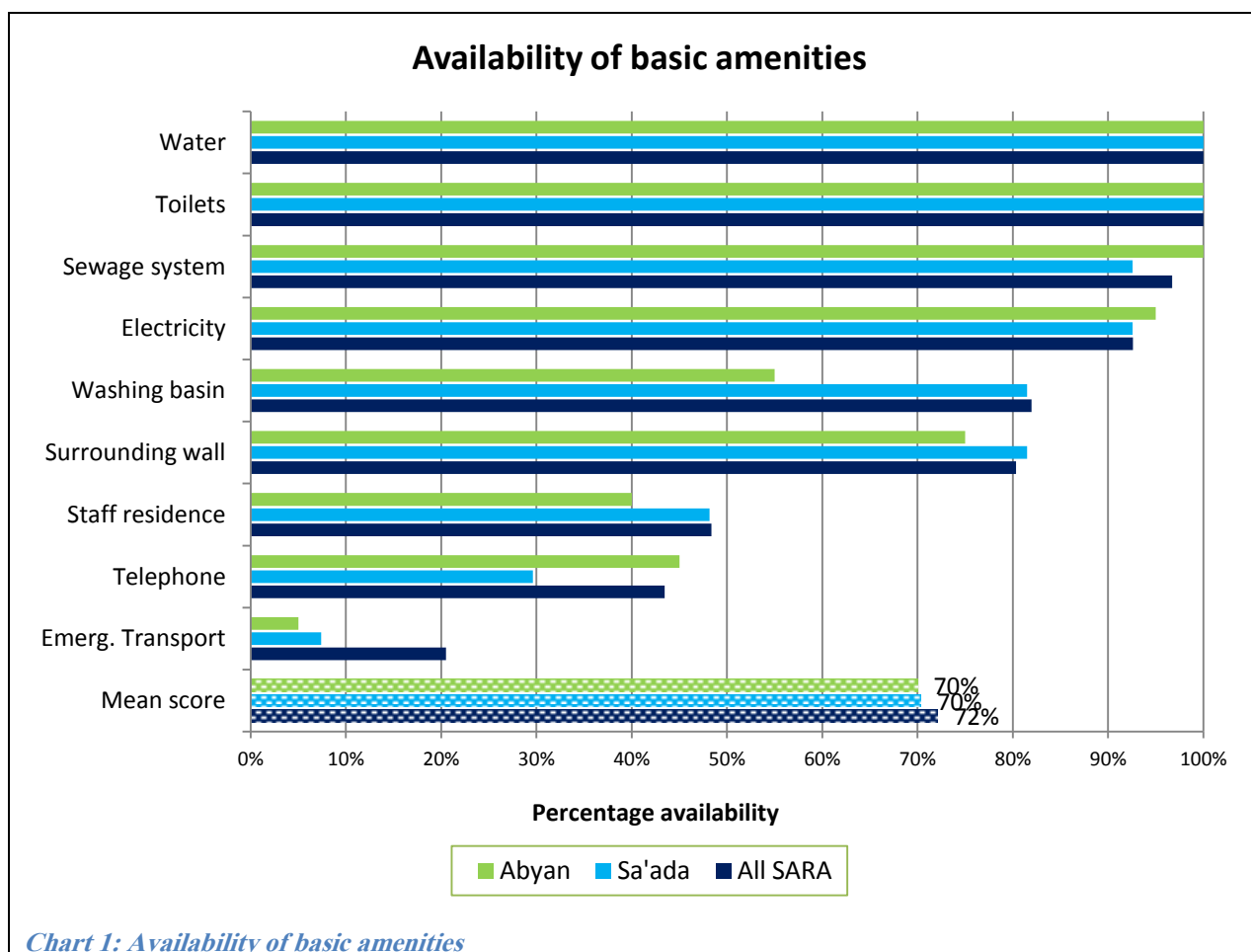
Altogether 135 HFs, 20 general referral level hospitals, 25 district/rural level hospitals, one health center with beds capacity for in-patient, 83 health centers without in-patient beds capacity and 6 polyclinics were included for the SARA assessment.

The data were analyzed for the various components as a **group for all surveyed HFs from the 10 selected governorates** and also **separately for Sa'ada and Abyan governorates**.

The survey found that out of the 135 health facilities 77 HFs were fully functional, while 45 HFs were partially functioning, 11 HFs were not functioning and two HFs in Sa'ada governorate were not accessed due to security **situations. So, 122 (90%) out of the initial sample of 135 HFs** were somehow functional, providing health services to the people. The final sample providing services in Sa'ada was 27 HFs and in Abyan 20 HFs.

Out of the 122 HFs, 114 (93.4%) of them have **intact buildings**. The building status of four HFs or (3.3%) is partially destroyed, while for other four HFs or (3.3%), their buildings are totally destroyed.

The mean score for **basic amenities** (running water, toilet facilities, sewage system, electricity, washing basin, surrounding walls, emergency transport, telephone service, and staff residence) as **a group is 72%**. This means that most of the basic amenities are available in 72% of the HFs. The mean score for basic amenities in the HFs in both **Sa'ada and Abyan is 70%**, a bit less the general average.



The average value for the availability of health services in all surveyed HFs is 61%, while the average values in Abyan and Sa'ada governorates are 59% and 52% respectively.

The survey found that there is altogether 11,513 health staff, with 74% or 8,531 of the staff being health workers of various categories. The male/female ratio among the health workers is 100/82.

The total numbers of core health workers in Sa'ada and Abyan governorates are 336 and 814, respectively. Also, the male to female ratios in the two governorates of Sa'ada and Abyan are 100 to 44 and 100 to 54, which are far lower than the overall average ratio.

The main PHC services, which comprise eight health services including OPD, child immunization, family planning, reproductive health, nutrition, lab services, outreach services and health education, are provided by 84% of the surveyed HFs, irrespective of the quality of those services. In Sa'ada and Abyan governorates, the PHC services are available at the rates of 82% and 77% respectively.

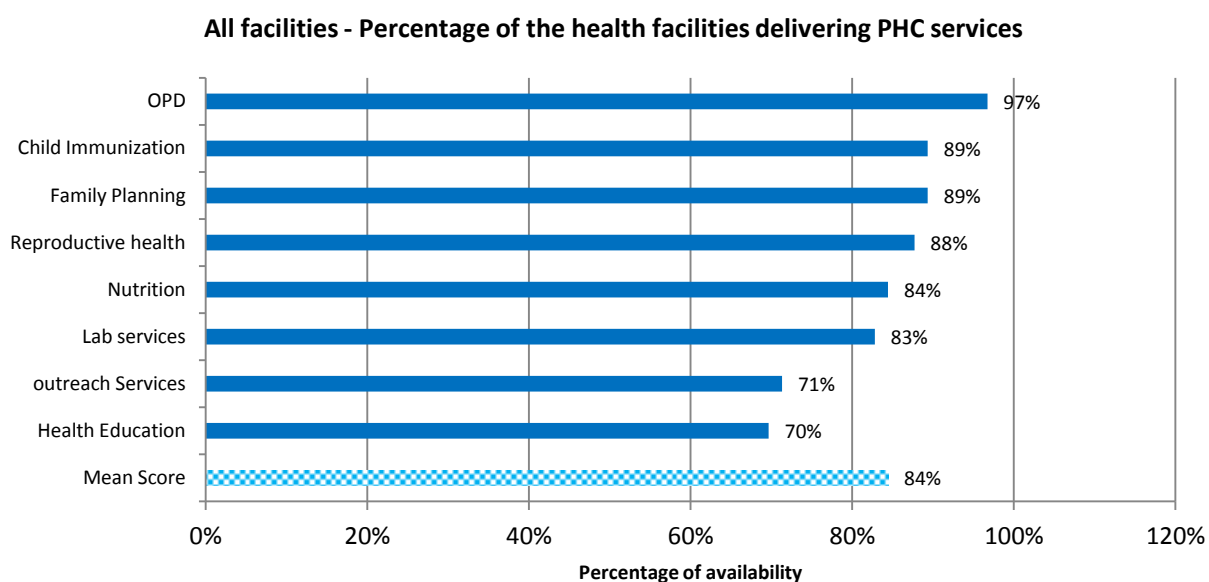


Chart 2: Percentage of the HFs providing the main PHC components

Only 30% of the surveyed HFs provides inpatient services. General medicine, normal delivery and pediatrics are the highest available inpatient services with availability rates of 69%, 67% and 61% respectively. **Psychiatry & neurology** with only 6% of the HFs offering the service, is the lowest available inpatient service.

Reproductive health services are available in 88% of the HFs in the surveyed areas, but all the RH components are provided by only 76% of the HFs. In Sa'ada and Abyan governorates, the percentages of HFs which provide all the RH components are 83% and 59% respectively.

Out of the total 122 surveyed HFs, 89% of them provide FP services. In Sa'ada governorate 85% and in Abyan governorate 75% of the HFs provide FP services. The six listed FP component in full are available in 64% of all surveyed HFs. In Sa'ada, the full package of FP is available in 48% and in Abyan in 60% of the HFs.

While 70% of the 122 surveyed HFs provides Health Education (HE) services, in Sa'ada 48% and in Abyan 65% HFs provide HE services. The full package of HE services is available in 63% of the 122 HFs, whereas in Sa'ada 42% and in Abyan 57% of the HFs provide all components of HE services.

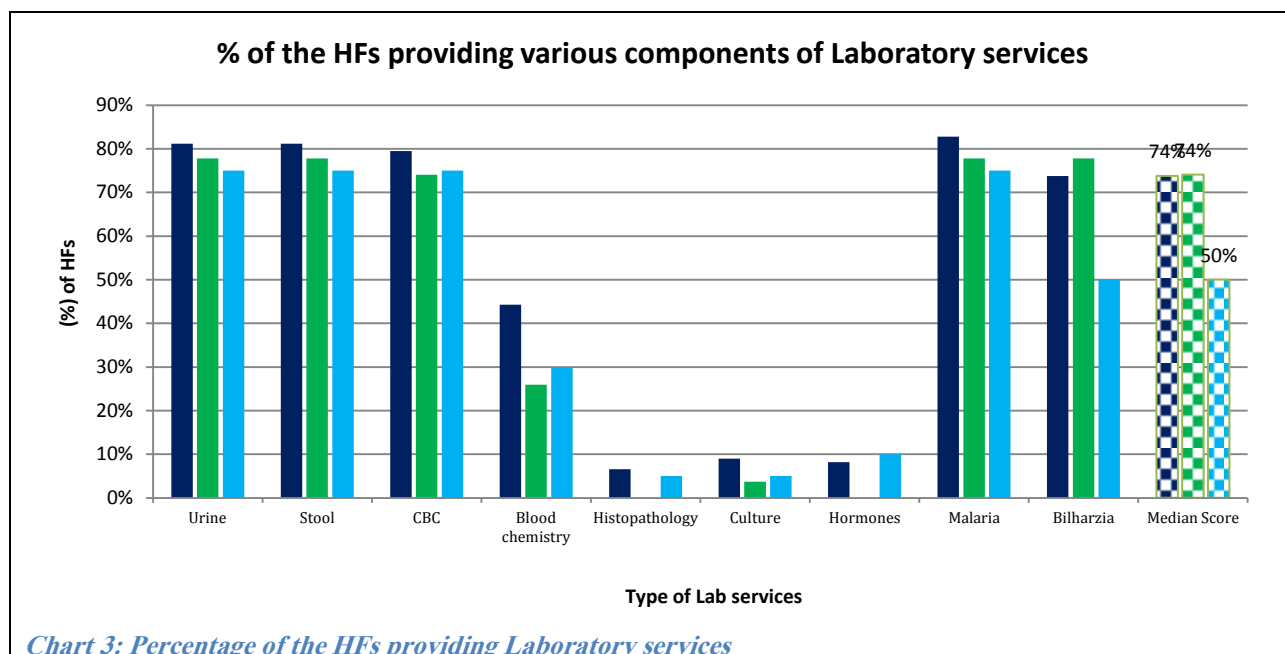
Child Immunization (CI) services are provided by 89% of all surveyed HFs, whereas in Sa'ada and Abyan governorates they are available in 93% and 80% respectively. The CI services with all the six vaccines are available in 88% of the HFs in the surveyed areas and 93% and 75% in Sa'ada and Abyan governorates.

Nutrition services for mother and child are available in 84% of the HFs in the surveyed areas, whereas in Sa'ada the service is available at 89% and in Abyan in 70% of the HFs. Based on the Mean Score, 64% of all the surveyed HFs provide all seven components of nutrition services for

mothers and children. Sa'ada governorate with 70% of all 7 components of nutrition services availability is in a higher position, but Abyan with 45% is the lowest in the group.

Out of the 122 HF's 71% of them provide outreach services. In Sa'ada and Abyan governorates the situations are relative better with 78% and 80% of the HF's providing outreach services.

While Lab services are available in 83% of the surveyed HF's, all lab tests are provided by only 74% HF's. Similarly, in Sa'ada governorate 74% of the HF's provides all Lab tests, whereas in Abyan governorate only 50% of the HF's provides all Lab test.



The Means Score suggests that 25% of the 122 HF's provides all components of Oral Health services. In Sa'ada governorate 19% and in Abyan governorate 15% of the HF's provide the entire package of Oral Health services.

Blood Transfusion services are very weak and all the BT related components available in only 18% of the 122 HF's. The situations are further aggravated in Sa'ada and Abyan with the mean scores for BT 7% and 15% respectively.

The Median Score shows that all components of Radiology services are available in 10% and 7% of the HF's in Abyan and Sa'ada governorates respectively. However, at the "All survey" level, these services are provided by 17% of the surveyed HF's.

The drugs supply system in Yemen is more decentralized. Only 21% of the HF's indicated receiving drug supply from MoPH&P at the Central level. Also, it was revealed that 90% of the HF's had at least a few drug items available during the survey.

The average of HF's facilities which had most of the drugs available during the survey is 51%. Also, in Sa'ada governorate 67% of the HF's and in Abyan governorate 34% of the HF's had most of the drug items available on average.

About 3/4 or 72% of the 122 HF's had all the Medical examination equipment available during the survey. The Mean Scores for availability of Medical examination equipment in Sa'ada and Abyan governorates are 84% and 71% respectively.

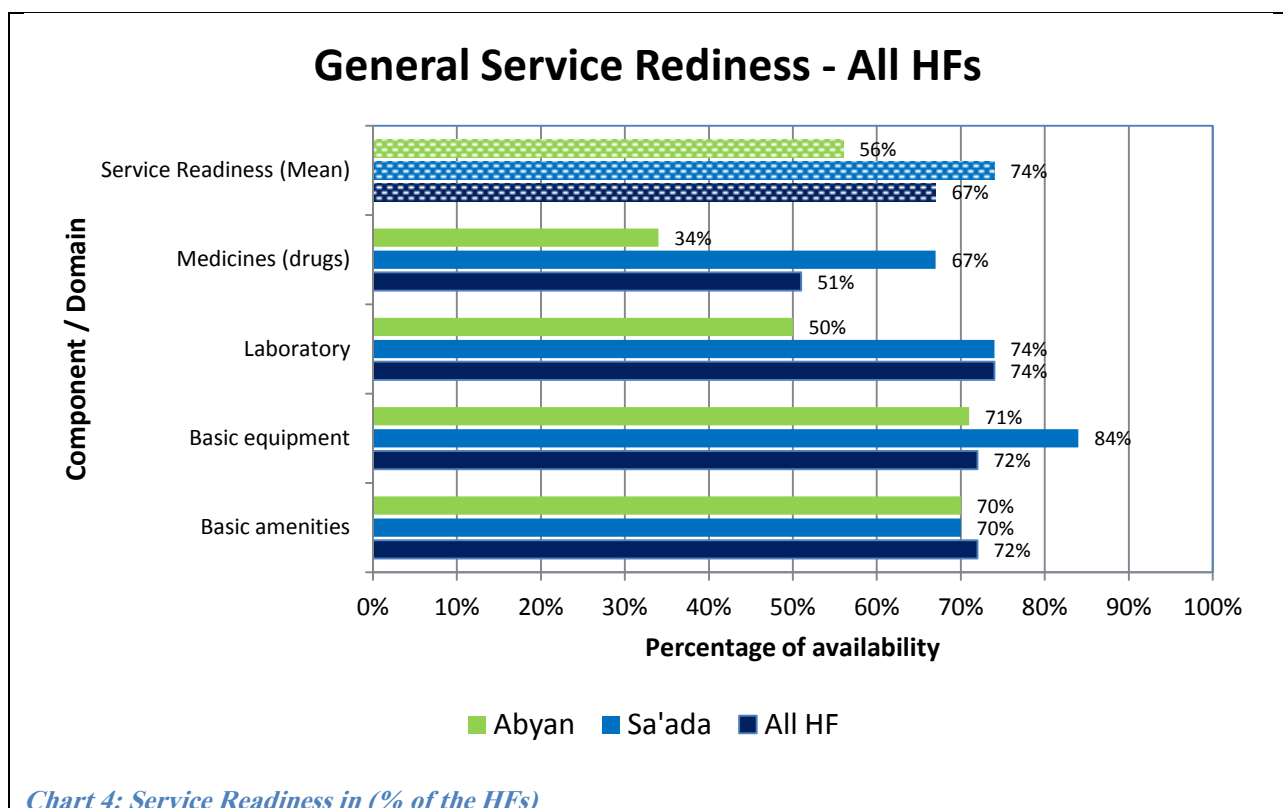
61% of the HFs had all the Delivery equipment (Labour table, Fetoscope, Safe delivery kit, Oxygen cylinder, Vaginal Speculum, Vacuum Extractor, Suction Machine, Sterilization Machine, Lamp) available during the survey. In Sa'ada and Abyan the percentage is about the same with 59% and 60% respectively.

In 71% of the 122 HFs all laboratory equipment (Microscope, Spectrophotometer, Sterilization Machine, Shaker, Centrifuge, Hemoglobin measurement device, Refrigerator, Blood Cells Counter, Water bath) are available. However, in Abyan governorate only 40% and in Sa'ada governorate 56% of the HFs has all the Lab equipment.

The full list of diagnostic equipment such as Fixed X-ray machine, Mobile X-ray machine, Ultrasound machine, C.T Scan machine, Echocardiogram, Endoscope and Dark room, is available in 27% of the HFs in the surveyed areas. In Sa'ada and Abyan governorates the percentages are further low as 19% and 20% respectively.

It is indicated that 61% of the HFs has Medical record system, mostly in the hospitals. Similarly, **Statistics and information** services are available in 60% of the HFs. In Abyan governorate, 70% of the HFs has Statistics **and information** services available.

Based on the Service Readiness Index scores, **67%** of the health facilities have all the necessary capacities and are **READY** for proper service delivery. Also, for the HFs in Sa'ada the Readiness score is **74%**, which is relatively better. In Abyan governorate the Service Readiness Index only **56%**.



INTRODUCTIONS:

The Republic of Yemen is located in the southern part of the Arabian Peninsula. The geographical topography is varied and ranges from high mountainous regions to deserts and coastal terrain. The projected population for 2012 was 24,527,000 people, who inhabit 110 000 settlements over an area of 527 970 square kilometers. Around 71% of the population lives in rural areas.

While the ongoing conflicts and socio-economic disruption in Yemen have reduced the capacity of health care services delivery to minimum for the affected populations, there is a need for enhancing the capacity of and improve access to existing health facilities through physical rehabilitation of affected health facilities, provision of basic medical supplies and capacity building interventions, in order to ensure maximum coverage of basic primary health care services in the affected areas. Similarly, the secondary health facilities (hospitals) need to be strengthened and prepared for addressing the secondary health care services and respond effectively and efficiently to emergency medical service's needs, in view of the volatile political and security situation in Yemen.

The prevailing situation is exposing affected populations with physical and environmental hazards, which has enhanced the potential exposure of the affected populations, including the IDPs and host communities to risk/threat of communicable diseases. Acute Watery Diarrhea (AWD) with other water-borne and vector-borne diseases, posing major health risks in the affected areas. While the common causes of morbidity and mortality are diarrheal diseases including cholera, malaria, ARI and childhood vaccine preventable diseases, including measles, sporadic outbreaks of Hemorrhagic Fever: both Dengue and Chickongonia have been recorded in various parts of the south and central west that may require special attention.

The assessment of health facilities in Abyan by WHO team conducted in July 2012 suggests that 90% of the health facilities lacked the essential drugs required for minimum package of health care services. The same assessment indicates that 37% of the health facilities were either partially or fully damaged and 18% of them looted.

The reproductive health indicators for Yemen are the worst among GCC and Arab regions. The contraceptive prevalence rate for Yemen is 27% and the unmet need for family planning for Yemen is more than 24%. In addition to socio cultural barrier and religious biases, there is inconsistency supply and stock out of contraceptive in most facilities. The proportion of women receiving skilled birth attendance and health facility delivery during child birth is not more than 37% (ranges from as low as 26% in rural and 61% in urban) leaving more than 50% of pregnant women to the uncertainty and unpredictability of birth complication.

Based on the above and also multiple other dire health indicators, it was envisaged to carry out a Service Availability and Readiness Assessment (SARA) survey of the most vulnerable and emergency prone areas, in order to assist to the health partners in making informed decision for the improvement and strengthening health services.

OBJECTIVES:

The objectives of the Service Availability and Readiness Assessment (SARA) are to generate reliable and regular information on service delivery such as the availability of key human and infrastructure resources, basic equipment, basic amenities, essential medicines, and diagnostic capacities; and on the readiness of health facilities 'capacity for providing basic health care interventions.

Also, the purpose of the SARA is to assist the health sector in assessing and monitoring service readiness and capacity at governorate; assessing the equitable and appropriate distribution of service and resources as well as providing the sector with skills and tools for monitoring services and resources availability on regular basis. The outcome of this assessment should be used to provide input into the planning process of the health sector. The survey generates a set of tracer indicators of service availability and readiness that can be used to:

- Detect change and measure progress in health system strengthening over time. Assess and monitor progress in health system strengthening
- Plan and monitor scale up of interventions and better respond to the increasing needs, particularly in the conflict affected areas;
- Generate the evidence base to feed into country annual health reviews to better inform the development of annual operational plans and to guide more effective country and partners 'investments;
- Support health cluster partners in planning and managing health activities.

The survey is designed to generate a set of core indicators on key inputs and outputs of the health system, which can be used to measure progress in health system strengthening over time.

Target governorates for the assessment:

The SARA targeted 10 governorates including: 1- Abyan; 2- Sa'ada; 3- Sana'a (capital city); 4- Al-Bayda; 5-Taiz; 6-Hajjah; 7- Aden; 8-Lahaj; 9-Amran; 10- Al-Jawf.

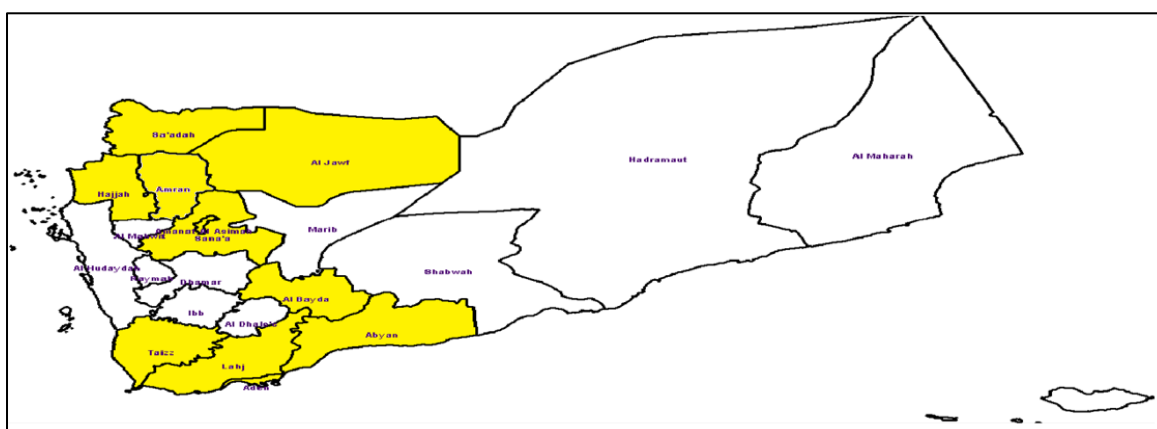


Figure (1): Map of Yemen: Location of the 10 Governorates selected for SARA assessment

The governorates of Abyan and Sa'ada were selected for full assessment, due to the protracted conflict which has immensely affected service delivery in all sectors.

Health Facilities (HF) selection methodology:

The governorates of Sa'ada and Abyan, due to being enormously affected by protracted conflicts, were fully assessed. All the Hospitals and Health Centers (HC) were included in the SARA assessment, in order to measure the current capacities and also the level that those services can cover the needs of the population.

For the other eight governorates including the Capital City of Sana'a, Al-Bayda, Taiz, Hajjah, Aden, Lahaj, Amran and Al-Jawf, all central/governorate level Public Hospitals, 10% of the District Hospitals and 15% of the Health Centers were randomly selected for the assessment. This would provide the overall picture of the health service capacities and the level of their readiness.

Health Units (HU), due to their limited health services delivery capacity, were not included in the SARA assessment.

As a result of the above sample selection criteria, altogether 135 health facilities including 20 general referral level hospitals, 25 district level hospitals, one health center with beds capacity for in-patient, 83 health centers without in-patient beds capacity and 6 polyclinics were included for the SARA assessment. This list of health facilities, shown in the below table, was derived from a Master Health Facility list, which was provided by the Ministry of Public Health and Population (MoPH&P). It shows the number of health facilities by type in each of the 10 selected governorates.

Table1 shows the summary of the health facilities distribution by governorates and by type.

Governorate	General Hospital	District Hospital	H. Center w/Beds	H. Center w/o Beds	Polyclinic	Total
Abyan	1	7	-	14	-	22
Sa'adah	1	8	-	23	-	32
Sana'a City	4	1	-	-	3	8
Aden	4	-	-	1	3	8
Al-Baida	2	1	-	8	-	11
Taiz	2	2	-	19	-	23
Al-Jawf	1	1	-	3	-	5
Hajjah	2	1	1	6	-	10
Lahaj	1	3	-	4	-	8
Amran	2	1	-	5	-	8
Total	20	25	1	83	6	135

Table 1: List of HFs selected for SARA survey in Yemen (March 2013)

I. RESULTS OF THE SARA ASSESSMENT:

The analysis of the health services availability is presented at two levels:

1. At general level in the 10 governorates where the survey was conducted. This will provide an overall picture of the available services. Coverage indicators will not be measure as the data are not representing all the health facilities.
2. At the level of Abyan and Sa'ada governorates where we can also show the population coverage indicators as the data represent all the health facilities.

I.1. Health facilities status:

Out of the 135 health facilities selected for the SARA assessment, 77 of those were fully functional, while 45 of those were functioning partially. One health facility in Sa'ada governorate was permanently closed, but 8 health facilities were closed temporarily due to different reasons. Two health facilities, one in Sa'ada governorate and one in Taiz, which their buildings were recently constructed, they were still not inaugurated. Two of the health facilities in Sa'ada were not accessed for assessment due to security situations.

Table (2) shows the functional status of the health facilities.

Governorate	Fully functional	Partially functional	Permanently closed	Temporary closed	Not function yet	Not surveyed	Total
Abyan	15	5	-	2	-	-	22
Sa'adah	3	24	1	1	1	2	32
Sana'a City	5	3	-	-	-	-	8
Aden	7	1	-	-	-	-	8
Al-Baida	7	3	-	1	-	-	11
Taiz	18	2	-	2	1	-	23
Al-Jawf	3	2	-	-	-	-	5
Hajjah	5	3	-	2	-	-	10
Lahij	8	-	-	-	-	-	8
Amran	6	2	-	-	-	-	8
Total	77	45	1	8	2	2	135
	122 (90%)		13 (10%)				

Table 2: Functional status of the HFs by governorate

As per table (2), out of the 135 health facilities, the sample selected for the SARA assessment, 122 (90%) of the health facilities were somehow functioning and providing services to the people. Table (3) shows the functional status of the health facilities by type.

Facility type	Functional	Partially functional	Total
General Hosp.	17	3	20
District Hosp.	13	11	24
H. Center w/Beds	1	0	1
H.C. w/o Beds	42	29	71
Polyclinic	4	2	6
Total	77	45	122

Table 3: Functional status of the HFs by type of HF.

Table (4) represents the distribution of the somewhat functioning health facilities by the governorate. Sa'ada governorate with 11% of the health facilities in fully functional status is the lowest in the rank and Al-Jawf governorate is the second lowest. This status can be attributed to presence of conflict and insecurity.

Governorate	Fully functional	Partially functional	Total	Fully functional (%)
Abyan	15	5	20	75%
Sa'adah	3	24	27	11%
Sana'a City	5	3	8	63%
Aden	7	1	8	88%
Al-Baida	7	3	10	70%
Taiz	18	2	20	90%
Al-Jawf	3	2	5	60%
Hajjah	5	3	8	63%
Lahij	8	-	8	100%
Amran	6	2	8	75%
Total	77	45	122	63%

Table 4: Functional status of the HFs by the governorate

The following table (5) shows the distribution of functioning health facilities by type and by governorate with the relevant percentage out of the total 122 surveyed health facilities.

Governorate	General Hospital	District Hospital	H. Center w/Beds	H. Center W/O Beds	Polyclinic	Total	Percent (%)
Abyan	1	6	-	13	-	20	16%
Sa'ada	1	8	-	18	-	27	22%
Sana'a City	4	1	-	-	3	8	7%
Aden	4	-	-	1	3	8	7%
Taiz	2	2	-	16	-	20	16%
Al-Baida	2	1	-	7	-	10	8%
Al-Jawf	1	1	-	3	-	5	4%
Hajjah	2	1	1	4	-	8	7%
Lahij	1	3	-	4	-	8	7%
Amran	2	1	-	5	-	8	7%
Total	20	24	1	71	6	122	100%
Percent (%)	16%	20%	1%	58%	5%	100%	

Table 5: Distribution of the functioning HFs by type and the governorate

The graphic presentation of the health facilities distribution is shown in the below chart.

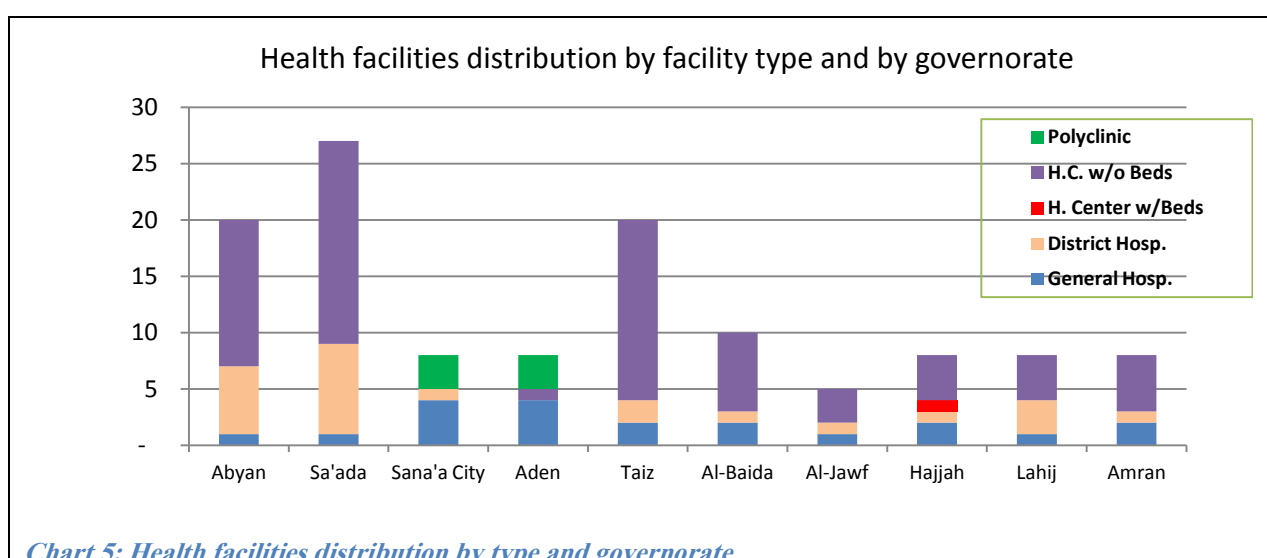


Chart 5: Health facilities distribution by type and governorate

The functional status of the surveyed health facilities is presented in the following chart.

Functional status of the health facilities by governorate

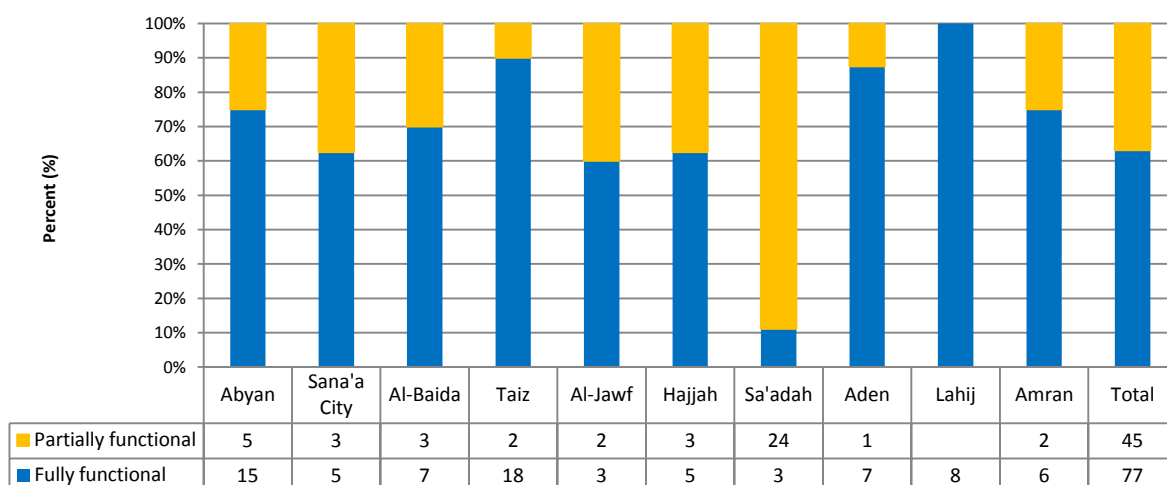


Chart 6:H. Facility functional status by governorate

As shown in the chart, 77 (63%) of the 122 health facilities are fully functional, while 45 (37%) of the health facilities function partially. The mostly affected governorate is Sa'ada where only 3 (11%) of the 27 health facilities are fully functional.

In Sa'ada, there are 27 health facilities including one referral hospital, 8 district level hospitals and 18 health centers. Also, according to the health facility master list provide by the Department of Health Information and Research (HIR) of MoPH&P, there are 93 Health Units. Regardless of the quality of health services that can be provided by HUs, the total number of health facility will be 120. The population estimate for Sa'ada is 862,758 people. Therefore, the number of health facilities per 10,000 populations will be 1.4 HF/10,000 people. While the global target is 2 HF/10,000 people.

Health services in Abyan governorate are provided through 20 health facilities including; one referral hospital, 6 district level hospitals and 13 health centers. There are, however, 112 Health Units functioning in Abyan, according to the Department of HIR/MoPH&P. Regardless of the quality of health services that can be provided by HUs, the total number of health facility will be 132. The 2012 population estimates for Abyan is 543,144 people. Therefore, the number of health facilities per 10,000 populations in Abyan will be 2.4 HF/10,000 people. While the global target is 2 HF/10,000 people.

Functional status of the HF by type - Sa'ada

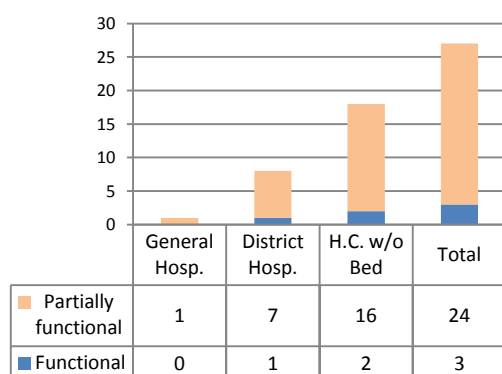


Chart 7: Funct. status by HF type- Sa'ada

Functional status of th HF by type- Abyan

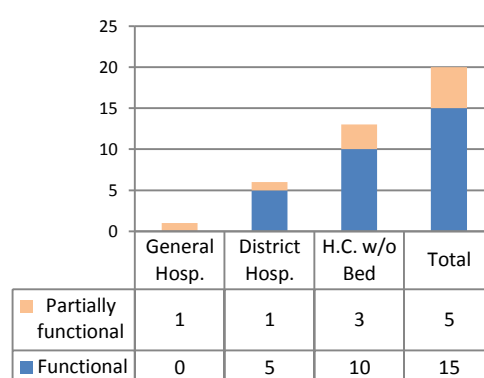


Chart 8: Funct. status by HF type- Abyan

Building condition of the health facilities vs. the functional status

Building status	Functioning	Partially Functioning	Total	(%)
Intact	77	37	114	93.4%
Partially destroyed	0	4	4	3.3%
Totally destroyed	0	4	4	3.3%
Total	77	45	122	100%

Table 6: Building condition vs. HF funct.

Building status vs. functional status of the HF

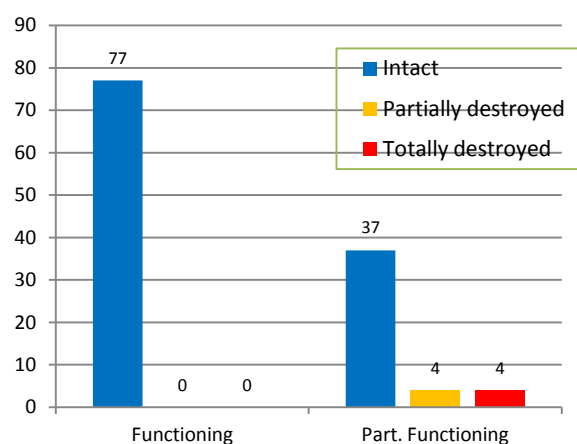


Chart 9: Building condition vs. HF funct.

As shown in table 6 &7, the status of buildings of 114 (93.4%) HFs is "intact"; 4 (3.3) HFs "partially destroyed"; and 4 (3.3) HFs "totally destroyed". The 4 "totally destroyed" health facilities including 3 district level hospitals and one health center currently have made temporary arrangements for delivering health care services to the public.

Table 7: Building status vs. type of the HFs

Facility type	Totally destroyed	Partially destroyed	Intact	Total
General Hosp.	-	1	19	20
District Hosp.	3	-	22	25
H. Center w/beds	-	-	1	1
H. Center w/o beds	1	3	66	70
Polyclinic	-	-	6	6
Total	4	4	114	122

Building status of HF's vs. type of HF for Sa'ada and Abyan summarized in the below tables

Table 8: Build. state vs. HF type-Sa'ada

Facility type	Totally destroyed	Partially destroyed	Intact	Total
General Hosp.	-	-	1	1
District Hosp.	2	-	7	9
H. Center w/o beds	1	1	15	17
Total	3	1	23	27

As in the above table, the status of building for 3 of the health facilities (2 district level hospitals and 1 health center) in Sa'ada is "Totally destroyed". This means that these facilities deliver health services through temporary arrangements, either tents or rented facilities.

Table 9: Build.state vs. HF type-Abyan

Facility type	Partially destroyed	Intact	Total
General Hosp.	1	-	1
District Hosp.	-	6	6
H. Center w/o beds	-	13	13
Total	1	19	20

In Abyan governorate, the building status of the only general/referral hospital is "partially destroyed" and due to the damage inflicted to the building, the hospital does not function in its full capacity as also indicated in chart 4.

I.2. Basic amenities:

Providing an enabling working environment is a requirement for an effective and functional health care delivery system. Such enabling environment includes the physical infrastructure and the availability of basic requirements for delivering quality services.

As depicted in the below chart, running **water** and **toilet** facilities are available in 100% of the surveyed health facilities. While **sewage system**, **electricity** and **washing basin** are available in 97%, 93% and 82% of the health facilities respectively, 80% of the health facilities are protected by **surrounding walls**. Emergency **transport**, **telephone** service and **residence** for staff attached to the health facility are respectively available in 20%, 43% and 48% of the health facilities.

The **mean score** for **basic amenities as a group** is 72%. This means that most of the basic amenities are available in 72% of the HF's.

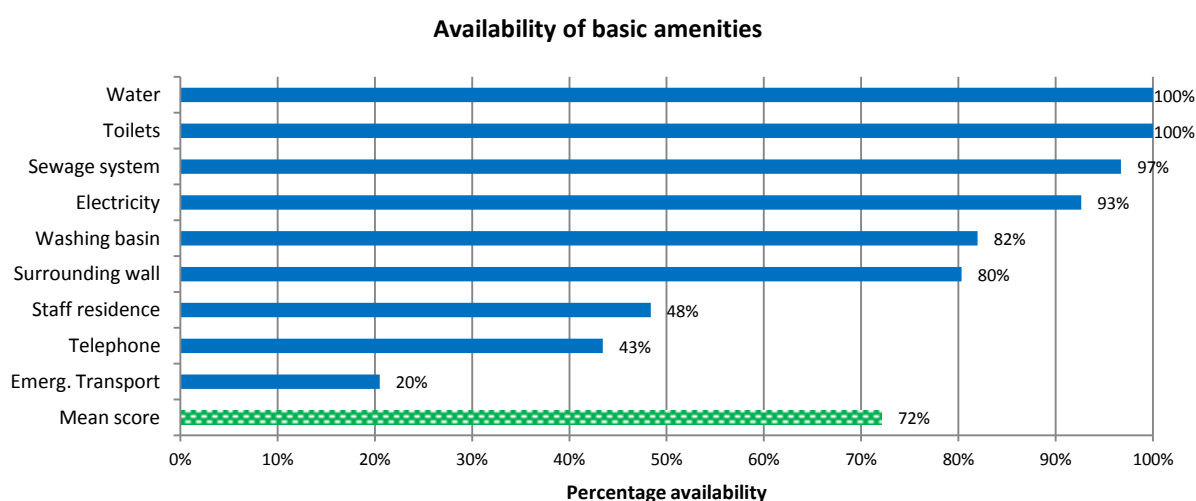


Chart 10: Availability of basic amenities

Based on the mean score, the **Basic Amenities** as a group is available in 70% of the health facilities functioning in Sa'ada governorate. Running **water** and **toilet** facilities are available in 100% of the health facilities, while **sewage system** and **electricity** are available in 93% of the health facilities. Only two (2) health facilities (1 referral hospital and 1 district hospital) out of the total 27 health facilities in Sa'ada have emergency **transportation**. Telephone service is available in 30% or 8 out of the 27 health facilities.

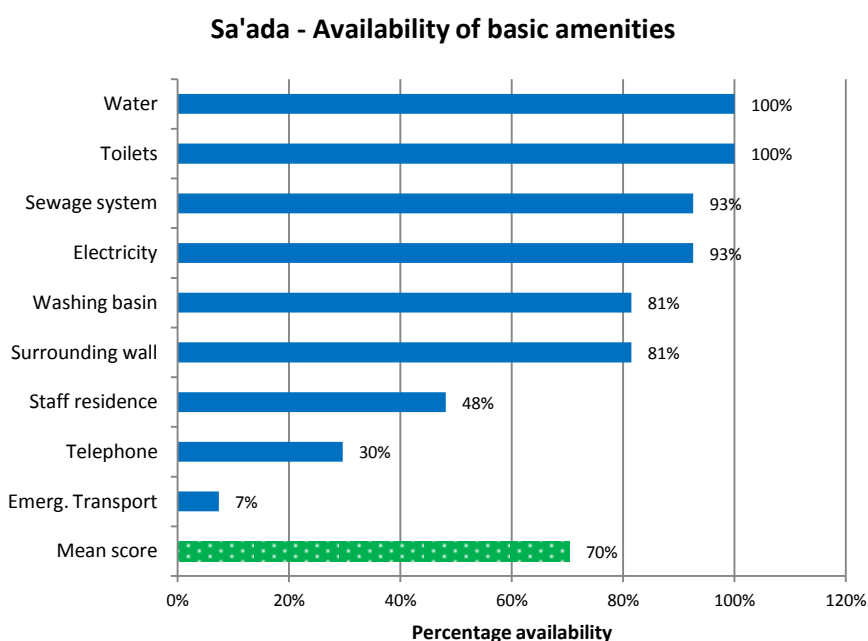


Chart 11: Availability of basic amenities in the HFs

In Abyan governorate according to the mean score, the **Basic Amenities** as a group is available in 70% of the functioning health facilities. Running **water**, **toilet** facilities and **sewage system** are available in 100% of the health facilities, while **electricity** and washing basin are available in 95% and 55% of the health facilities respectively. Only one health facility (referral hospital) out of the total 20 health facilities in Abyan has emergency **transportation**. Telephone service is available in 45% or 9 out of the 20 health facilities.

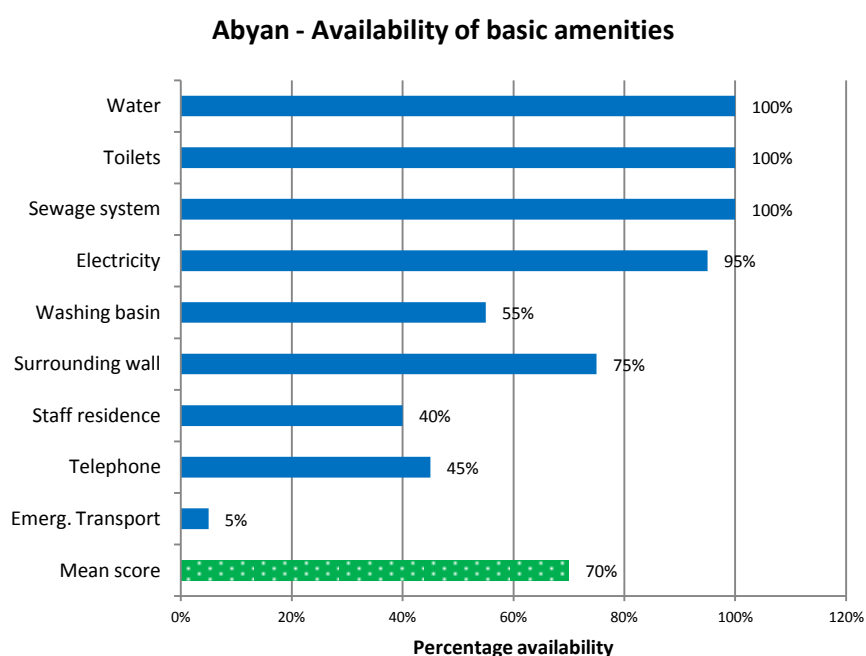


Chart 12: Availability of basic amenities in the HFs

I.3. Availability of health services:

The following table and the adjacent chart represent the type of health services available/provided at the surveyed health facilities in percent (%). Health **staff** being available in 100% of health facilities is ranking first in the group of health services. Availability of basic **medical equipment** with (98%) and organizing **OPD** clinics for ambulatory services with 97%. are the second and third in the order. Only 20% of the health facilities provide Comprehensive

Emergency Obstetric Care (EmOC Comprehensive) and therefore, it is the lowest in the rank of the available health services. The mean score for health services availability is 61%.

Type of service	# HF	Percent
OPD	118	97%
Inpatient	36	30%
EmOC (Basic)	53	43%
EmOC (Comprehensive)	25	20%
Any surgical services	36	30%
Overnight observation beds	55	45%
Ambulance	35	29%
ANC	86	70%
Family planning	109	89%
Health education	85	70%
Immunization	109	89%
Nutrition	103	84%
Oral health	40	33%
Outreach immunization	87	71%
Outreach (catchment area)	57	47%
Blood transfusion	36	30%
Lab services	101	83%
Radiology	58	48%
Pharmaceutical	110	90%
Medical equipment	119	98%
Other support services	56	46%
Admin/Fin services	87	71%
Health staff	122	100%
Mean Score	75	61%

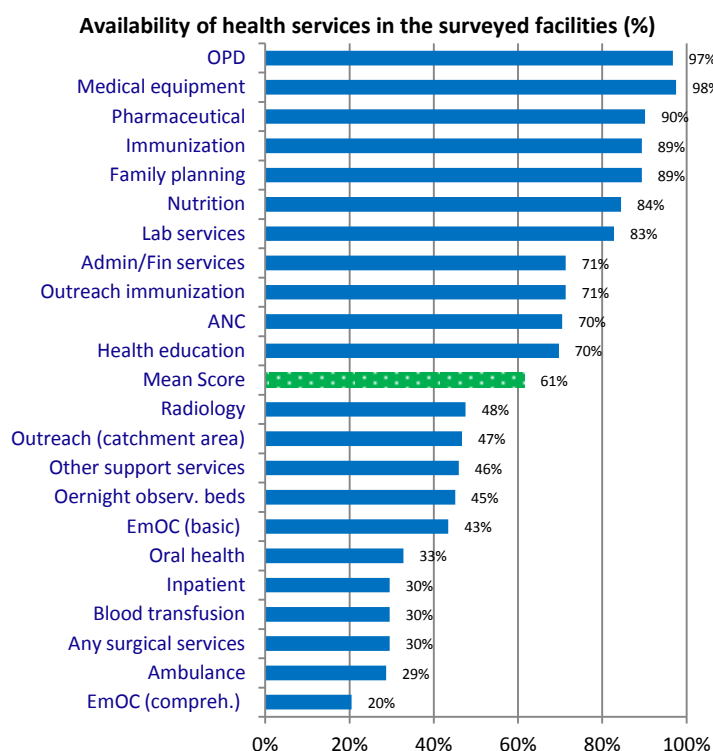


Chart 13: Number of HFs vs. the type of h.services provided

Table 10: Type of health services available in the HFs (in %)

The following table (11) represents the data on health services availability by type of health facility in Sa'ada and Abyan governorates. In both governorates, the genera/referral hospitals provide almost all the listed health services. However, the district hospitals, especially in Sa'ada governorate, are lacking the capacity for providing all the listed services.

The situations of health services availability at the health centers' level is even worse as on average only 41% of the health centers in Sa'ada governorate and 45% in Abyan governorate have the capacity to provide the health services which they are supposed to provide among the listed services.

Based on the mean score (average), 52% of the HFs in Sa'ada governorate are providing all the listed services, while in Abyan governorate this figure is 59%, which is comparatively better.

Type of service	Sa'ada governorate					Abyan governorate				
	General hosp.	District hosp.	HC w/o beds	Total	Percent	General hosp.	District hosp.	HC w/o beds	Total	Percent
OPD	1	9	17	27	100%	1	6	13	20	100%
Inpatient	1	3	0	4	15%	1	6	-	7	35%
EmOC (basic)	1	3	6	10	37%	1	6	3	10	50%
EmOC (comprehensive)	0	0	1	1	4%	1	3	1	5	25%
Any surgical services	1	0	1	2	7%	1	3	-	4	20%
Overnight observation	1	9	7	17	63%	1	4	1	6	30%

Type of service	Sa'ada governorate					Abyan governorate				
	General hosp.	District hosp.	HC w/o beds	Total	Percent	General hosp.	District hosp.	HC w/o beds	Total	Percent
beds										
Ambulance	1	1	0	2	7%	1	1	1	3	15%
ANC	1	8	10	19	70%	1	4	8	13	65%
Family planning	1	8	13	22	81%	1	6	8	15	75%
Health education	1	5	9	15	56%	1	4	8	13	65%
Immunization	1	8	14	23	85%	-	6	10	16	80%
Nutrition	1	9	14	24	89%	1	4	9	14	70%
Oral health	1	5	1	7	26%	1	3	-	4	20%
Outreach immunization	1	6	12	19	70%	-	6	10	16	80%
Outreach (catchment area)	-	2	4	6	22%	-	6	9	15	75%
Blood transfusion	1	4	-	5	19%	1	4	1	6	30%
Lab services	1	8	10	19	70%	1	6	8	15	75%
Radiology	1	6	2	9	33%	1	5	5	11	55%
Pharmaceutical	1	8	17	26	96%	1	6	10	17	85%
Medical equipment	1	8	15	24	89%	1	6	11	18	90%
Other support services	1	4	3	8	30%	1	4	6	11	55%
Admin/Fin services	1	5	2	8	30%	1	6	7	14	70%
Health staff	1	9	17	27	100%	1	6	13	20	100%
Mean Score	14 52%					12 59%				

Table 11: Type of services available in the HFs of Sa'ada and Abyan governorates (%)

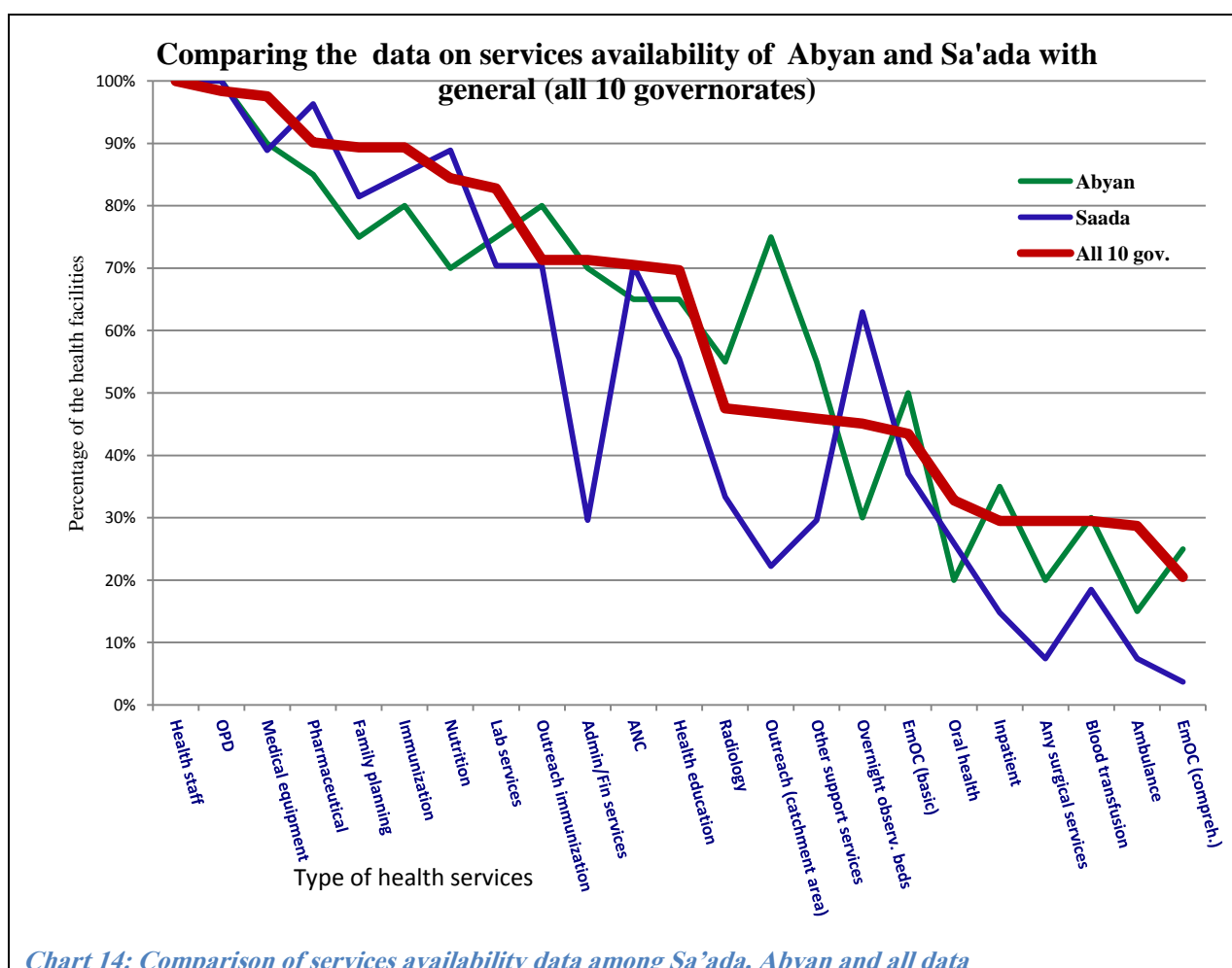
Comparing the sub-sets of data of Abyan and Sa'ada governorates with the data set of “All HFs assessment” about the health services availability, except for a few similarities, generally there is no consistency among the data to establish a uniform trend. In other words, this can also be interpreted that the other 8 governorates are not uniformly better or worse than Sa'ada and Abyan in terms of availability of the listed services.

However, as can be seen in table (12) and also in the line chart (10) below, the situation of services availability in the health facilities of Sa'ada is less favored in several instances in comparison to the data on Abyan and the “all surveyed in the 10 governorates”.

Services provided/available by the health facilities (%) – Comparison of Sa’ada and Abyan with the “All data”																								
Type of service	Health staff	OPD	Medical equipment	Pharmaceutical	Family planning	Immunization	Nutrition	Lab services	Outreach immunization	Admin/Fin	ANC	Health education	Radiology	Outreach (catchment)	Support services	Overnight obs. beds	EmOC (basic)	Oral health	Inpatient	Any surgical services	Blood transfusion	Ambulance	EmOC (comprehensive.)	Mean Score (Average)
Abyan	100	100	90	85	75	80	70	75	80	70	65	65	55	75	55	30	50	20	35	20	30	15	25	59
Sa’ada	100	100	89	96	81	85	89	70	70	30	70	56	33	22	30	63	37	26	15	7	19	7	4	52
All data	100	97	98	90	89	89	84	83	71	71	70	70	48	47	46	45	43	33	30	30	29	20	61	

Table 12: Services availability comparison in the HF of Sa'ada and Abyan with "all data"

This below Line Chart (14) shows the comparative trend of service availability based on the three sets of data.



I.4. Staff:

The table (13), below, shows the summary results on the total number of health staff by category in the health facilities assessed through the SARA. Altogether, there is **11,513** health staff of different categories. 10,934 or 95% of the staff are Yemeni nationals, while expatriate health workers comprise only 5% or 579 of the total staff.

Although, the overall sex ratio between Male and Female health staff is 100 to 64, it changes slightly either upward or downward between different categories.

Excluding the administrative and support staff (the last 4 categories of table 13), there are 8,531 core health workers including 4,687 males and 3,844 females.

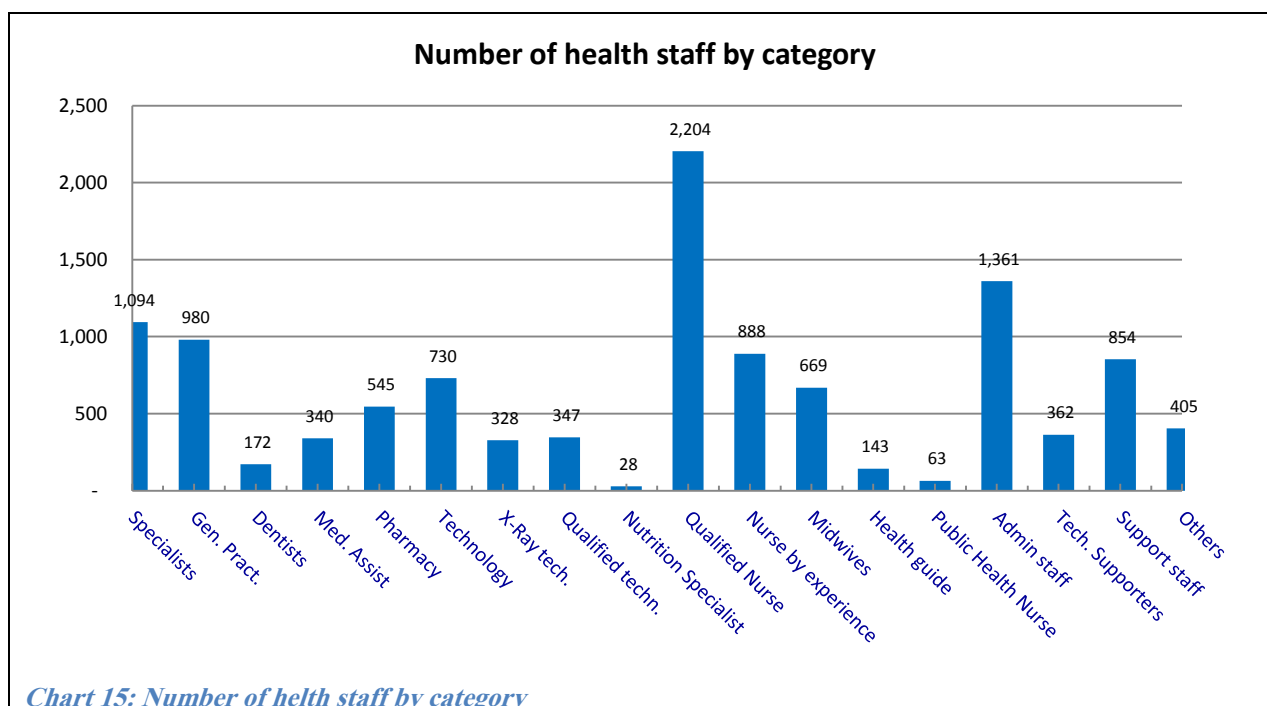
On average, the male to female ratio among core health workers is 100 to 82.

Comparing the above two sex ratios, it is evident that there is more male staff (2,315) compared to female staff (667) in the administrative and support staff categories. This can make female patients access to health services utilization rather difficult.

The ratio between doctors and qualified nurses, according to table 13, is 100/98 or almost 1 to 1. While, according to the World Health Organization (WHO) standards, there should be three nurses for one doctor.

Staff Category	Yemenis			Expatriate workers			Grand Total
	Male	Female	Total	Male	Female	Total	
Specialists	635	412	1,047	35	12	47	1,094
General Practitioner	571	403	974	4	2	6	980
Dentists	115	57	172	-	-	-	172
Medical assistant	318	22	340	-	-	-	340
Pharmacy	392	153	545	-	-	-	545
Technology	522	207	729	1	-	1	730
X-Ray technicians	250	77	327	1	-	1	328
Qualified technician	253	67	320	24	3	27	347
Nutrition specialist	14	12	26	-	2	2	28
Qualified nurse	878	894	1,772	217	215	432	2,204
Nurse by experience	353	535	888	-	-	-	888
Midwives	-	667	667	-	2	2	669
Health Guide	55	88	143	-	-	-	143
Public Health Nurse	49	14	63	-	-	-	63
Total - core health staff	4,405	3,608	8,013	282	236	518	8,531
Admin staff	1,065	296	1,361	-	-	-	1,361
Tech. support staff	337	25	362	-	-	-	362
Support staff	604	197	801	46	7	53	854
Others	259	138	397	4	4	8	405
Grand-total	6,670	4,264	10,934	332	247	579	11,513

Table 13: Number of staff by category in the surveyed HFs

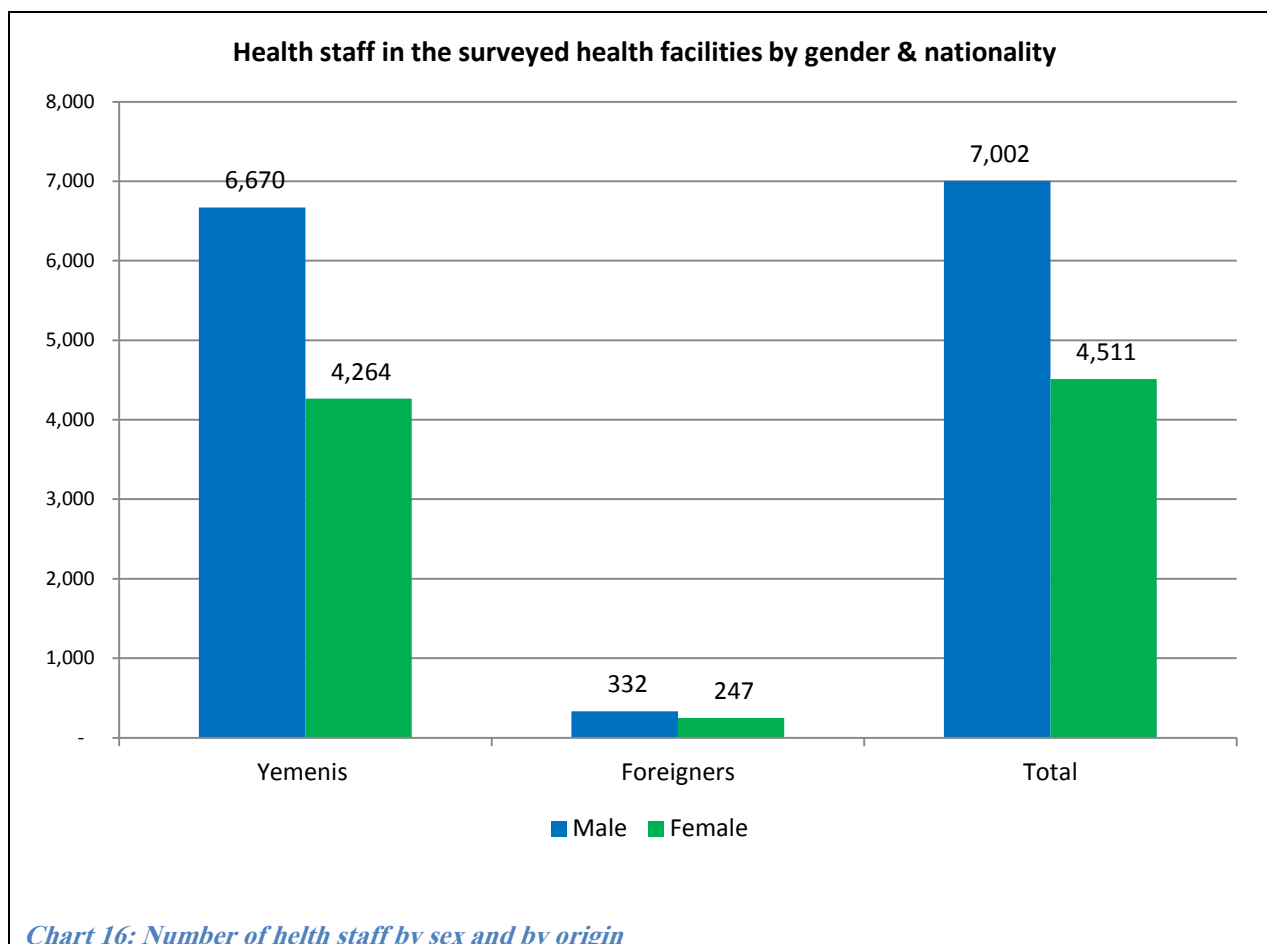


Among the total 11,513 staff working in the surveyed health facilities, 39% are female staff. This makes the proportion of females to male as 1 to 1.6.

Health staff	Male	Female	Total	Female (%)
Yemenis	6,670	4,264	10,934	39
Expatriates	332	247	579	43
Total	7,002	4,511	11,513	39

Table 14: Number of h. staff by sex & by Yemenis & Expatriates

Chart (16), below, represents the health staff by sex and origin (Yemenis & Foreigners)



The following table (15) lists the health staff by category and by sex in Sa'ada and Abyan governorates.

The total number of health staff including admin and support staff in the health facilities of Sa'ada governorate is 420 persons including 314 males and 106 females. Similarly, the total number of health staff in the health facilities in Abyan governorate is 1,024 people including 714 males and 310 females.

The number of health workers (excluding admin and support staff) per 10,000 populations in Sa'ada governorate is 4 (4/10,000 people). In Abyan the number of health workers per 10,000 populations is 15 (15/10,000 people).

While the WHO target of health workers per 10,000 people is 23, the health workers' in Sa'ada governorate is far below the target.

Although, Abyan governorate with 15 health workers per 10,000 populations is about 2/3 of the target, compared to Sa'ada governorate it is in a better position.

In Sa'ada governorate, female health workers comprise 30% of the total number of health workers, while in Abyan the percentage of female health workers is 35% of the total number of health workers.

Staff Category	Sa'ada / Population: 862,758			Abyan / Population: 543,144		
	Male	Female	Total	Male	Female	Total
Specialists	8	2	10	19	7	26
General Practitioner	11	1	12	78	53	131
Dentists	6	1	7	6	3	9
Medical Assistant	59	2	61	51	1	52
Pharmacist	41	0	41	54	6	60
Technology	37	0	37	70	14	84
X-Ray tech.	11	0	11	27	3	30
Qualified tech	13	0	13	37	3	40
Nutrition Specialist	0	0	0	0	0	0
Qualified Nurse	32	5	37	88	20	108
Nurse by experience	0	1	1	82	76	158
Midwives	0	72	72	0	97	97
Health guide	9	11	20	13	1	14
Public Health Nurse	7	7	14	5	0	5
Total - core health staff	234	102	336	530	284	814
Admin staff	41	0	41	65	10	75
Tech. Supporters	2	0	2	66	6	72
Support staff	29	1	30	43	10	53
Others	8	3	11	10	0	10
Grand-total	314	106	420	714	310	1,024

Table 15: Number of h. staff by category and sex

I.5. Selected PHC services – Availability and Quality:

The availability of the main PHC component differs in different health facilities; only limited number of those facilities may provide the full package of service. As shown in chart (13) below, the availability of the PHC services ranges from 97% for **OPD** to 70% for **Health Education**. The **Mean Score** for availability of the PHC components in all surveyed health facilities is 84%, which indicate that, regardless of their quality, even the very basic PHC services are not delivered by all the health facilities.

All facilities - Percentage of the health facilities delivering PHC services

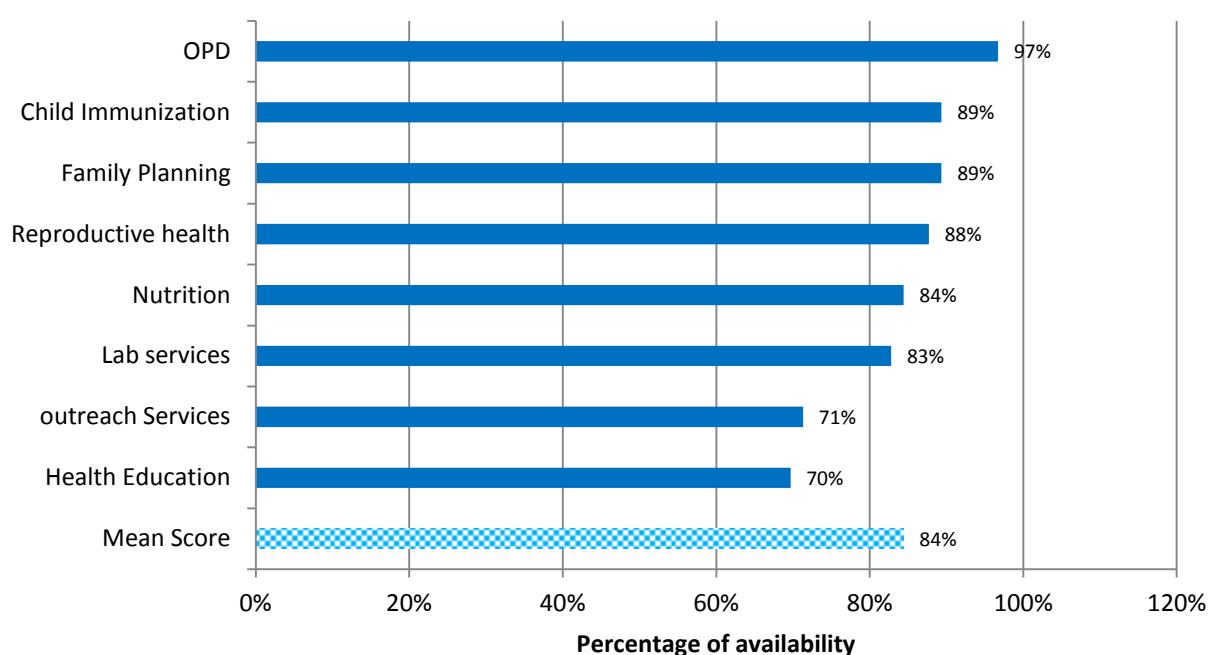


Chart 17: Percentage of the HFs providing the main PHC components

The Mean Scores for availability of the main PHC services in the health facilities of Sa'ada and Abyan governorates, as shown in Charts 18&19 below, are 82% and 77% respectively.

Although, the details of sub-components of each of the PHC services are going to be described in the coming parts of this section, the difference in the Mean Scores, which are lower in Abyan and Sa'ada governorates compared to the overall mean score, shows that the PHC services in Abyan and Sa'ada are weaker.

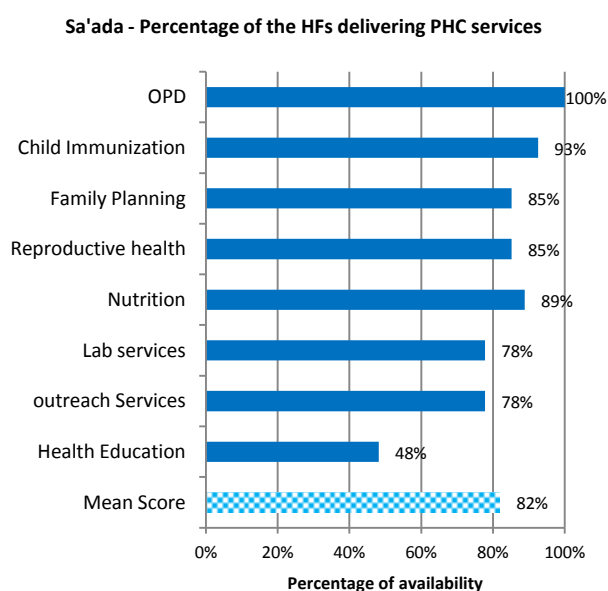


Chart 18: % of the HFs provide PHC Services-Sa'ada

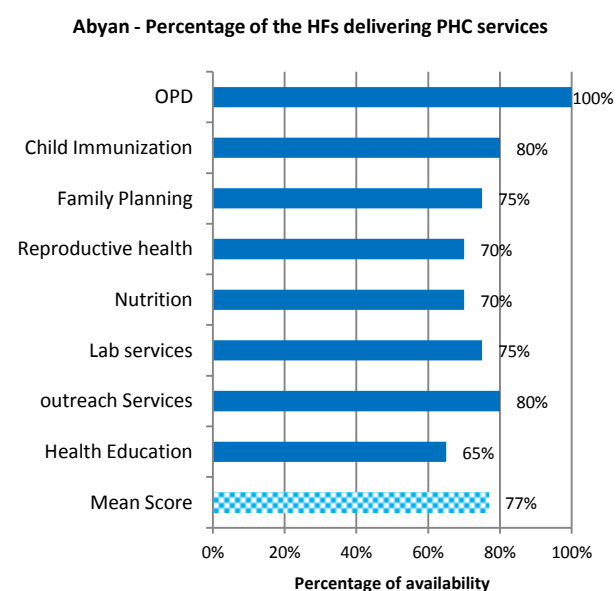


Chart 19: % of the HFs provide PHC services-Sa'ada

I.5.1. Out-Patient Department (OPD):

The below Table (16) shows the number of health facilities by type that provide OPD clinics by type of health service. As can be seen, some of the specialized services including Neurology, Psychiatry and Cardiovascular Diseases (CVD) are provided by only 8% or 10 out of the total 122 health facilities. Most of the health facilities, which provide the specialized services, are general/referral hospitals.

OPD Clinics held	General hosp.	District hosp.	H. C. w/beds	H.C. w/o beds	Polyclinic	Total	(%)
General service	15	23	1	50	6	95	78%
Internal Medicine	16	5	-	4	4	29	24%
OB/GYN	16	4	-	5	5	30	25%
Pediatrics	15	4	-	2	4	25	20%
General surgery	16	5	-	1	-	22	18%
Dermatology	11	2	-	1	-	14	11%
ENT	15	1	-	1	-	17	14%
Ophthalmology	10	2	-	-	3	15	12%
Orthopedic	14	1	-	-	-	15	12%
Dentistry	17	12	-	8	4	41	34%
Emergency	18	12	-	8	2	40	33%
Urology	12	1	-	1	-	14	11%
Neurology	8	1	-	-	1	10	8%
Psychiatry	6	2	-	2	-	10	8%
CVDs (D&T)	10	-	-	-	-	10	8%
Diabetes (D&T)	10	2	-	8	1	21	17%
COPDs (D&T)	8	2	-	7	1	18	15%

Table 16: OPD clinics by type of services organized by HFs in (%)

The following Chart (20) is the graphic presentation of the data in the above table (16). Except the OPD clinics on “General services”, which are provided by 78% of the HFs; OPD clinics of all other types are provided by less than 45% of the HFs.

In the “General Services” OPD clinics, which are usually managed by General Practitioners, other patients who need different specialized care, are also handled. The main reason for the small number of specific OPD clinics on specialized services is the lack of health staff specialized in different disciplines.

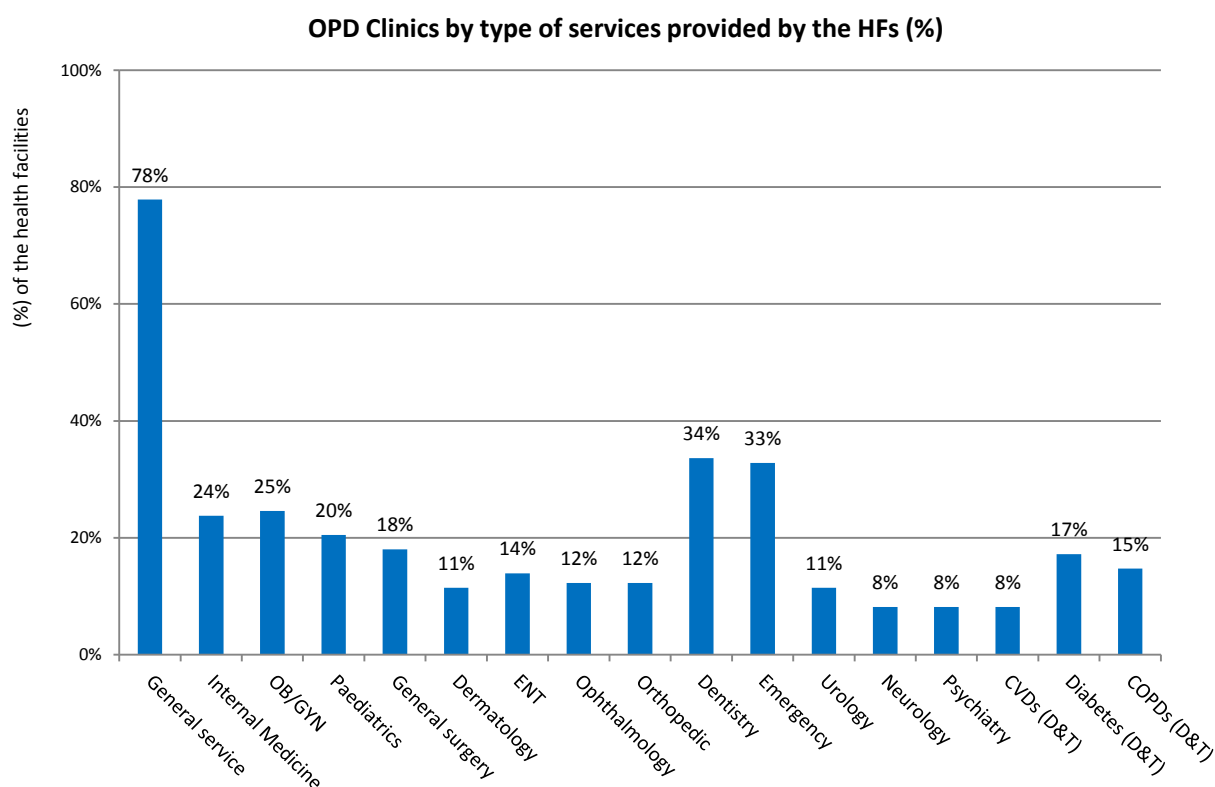


Chart 20: OPD clinics by type of service organized by the HFs in (%)

The OPD clinics available in the health facilities of Sa'ada and Abyan governorates are mainly related to the "General services". The few other OPD clinics related to different health conditions are mainly organized at the only one General/Referral hospital in each of the two governorates.

None of the two General/referral hospitals in Sa'ada and Abyan provide OPD clinics on specialized services including Neurology, Psychiatry, CVDs, Diabetes and COPDs. However, there are two health facilities (one District hospital and one Health Center) in Sa'ada governorate and also three health facilities (one District hospital and two Health Centers) in Abyan governorate, listed as having OPD clinic on Diabetes and COPDs. Regardless of the quality of these services, the physical coverage is also an issue of a big concern.

OPD Clinics held	Sa'ada (Number of HFs = 27)					Abyan (Number of HFs = 20)				
	General Hosp.	District Hosp.	H.C. w/o Beds	Total	(%)	General Hosp.	District Hosp.	H.C. w/o Beds	Total	(%)
General service	1	8	15	24	89	1	5	9	15	75
Internal Medicine	1	-	1	2	7	1	3	1	5	25
OB/GYN	1	-	1	2	7	1	1	1	3	15
Pediatrics	1	-	-	1	4	1	2	-	3	15
General surgery	1	-	-	1	4	1	2	1	4	20
Dermatology	1	7	16	24	89	1	2	1	4	20
ENT	1	-	-	1	4	1	1	1	3	15

OPD Clinics held	Sa'ada (Number of HF = 27)					Abyan (Number of HF = 20)				
	General Hosp.	District Hosp.	H.C. w/o Beds	Total	(%)	General Hosp.	District Hosp.	H.C. w/o Beds	Total	(%)
Ophthalmology	1	-	-	1	4	-	1	-	1	5
Orthopedic	1	1	-	2	7	1	-	-	1	5
Dentistry	1	2	2	5	19	1	3	-	4	20
Emergency	1	-	1	2	7	1	4	2	7	35
Urology	1	-	-	1	4	-	1	1	2	10
Neurology	-	-	-	-	-	-	1	-	1	5
Psychiatry	-	-	-	-	-	-	1	2	3	15
CVDs (D&T)	-	-	-	-	-	-	-	-	-	0
Diabetes (D&T)	-	1	1	2	7	-	1	2	3	15
COPDs (D&T)	-	1	1	2	7	-	1	2	3	15

Table 17: OPD clinics by type of services organized in Sa'ada and Abyan HFs in (%)

The results of the above table (17) are illustrated graphically in chart 21 and 22, below.

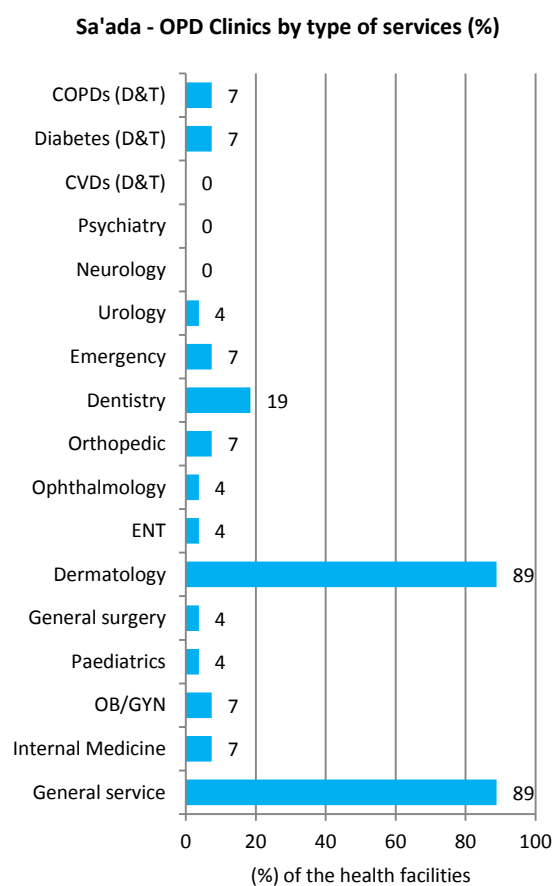


Chart 21: OPD clinics by type of service in Sa'ada

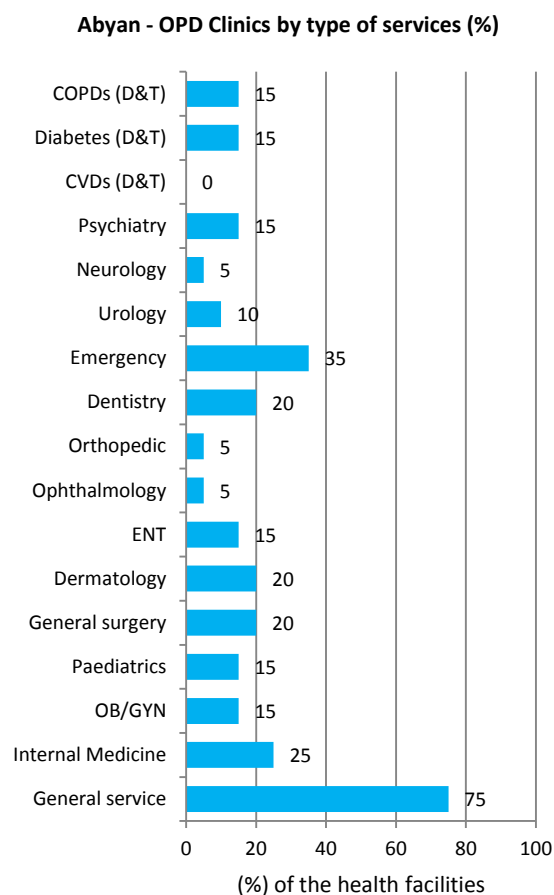
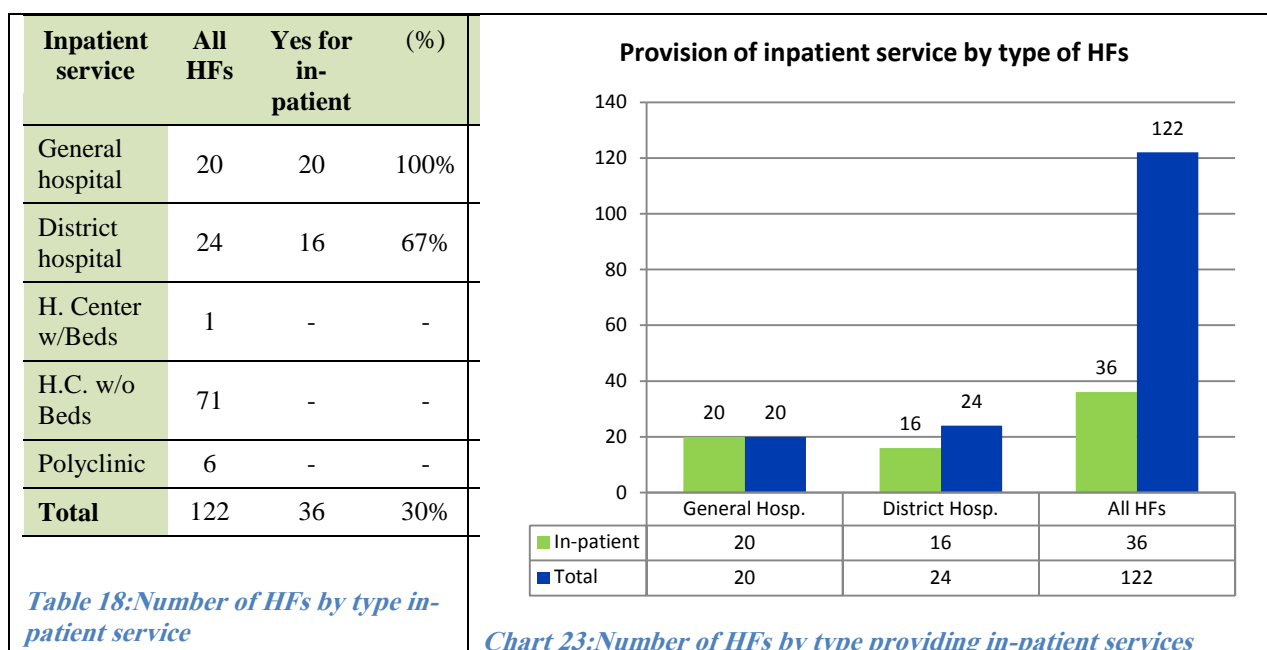


Chart 22: OPD clinics by type of service in Abyan

I.5.2. In-patient services provision:

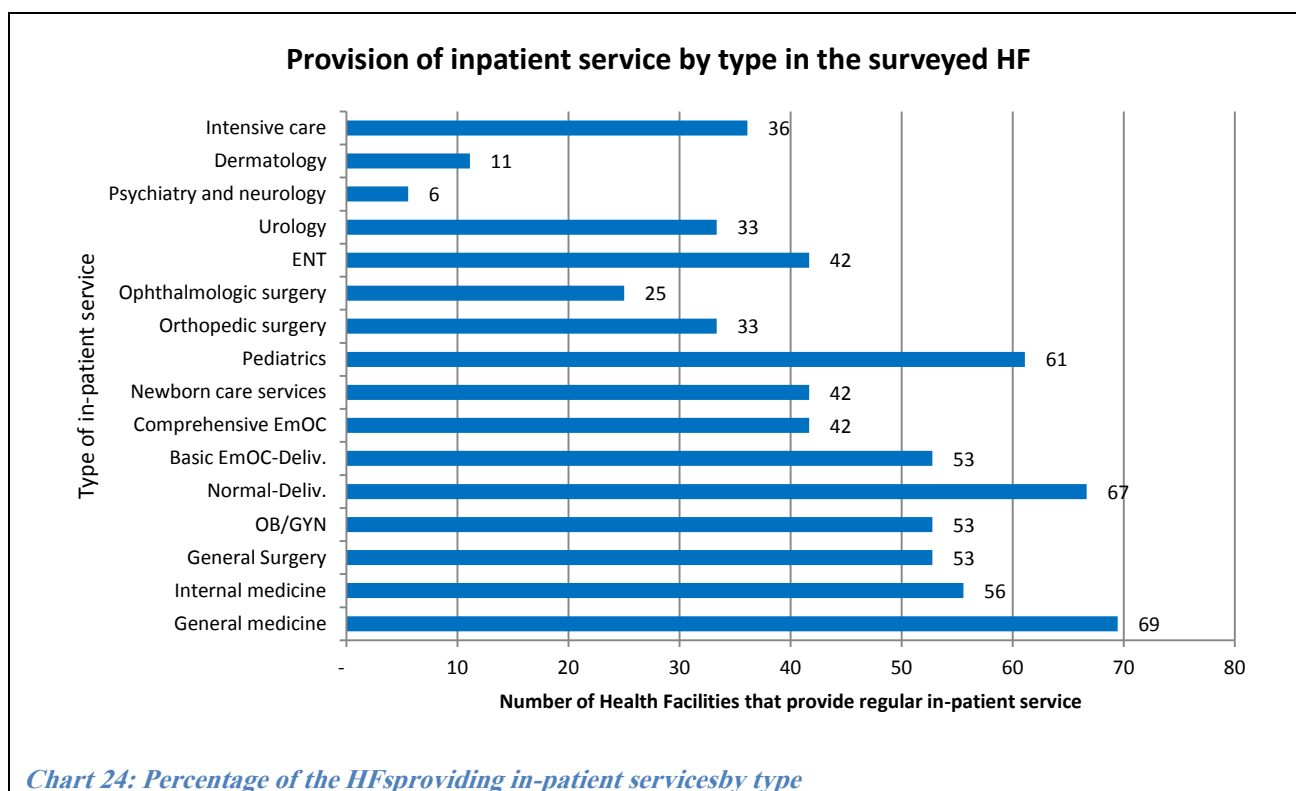
Out of the total 122 health facilities only 36 health facilities or 30% provide in-patient services to their respected communities. Although, all the general/referral hospitals provide in-patient services, from the 24 district level hospitals, 16 of them or 67% provide in-patient service.



All of the 36 health facilities with inpatient services, shown in table (18) above, do not provide all the health service components as listed in table (19). As can be easily noticed from chart (24), **General medicine**, **Normal delivery** and **Pediatrics** with 69%, 67% and 61% respectively, are the highest available inpatient services. Inpatient service for **Psychiatry & neurology** with only 6% of the 36 health facilities offering this service is the lowest in the column.

Type of in-patient service	General hospital	District hospital	Total	(%)
General medicine	10	15	25	69%
Internal medicine	15	5	20	56%
General Surgery	15	4	19	53%
OB/GYN	14	5	19	53%
Normal-delivery	14	10	24	67%
Basic EmOC-delivery	12	7	19	53%
Comprehensive EmOC-delivery	12	3	15	42%
Newborn care services	12	3	15	42%
Pediatrics	14	8	22	61%
Orthopedic surgery	12	-	12	33%
Ophthalmologic surgery	9	-	9	25%
ENT	13	2	15	42%
Urology	10	2	12	33%
Psychiatry and neurology	2	-	2	6%
Dermatology	2	2	4	11%
Intensive care	12	1	13	36%

Table 19: Number of HFs providing in-patient services by type of service.



Out of the 27 health facilities in Sa'ada governorate only 4 of them (15%), including one general/referral hospital and 3 district level hospital are providing regular inpatient services. As mentioned, out of the 8 district level hospitals in Sa'ada, only 3 of them provide inpatient services, but 5 of them which is 62% do not have the capacity for inpatient service provision.

In Abyan governorate, however, 7 out of the 20 health facilities or 37% are providing inpatient services. The 7 health facilities include; the only one general/referral and six district level hospitals.

Therefore, comparing the two governorates inters of inpatient services availability, Abyan is in a better position than Sa'ada.

Inpatient service	Sa'ada governorate			Abyan governorate		
	All HFs	Yes/inpatient	(%)	All HFs	Yes/inpatient	(%)
General hospital	1	1	100%	1	1	100%
District hospital	8	3	38%	6	6	100%
H.C. w/o Beds	18	-	-	13	-	-
Total	27	4	15%	20	7	35%

Table 20: Number of HFs providing in-patient services in Sa'ada and Abyan governorates

The situations regarding the inpatient services availability in Sa'ada, particularly, are very grim. As shown in the below table (21), out of the 16 listed services only 9 of them are available, most of them in the general/referral hospital.

Abyan is relatively in better shape as the seven (7) HFs with inpatient services; provide most of the listed services in table (21).

Inpatient service	Sa'ada: HF's with inpatient=4				Abyan: HF's with inpatient=7			
	General Hospital	District Hospital	Total	(%)	General Hospital	District Hospital	Total	(%)
General medicine	-	2	2	50	-	6	6	86
Internal medicine	1	-	1	25	1	4	5	71
General Surgery	1	-	1	25	1	2	3	43
OB/GYN	1	-	1	25	1	4	5	71
Normal delivery	-	-	-	-	1	6	7	100
Basic EmOC delivery	-	-	-	-	1	3	4	57
Comprehensive EmOC	-	-	-	-	1	2	3	43
Newborn care services	-	-	-	-	-	1	1	14
Pediatrics	1	2	3	75	1	5	6	86
Orthopedic surgery	1	-	1	25	1	-	1	14
Ophthalmologic surgery	1	-	1	25	-	-	-	-
ENT	1	-	1	25	1	2	3	43
Urology	1	-	1	25	-	2	2	29
Psychiatry and neurology	-	-	-	-	-	-	-	-
Dermatology	-	-	-	-	-	2	2	29
Intensive care	-	-	-	-	1	1	2	29

Table 21: Number of HF's with in-patient services by type in Sa'ada and Abyan

I.5.3.Reproductive Health (RH) services provision:

The following table (22) represents the number of HF's by type providing Reproductive Health (RH) services. As can be seen, 88% of the HF's or 107 of the total 122 surveyed HF's provide RH services. Similarly, in Sa'ada governorate 85% (23 out of the 27) HF's and in Abyan governorate, 70% (14 out of the 20) HF's provide RH services.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	RH Serv.	Total HF	RH Serv.	Total HF	RH Serv.
General hosp.	20	18	1	1	1	1
District hosp.	24	24	8	8	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	58	18	14	13	7
Polyclinic	6	6	0	-	0	-
Total	122	107	27	23	20	14
(%)		88%		85%		70%

Table 22: Number of HF's by type providing RH services

As described before, 107 out of the total 122 surveyed HF's provide RH services. The details about the availability of the various components of RH services, as portrayed in Chart (25),

show that all the listed components of RH services are not available in all 107 HFs. According to the Means Score, 76% of the HFs provide all the listed RH components.

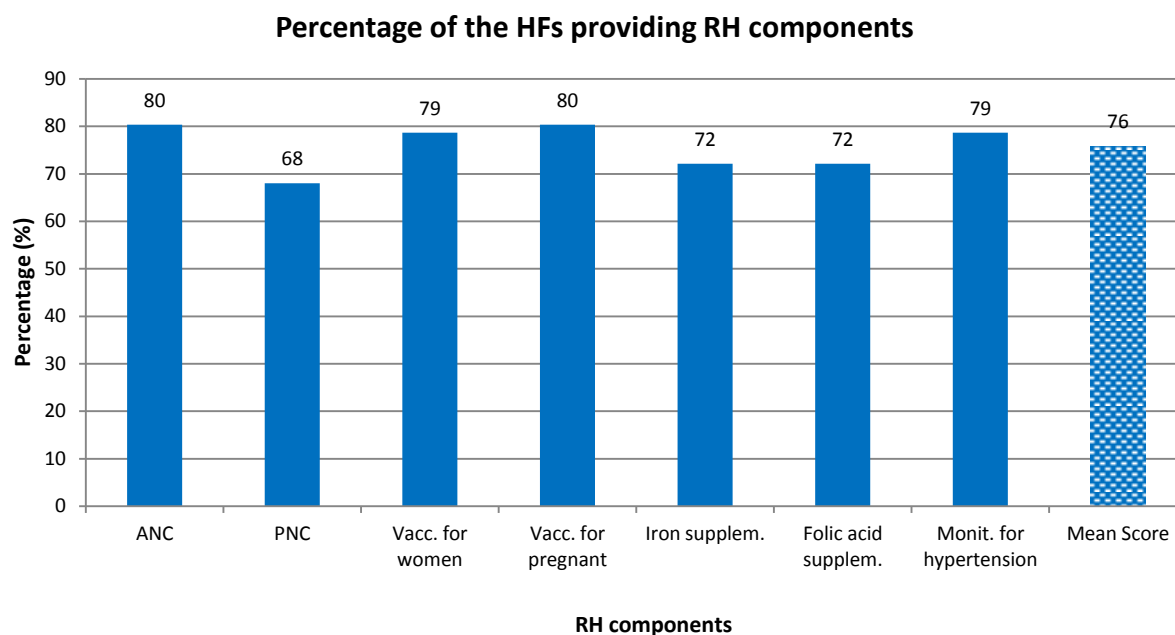


Chart 25): Percentage of the HFs providing different components of RH services

The following chart (26) represents the availability of various components of RH services in Abyan and Sa'ada governorates. As shown by the Mean Score, 83% of the HFs in Sa'ada provide all the seven listed RH components, while in Abyan governorate 59% HFs provide all the RH components.

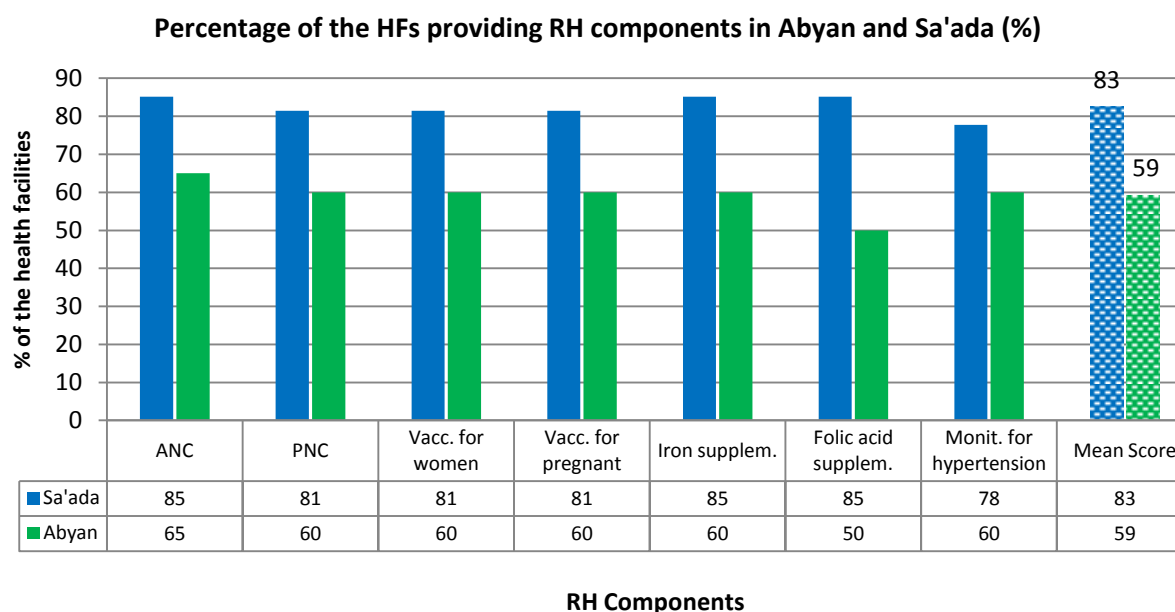


Chart 26: Percentage of the HFs providing different components of RH services

I.5.4. Family Planning (FP) services provision:

The number of HFs providing Family Planning (FP) services is almost the same as the RH services. Of the total 122 HFs, 109 (89%) of them provide FP services. In Sa'ada governorate 85% and in Abyan governorate 75% of the HFs provide FP services as per the below Table (23).

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	FP Serv.	Total HF	FP Serv.	Total HF	FP Serv.
General hosp.	20	17	1	1	1	1
District hosp.	24	24	8	8	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	61	18	14	13	8
Polyclinic	6	6	0	-	0	-
Total	122	109	27	23	20	15
(%)		89%		85%		75%

Table 23: Number of HFs by type providing Family Planning services

The availability of FP service differs greatly from one component to another. While Oral contraceptive pills are available in all 89% of the HFs which provide FP services, Tubal ligation is the least available service provided by 9%, 4% and 5% of the health facilities in the "All survey" data, Sa'ada and Abyan governorates, respectively.

Because of the skewedness of the data sets on availability of FP services, the Mean Score will not properly represent the central points; instead the Median Score was used to determine the mid-point of the number of HFs providing the FP components.

According to the Median Scores as presented in table 24 below, 64% of the HFs provides the six listed components of FP service. In Sa'ada governorate 48% and in Abyan governorate 60% of the HFs provide the entire six FP components.

Family planning (FP)	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HFs	(%)	# of HFs	(%)	# of HFs	(%)
Oral contraceptive pills	108	89	23	85	15	75
Condoms	95	78	19	70	14	70
IUCD	61	50	6	22	10	50
Injectable contraceptive	100	82	21	78	14	70
Implant contraceptive	26	21	3	11	1	5
Tubal ligation	11	9	1	4	1	5
Median Score	78	64%	13	48%	12	60%

Table 24: Number of HFs providing different components of FP services

The percentages shown in table (24), above, are graphically portrayed in chart (27), below. Comparing the three Median Scores, which represent the middle number of the HFs providing all components of FP, Sa'ada governorate ranks the lowest with only 48% of the HFs providing all FP service components.

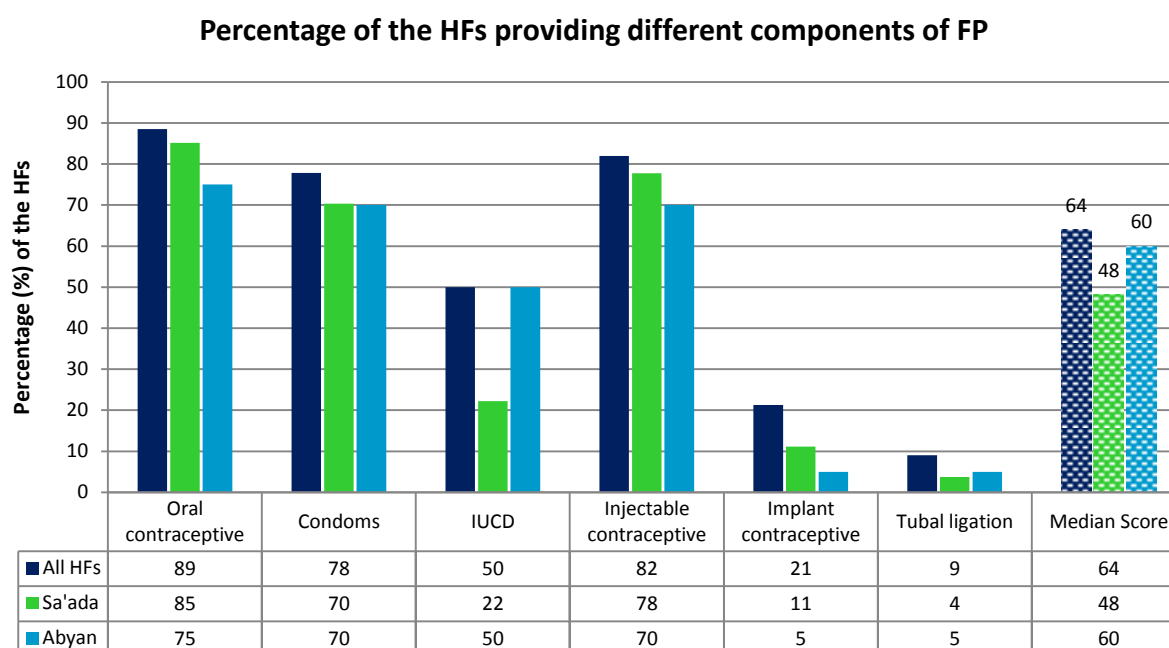


Chart 27: Percentage of the HFs providing different components of FP services

1.5.5. Health Education:

Health education services are provided by 70% of the 122 health facilities surveyed through the SARA. Also, as can be noticed table (25) below, in Sa'ada governorate less than half of the total number of health facilities (48%) there provides health education services. Abyan governorate with 65% of the health facilities providing health educations services comes in the middle between “All Survey” and Sa'ada governorate.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Health Education	Total HF	Health Education	Total HF	Health Education
General hosp.	20	14	1	1	1	1
District hosp.	24	16	8	3	6	4
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	49	18	9	13	8
Polyclinic	6	5	0	-	0	-
Total	122	85	27	13	20	13
(%)		70%		48%		65%

Table 25: Number of HFs by type providing Health Education services

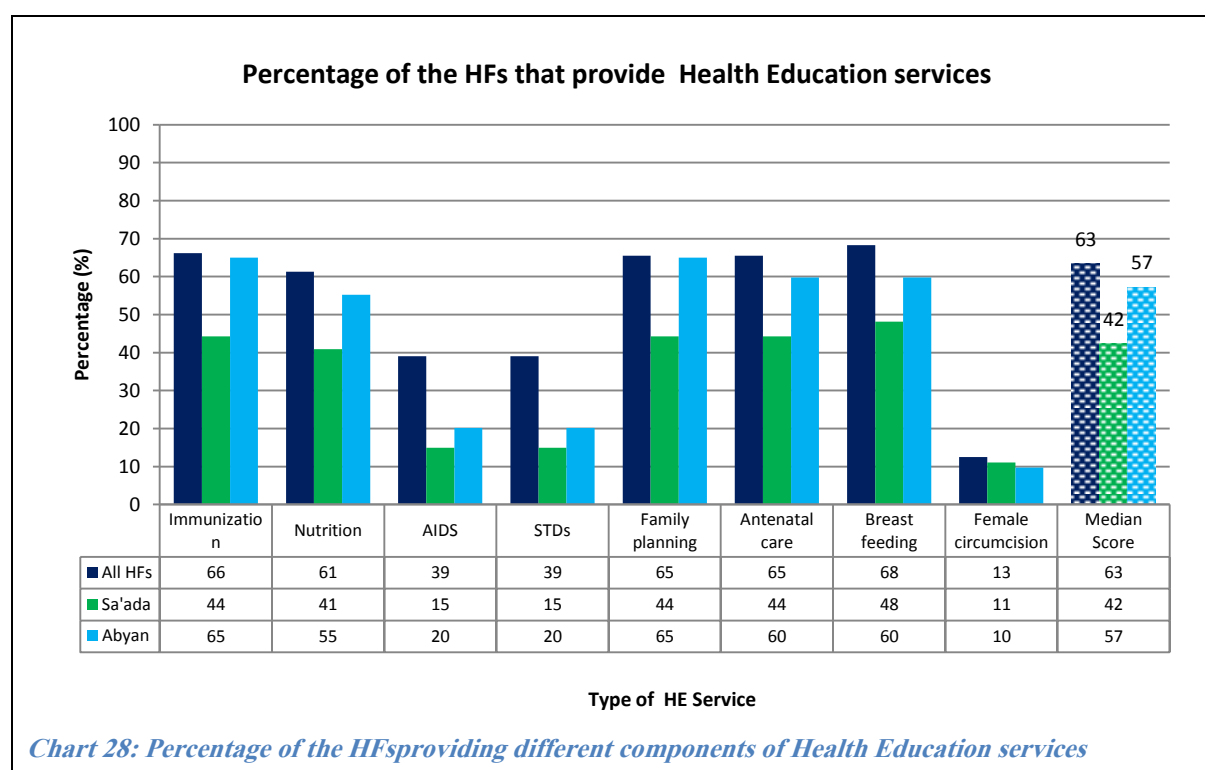
The provision or availability of the various components of health education services differs significantly. Health education services on immunization, family planning, antenatal care and

breast feeding are ranking high, while sensitive issues such as female circumcision, HIV/AIDS and STDs get little coverage through health education, as shown in table (26) below.

Health Education	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HFs	(%)	# of HFs	(%)	# of HFs	(%)
Immunization	81	66%	12	44%	13	65%
Nutrition	75	61%	11	41%	11	55%
AIDS	48	39%	4	15%	4	20%
STDs	48	39%	4	15%	4	20%
Family planning	80	65%	12	44%	13	65%
Antenatal care	80	65%	12	44%	12	60%
Breast feeding	83	68%	13	48%	12	60%
Female circumcision	15	13%	3	11%	2	10%
Median Score	78	63%	12	42%	12	57%

Table 26: Number of HFs providing different components of HE services

The significant difference in the proportion of HFs providing HE services, particularly in Sa'ada with the other governorates, the Median Scores about the availability of various components of HE services also significantly different, as depicted in the following Chart (28).



1.5.6. Child Immunization:

Child Immunization (CI) services are relatively well established and available at most of the HFs. Sa'ada with 93% of the HFs providing CI service, is the highest in the group of the three data as presented in table (27) below. In Abyan governorate only 80% or 16 out of 20 health facilities provide child immunization services.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Child Immunization	Total HF	Child Immunization	Total HF	Child Immunization
General hosp.	20	12	1	1	1	0
District hosp.	24	24	8	8	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	66	18	16	13	10
Polyclinic	6	6	0	-	0	-
Total	122	109	27	25	20	16
(%)		89%		93%		80%

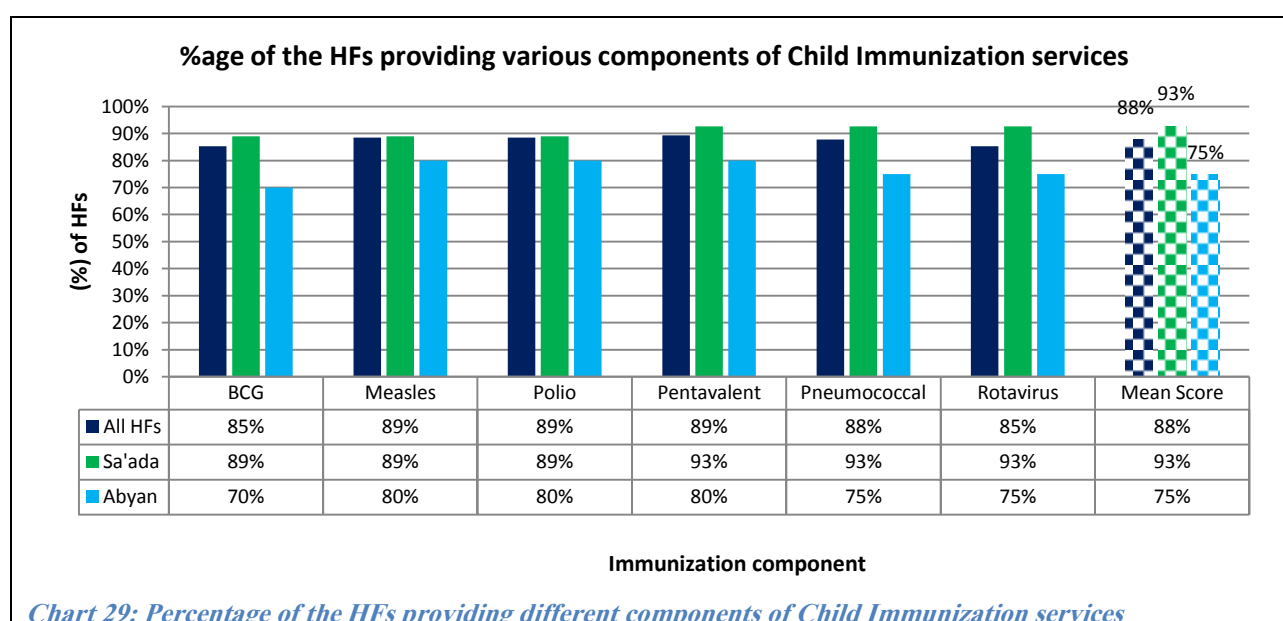
Table 27: Number of HFs by type providing Child Immunization services

On the availability and provision of the various vaccines, the situations are good in all areas covered by the SARA, as presented in table (28), below, with Mean Scores for Sa'ada 93%, for Abyan 75% and for all surveyed areas is 88%.

Child Immunization	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HFs	(%)	# of HFs	(%)	# of HFs	(%)
BCG	104	85%	24	89%	14	70%
Measles	108	89%	24	89%	16	80%
Polio	108	89%	24	89%	16	80%
Pentavalent	109	89%	25	93%	16	80%
Pneumococcal	107	88%	25	93%	15	75%
Rotavirus	104	85%	25	93%	15	75%
Mean Score	107	88%	25	93%	15	75%

Table 28: Number of HFs providing different components of Child Immunization service

As evident from the chart (29), below, the child immunization services are available in majority of the HFs with all the listed six vaccines.



1.5.7. Nutrition services for Mother & Child:

As presented in table (29) below, the Nutrition services are available in 84%, 89% and 70% of the health facilities in the “All survey”, Sa’ada and Abyan governorates respectively.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Nutrition	Total HF	Nutrition	Total HF	Nutrition
General hosp.	20	15	1	1	1	1
District hosp.	24	22	8	8	6	4
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	59	18	15	13	9
Polyclinic	6	6	0	-	0	-
Total	122	103	27	24	20	14
(%)		84%		89%		70%

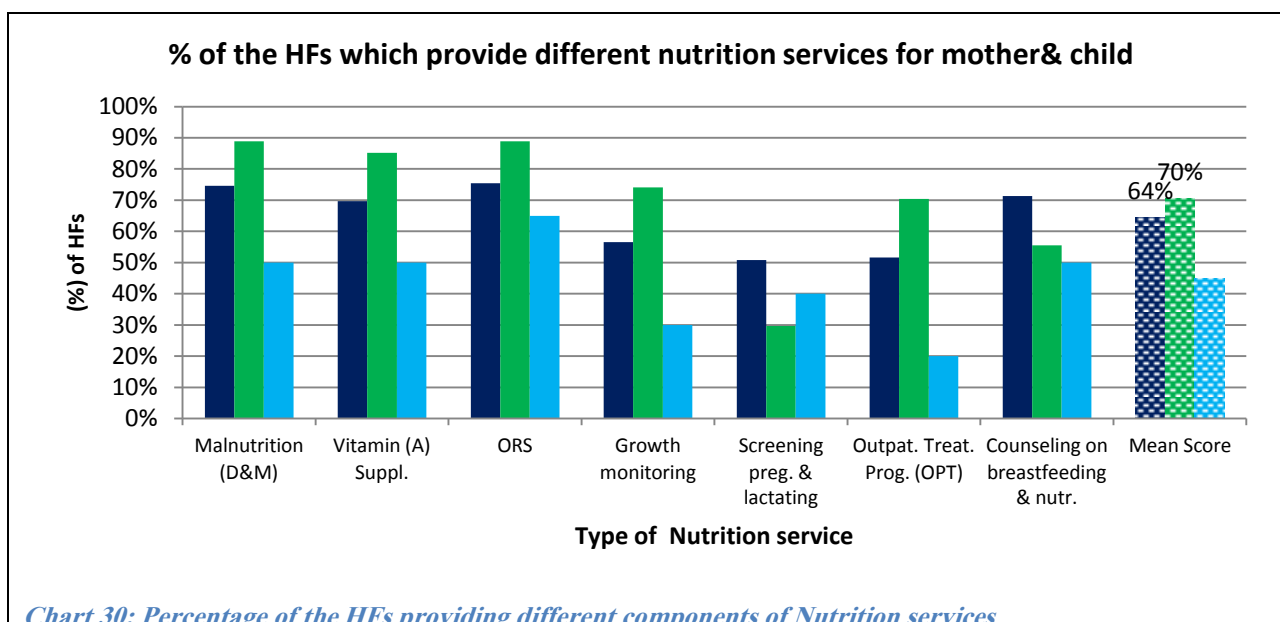
Table 29: Number of HFs by type providing Nutrition services

According to the Mean Score in the below table (30), 64% of all the surveyed HFs provide all the seven listed components of nutrition services for mothers and children. Sa’ada governorate with 70% of nutrition services availability is in a higher position, but Abyan with 45% is the lowest in the group.

Nutrition for Mother and child	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HFs	(%)	# of HFs	(%)	# of HFs	(%)
Malnutrition (D&M)	91	75%	24	89%	10	50%
Vitamin (A) Suppl.	85	70%	23	85%	10	50%
ORS	92	75%	24	89%	13	65%
Growth monitoring	69	57%	20	74%	6	30%
Screening for pregnant & lactating women	62	51%	8	30%	8	40%
Outpatient Treatment Programme (OPT)	63	52%	19	70%	4	20%
Counseling on breastfeeding & nutrition	87	71%	15	56%	10	50%
Mean Score	78	64%	19	70%	9	45%

Table 30: Number of HFs providing different components of Nutrition services

The following chart (30) is representing the data in the above table (30).



1.5.8.Outreach services:

Only 71% of the health facilities in the survey provide outreach services, while the percentage on the same in Sa'ada and Abyan governorates are relatively better with 78% and 80% respectively.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Outreach	Total HF	Outreach	Total HF	Outreach
General hosp.	20	6	1	1	1	0
District hosp.	24	20	8	7	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	57	18	13	13	10
Polyclinic	6	3	0	-	0	-
Total	122	87	27	21	20	16
(%)		71%		78%		80%

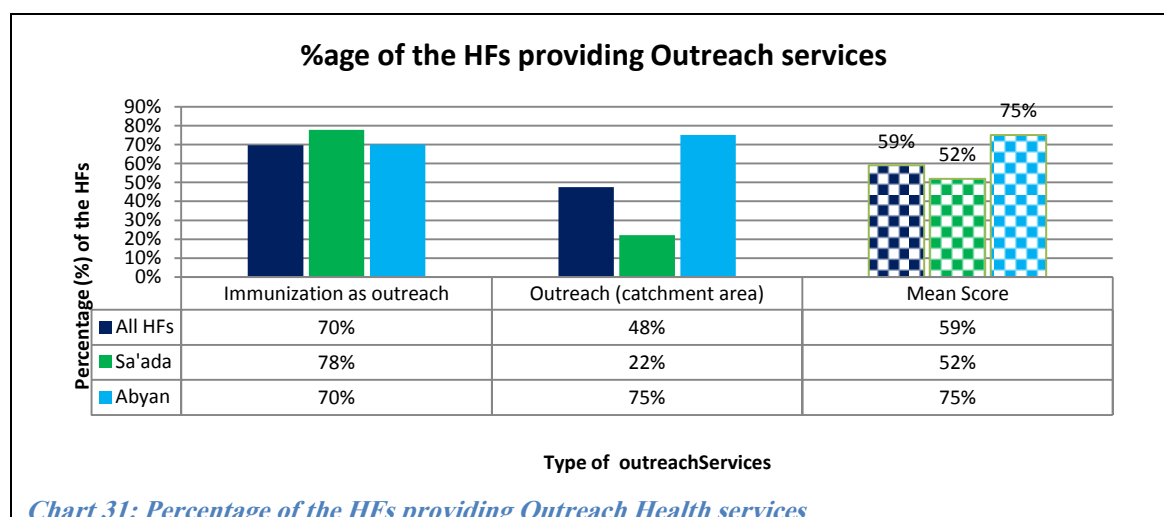
Table 31: Number of HFs by type providing Outreach Health services

The Outreach services in Sa'ada governorate, other than immunization, are relatively weak with only 22% of the health facilities provide outreach services in the catchment area. This weakness could be attributed to lack of health staff in Sa'ada governorate in general.

Outreach services	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HFs	(%)	# of HFs	(%)	# of HFs	(%)
Immunization as outreach	85	70%	21	78%	14	70%
Outreach in catchment area	58	48%	6	22%	15	75%
Mean Score	72	59%	14	52%	15	75%

Table 32: Number of HFs providing different components of Outreach Health services

Outreach services related to immunization is relatively better off compared to Outreach services in the catchment area in "All survey" as well as in Sa'ada governorate. However, the case in Abyan governorate is a bit different as Outreach services in the catchment area (75%) is a little higher than Outreach services related to immunization, which is 70%.



I.5.9.Laboratory (Lab) services:

Laboratory services play very crucial role in measuring and diagnosis of health conditions. Lab services are available in 83% or 101 of the total 122 HFs which were surveyed during SARA. Similarly, in Sa'ada governorate 21 out of the 27 or 78% health facilities and in Abyan governorate 15 out of the 20 or 75% of the health facilities have lab services.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Lab services	Total HF	Lab services	Total HF	Lab services
General hosp.	20	20	1	1	1	1
District hosp.	24	23	8	8	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	51	18	12	13	8
Polyclinic	6	6	0	-	0	-
Total	122	101	27	21	20	15
(%)		83%		78%		75%

Table 33: Number of HFs by type providing Lab services

As shown in the below table (34), some of the basic laboratory tests are available in almost all of the HFs which provide laboratory services. Urine tests, Stool examination, CBC and Malaria test are available in all of the health facilities, while advanced tests including Histopathology, Culture and Hormones tests are ranking very low in terms of availability. The Median Score for availability of all listed lab tests 74%. In Sa'ada governorate, the percentage of HFs providing all lab test is also 74%, while in Abyan governorate only 50% of the HFs provide all listed Lab tests.

Lab services	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HFs	(%)	# of HFs	(%)	# of HFs	(%)
Urine	99	81%	21	78%	15	75%
Stool	99	81%	21	78%	15	75%
CBC	97	80%	20	74%	15	75%
Blood chemistry	54	44%	7	26%	6	30%
Histopathology	8	7%	0	0%	1	5%
Culture	11	9%	1	4%	1	5%
Hormones	10	8%	0	0%	2	10%
Malaria	101	83%	21	78%	15	75%
Bilharzia	90	74%	21	78%	10	50%
Median Score	90	74%	20	74%	10	50%

Table 34: Number of HFs providing different components of Lab services

The below chart (32) portrays the availability of the various components of Laboratory services in the HFs, which provide lab services. As described above, most of the basic lab tests are available in almost all of the HFs with Laboratory services.

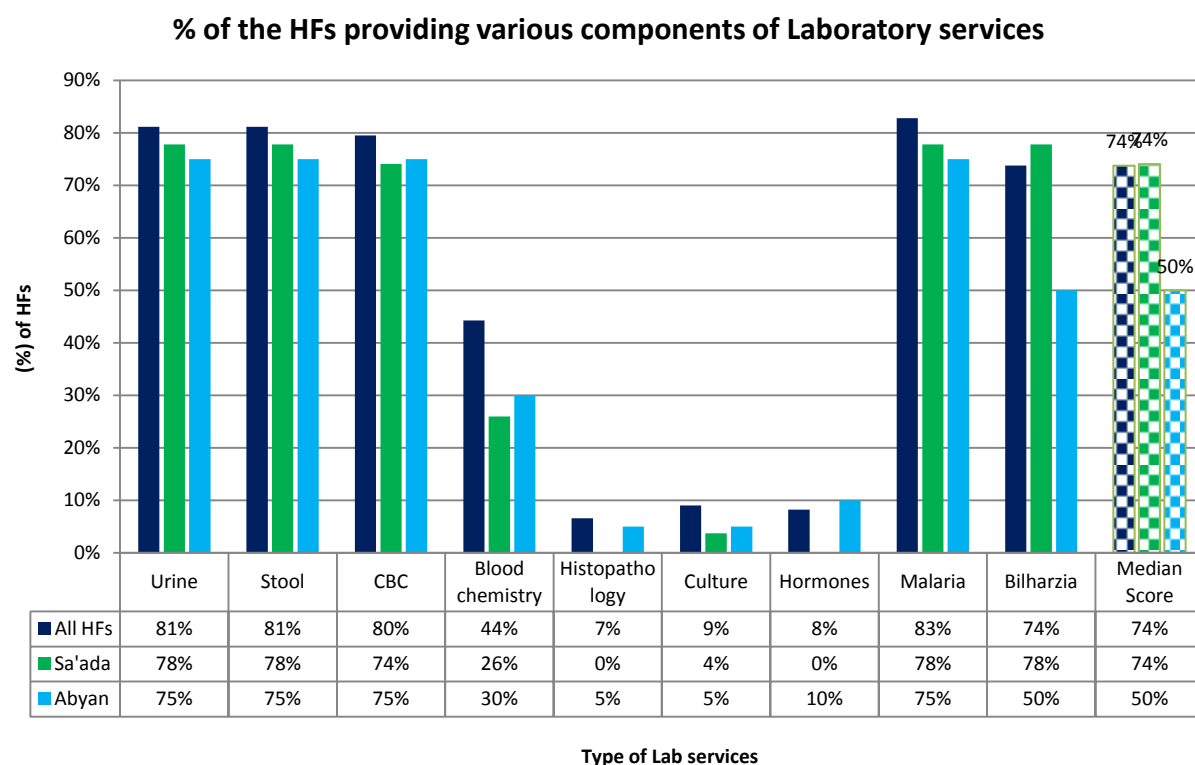


Chart 32: Percentage of the HFs providing Laboratory services

1.5.10.Oral Health services:

Oral health services are available in 33% or 1/3 of the total number of surveyed HFs. The availability of Oral Health services is further reduced to 22% and 20% in the HFs in Sa'ada and Abyan governorates respectively.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Oral Health	Total HF	Oral Health	Total HF	Oral Health
General hosp.	20	16	1	1	1	1
District hosp.	24	13	8	3	6	3
HC w/beds	1	0	0	-	0	-
HC w/o beds	71	8	18	2	13	0
Polyclinic	6	3	0	-	0	-
Total	122	40	27	6	20	4
(%)		33%		22%		20%

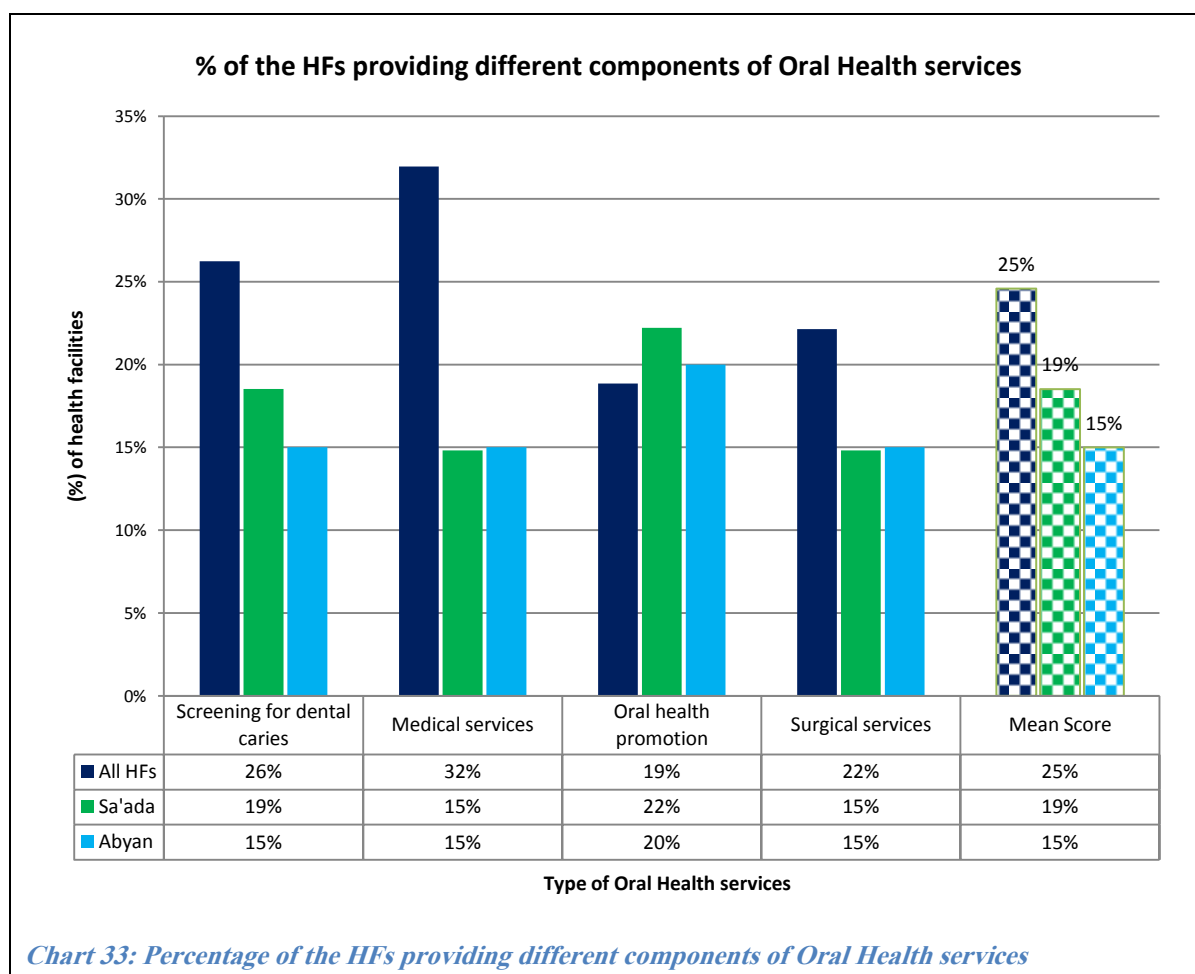
Table 35: Number of HFs by type providing Oral Health services

Based on the Means Score as presented in the below table (36), 25% of the 122 HFs provides all the listed four components of Oral Health services. In Sa'ada governorate 19% and in Abyan governorate 15% of the HFs provide the entire package of Oral Health services.

Oral Health services	All survey (40/122)		Sa'ada (6/27)		Abyan (4/20)	
	# of HFs	(%)	# of HFs	(%)	# of HFs	(%)
Screening for dental caries	32	26%	5	19%	3	15%
Medical services	39	32%	4	15%	3	15%
Oral health promotion	23	19%	6	22%	4	20%
Surgical services	27	22%	4	15%	3	15%
Mean Score	30	25%	5	19%	3	15%

Table 36: Number of HFs providing different components of Oral Health services

The following chart (33) represents the above table (36), which shows that the three sets of data on the availability of the various components of Oral Health are close to each other.



I.5.11. Blood Transfusion services:

Only 30% of the 122 HFs in the SARA provides Blood Transfusion (BT) services. The percentage of HFs in Sa'ada providing BT services is 15%, whereas in Abyan governorate 30% of HFs provides BT services. See all the details in the below table (37).

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Blood transfusion	Total HF	Blood transfusion	Total HF	Blood transfusion
General hosp.	20	19	1	1	1	1
District hosp.	24	11	8	2	6	4
HC w/beds	1	0	0	-	0	-
HC w/o beds	71	6	18	1	13	1
Polyclinic	6	0	0	-	0	-
Total	122	36	27	4	20	6
(%)		30%		15%		30%

Table 37: Number of HFs by type providing Blood Transfusion services

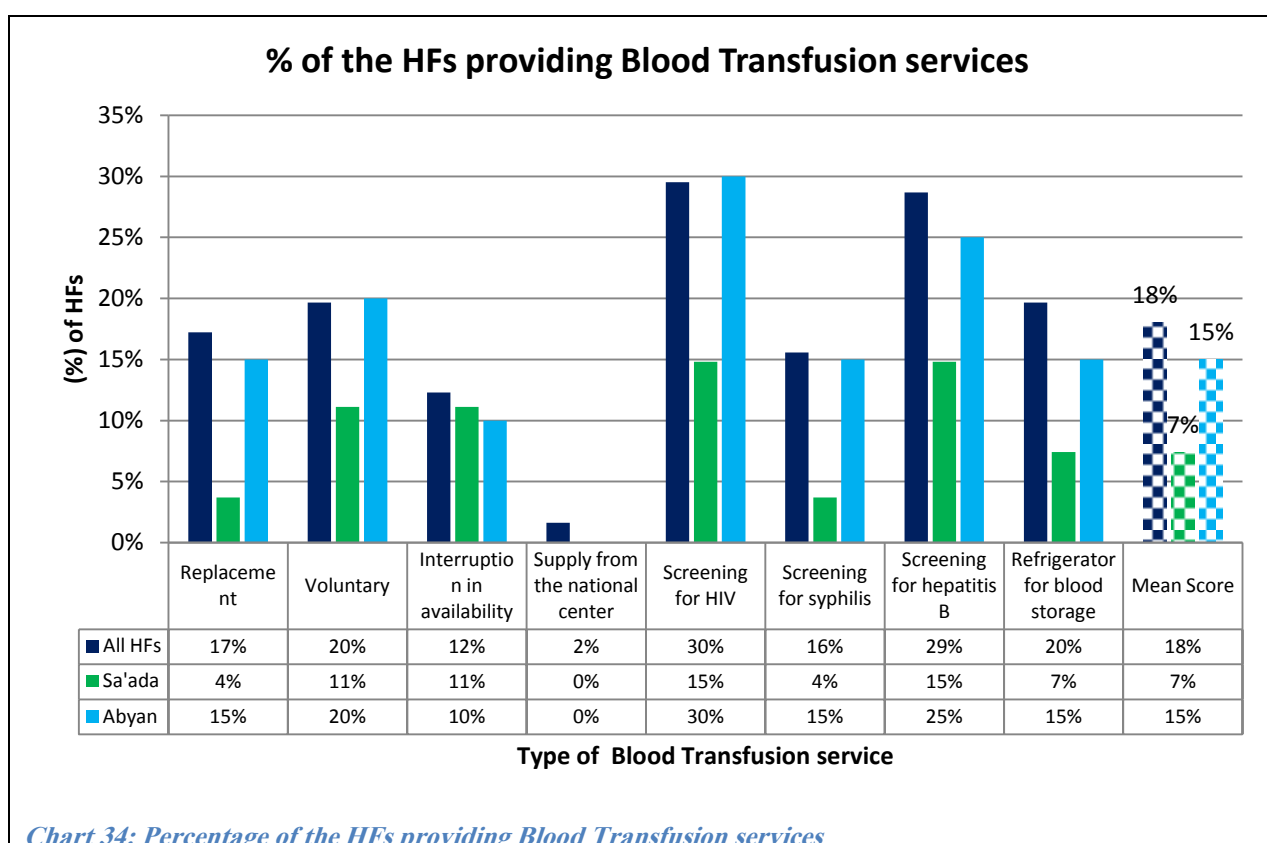
As you can notice in the below table (38) and also the subsequent chart (34), the already low numbers of HFs providing Blood Transfusion services in the study areas are further crippled by shortage of regular supplies and also lack of storage equipment.

On the other hand, screening for syphilis is done in only 4% and 15% of the HFs in Sa'ada and Abyan governorates respectively.

Blood Transfusion services	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HFs	(%)	# of HFs	(%)	# of HFs	(%)
Replacement	21	17%	1	4%	3	15%
Voluntary	24	20%	3	11%	4	20%
Interruption in availability	15	12%	3	11%	2	10%
Supply from the national center	2	2%	0	0%	0	0%
Screening for HIV	36	30%	4	15%	6	30%
Screening for syphilis	19	16%	1	4%	3	15%
Screening for hepatitis B	35	29%	4	15%	5	25%
Refrigerator for blood storage	24	20%	2	7%	3	15%
Mean Score	22	18%	2	7%	3	15%

Table 38: Number of HFs providing different components of Blood Transfusion services

As indicated in the below chart (34) the resupply process and sources aren't uniform across the county.



1.5.12. Radiological services:

Radiological services are weak and available in less than half (48%) of the surveyed HFs. The availability of Radiology services is worse in Sa'ada governorate as only 26% or 7 of the 27 functioning HFs provide the services. The governorate of Abyan with 55% of HFs providing Radiology services is comparatively better off. For more details, please see table (39), below.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Radiology services	Total HF	Radiology services	Total HF	Radiology services
General hosp.	20	20	1	1	1	1
District hosp.	24	17	8	4	6	5
HC w/beds	1	0	0	-	0	-
HC w/o beds	71	16	18	2	13	5
Polyclinic	6	5	0	-	0	-
Total	122	58	27	7	20	11
(%)		48%		26%		55%

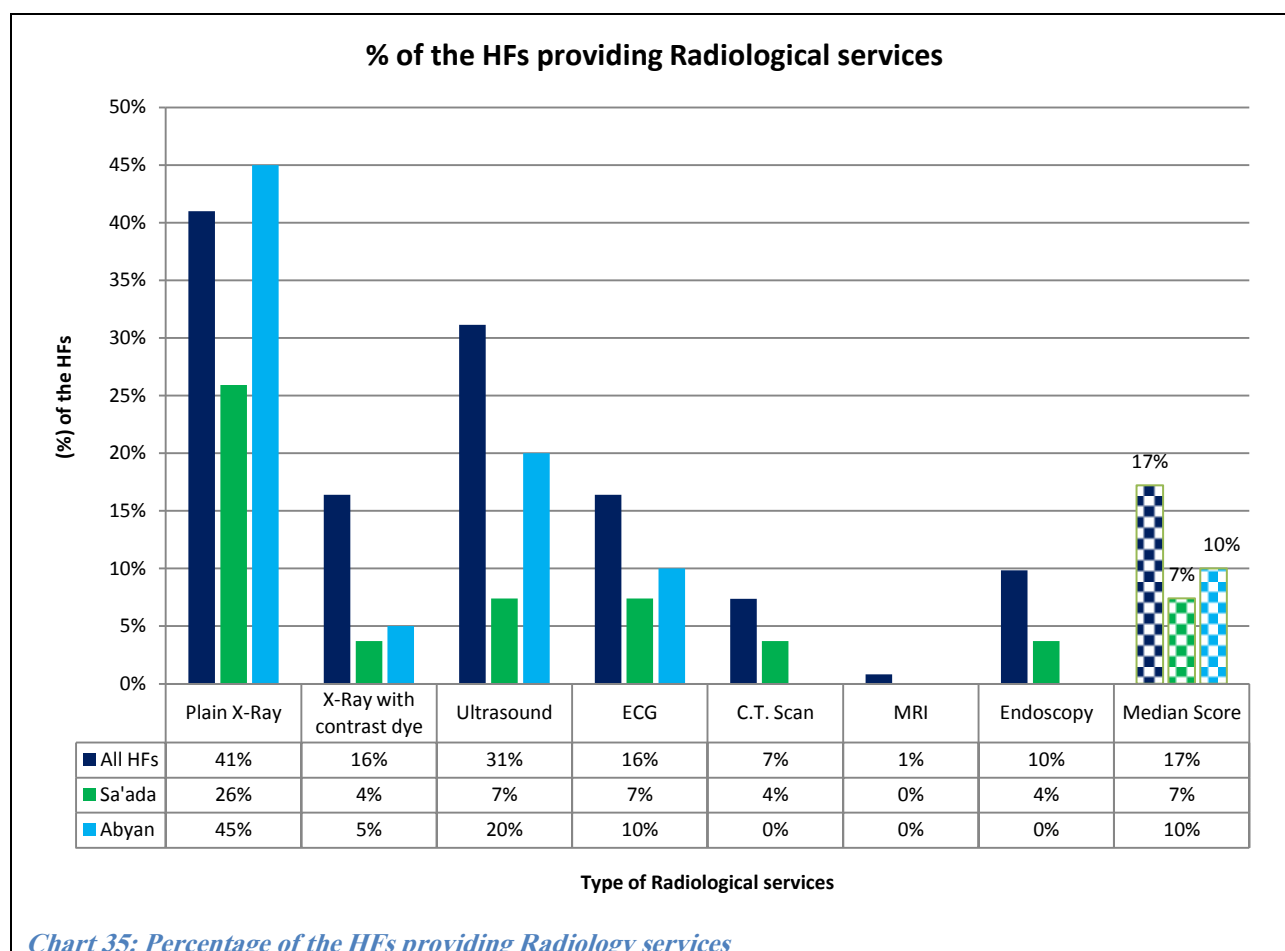
Table 39: Number of HFs by type providing Radiology services

Looking at the details of the status of availability of various components of Radiology services in table (41) below, except for Plain X-Ray which the service is provided by relatively higher percent of the health facilities, the rest of the services are either non-existent or available in a

limited number of health facilities. The Median Score shows that all components of Radiology services are available in 10% and 7% of the HFs in Abyan and Sa'ada governorates respectively. However, at the "All survey" level, these services are provided by 17% of the surveyed HFs.

Radiology services	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HFs	(%)	# of HFs	(%)	# of HFs	(%)
Plain X-Ray	50	41%	7	26%	9	45%
X-Ray with contrast dye	20	16%	1	4%	1	5%
Ultrasound	38	31%	2	7%	4	20%
ECG	20	16%	2	7%	2	10%
C.T. Scan	9	7%	1	4%	0	0%
MRI	1	1%	0	0%	0	0%
Endoscopy	12	10%	1	4%	0	0%
Median Score	21	17%	2	7%	2	10%

Table 40: Number of HFs providing different components of Radiology services



I.6. Drugs (availability, source and supply frequency):

I.6.1. Drugs availability:

During the survey, 110 out of 122 or 90% of the HFs responded **yes** for the availability of at least a number of drug items in their stock. Based on the below table (41), the situations of drugs availability in the HFs of Sa'ada is 100%, while in Abyan only 85% of the HFs said yes to availability of medicine.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Drug Available	Total HF	Drug Available	Total HF	Drug Available
General hosp.	20	20	1	1	1	1
District hosp.	24	24	8	8	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	59	18	18	13	10
Polyclinic	6	6	0	-	0	-
Total	122	110	27	27	20	17
(%)		90%		100%		85%

Table 41: Number of HFs by type where Drugs were available

I.6.2. Sources of drugs supply:

The drugs supply system seems to be more decentralized in Yemen as the MoPH&P at the Central level provides drugs and medical supplies to only 21% of the surveyed HFs. The rest of the HFs is supplied from multiple sources, which the major sources of drug supplies include the Governorate and District level health authorities. The major source of drug supply for the HFs in Sa'ada governorate is the District level health authorities, which provides medicine supply to 59% of the HFs. However, for Abyan governorate the main source of drugs supply is the Governorate health authority, which provides medicine to 71% of the HFs as per the table (42).

Source of Supply	All survey (110/122)	Sa'ada (27/27)	Abyan (17/20)
MoPH&P	21%	4%	6%
The Governorate	39%	30%	71%
The District	25%	59%	12%
Private	10%	7%	6%
Other	5%	-	6%

Table 42: Sources of drugs supply for the health facilities

I.6.3.Frequency of drugs supply:

As shown in the following table (43), the frequency of drug supply is mostly irregular as 70% of the HFs in the surveyed areas does not receive regular supply. However, a small percentage of HFs also expressed that they receive regular drugs supply, which majority among them has indicated quarterly resupplying frequency.

Frequency of supply	All survey (110/122)	Sa'ada (27/27)	Abyan (17/20)
Monthly	5%	4%	-
Every 3-month	18%	11%	29%
Every 6-month	5%	-	12%
Yearly	1%	-	-
Irregular	70%	85%	59%

Table 43: Frequency of drugs supply to the health facilities

I.6.4.Availability of different drug items:

The availability of various drug items, as listed in the below table (44), differs from facility to facility. However, some of the essential drug items were available in majority of the HFs during the survey. The Mean Score for the drug availability is 51%, which means most of the drugs were available in half of the HFs during the survey. Analgesics were available in 81% of the HFs. Injectable and Antibiotics were available in 75% of the HF, the second in the rank, in terms of availability.

On the other hand, Anti Leishmaniasis drug with its availability in only 10% of the health facilities is the lowest in the rank.

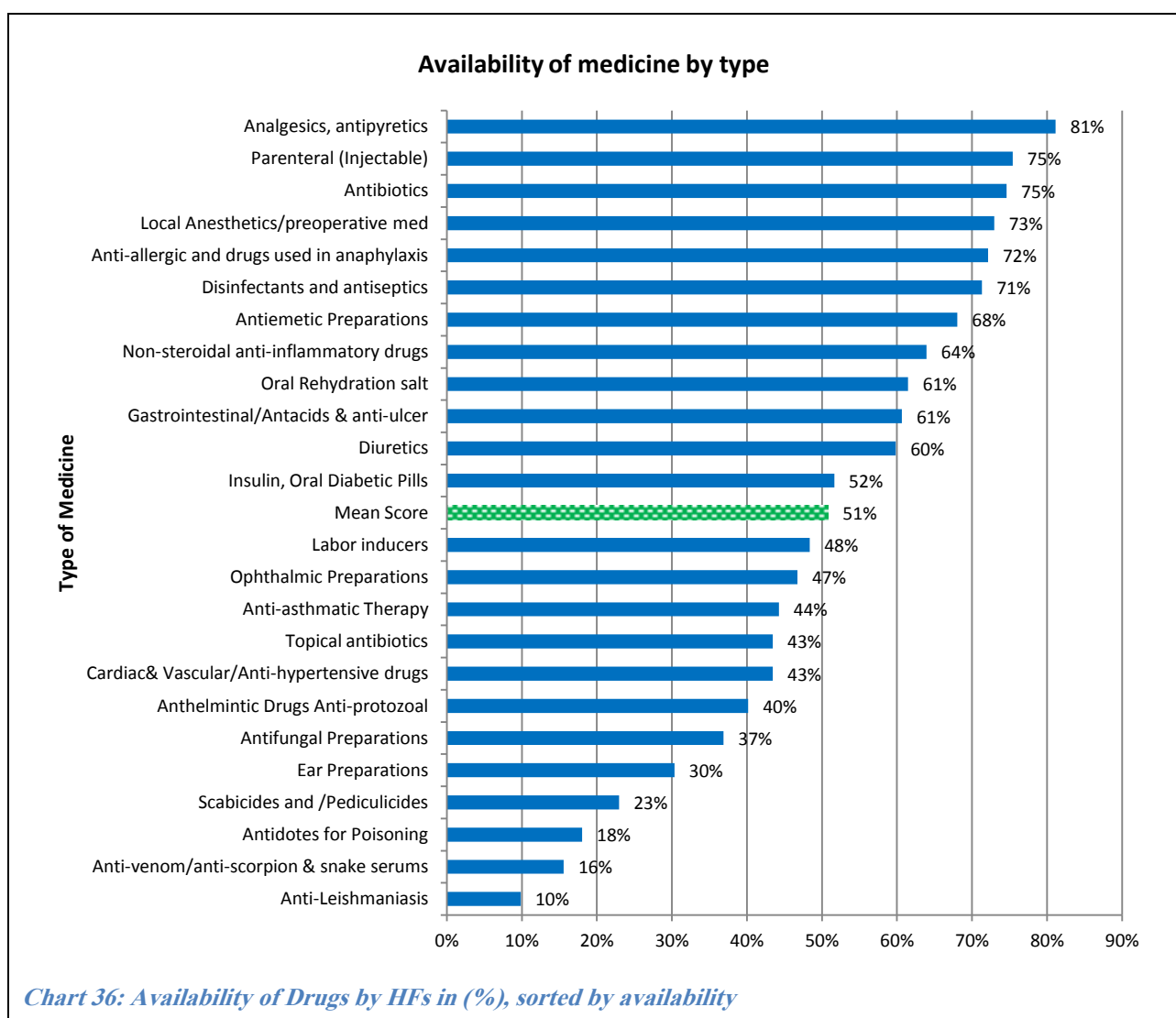
Drugs availability in the HFs of Sa'ada governorate is 67%, which is better compared to the average of "All survey" data. The status of drugs availability in Abyan governorate is very weak as only 34% of the HFs has most of the drugs available.

Type of medicine	All survey (122)		Sa'ada (27)		Abyan (20)	
	Total HF	(%)	Total HF	(%)	Total HF	(%)
Analgesics, antipyretics	99	81%	27	100%	14	70%
Parenteral (Injectable)	92	75%	24	89%	12	60%
Antibiotics	91	75%	23	85%	11	55%
Local Anesthetics/preoperative med	89	73%	20	74%	14	70%
Anti-allergic & anti-anaphylaxis	88	72%	26	96%	9	45%
Disinfectants and antiseptics	87	71%	26	96%	11	55%
Antiemetic Preparations	83	68%	26	96%	6	30%
Non-steroidal anti-inflammatory drugs	78	64%	25	93%	5	25%
Oral Rehydration salt	75	61%	22	81%	8	40%
Gastrointestinal/Antacids & anti-ulcer	74	61%	24	89%	4	20%
Diuretics	73	60%	23	85%	11	55%
Insulin, Oral Diabetic Pills	63	52%	22	81%	8	40%
Labor inducers	59	48%	20	74%	7	35%
Ophthalmic Preparations	57	47%	19	70%	4	20%
Anti-asthmatic Therapy	54	44%	16	59%	6	30%

Type of medicine	All survey (122)		Sa'ada (27)		Abyan (20)	
	Total HF	(%)	Total HF	(%)	Total HF	(%)
Topical antibiotics	53	43%	18	67%	6	30%
Cardiac & Vascular/Anti-hypertensive	53	43%	15	56%	6	30%
Anthelmintic Drugs Anti-protozoal	49	40%	15	56%	4	20%
Antifungal Preparations	45	37%	16	59%	4	20%
Ear Preparations	37	30%	13	48%	4	20%
Scabicides and /Pediculicides	28	23%	11	41%	3	15%
Antidotes for Poisoning	22	18%	3	11%	2	10%
Anti-venom/anti-scorpion & snake serums	19	16%	2	7%	2	10%
Anti-Leishmaniasis	12	10%	1	4%	2	10%
Mean Score	62	51%	18	67%	7	34%

Table 44: Availability of different drug items in the health facilities

The below chart (36) present the various drug items, sorted by their availability in the HF.



I.7. Availability of medical equipment:

Medical equipment are grouped into several categories; including 1- Medical examination equipment; 2- Delivery equipment; 3- Pharmacy equipment; 4- Laboratory equipment; 5- Diagnostic equipment; 6- Dental equipment; 7- Drugs warehouse equipment; 8- Surgical operation equipment; 9- Inpatient department equipment; 10- Emergency department equipment; 11- ICU (Intensive Care Unit) equipment; and 12- Other equipment. In this section, the availability of each of the equipment group will be described.

I.7.1. Medical examination equipment:

As shown in the following table (45), 98% or 119 out of 122 of the HFs have at least several of the Medical examination equipment. Sa'ada governorate with 100% of the 27 health facilities having Medical examination equipment is in a better shape.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Med. Exam. equipment	Total HF	Med. Exam. equipment	Total HF	Med. Exam. equipment
General hosp.	20	20	1	1	1	1
District hosp.	24	24	8	8	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	68	18	18	13	11
Polyclinic	6	6	0	-	0	-
Total	122	119	27	27	20	18
(%)		98%		100%		90%

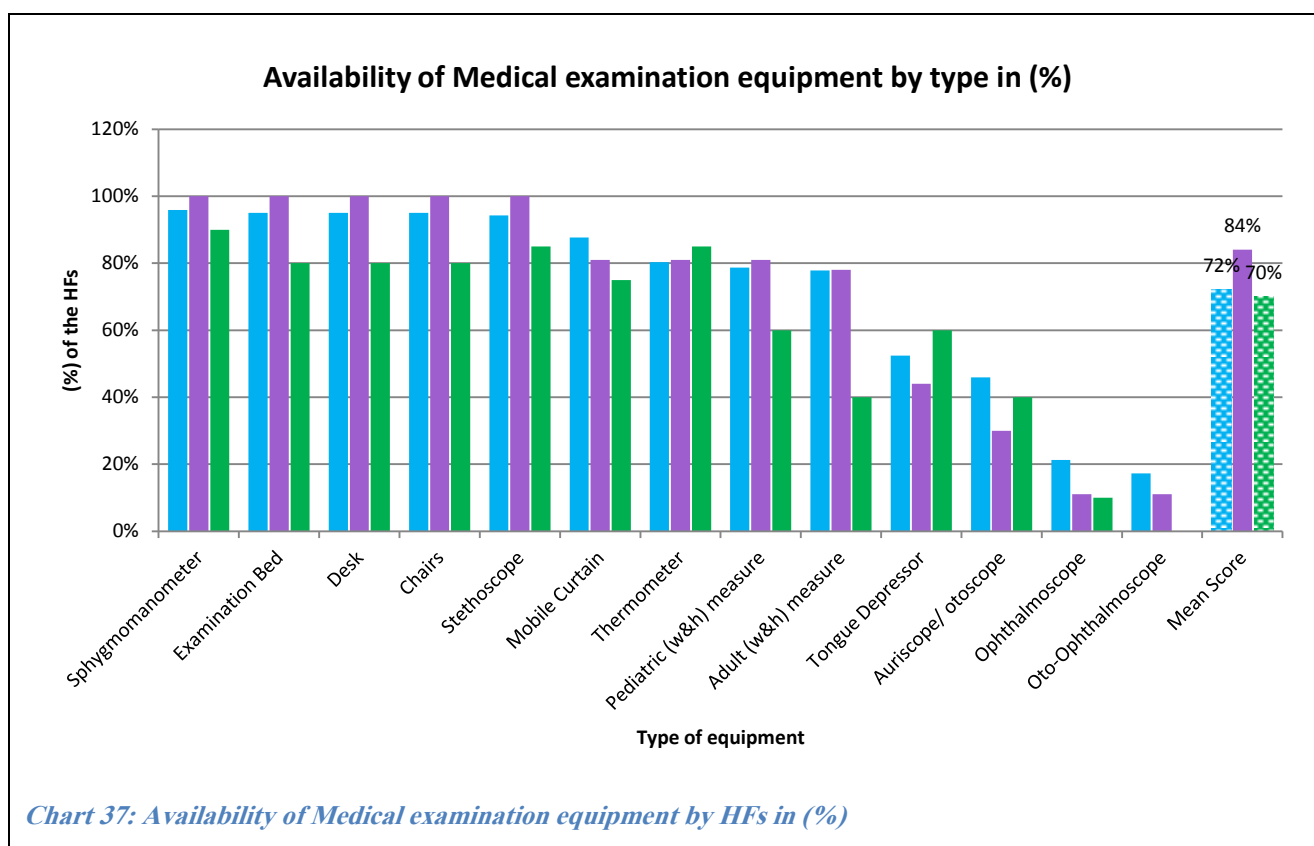
Table 45: Availability of Medical examination equipment by type of health facility

As the details can be seen in the below table (46), some of the basic Medical examination equipment are available in most of the HFs. The Mean Score of 72% indicates that about $\frac{3}{4}$ of the HFs had all the Medical examination equipment available during the survey. The Mean Scores for availability of Medical examination equipment in Sa'ada and Abyan governorates are 84% and 71% respectively.

Type of Medical examination equipment	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Examination Bed	116	95%	27	100%	16	80%
Sphygmomanometer	117	96%	27	100%	18	90%
Stethoscope	115	94%	27	100%	17	85%
Thermometer	98	80%	22	81%	17	85%
Tongue Depressor	64	52%	12	44%	12	60%
Pediatric scale& height measure	96	79%	22	81%	12	60%
Adult scale& height measure	95	78%	21	78%	8	40%
Mobile Curtain	107	88%	22	81%	15	75%
Desk	116	95%	27	100%	16	80%
Chairs	116	95%	27	100%	16	80%
Ophthalmoscope	26	21%	3	11%	2	10%
Oto-Ophthalmoscope	21	17%	3	11%	0	0
Auriscopes/ otoscope	56	46%	8	30%	8	40%
Mean Score	88	72%	23	84%	14	70%

Table 46: Availability of different Medical examination equipment in the health facilities

The following Chart (37) represents the above table (46) in a descending order of availability of the listed Medical examination equipment.



1.7.2.Delivery equipment:

As per table (47) below, 80% of the 122 HFs responded with YES to the availability of Delivery equipment during the survey, which include most of the hospitals and a number of health centers. In Sa'ada, Delivery equipment is available in 85% of the HFs, while in Abyan governorate only 15 out of 20 HFs or 75% had Delivery equipment available.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Delivery equipment	Total HF	Delivery equipment	Total HF	Delivery equipment
General hosp.	20	16	1	1	1	1
District hosp.	24	24	8	8	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	54	18	14	13	8
Polyclinic	6	2	0	-	0	-
Total	122	97	27	23	20	15
(%)		80%		85%		75%

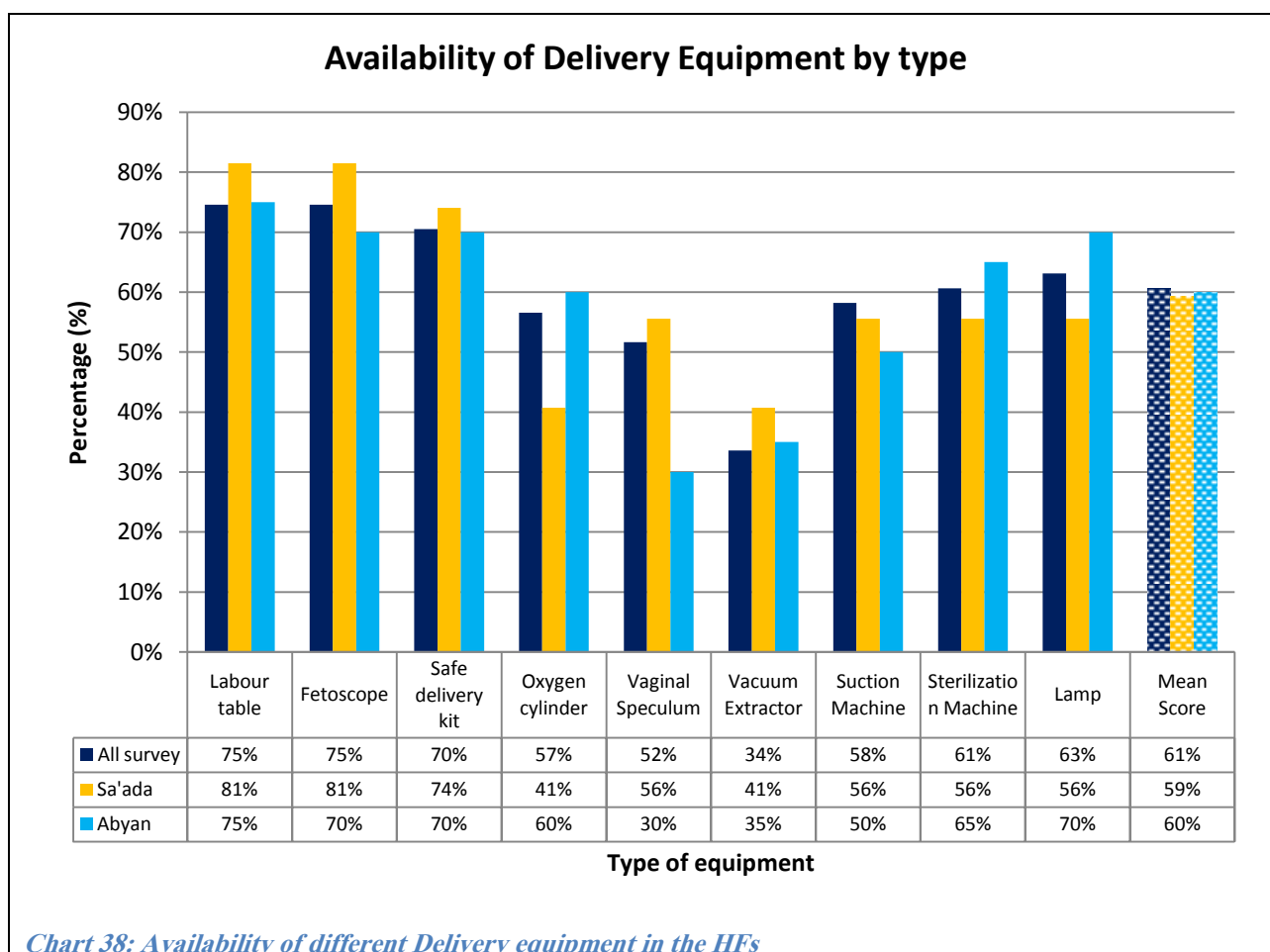
Table 47: Availability of Delivery equipment by type of health facility

Based on the Mean Score in the below table (48), 61% of the HFs had all the listed Delivery equipment during the survey.

Type of Delivery equipment	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Labour table	91	75%	22	81%	15	75%
Fetoscope	91	75%	22	81%	14	70%
Safe delivery kit	86	70%	20	74%	14	70%
Oxygen cylinder	69	57%	11	41%	12	60%
Vaginal Speculum	63	52%	15	56%	6	30%
Vacuum Extractor	41	34%	11	41%	7	35%
Suction Machine	71	58%	15	56%	10	50%
Sterilization Machine	74	61%	15	56%	13	65%
Lamp	77	63%	15	56%	14	70%
Mean Score	74	61%	16	59%	12	60%

Table 48: Availability of different Delivery equipment in the health facilities

As can be easily noticed in the below chart (38), the two data subsets for Sa'ada and Abyan governorates are almost the same with that of 'All survey' in term of availability of the various components of the Delivery equipment.



I.7.3. Pharmacy equipment:

In Sa'ada governorate, 100% of the 27 HF's indicated the availability of Pharmacy equipment, while in Abyan only two health centers are lacking Pharmacy equipment.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Pharmacy equipment	Total HF	Pharmacy equipment	Total HF	Pharmacy equipment
General hosp.	20	20	1	1	1	1
District hosp.	24	24	8	8	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	61	18	18	13	11
Polyclinic	6	6	0	-	0	-
Total	122	112	27	27	20	18
(%)		92%		100%		90%

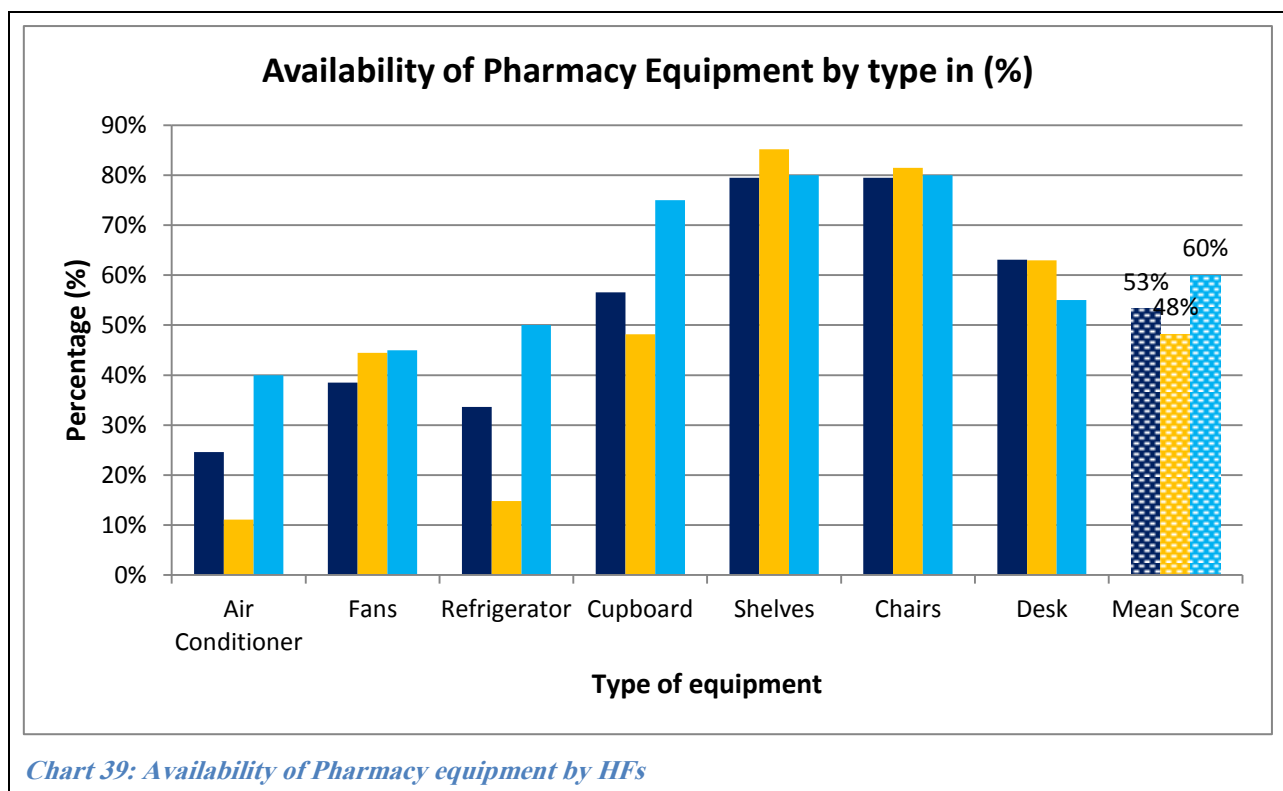
Table 49: Availability of Pharmacy equipment by type of health facility

The listed Pharmacy equipment as a full package is available in 53% of the 122 HF's. In Sa'ada governorate this package is available in only 48% of the HF's, while in Abyan it is 60%.

Type of Pharmacy equipment	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Air Conditioner	30	25%	3	11%	8	40%
Fans	47	39%	12	44%	9	45%
Refrigerator	41	34%	4	15%	10	50%
Cupboard	69	57%	13	48%	15	75%
Shelves	97	80%	23	85%	16	80%
Chairs	97	80%	22	81%	16	80%
Desk	77	63%	17	63%	11	55%
Mean Score	65	53%	13	48%	12	60%

Table 50: Availability of different Pharmacy equipment in the health facilities

Chart (39) represents table (50).



1.7.4.Laboratory equipment:

As indicated in table (51), 89% of the HFs has Laboratory equipment. In Sa'ada and Abyan governorates, the availability of Lab. Equipment is 85% and 90% respectively.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Laboratory equipment	Total HF	Laboratory equipment	Total HF	Laboratory equipment
General hosp.	20	20	1	1	1	1
District hosp.	24	24	8	8	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	58	18	14	13	11
Polyclinic	6	6	0	-	0	-
Total	122	109	27	23	20	18
(%)		89%		85%		90%

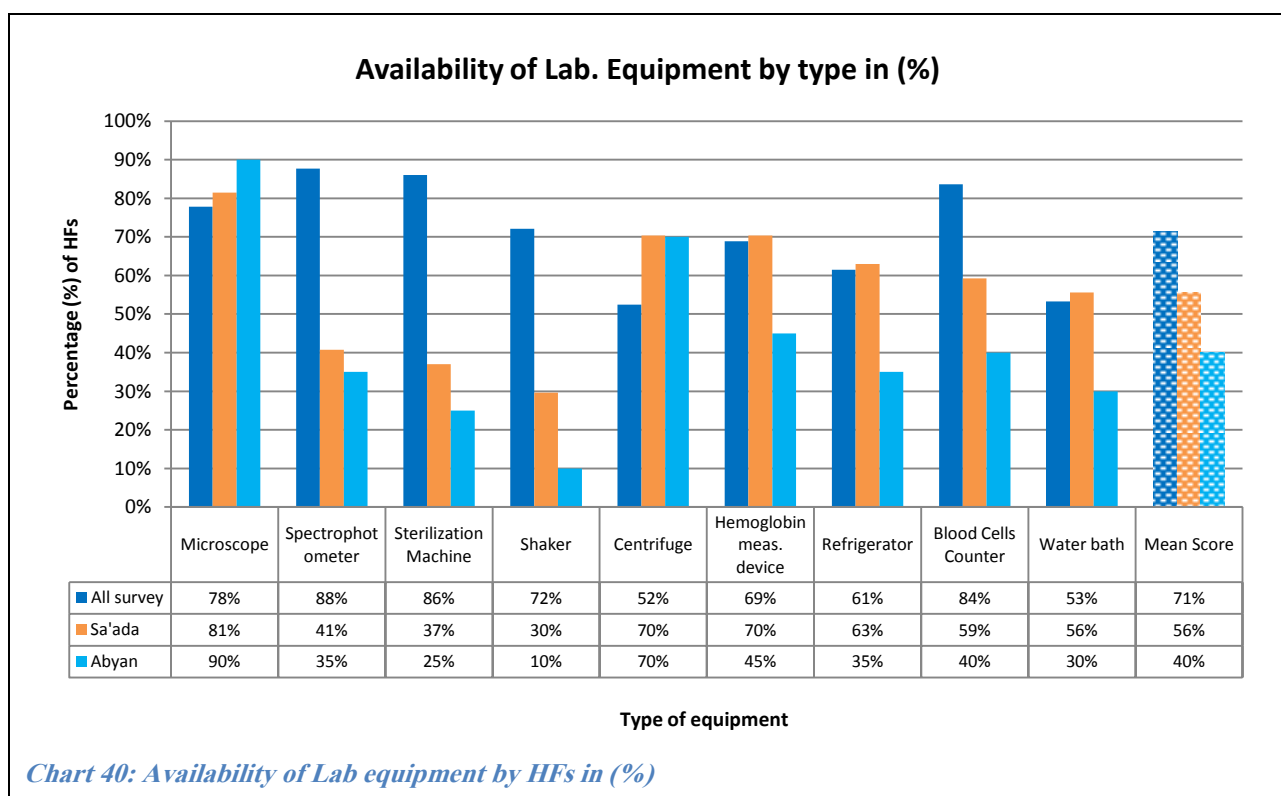
Table 51: Availability of Lab equipment by type of health facility

The availability of the different Lab. equipment differs from facility to facility. According to the Mean Score in table (52) below, 71% of the HF's has the listed Lab. Equipment in full. However, in Abyan governorate only 40% of the HF's has all the listed Lab. Equipment.

Type of Laboratory equipment	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Microscope	95	78%	22	81%	18	90%
Spectrophotometer	107	88%	11	41%	7	35%
Sterilization Machine	105	86%	10	37%	5	25%
Shaker	88	72%	8	30%	2	10%
Centrifuge	64	52%	19	70%	14	70%
Hemoglobin measurement device	84	69%	19	70%	9	45%
Refrigerator	75	61%	17	63%	7	35%
Blood Cells Counter	102	84%	16	59%	8	40%
Water bath	65	53%	15	56%	6	30%
Mean Score	87	71%	15	56%	8	40%

Table 52: Availability of different Lab equipment in the health facilities

As evident from chart (40), most (71%) of the HF's has all the listed Lab equipment. In Sa'ada governorate the full list of lab equipment is available in 56% of the HF's. However, in Abyan governorate the availability of Lab equipment is only 40%, which is comparatively very low.



1.7.5.Diagnostic equipment:

Altogether 81 out of 122 or 66% of the HF's indicated the Diagnostic equipment availability during the survey. The HF's include; most of the hospitals and some of the health centers. In Sa'ada governorate the percentage of HF's with Diagnostic equipment is 63%, which is close to the all survey average, while in Abyan governorate 75% of the HF's has Diagnostic equipment.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Diagnostic equipment	Total HF	Diagnostic equipment	Total HF	Diagnostic equipment
General hosp.	20	20	1	1	1	1
District hosp.	24	22	8	7	6	6
HC w/beds	1	0	0	-	0	-
HC w/o beds	71	34	18	9	13	8
Polyclinic	6	5	0	-	0	-
Total	122	81	27	17	20	15
(%)		66%		63%		75%

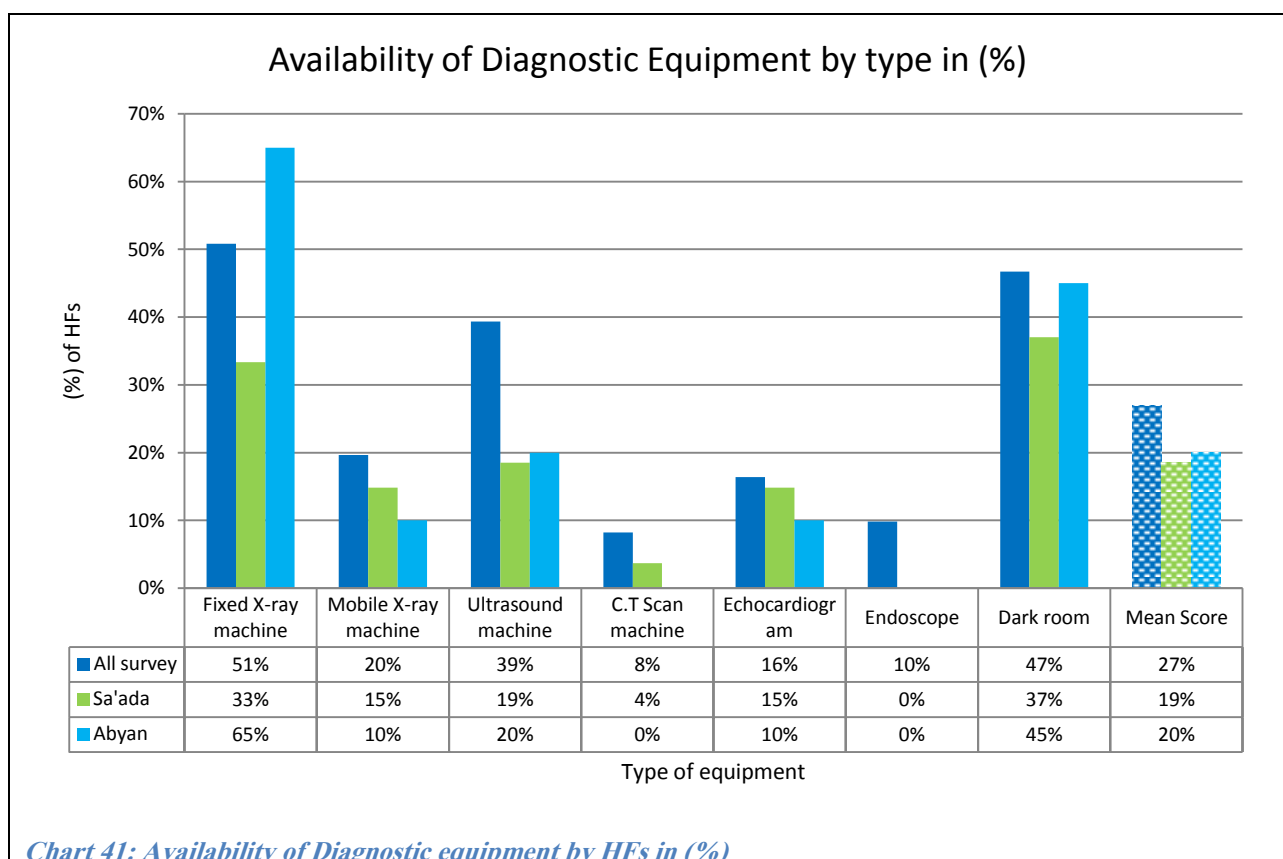
Table 53: Availability of Diagnostic equipment by type of health facility

Although, 81 of the 122 or 66% of the health facilities indicated the availability of Diagnostic equipment, only limited number of the HF's (27%) has all the listed Diagnostic equipment, according to table (54) below. In Sa'ada and Abyan governorates, 1/5 of the surveyed HF's has the listed Diagnostic equipment in full.

Type of Diagnostic equipment	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Fixed X-ray machine	62	51%	9	33%	13	65%
Mobile X-ray machine	24	20%	4	15%	2	10%
Ultrasound machine	48	39%	5	19%	4	20%
C.T Scan machine	10	8%	1	4%	-	0%
Echocardiogram	20	16%	4	15%	2	10%
Endoscope	12	10%	0	0%	-	0%
Dark room	57	47%	10	37%	9	45%
Mean Score	33	27%	5	19%	4	20%

Table 54: Availability of different Diagnostic equipment in the health facilities

At the 'All survey' level, 'Fixed X-Ray machine' with 51% availability is high in the rank, while 'C.T. Scan machine' with 8% availability is the lowest Diagnostic equipment, as can be noticed in the below chart (41).



I.7.6.Dental equipment:

Dental equipment is available in 44% of the 122 HF's, mainly in the hospitals and a few (only 12 of the 71) health centers. The availability of Dental equipment in Abyan and Sa'ada governorate is 35% and 37% respectively.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Dental equipment	Total HF	Dental equipment	Total HF	Dental equipment
General hosp.	20	18	1	1	1	1
District hosp.	24	19	8	5	6	6
HC w/beds	1	0	0	-	0	-
HC w/o beds	71	12	18	4	13	0
Polyclinic	6	5	0	-	0	-
Total	122	54	27	10	20	7
(%)		44%		37%		35%

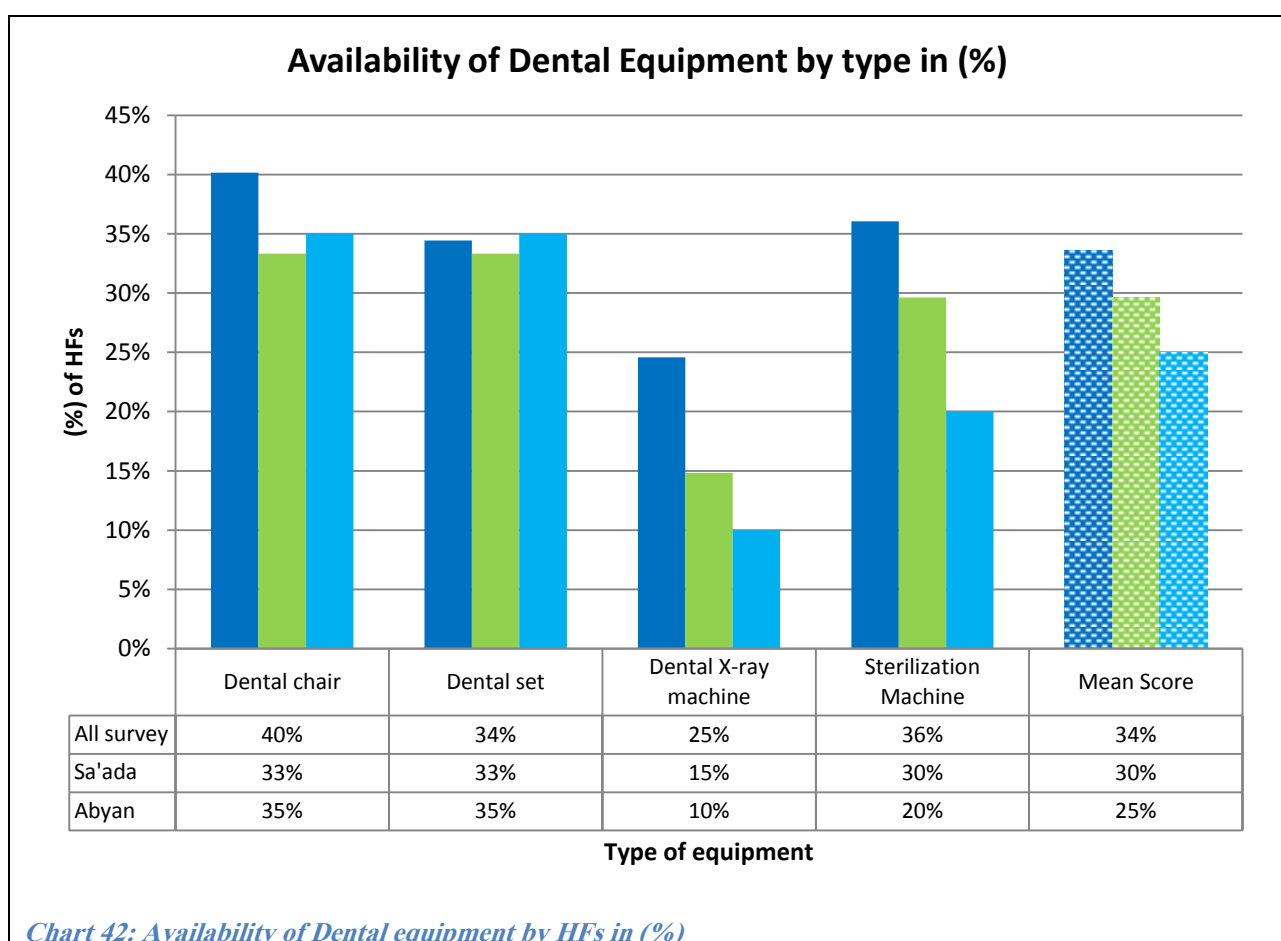
Table 55: Availability of Dental equipment by type of health facility

As per the Mean Score in the below table (56), 34% of the HFs have all the package of Dental equipment. In Sa'ada governorate 30% and in Abyan governorate 25% of the HFs have all the Dental equipment.

Type of Dental equipment	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Dental chair	49	40%	9	33%	7	35%
Dental set	42	34%	9	33%	7	35%
Dental X-ray machine	30	25%	4	15%	2	10%
Sterilization Machine	44	36%	8	30%	4	20%
Mean Score	41	34%	8	30%	5	25%

Table 56: Availability of different Dental equipment in the health facilities

The following chart (42) represents the availability Dental equipment in the HFs in the surveyed areas.



I.7.7. Drugs warehouse equipment:

Of the total 122 HFs, only 45 of them or 37% have Drugs warehouse equipment available as shown in the table (57) below. In Sa'ada governorate, Drugs warehouse equipment is available in only 26% or 7 out of the 20 functioning health facilities.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Drugs warehouse equipment	Total HF	Drugs warehouse equipment	Total HF	Drugs warehouse equipment
General hosp.	20	19	1	1	1	1
District hosp.	24	13	8	4	6	5
HC w/beds	1	0	0	-	0	-
HC w/o beds	71	11	18	2	13	5
Polyclinic	6	2	0	-	0	-
Total	122	45	27	7	20	11
(%)		37%		26%		55%

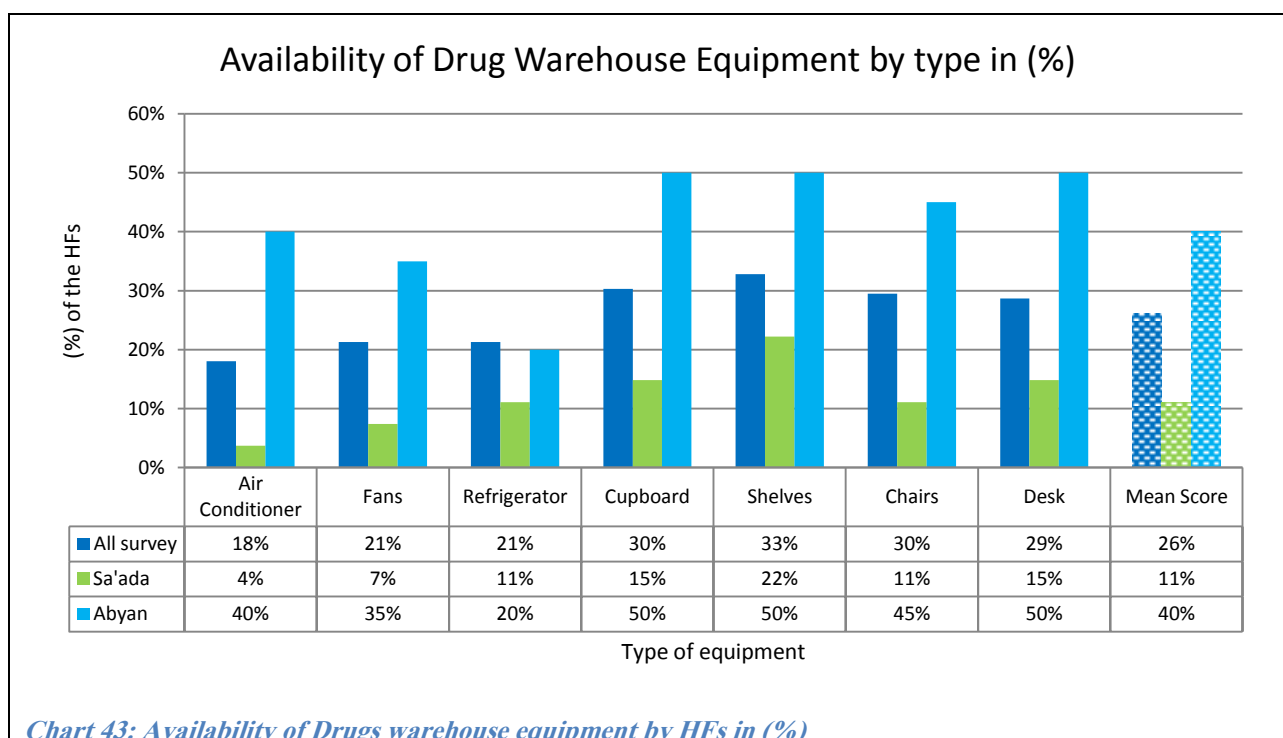
Table 57: Availability of Drugs warehouse equipment by type of health facility

On average, 26% of the HFs has all the listed Drug warehouse equipment as shown in table (58) below. In Sa'ada the average percentage of HFs, which have all Drugs warehouse equipment, is 11%, while in Abyan governorate it is 40%.

Type of Drug warehouse equipment	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Air Conditioner	22	18%	1	4%	8	40%
Fans	26	21%	2	7%	7	35%
Refrigerator	26	21%	3	11%	4	20%
Cupboard	37	30%	4	15%	10	50%
Shelves	40	33%	6	22%	10	50%
Chairs	36	30%	3	11%	9	45%
Desk	35	29%	4	15%	10	50%
Mean Score	32	26%	3	11%	8	40%

Table 58: Availability of different Drugs warehouse equipment in the health facilities

Details on the availability of Drugs warehouse equipment are depicted in the below chart (43). As can be easily notice in the bar chart, the Drugs warehouse equipment is less available in Sa'ada governorate.



I.7.8.Surgical operation equipment:

Only 36% or 44 out of the total 122 HFs have indicated the availability of 'Surgical operation equipment' during the survey. In Sa'ada governorate, 4 out of the total 27 HFs including one General/referral hospital, 2 district level hospitals and one Health Center have 'Surgical operation equipment' available.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Surgical operation equipment	Total HF	Surgical operation equipment	Total HF	Surgical operation equipment
General hosp.	20	18	1	1	1	1
District hosp.	24	14	8	2	6	6
HC w/beds	1	0	0	-	0	-
HC w/o beds	71	10	18	1	13	1
Polyclinic	6	2	0	-	0	-
Total	122	44	27	4	20	8
(%)		36%		15%		40%

Table 59: Availability of Surgical operation equipment by type of health facility

The availability of the listed equipment under the group of ‘Surgical operation equipment’ differs from one facility to another. Based on the Mean Score, as shown in table (60) below, 22% of HFs have all the listed equipment available. The Mean Scores for Sa’ada and Abyan governorates are 7% and 25% respectively.

Type of <i>Surgical operation equipment</i>	All survey (122)		Sa’ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Operation Bed	32	26%	3	11%	8	40%
Anesthesia Machine	29	24%	2	7%	6	30%
Minor operation set	39	32%	3	11%	7	35%
Major operation set	26	21%	2	7%	3	15%
Cauterization	28	23%	3	11%	3	15%
Patient monitoring machine	23	19%	1	4%	2	10%
Defibrillator	14	11%	0	0%	1	5%
Fixed light source	26	21%	1	4%	5	25%
Mobile light source	33	27%	1	4%	8	40%
Boiling Sterilizer	25	20%	1	4%	4	20%
Steam Autoclave	25	20%	3	11%	5	25%
Hot air Sterilizer	29	24%	3	11%	5	25%
Mean Score	27	22%	2	7%	5	25%

Table 60: Availability of different Surgical operation equipment in the health facilities

Chart (44) below represent the data sets in the table (60),above. As can be easily noticed, the average of ‘Surgical operation equipment’ in Sa’ada governorate is only 7%, which is very low.

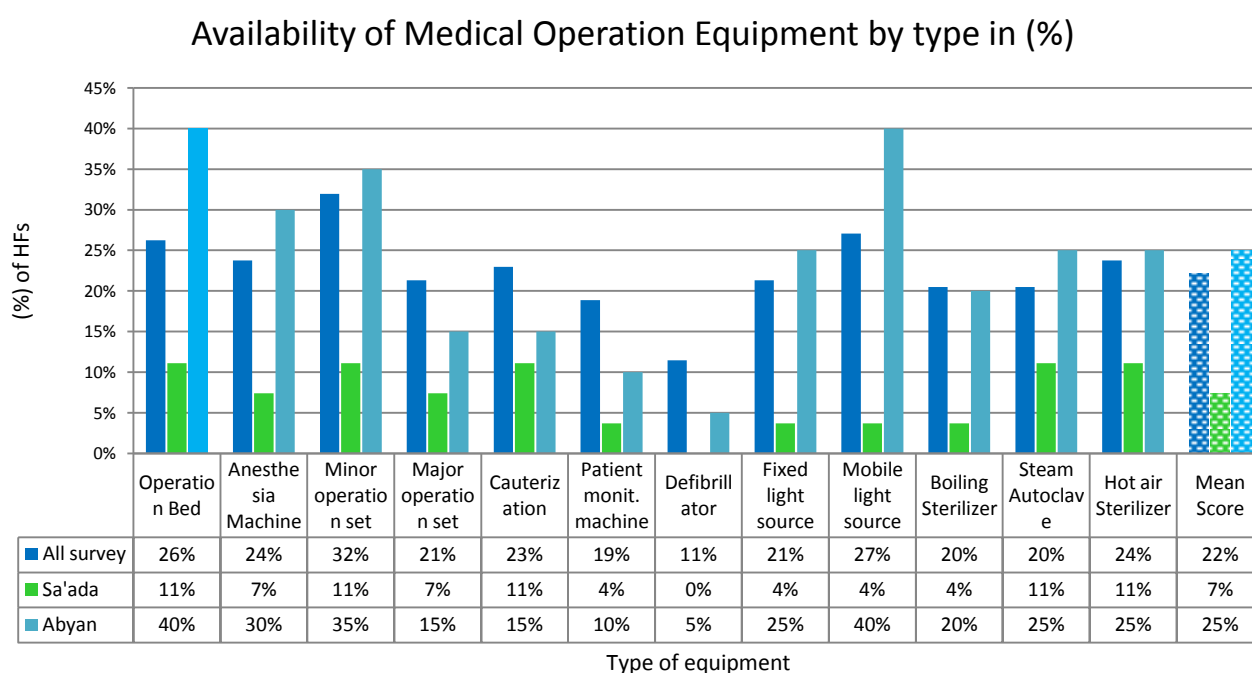


Chart 44: Availability of Surgical operation equipment by HFs in (%)

1.7.9. Inpatient department equipment:

Based on the below table (61), 47% of the total 122 health facilities has indicated availability of 'Inpatient department equipment'. In Sa'ada governorate, 30% of the 27 and in Abyan governorate 70% of the 20 health facilities have 'Inpatient department equipment' available.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Inpatient department equipment	Total HF	Inpatient department equipment	Total HF	Inpatient department equipment
General hosp.	20	20	1	1	1	1
District hosp.	24	20	8	5	6	6
HC w/beds	1	0	0	-	0	-
HC w/o beds	71	17	18	2	13	7
Polyclinic	6	0	0	-	0	-
Total	122	57	27	8	20	14
(%)		47%		30%		70%

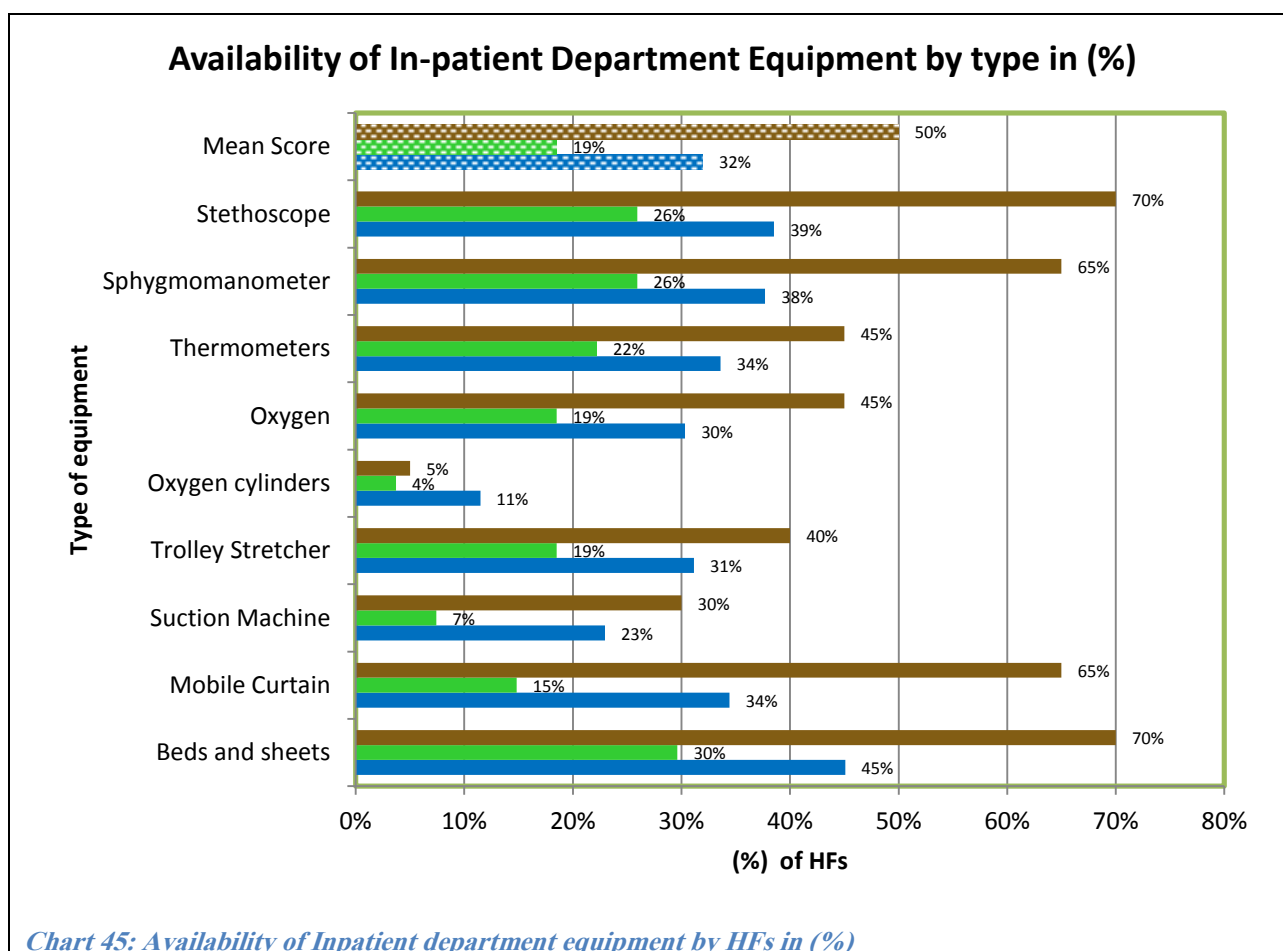
Table 61: Availability of Inpatient department equipment by type of health facility

Table (62) below shows the availability of different equipment related to 'Inpatient department'. As can be noticed, 32% of the HFs has most of the listed equipment, according the Mean Score. Similarly, the Mean Scores for availability of the 'Inpatient department equipment' for Abyan and Sa'ada governorates are 19% and 50% respectively.

Type of Inpatient department equipment	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Beds and sheets	55	45%	8	30%	14	70%
Mobile Curtain	42	34%	4	15%	13	65%
Suction Machine	28	23%	2	7%	6	30%
Trolley Stretcher	38	31%	5	19%	8	40%
Oxygen cylinders	14	11%	1	4%	1	5%
Oxygen	37	30%	5	19%	9	45%
Thermometers	41	34%	6	22%	9	45%
Sphygmomanometer	46	38%	7	26%	13	65%
Stethoscope	47	39%	7	26%	14	70%
Mean Score	39	32%	5	19%	10	50%

Table 62: Availability of different Inpatient department equipment in the health facilities

The below chart (45) shows the availability of the different equipment related to 'Inpatient department.



1.7.10. Emergency department equipment:

The Emergency department equipment is available in 47% of HFs. In Sa'ada governorate 67% HFs has Inpatient department equipment; while in Abyan the percentage is as low as 20%.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Emergency department equipment	Total HF	Emergency department equipment	Total HF	Emergency department equipment
General hosp.	20	19	1	1	1	1
District hosp.	24	20	8	8	6	3
HC w/beds	1	0	0	-	0	-
HC w/o beds	71	14	18	9	13	0
Polyclinic	6	3	0	-	0	-
Total	122	57	27	18	20	4
(%)		47%		67%		20%

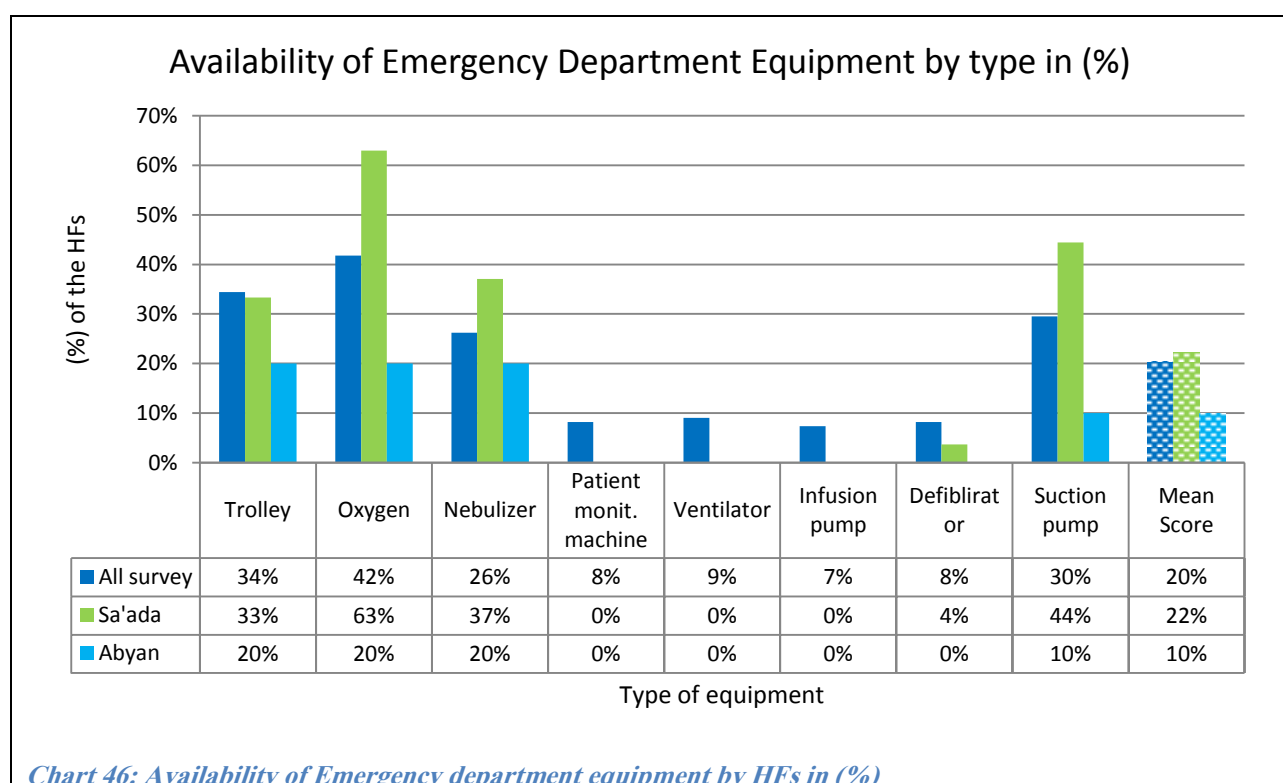
Table 63: Availability of Emergency department equipment by type of health facility

Although 57 of 122 HFs have indicated having the ‘Emergency department equipment’, on average only 20% have all the listed ‘Emergency department equipment’. In Sa’ada governorate 22% and in Abyan 10% of the HFs have ‘Inpatient department equipment’ available. See table (64) for more details.

Type of <i>Emergency department equipment</i>	All survey (122)		Sa’ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Trolley	42	34%	9	33%	4	20%
Oxygen	51	42%	17	63%	4	20%
Nebulizer	32	26%	10	37%	4	20%
Patient monitoring machine	10	8%	0	0%	0	0%
Ventilator	11	9%	0	0%	0	0%
Infusion pump	9	7%	0	0%	0	0%
Defibrillator	10	8%	1	4%	0	0%
Suction pump	36	30%	12	44%	2	10%
Mean Score	25	20%	6	22%	2	10%

Table 64: Availability of different Emergency department equipment in the HFs

As indicated in chart (46), several of the ‘Emergency department equipment’ including Patient monitoring machine, Ventilator, Infusion pump and Defibrillator, is not available in Sa’ada and Abyan governorates.



1.7.11.ICU (Intensive Care Unit) equipment:

The ICU equipment is available in only 14% HF, which all are hospitals. In Abyan governorate only one hospital has indicated having ICU equipment, while in Abyan governorate 4 health facilities or 20% of the 20 HF, have the ICU equipment available.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	ICU equip.	Total HF	ICU equip.	Total HF	ICU equip.
General hosp.	20	11	1	1	1	1
District hosp.	24	6	8	0	6	3
HC w/beds	1	0	0	-	0	-
HC w/o beds	71	0	18	0	13	0
Polyclinic	6	0	0	-	0	-
Total	122	17	27	1	20	4
(%)		14%		4%		20%

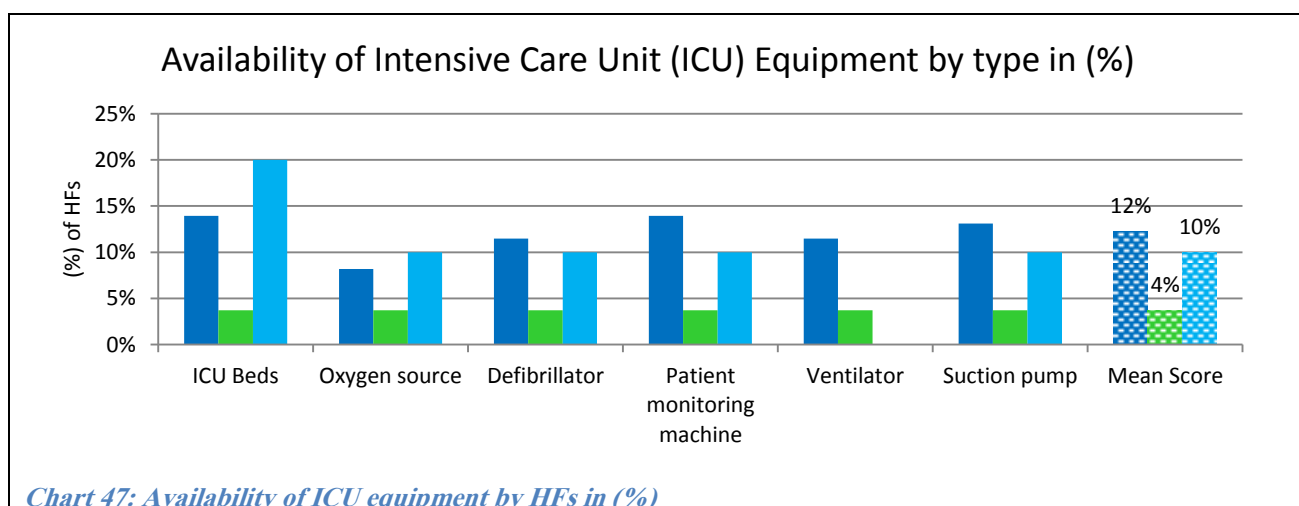
Table 65: Availability of ICU equipment by type of health facility

The ICU equipment as listed in table (66) below, are available in 12% of the surveyed HF. The only hospital with ICU equipment in Sa'ada governorate has all the listed ICU equipment (4% of 27 HF). In Abyan governorate, 10% or 2 of the HF, have all the listed ICU equipment.

Type of ICU equipment	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
ICU Beds	17	14%	1	4%	4	20%
Oxygen source	10	8%	1	4%	2	10%
Defibrillator	14	11%	1	4%	2	10%
Patient monitoring machine	17	14%	1	4%	2	10%
Ventilator	14	11%	1	4%	0	0%
Suction pump	16	13%	1	4%	2	10%
Mean Score	15	12%	1	4%	2	10%

Table 66: Availability of different ICU equipment in the health facilities

Chart (47) represents the status of the ICU equipment in the health facilities.



1.7.12. Other equipment:

Other equipment, which is listed in table (67), is available in 93% of 122 HFs. In Sa'ada governorate 96% and in Abyan governorate 20% of the HFs has other' equipment available.

Type of Health Facility	All Survey		Sa'ada		Abyan	
	Total HF	Other equipment	Total HF	Other equipment	Total HF	Other equipment
General hosp.	20	20	1	1	1	1
District hosp.	24	23	8	8	6	5
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	64	18	17	13	9
Polyclinic	6	5	0	-	0	-
Total	122	113	27	26	20	15
(%)		93%		96%		20%

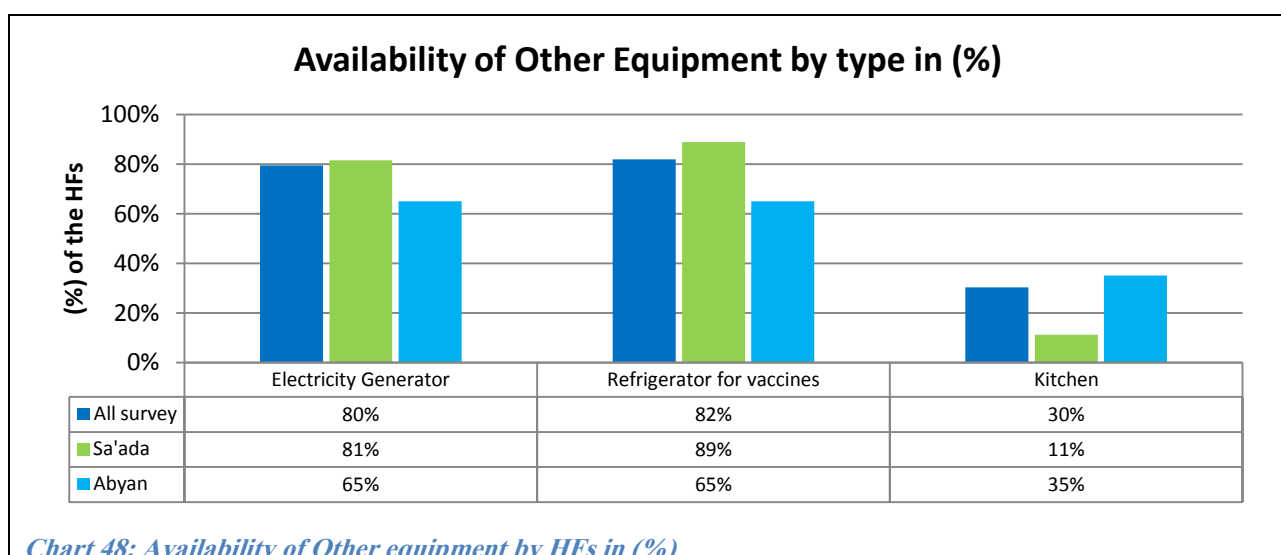
Table 67: Availability of Other equipment by type of health facility

As can be seen in table (68) below, 80% of the HFs has Generators and 82% has Refrigerator for vaccines from listed equipment.

Type of Other equipment	All survey 113/122)		Sa'ada (26/27)		Abyan (15/20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Electricity Generator	97	80%	22	81%	13	65%
Refrigerator for vaccines	100	82%	24	89%	13	65%
Kitchen	37	30%	3	11%	7	35%

Table 68: Availability of different ICU equipment in the health facilities

Chart (48) represents the availability of the three listed equipment in the health facilities.



I.8. Administrative and support services:

These services were grouped into 1- Support services; and 2- Administrative services. Both are described below in details.

I.8.1. Other support services:

Support services are available in 46% of the 122 HFs, mainly in the hospitals, but also in a number of health centers. In Sa'ada governorate only 30% of the HFs provides support services. The governorate of Abyan is relatively better with support services available in 55% of the HFs.

Type of Support services	All Survey		Sa'ada		Abyan	
	Total HF	Other sup. services	Total HF	Other sup. services	Total HF	Other sup. services
General hosp.	20	19	1	1	1	1
District hosp.	24	14	8	3	6	4
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	20	18	4	13	6
Polyclinic	6	2	0	-	0	-
Total	122	56	27	8	20	11
(%)		46%		30%		55%

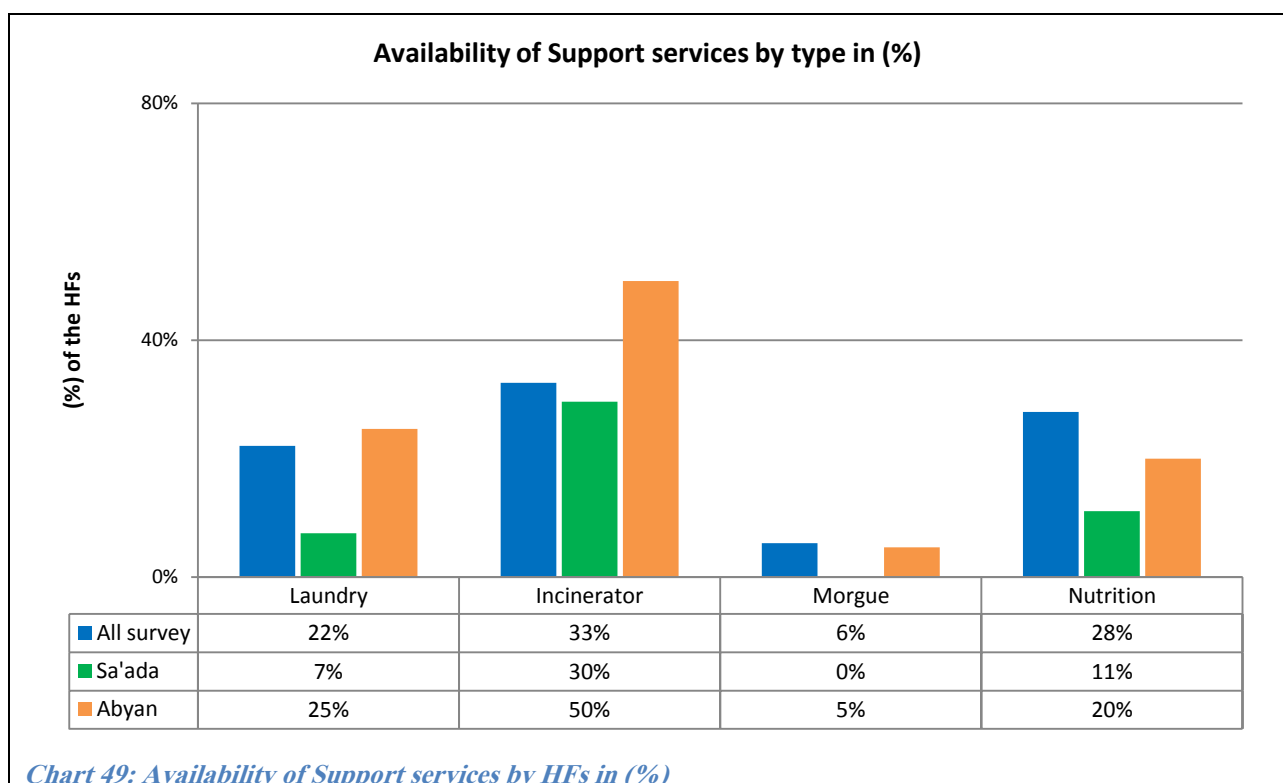
Table 69: Availability of Other support services by type of health facility

Among the support services, Incinerator with 33% is high in the rank, followed by Nutrition (28%) and Laundry (22%). The same trend is valid for the availability of Support services in Sa'ada governorate. There is no Morgue in the health facilities in Sa'ada governorate, while in Abyan; there is only one Morgue in the general/referral hospital. See the details on support services in the below table (70).

Type of Support service	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Laundry	27	22%	2	7%	5	25%
Incinerator	40	33%	8	30%	10	50%
Morgue	7	6%	0	0%	1	5%
Nutrition	34	28%	3	11%	4	20%

Table 70: Availability of Other support services in the health facilities

The following Chart (49) depicts the status of Support services availability in the health facilities in the “All survey” and in the two governorates of Sa’ada and Abyan.



I.8.2.Administrative services:

As elaborated in the below table (71), Admin services are available in 71% or 87 of the 122 HFs. The availability of Administrative services is weak in Sa’ada governorate with only 13 out of the 27 health facilities or 48% having admin services. However, in Abyan 70% of the 20 health facilities have administrative services, which is relatively better.

Type of Admin services	All Survey		Sa'ada		Abyan	
	Total HF	Admin services	Total HF	Admin services	Total HF	Admin services
General hosp.	20	20	1	1	1	1
District hosp.	24	22	8	6	6	6
HC w/beds	1	1	0	-	0	-
HC w/o beds	71	38	18	6	13	7
Polyclinic	6	6	0	-	0	-
Total	122	87	27	13	20	14
(%)		71%		48%		70%

Table 71: Availability of Administrative services by type of health facility

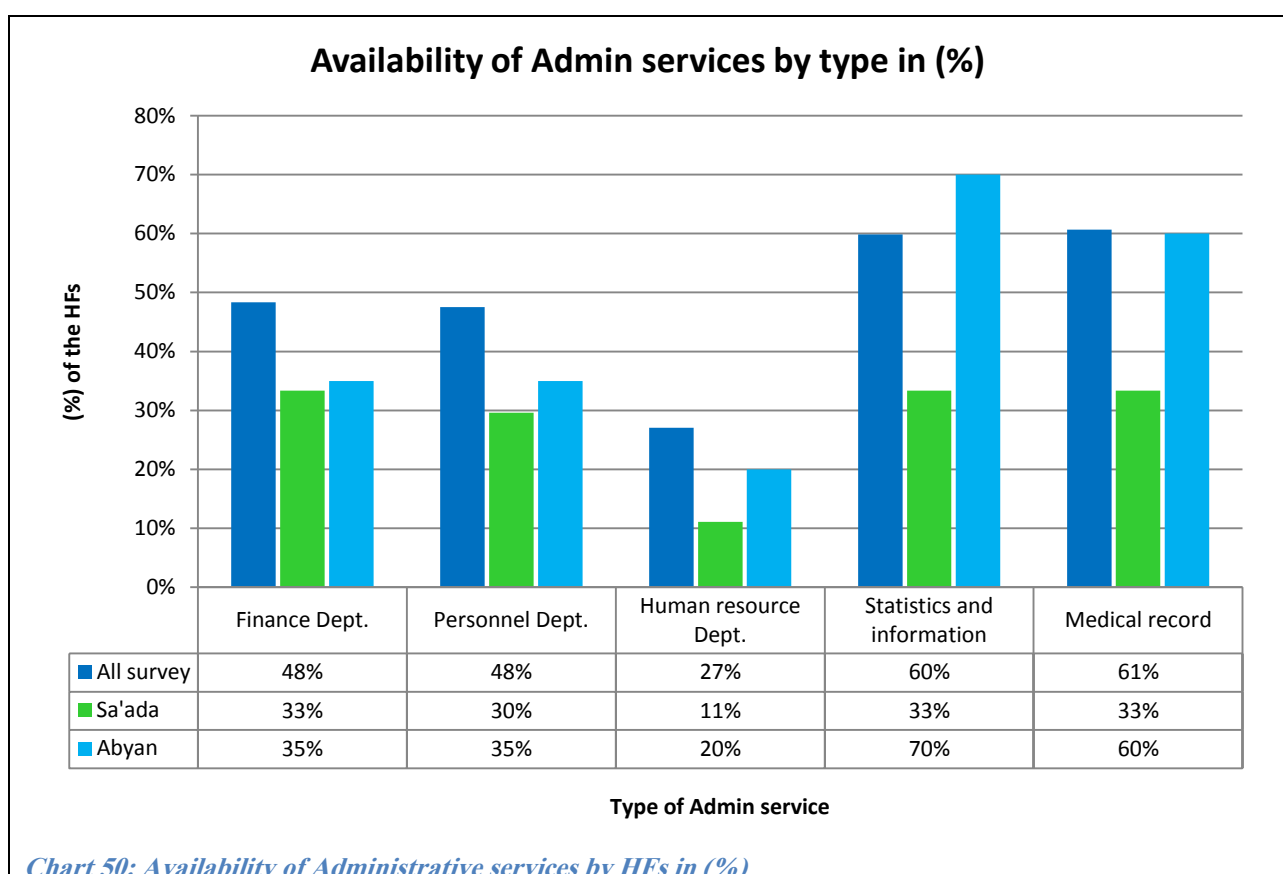
The following table (72) shows that 61% of the HFs has Medical record system available, mostly in the hospitals. Similarly, **Statistics and information** services are available in 60% of

the HFs. In Abyan governorate, 70% of the HFs has Statistics **and information** services available.

Type of <i>Admin service</i>	All survey (87/122)		Sa'ada (13/27)		Abyan (14/20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Finance Dept.	59	48%	9	33%	7	35%
Personnel	58	48%	8	30%	7	35%
Human resource Dept.	33	27%	3	11%	4	20%
Statistics and information	73	60%	9	33%	14	70%
Medical record	74	61%	9	33%	12	60%

Table 72: Availability of Administrative services in the health facilities

The following Chart (50) graphically represents the data in the above table (70) on the availability of the listed Administrative services.



II. DISCUSSION:

The assessment was conducted in 10 governorates of Yemen including; 1- Abyan; 2- Sa'ada; 3- Sana'a (capital city); 4- Al-Bayda; 5- Taiz; 6- Hajjah; 7- Aden; 8- Lahaj; 9- Amran; and 10- Al-Jawf.

In Abyan and Sa'ada governorates the assessment covered all public hospitals and health centers. In the remaining eight (8) governorates, all central/governorate level public hospitals, 10% of the district hospitals and 15% of the health centers were randomly selected for the assessment. Health Units (HU) were not included in the assessment.

The random selection was done from the Master List of HFs, which was provided by the Health Information and Research(HIR) Department of MoPH&P. Some of the randomly selected HFs, which were difficult to reach, were replaced with the ones with easy access and this might have introduced a bias in the assessment process.

Although, generally it is perceived that health units are providing limited services, still their exclusion from the assessment can introduce a bias, as we don't know exactly how much of the health service delivery load is taken by health units. This will be especially the case in Sa'ada and Abyan governorates where due to the assessment of all health facilities, the population coverage of health facilities was analyzed.

Basic amenities

The basic amenities, which were assessed included availability of **running water** in the HFs, **washing basin, toilets, sewage system, electricity, HFs surrounding walls, emergency transport, telephone** and **residence** for staff attached to HF.

The availability of amenities is very important for better functioning of health services. Some of the amenities are even a prerequisite for the full functioning of some health services. For example, in the absence of electricity, radiological services, cold chain for vaccination and some other health services cannot function.

Both quality and quantity of these amenities are important for the effective and efficient functioning of HFs. Their availability alone cannot reflect the true full picture. For example, the availability of running water and toilets in 100% HFs, electricity in 97% HFs and washing basin in 93% HFs, are impressive figures, but indicative only. Further analysis of the quality and quantity of these amenities will reveal the shortfalls. Therefore, these figures should be used with caution. Those who are interested in more details of any specific section may refer to the HIR Department of MoPH&P for looking into the full database of the SARA.

Health staff

All the health facilities (100%) indicated the presence of health staff. Regardless of the staff categories and quality, generally, 100% availability is a good indicator. Although, the overall ratio of 100 to 82 between the male and female core health workers is acceptable in the context of Yemen, however the disparity is huge in the rural areas, e.g. 100 to 34 in Sa'ada governorate. The disparity between male and female administrative and support staff (100 to 29 male to female ratio) can negatively affect female accessibility to health services.

The doctor to nurse ratio of 100 to 98 from the SARA indicates a big difference with the WHO standard ratio of 1 to 3. However, the ratio of 1 to 3, according to WHO, is more applicable to the situations of hospitals and HFs with inpatient services.

Also, looking at the number of health staff in proportion to population in Sa'ada and Abyan governorates, which is (4/10,000) and (15/10,000) respectively, there seem to be a big disparity in the distribution of health staff among the governorates.

Also, for Yemen to reach the WHO standard of 23 health workers per 10,000 populations, need more effort and high target for producing health workers.

Health services

The availability of a health service alone is indicative. For knowledge of the full extent of the service, all the relevant components of the same service need to be taken into consideration, e.g. Reproductive Health (RH) services are available in 107 or 88% of the 122 HFs, which is relatively a good indicator. The RH components include; **ANC, PNC, vaccination for women, vaccination for pregnant, iron supplementation, folic acid supplementation and monitoring for hypertension**. The mean score for the availability of all RH components is 76% of the 122 surveyed health facilities.

Readiness

The availability of health services is, generally, a simple indicator to measure and report. However, assessing their readiness and capacity to deliver is rather a complex issue and not easily measured. The readiness of health services is a multi-dimensional concept and is measured by composite indicators.

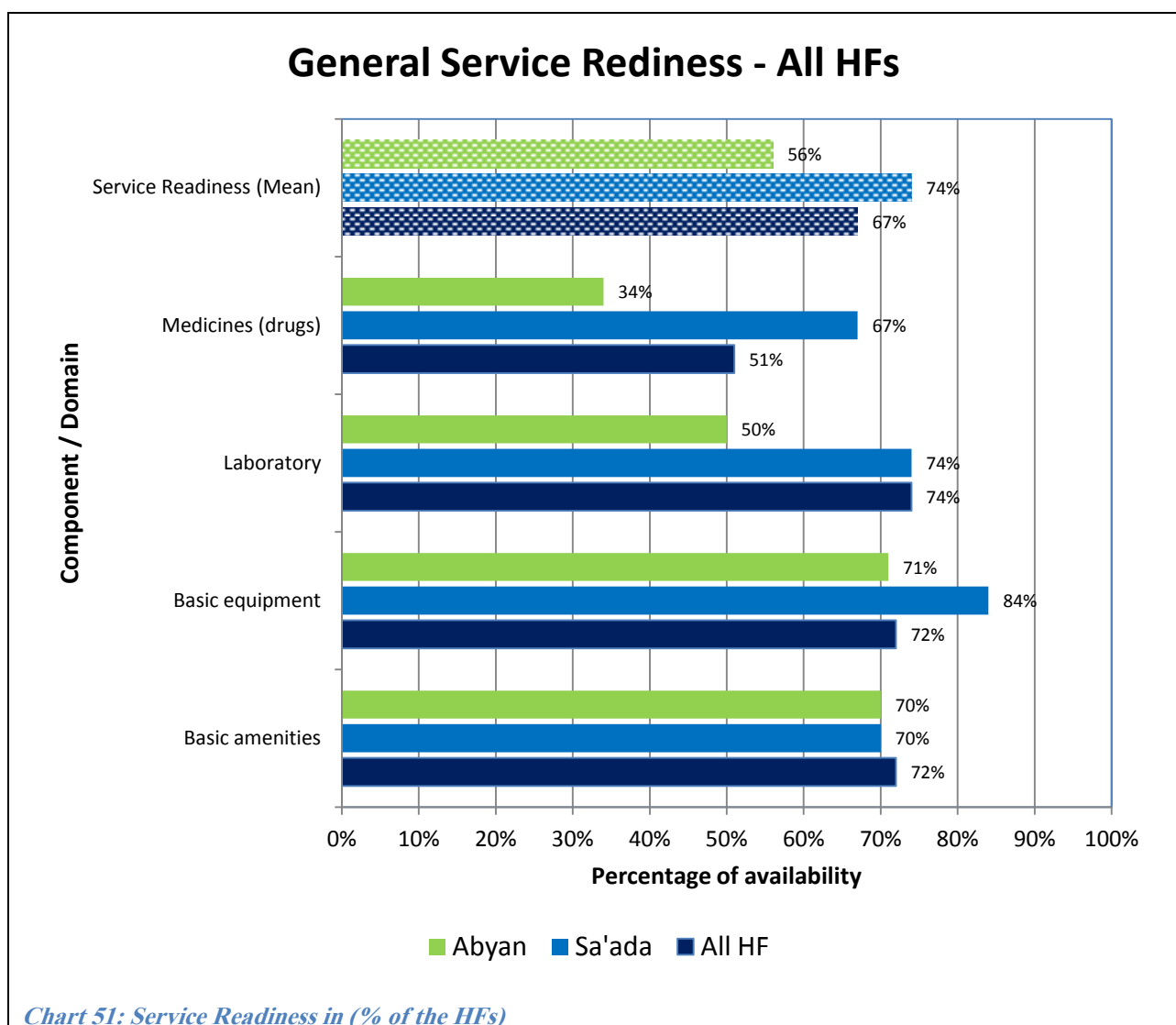
In this report, in order to measure the service readiness, the availability of the four main components including; Basic amenities; Basic equipment for medical examination; Laboratory; and Medicine (drugs), were considered. The combined mean score of these four components show the service readiness indicator.

The following table (73) shows the mean score for the availability of the four main components and the Service Readiness indicator in the last row in all surveyed HFs as well as in Sa'ada and Abyan governorates.

Main component/domain	All survey (122)		Sa'ada (27)		Abyan (20)	
	# of HF	(%)	# of HF	(%)	# of HF	(%)
Basic amenities	88	72%	19	70%	14	70%
Basic equipment for med. examination	88	72%	23	84%	14	71%
Laboratory	90	74%	20	74%	10	50%
Medicines (drugs)	62	51%	18	67%	7	34%
Service Readiness (mean score)	82	67%	20	74%	11	56%

Table 73: Service Readiness indicators

As seen in Chart (51) below, the Service Readiness Index score for all surveyed HFs is 67%. While the Service Readiness Index score for Sa'ada is 74%, which is relatively high, in Abyan governorate the Service Readiness Index only 56%.



IV. CONCLUSION

The SARA generated a bank of data on the availability of key human resources and infrastructure required for the health services delivery in the 10 selected governorates of Yemen. The collection of data on the health system capacity including information on the availability of basic equipment, basic amenities, essential medicines, and diagnostic services as well as on the readiness of health facilities to provide basic health-care interventions was set as the main goal of this study, which was mostly achieved. The data generated can serve the Ministry of Health and other health partners in supporting their health services delivery efforts as well as in making informed decisions and planning and strategy development. These data can also serve the purpose of being baseline for successive similar health assessments.

On the appropriate and equitable distribution of health services and resources proportional to population among different governorates, since the data collected was only from a sample of

health facilities on eight of the governorates, therefore, the results could not be compared for coverage indicators. However, the average values on the availability of health resources and services from Sa'ada and Abyan governorates and comparing them with averages from all survey's averages indicate that there is no uniformity in the availability and distribution of health resources or services to set a trend either upward or downward. Therefore, for decision making on any health component, one should look at the status of that specific component individually and see its availability and quality in terms of presence of the subcomponents.

Except for a few components, generally, the status of health services and resources availability in Sa'ada and Abyan governorates are weaker in comparison to the overall averages, which could be attributed to protracted insecurity. Also, comparing the results of SARA for Sa'ada with those from Abyan governorate, the status is Abyan is relatively better.

V. RECOMMENDATIONS AND PRIORITIES

The following are some of the general recommendation:

- The findings of this report need to be shared with the concerned authorities of MoPH&P for review and approval, before publishing the final copy and distribution;
- The report should be shared with all concerned health partners for information and/or use in their programme planning.
- This report provides detailed information on Sa'ada and Abyan governorates due to the focus of humanitarian response. For other governorates, the data were not analyzed on individual governorate base, but rather for all 10 governorates. However, one can extract information on any specific area from the main database of SARA. Some of the Cluster Partners who may wish to have detailed information on other governorates, they can contact WHO or the HIR department of MoPH&P for the purpose.
- Building upon the SARA, further in-depth assessment should be carried out on regular intervals.
- Recently WHO in collaboration with other partners developed/adapted assessment tools at Health Facility, District and Governorate levels. Health partners to make regular use of those tools to fill the gap in the current data needs.
- In the long term, regular monitoring and assessment should be part of the health development policy and institutionalized.

ANNEX