

HeRAMS Annual Report

January - December 2017

Public Hospitals in the Syrian Arab Republic



2017

HeRAMS Annual Public Hospitals Report

World Health Organization | Health Resources and Services Availability Mapping System

HeRAMS-Syria



This is to acknowledge that the data provided in this report is a product of joint collaboration between the World Health Organization, Ministry of Health, and Ministry of Higher Education in the Syrian Arab Republic. The report covers the months of January to December 2017.

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Abbreviations

CEmOC	Comprehensive Emergency Obstetric Care
CS	Caesarean Sections
DoH	Directorate of Health
ESKD	End Stage Kidney Disease
HeRAMS	Health Resources & Services Availability Mapping System
HIS	Health Information System
HRP	Humanitarian Response Plan
ICT	Information and Communication Technology
ICU/CCU	Intensive Care Unit / Critical Care Unit
IDPs	Internally Displaced People
MoH	Ministry of Health
MoHE	Ministry of Higher Education
NCDs	Non-communicable Diseases
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
WHO	World Health Organization

Introduction

HeRAMS is a global health information management tool (for mapping, collection, collation and analysis of information on health resources and services) that aims to provide timely, relevant and reliable information for decision-making. It is used to guide interventions at the primary and secondary care levels, measure gaps and improve resource planning, ensure that actions are evidence-based, and enhance the coordination and accountability of WHO and other health sector partners.

HeRAMS in Syria is a World Health Organization (WHO) project that aims at strengthening the collection and analysis of information on the availability of health resources and services in Syria at health facility level. A team of national health staff from all governorates was formulated for HeRAMS reporting, and different data collection mechanisms were introduced to address the shortage of timely and relevant information. The main HeRAMS tool for collecting data is a questionnaire that assesses the functionality status, accessibility, health infrastructure, human resources, availability of health services, equipment and medicines at primary and secondary care level.

Executive summary

Regular assessment to monitor the impact of the crisis on the health facilities functionality, accessibility, condition status, availability of resources and services, has been conducted using **HeRAMS** (Health Resources & services Availability Mapping System) tool. The report provides descriptive and trend analysis for the situation of public hospitals in all 14 governorates of Syria [including Ministry of Health (MoH) and Ministry of Higher Education (MoHE) hospitals (a total of 111 hospitals)].

Despite the challenging security situation and protracted crisis, in addition to the wide disruption of the Health System, implementation of HeRAMS has been successfully institutionalized and strengthened in public health facilities during 2014 and 2017.

Completeness of hospitals' reporting remained 100%, where all 98 (MoH) hospitals and 13 (MoHE) hospitals reported to HeRAMS by end of December 2017.

Functionality status of the public hospitals

By the end of December 2017, and out of the 111 assessed public hospitals [MoH & MoHE], 49% (54) were reported fully functioning, 25% (28) hospitals were reported partially functioning (i.e., shortage of staff, equipment, medicines or damage of the building in some cases), while 26% (29) were reported non-functioning.

Accessibility status of the public hospitals

By the end of December 2017, 66% (73) hospitals were reported accessible, 11% (12) hard-to-access, and 23% (26) were inaccessible.

Infrastructure of the public hospitals

By the end of December 2017, 45% (50) hospitals were reported damaged [15% fully damaged and 30% partially damaged], while 55% (61) of public hospitals were reported intact.

Analysis on **inpatient capacity** in functional hospitals has shown shortage of beds at varying degrees, across all governorates.

Assessing the availability of **water sources** at functional public hospitals indicated that 38% (31) are using main pipelines, 11% (9) are mainly using wells, 49% (40) are using both (main pipeline and well), while 2% (2) are using other sources of water.

Electricity power is widely disrupted nationwide and majority of public hospitals are dependent on generators' power. According to HeRAMS assessment 35% (29) of functional public hospitals across Syria are in need for electrical generators, mainly reported from 12 governorates: Quneitra, Aleppo, Al-Hasakeh, Ar-Raqqa, Rural Damascus, Hama, Dar'a, As-Sweida, Damascus, Deir-ez-Zor, Homs, Tartous

Human resources for health

The general practitioner and emergency physician were the lowest proportion of health staff in public hospitals with (0.4%), followed by dentists (0.8%), pharmacists (0.9%), midwives (4.8%), laboratory (5.8%), specialists (14.2%), resident doctors (18.8%), and nurses (54%).

Trend analysis of available number of medical doctors and nurses during 2017 has shown slight increase. In functional public hospitals the number of **medical doctors** [general practitioner, specialists, emergency doctors, resident doctors, dentists] has increased by 8% in December 2017 compared to January 2017, similarly the number of **nurses** and number of **midwives** has increased by 3% and 6%, respectively .

Analysis of proportions of **medical doctors** [general practitioner, specialists, emergency doctors, resident doctors, dentists] working at MoHE hospitals versus MoH hospitals has shown that 29% of medical doctors work in MoHE, while 71% are in MoH hospitals.

Analysis of availability of medical doctors by gender has shown that lowest proportions of female to male medical doctors are in Deir-ez-Zor, Ar-Raqqa, and Al-Hasakeh governorates.

Availability and utilization of health services

As a result of disrupted healthcare delivery and non-functionality of the hospitals, limited provision of health services was observed across governorates, even within functional hospitals. Detailed analysis on services' availability and utilization throughout 2017 by category (i.e., General Clinical Services, Surgical and Trauma care, Child Health, Nutrition, Maternal & Newborn Health, Communicable Diseases, Non-communicable Diseases, and Mental Health) is provided at governorate level.

Availability of medical equipment

Analysis of availability of essential and specialized equipment was measured across all functional public hospitals [MoH & MoHE], in terms of functional equipment out of the total available equipment in the hospital. The produced analysis provides good indication of the current readiness of the hospitals to provide the health services, and also to guide focused planning for procurement and distribution of equipment and machines, to fill-in identified gaps that were observe even within the functional public hospitals.

Availability of medicines and medical supplies

Availability of medicines and medical supplies at hospitals' level was evaluated based on a standard list of identified priority medicines and medical supplies for duration of one month.

The key identified gaps of medicines and consumables at functional hospitals include the:

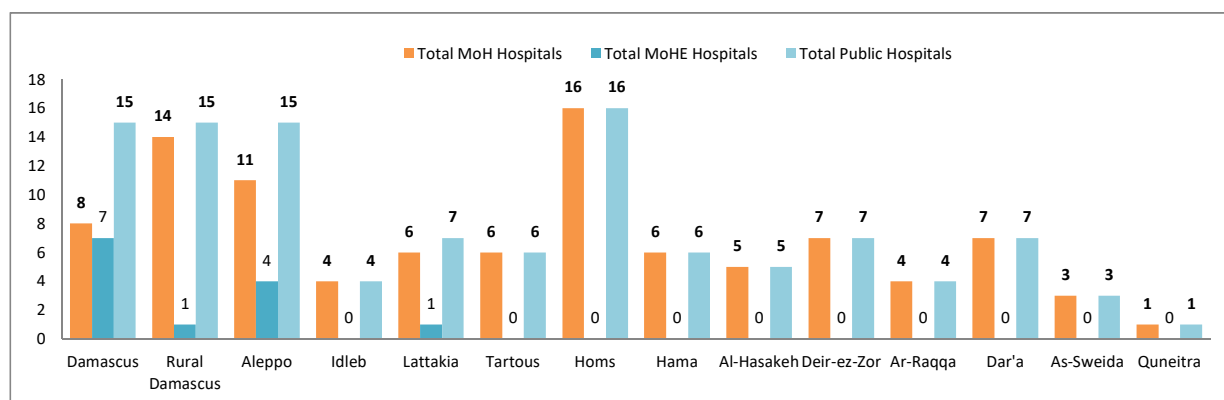
Tetanus shot (84%), Cancer related medicines (81%), Psychotropic medicines (76%), Hepatitis vaccine (73%) etc.

1. Completeness of hospitals reporting

The completeness of reporting from public hospitals across Syria remained at 100%, where all the 98 Ministry of Health (MoH) Hospitals and the 13 Ministry of Higher Education (MoHE) hospitals continued to report to HeRAMS in December 2017.

The distribution of public hospitals by affiliation [MoH & MoHE], per governorate is shown in Figure 1.

Figure 1: Distribution of public hospitals by affiliation, per governorate



The following sections provide descriptive and trend analysis on the functionality status, accessibility, and infrastructure of the public hospitals, availability of resources & services, and available equipment and medicines by the end of December 2017.

The provided analysis supports informed decision making, better planning and allocation of resources, and contributes to significant and focused humanitarian response by WHO and health sector partners.

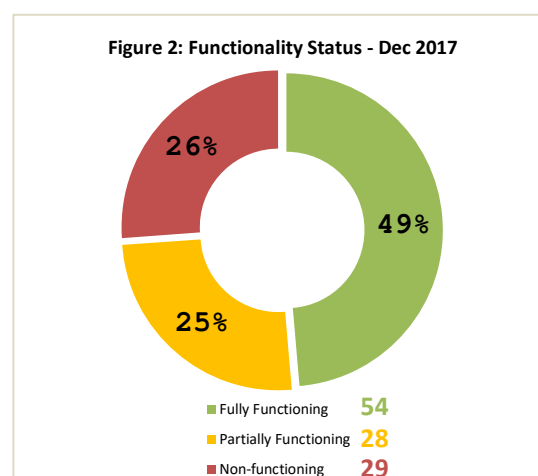
2. Functionality and accessibility of the public hospitals

The following sub-sections provide analysis on the functionality and accessibility status of the public hospitals at governorate level.

2.1 Functionality status of the public hospitals

Functionality of the public hospitals was defined and assessed at three levels;

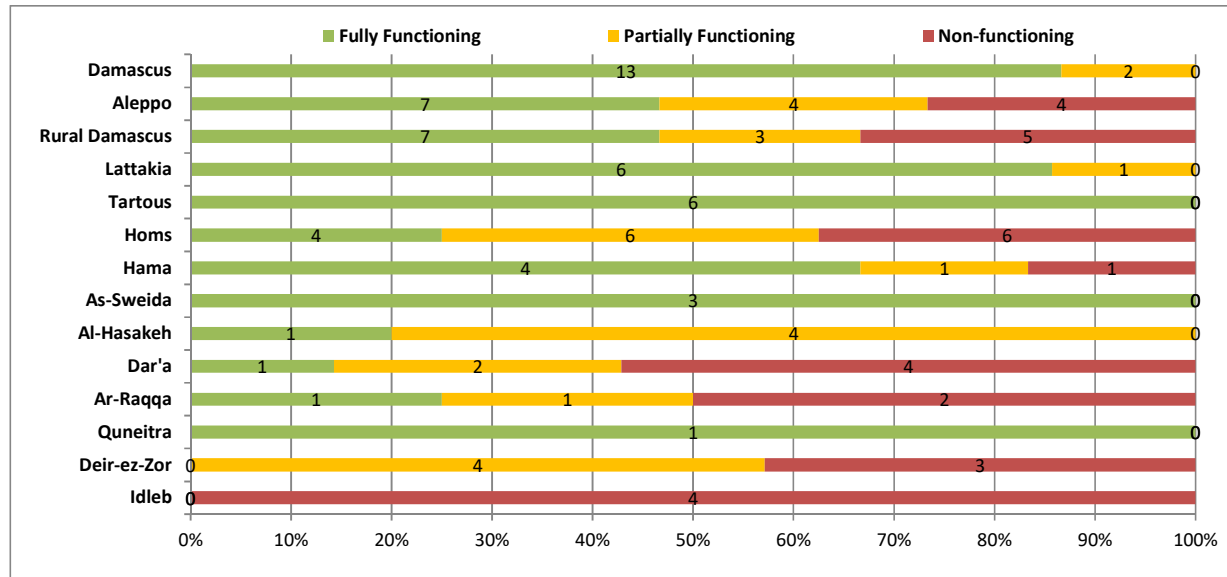
- ◆ **Fully Functioning:** a hospital is open, accessible, and provides healthcare services with full capacity (i.e., staffing, equipment, and infrastructure).
- ◆ **Partially functioning:** a hospital is open and provides healthcare services, but with partial capacity (i.e., either shortage of staffing, equipment, or damage in infrastructure).
- ◆ **Not functioning:** a hospital is out of service, because it is either fully damaged, inaccessible, no available staff, or no equipment.



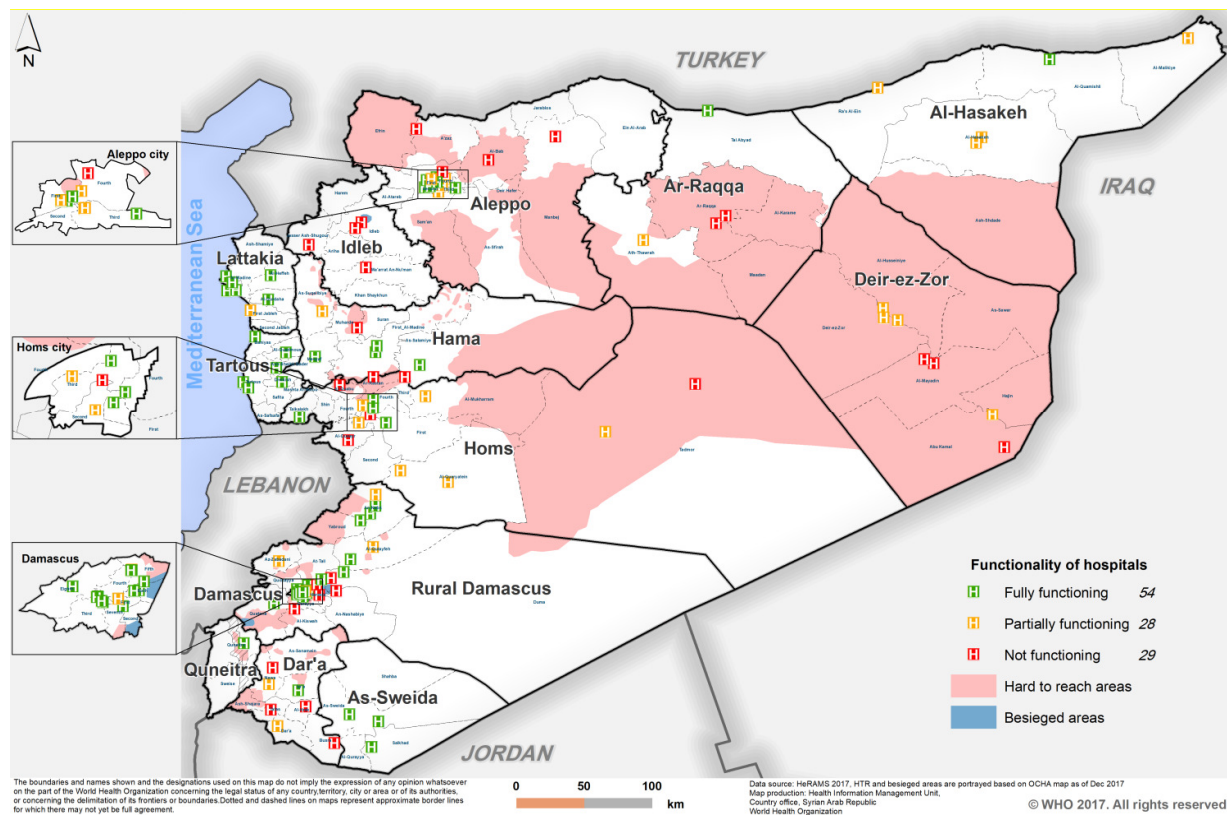
By the end of December 2017, and out of the **111** assessed public hospitals [MoH & MoHE], 49% (54) were reported fully functioning, 25% (28) hospitals were reported partially functioning, while 26% (29) were reported non-functioning [Figure 2].

The hospitals reported partially functioning or non-functioning are in 11 out of a total 14 governorates (79% of governorates). Detailed analysis on the functionality status of the MoH and MoHE hospitals at governorate level is presented in [Figure 3] and [Map 1]. All public hospitals in Idleb were reported out of service.

Figure 3: Number and percentage of the public hospitals by functionality status, per governorate, December 2017

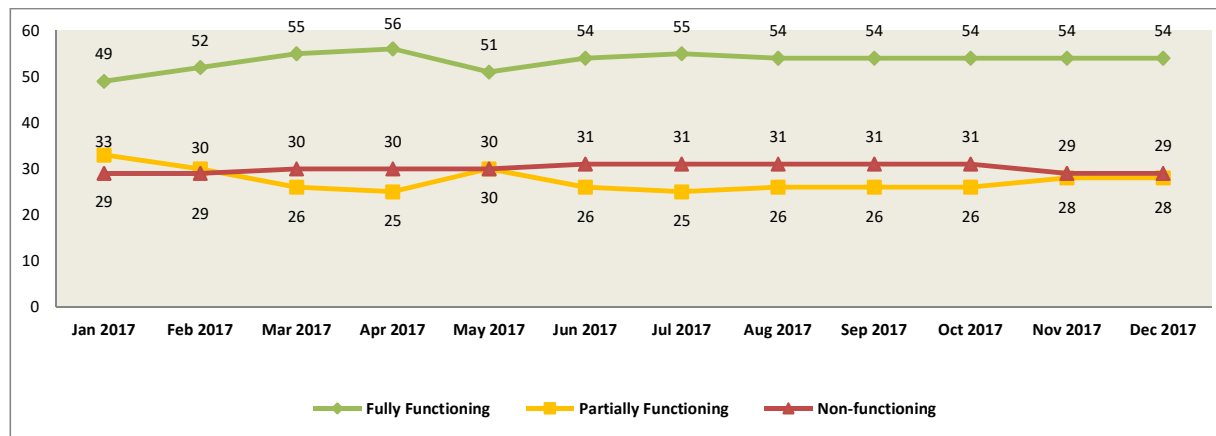


Map 1: Distribution and functionality status of public hospitals, December 2017

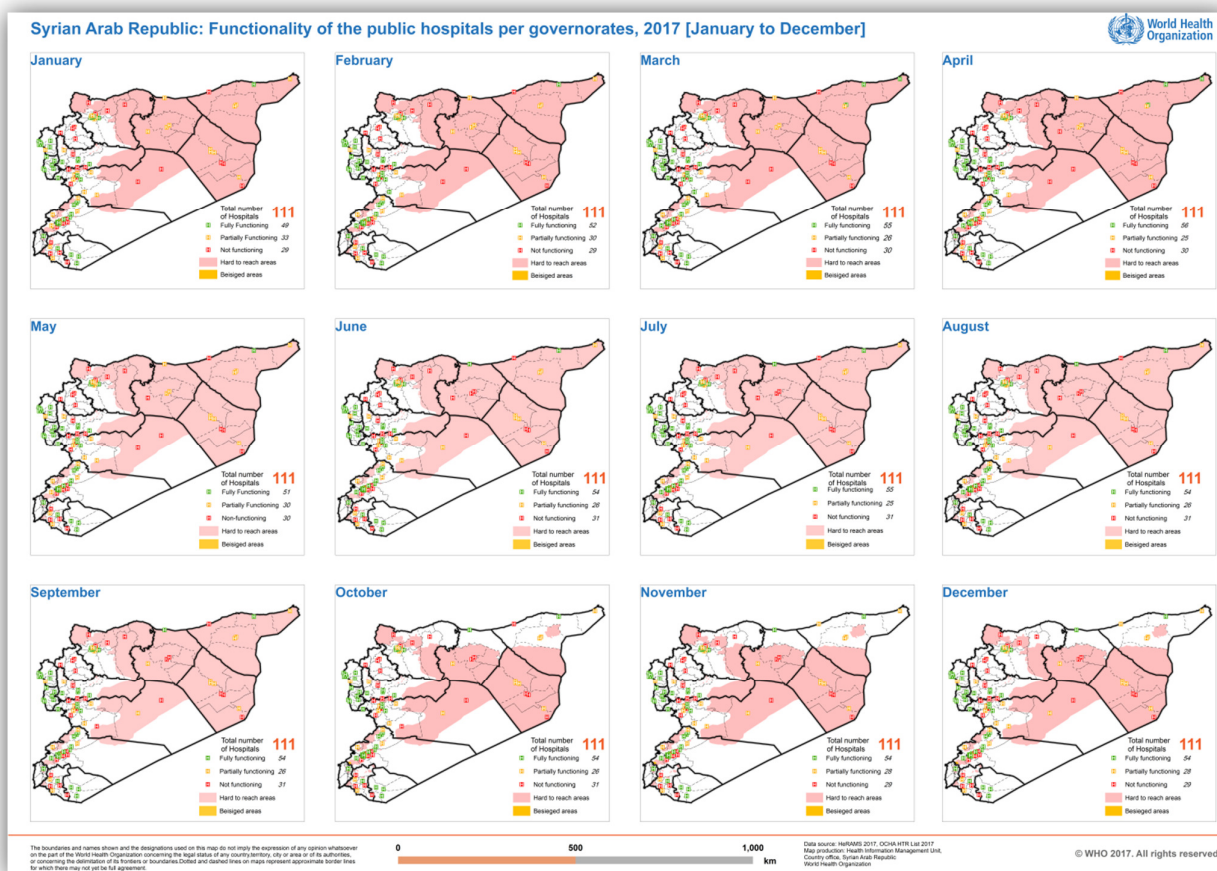


Slight variation of functionality status of public hospitals has been observed during 2017 [Figure 4].

Figure 4: Trend analysis of functionality status of public hospitals, January to December 2017



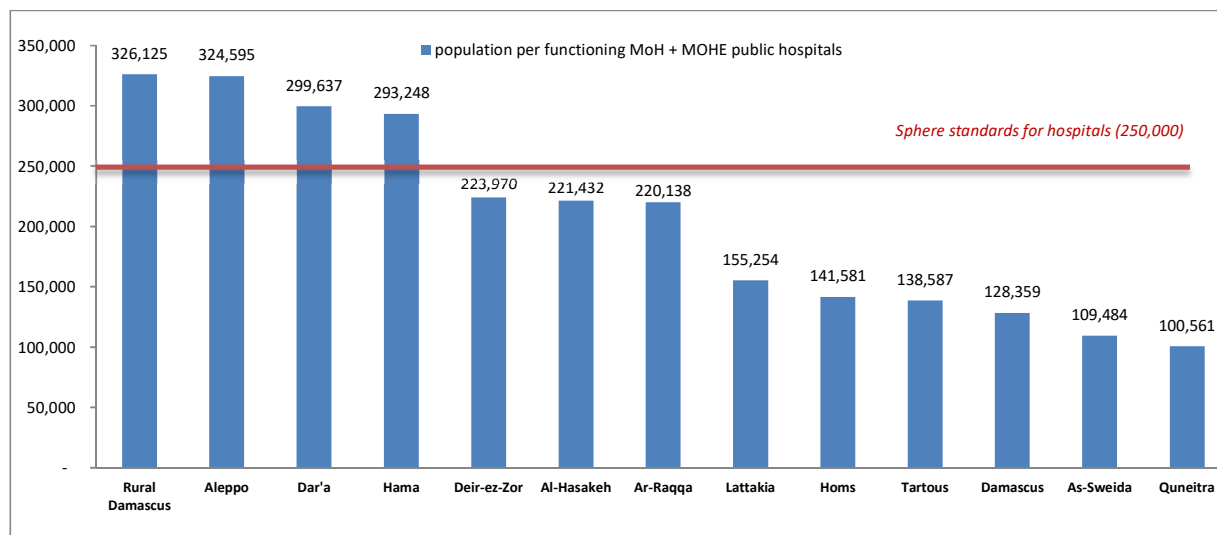
Map 2: Trend analysis of functionality status of public hospitals, January to December 2017



2.2 Density of the public hospitals

Hospitals density reflects the total number of hospitals relative to population size (based on OCHA HRP 2017), which helps measure physical access to outpatient health care services. Comparing with Sphere standards for hospitals (250,000), four governorates (Rural Damascus, Aleppo, Dar’a, and Hama) are over the standard density reference; due to high number of population against the available functioning public hospitals [Figure 5].

Figure 5: Density of the public hospitals per governorate, December 2017

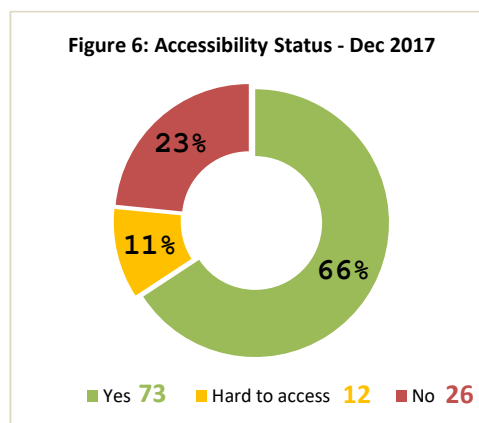


2.3 Accessibility to public hospitals

Accessibility to public hospitals is defined at three levels:

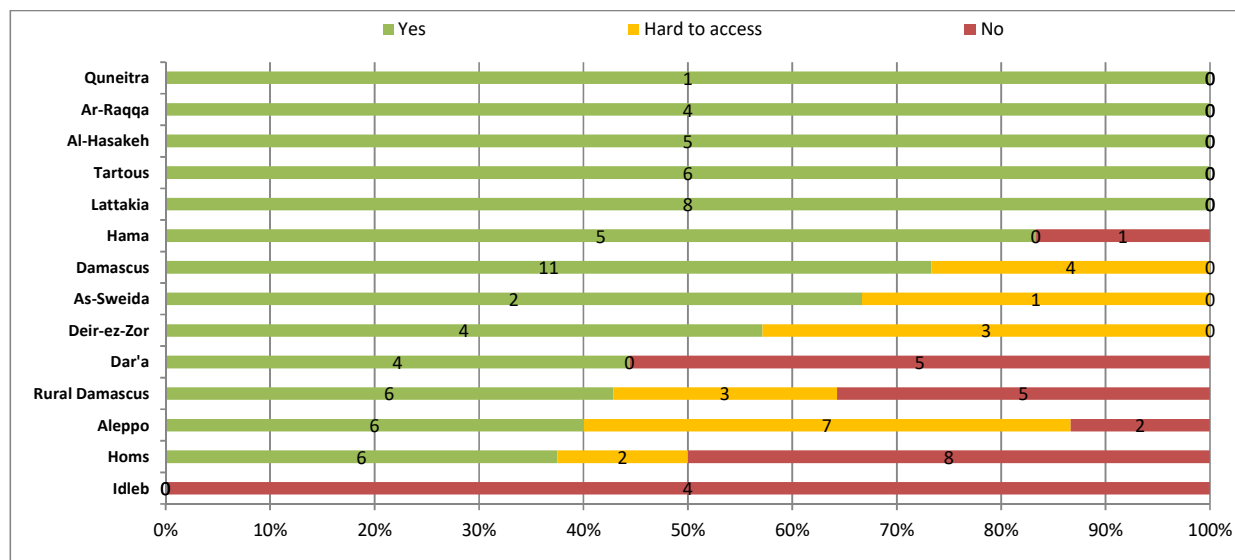
- ◆ **Accessible:** a hospital is easily accessible for patients and health staff.
- ◆ **Hard-to-reach:** a hospital is hardly reached, due to security situation or long distance.
- ◆ **Inaccessible:** a hospital is not accessible because of the security situation, or a hospital is accessible only to a small fraction of the population, or military people (inaccessible to civilians).

Figure 6: Accessibility Status - Dec 2017

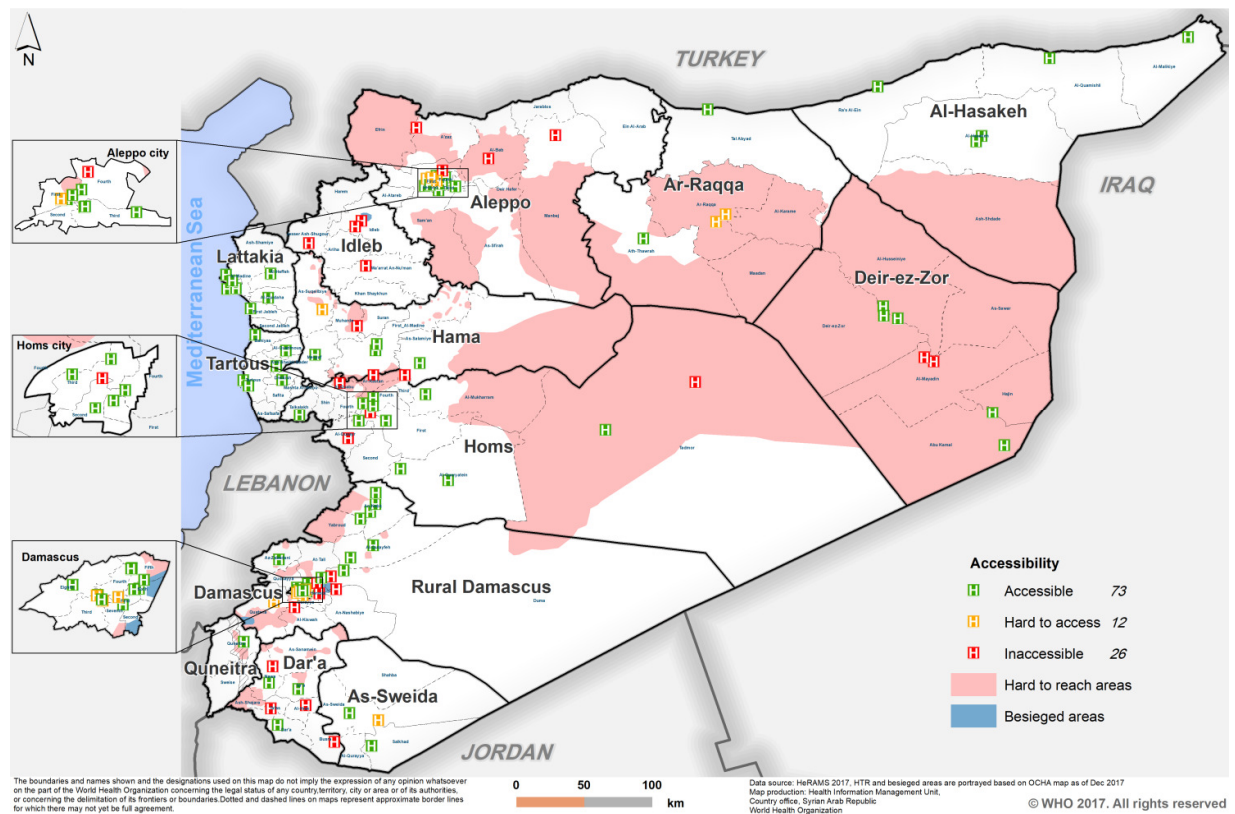


By the end of December 2017, 66% (73) hospitals were reported accessible, 11% (12) hard-to-access, and 23% (26) were inaccessible [Figure 6]. Distribution of public hospitals by accessibility status is presented in Map 3.

Figure 7: Accessibility status of the public hospitals per governorate, December 2017

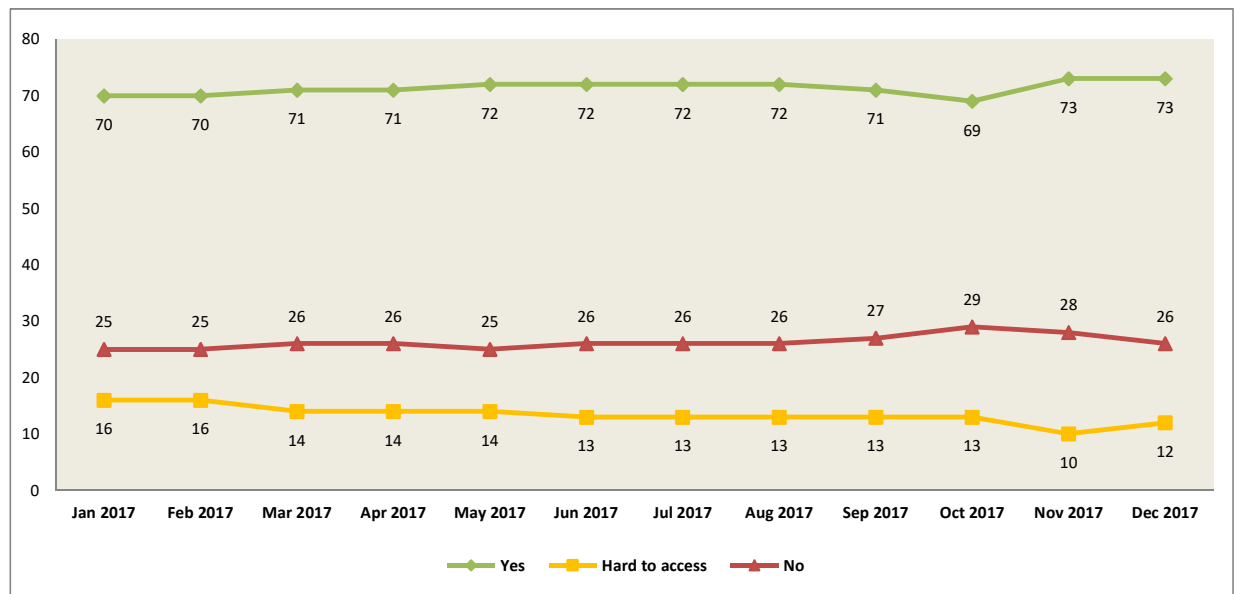


Map 3: Accessibility to public hospitals [MoH & MoHE], December 2017



Trend analysis on accessibility to public hospitals [MoH & MoHE] from January to December 2017, is presented in Figure 8.

Figure 8: Trend analysis of accessibility to public hospitals, January to December 2017



3. Infrastructure patterns of the public hospitals

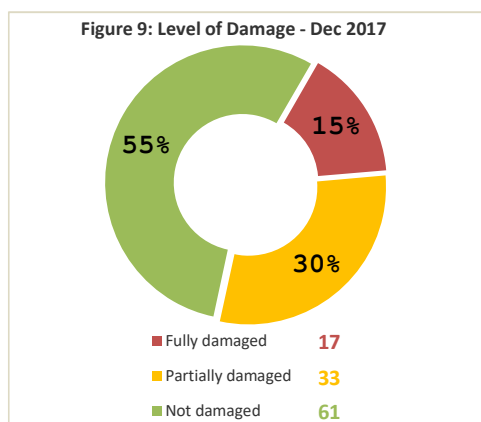
The following sub-sections provide analysis on the infrastructure patterns of the public hospitals, in terms of building condition, inpatient capacity, water sources, availability of ambulances, and electricity generators, all summarized at governorate level.

3.1 Level of damage of the hospitals' buildings

The level of damage to hospital buildings was measured at three levels:

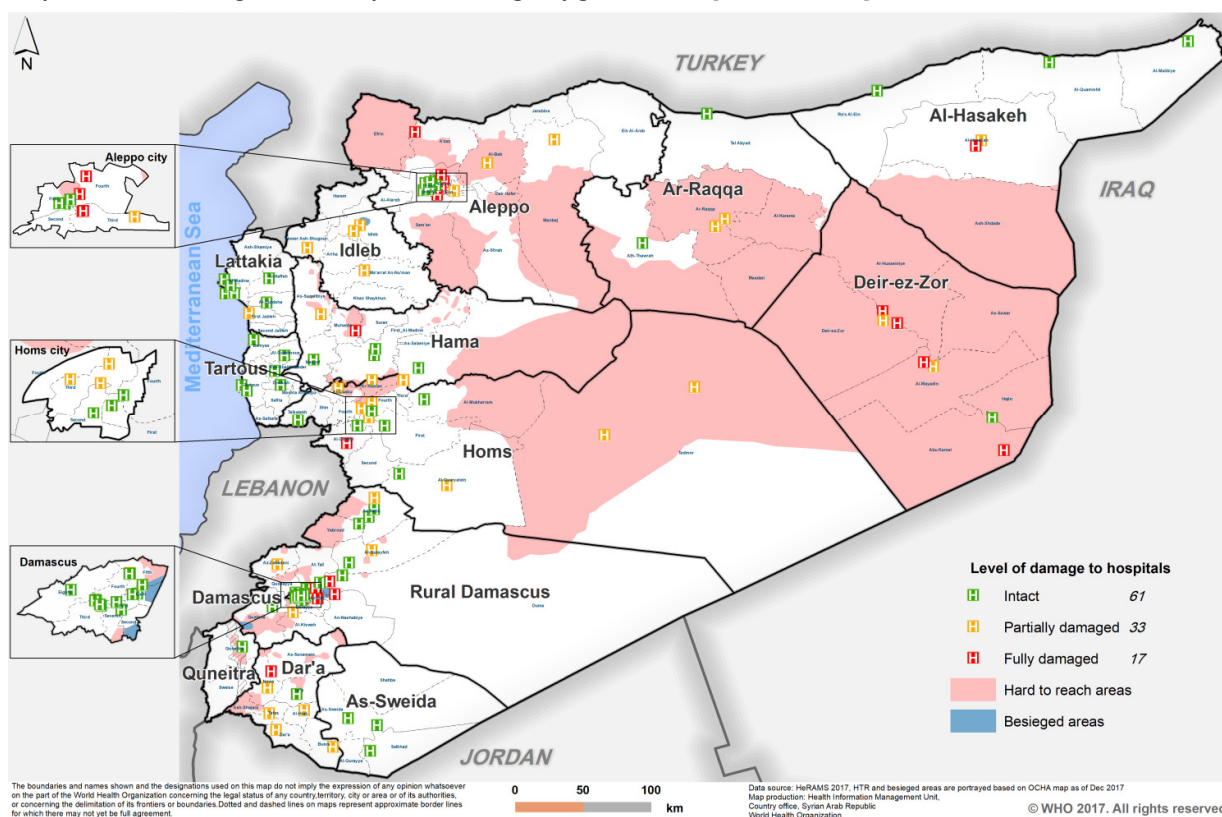
- ◆ Fully damaged: either, all the building is destroyed, about 75% or more of the building is destroyed, or damage of the essential services' buildings.
- ◆ Partially damaged: where part of the building is damaged.
- ◆ Intact: where there is no damage in the building.

Analysis of the level of damage provides good indication on the potential costs for reconstruction.



By the end of December 2017, 45% (50) hospitals were reported damaged [15% fully damaged and 30% partially damaged], while 55% (61) of public hospitals were reported intact [Figure 9]. Distribution of public hospitals by level of damage is presented in Map 4, while more details are provided at governorate's level in Figure 10.

Map 4: Level of Damage of the Hospitals' buildings, by governorate [MoH & MoHE], December 2017



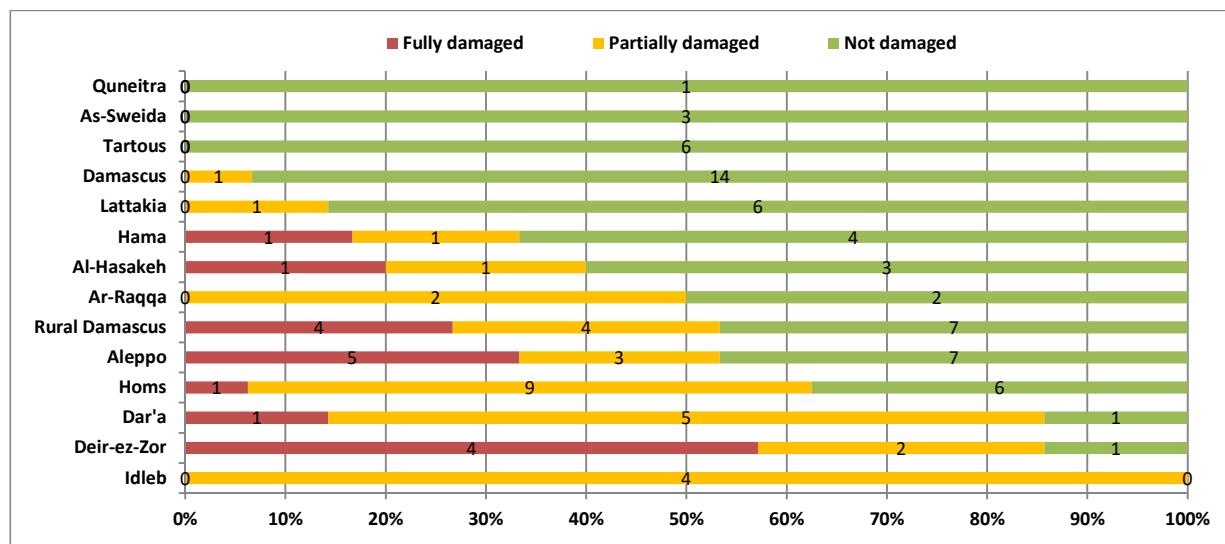
It is essential to cross-analyze the infrastructural damage of the public hospitals in relation to the functionality status (i.e. provision of services). Some hospitals have resiliently continued to provide services regardless of the level of damage of the building and by optimizing intact parts of the building or in a few cases operating from other neighboring facilities. The national figures translate as follows:

Out of the 33 partially damaged hospitals, 13 hospitals were reported partially functioning and 18 out of service (non-functioning), while 2 hospitals (Ophthalmology hospital in Homs, and Ebn Khaldoun Psychiatric hospital in Aleppo,) were reported to be fully functioning providing all services with full staffing capacity.

Out of the 17 fully damaged hospitals, 11 were reported non-functioning while 6 hospitals have opted for innovative ways to continue providing health services to populations in need through partially functioning from other nearby temporary locations and provide health services with limited staff capacity and resources. More details of the 6 hospitals are available in the HeRAMS database.

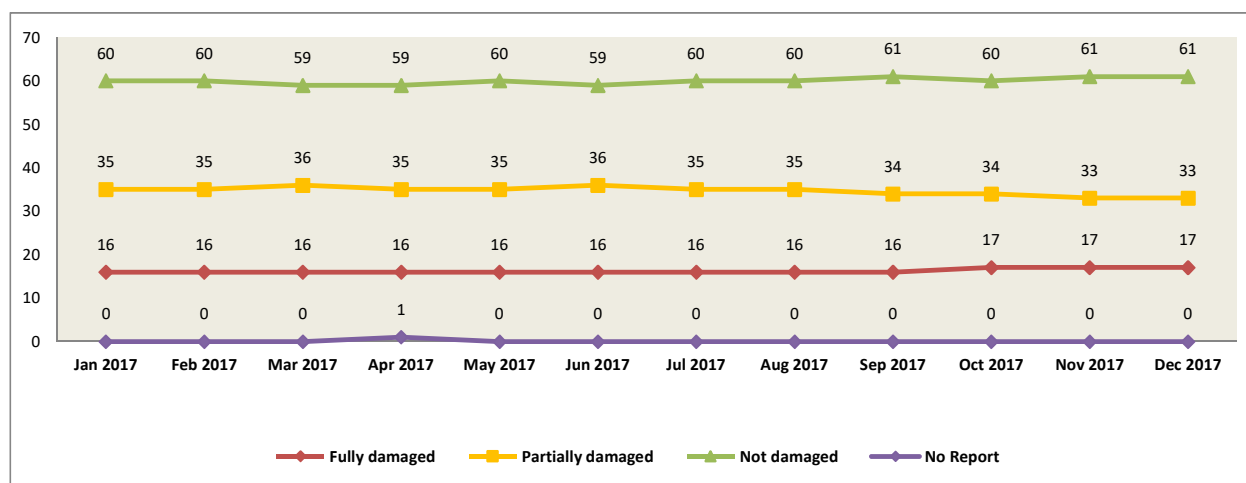
Then again, hospitals with intact buildings (61 hospitals) does not directly reflect full functionality, only 52 of the 61 intact hospitals are fully functioning, while 9 are partially functioning and one hospital is not functioning all together, due to limited access of patients and health staff to the facilities resulting from the dire security situation as well as critical shortage of supplies.

Figure 10: Number and percentage of the public hospitals by level of damage, per governorate, December 2017



Trend analysis on condition of the public hospitals (level of damage of the building) from January to December 2017 is presented in Figure 11.

Figure 11: Trend analysis of public hospitals' level of damage, January to December 2017



The tables below list the hospitals, which reported fully damaged (buildings), in addition to the list of hospitals that are operating from different location (s) given that the original building is fully damaged or partially damaged.

Table 1: The list of hospitals with reported fully damaged buildings:

#	Hospital Name	Province	District	Affiliation
1	Rural Damascus specialized hospital – Duma	Rural Damascus	Duma	MoH
2	Harasta general hospital	Rural Damascus	Harasta	MoH
3	Al-Mleha hospital	Rural Damascus	Harasta	MoH
4	An-Nashabeyeh hospital	Rural Damascus	An-Nashabeyeh	MoH
5	Zahi Azraq general hospital	Aleppo	The fourth	MoH
6	E'zaz national hospital	Aleppo	E'zaz	MoH
7	Ophthalmology hospital	Aleppo	Third	MoH
8	Children hospital	Aleppo	Third	MoH
9	Al-Qusayr general hospital	Homs	Al-Qusayr	MoH
10	Helfaya hospital	Hama	Muhardeh	MoH
11	Children hospital	Al-Hasakeh	Al-Hasakeh	MoH
12	Maternity and Paediatric specialized hospital	Deir-ez-Zor	Deir-ez-Zor	MoH
13	Al-Bassel-Abu Kamal hospital	Deir-ez-Zor	Albu Kamal	MoH
14	Alfurat general hospital	Deir-ez-Zor	Deir-ez-Zor	MoH
15	Modern Medicine hospital	Deir-ez-Zor	Al-Mayadin	MoH
16	Jassem general hospital	Dar'a	Nawa	MoH
17	Al-Kindi university hospital	Aleppo	The fourth	MoHE

Table 2: Special cases of hospitals which reported fully damaged (buildings), and operating partially from other locations:

#	Hospital name	Province	District	Type	Condition	Affiliation	New location
1	Zahi Azraq general hospital	Aleppo	The fourth	General	Fully damaged	MoH	Ar-Razi hospital
2	Ophthalmology hospital	Aleppo	Third	Specialized	Fully damaged	MoH	Ar-Razi hospital + Al-Bassel Heart Institute
3	Children hospital	Aleppo	Third	Specialized	Fully damaged	MoH	Ar-Razi hospital + Maternity hospital
4	Children hospital	Al-Hasakeh	Al-Hasakeh	Specialized	Fully damaged	MoH	New medical center in Al-hasakah
5	Maternity and Paediatric specialized hospital	Deir-ez-Zor	Deir-ez-Zor	Specialized	Fully damaged	MoH	Al-Assad hospital
6	Alfurat general hospital	Deir-ez-Zor	Deir-ez-Zor	Specialized	Fully damaged	MoH	Al-Assad hospital

Table 3: Special cases of hospitals which reported partially damaged (buildings), and operating partially (limited provided health services) from other locations:

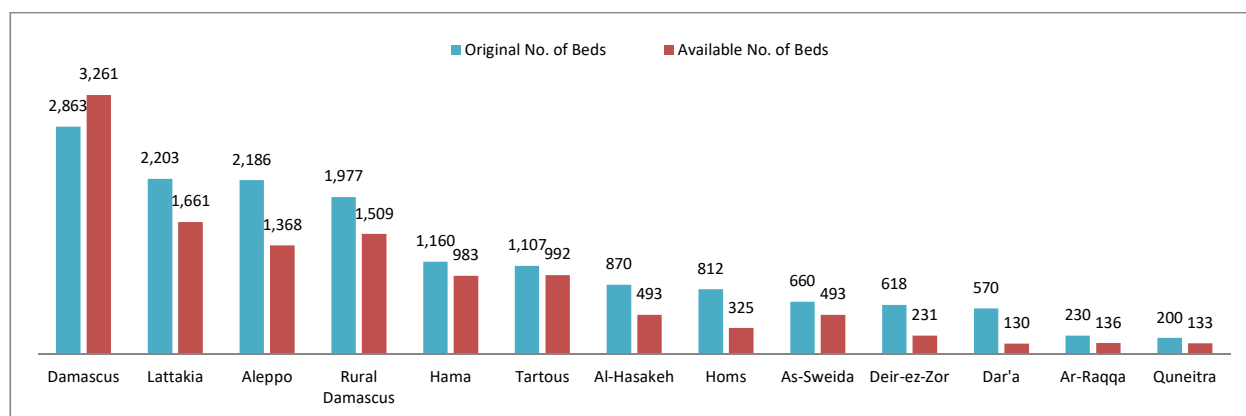
#	Hospital name	Province	District	Type	Condition	Affiliation	New location
1	Al-Bassel-Qara hospital	Rural Damascus	Al-Nabak	General	Partially damaged	MoH	Qara Municipal

The information above could guide focused rehabilitation activities for hospitals' infrastructure, which could improve functionality status of hospitals to reach fully functional level, especially for partially functional hospitals that need small scale of rehabilitation.

3.2 Analysis of the inpatient capacity

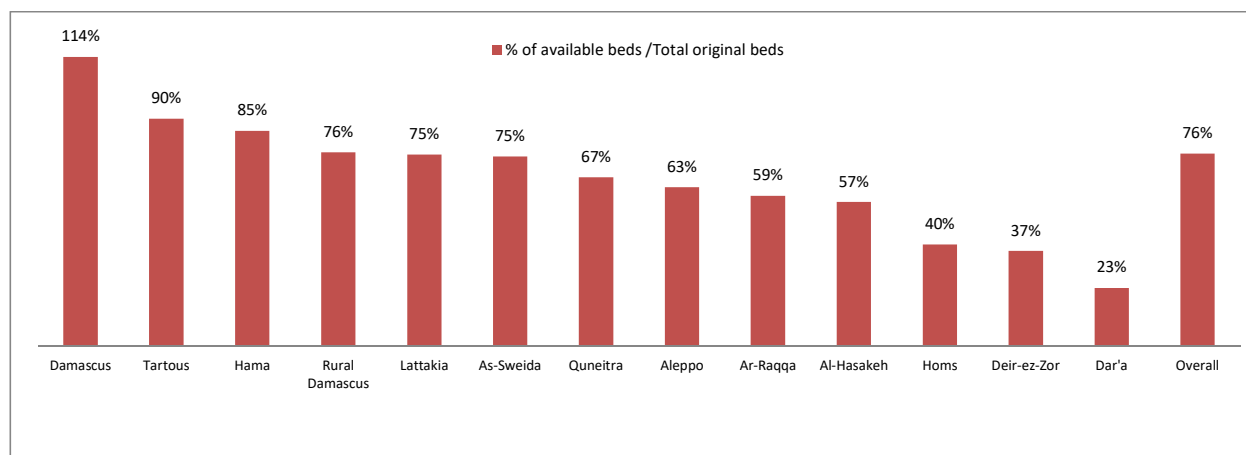
The inpatient capacity has been analyzed in terms of the total number of beds available in functional hospitals by end of 2017 compared to the original number of beds in these hospitals pre-crisis or the maximum inpatient capacity) [Figure 12].

Figure 12: Comparison of inpatient capacity (original vs. available) in functional hospitals per governorate, December 2017



Reduced inpatient capacity (shortage of beds) was observed in all governorates at varying degrees. This may be correlated to the upsurge in usage of beds in functional hospitals, as direct implication of the crisis on the overstretched public health sector. The number 114% in Damascus illustrates that some hospitals have expanded their operational capacity to meet the increase needs of provision health services. Figure 13 illustrates the proportion of available beds in functional hospitals versus the original inpatient capacity at governorate levels.

Figure 13: Percentage of available number of beds in functional hospital versus the original inpatient capacity, December 2017

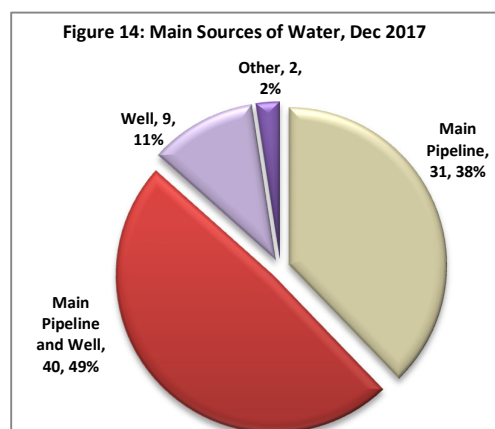


The lowest percentage (23%) of available beds in functional hospital versus original inpatient capacity is observed in Dar'a governorate, mainly reported from the national hospital [the current number of beds are 60, while the original hospital capacity is 450 beds].

3.3 Water sources and functionality status

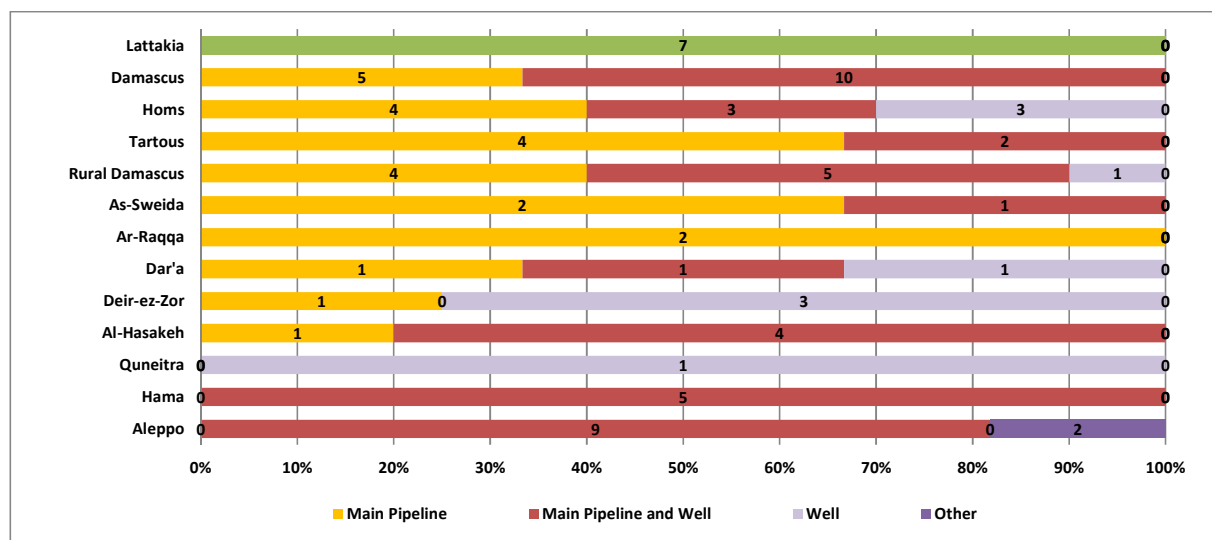
Availability of water sources at public hospitals was assessed using a standard checklist of main types of water sources (i.e., main pipeline, well, or both (main pipeline and well)).

By the end of December 2017 and out of 82 functional public hospitals, 38% (31) are using main pipelines, 11% (9) are mainly using wells, 49% (40) are using both (main pipeline and well), while 2% (2) are using other sources of water [Figure 14].



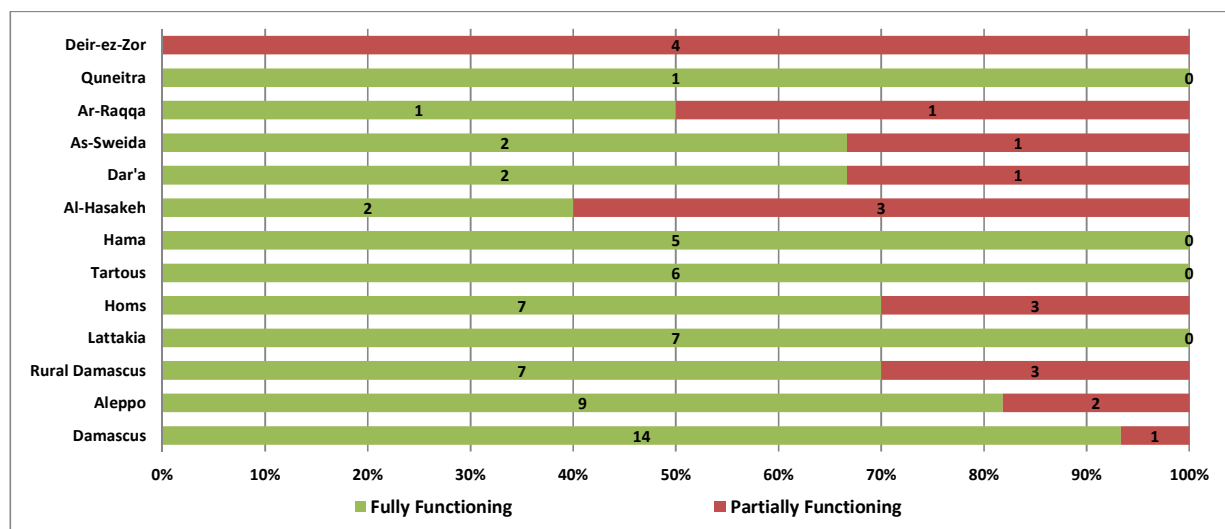
Detailed analysis on distribution of water sources at functional public hospitals is presented at governorate level on [Figure 15].

Figure 15: Distribution of water sources/ types at functional public hospitals, per governorate, December 2017



Functionality status of the water sources was measured at three levels; fully functional, partially functional, and not functional. Figure 16, provides details on functionality status of water sources at functional hospitals, (82/111) per governorate.

Figure 16: Functionality status of the water sources at functional public hospitals, December 2017

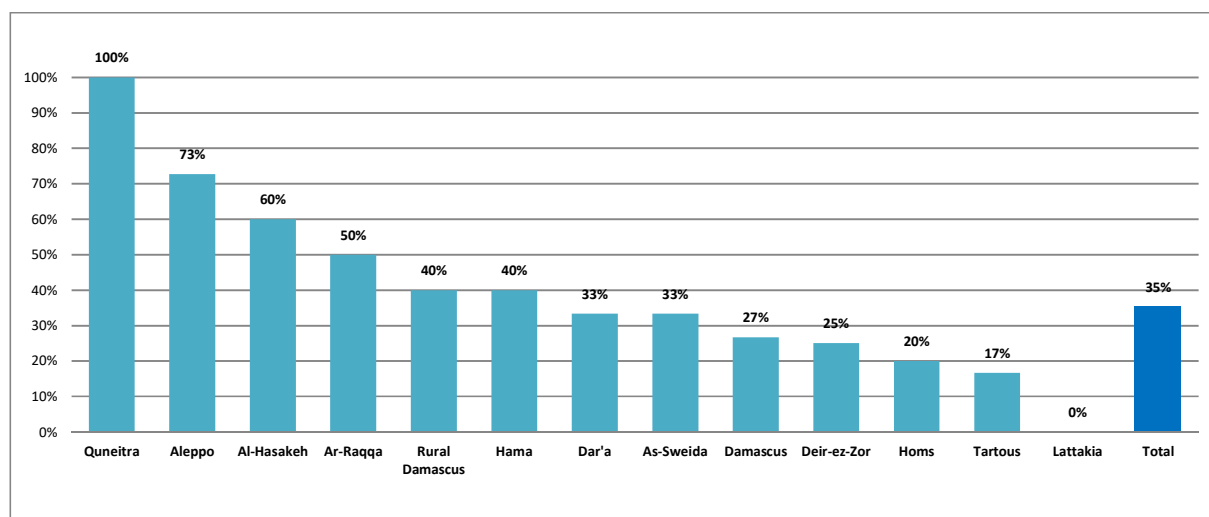


3.4 Availability of electricity generators

Availability of electricity generators continued to be highly demanded with the current situation, where electricity power is widely disrupted and majority of public hospitals are dependent on generators' power. Availability of electrical generators at functional hospitals was measured by assessing the functional out of the total existing generators in the hospital. The percent of hospitals in need for electricity generators out of the total functional hospital is summarized at governorate level [Figure 16].

35% (29) of functional public hospitals across Syria are in need for electrical generators, mainly reported from 12 governorates: Quneitra, Aleppo, Al-Hasakeh, Ar-Raqqa, Rural Damascus, Hama, Dar'a, As-Sweida, Damascus, Deir-ez-Zor, Homs, and Tartous [Figure 17].

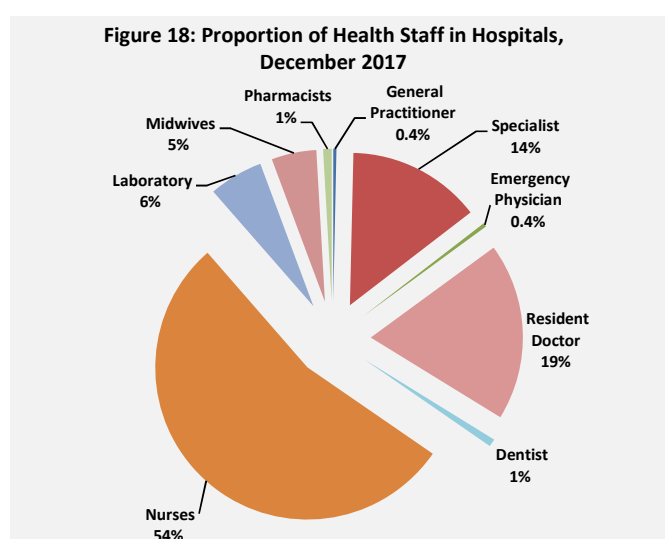
Figure 17: Percent of hospitals in need for generators out of total functional hospitals, December 2017



4. Availability of health human resources

Availability and trend of health human resources were analyzed across all public hospitals [MoH & MoHE] considering the following scopes:

- ◆ **Comparative and trend analysis** of medical staff by category (i.e., doctors, nurses, midwives)
- ◆ **Trend analysis of availability** of medical doctors by affiliation; MoH vs. MoHE hospitals
- ◆ **Trend analysis** of availability of medical doctors by **gender**, per governorate



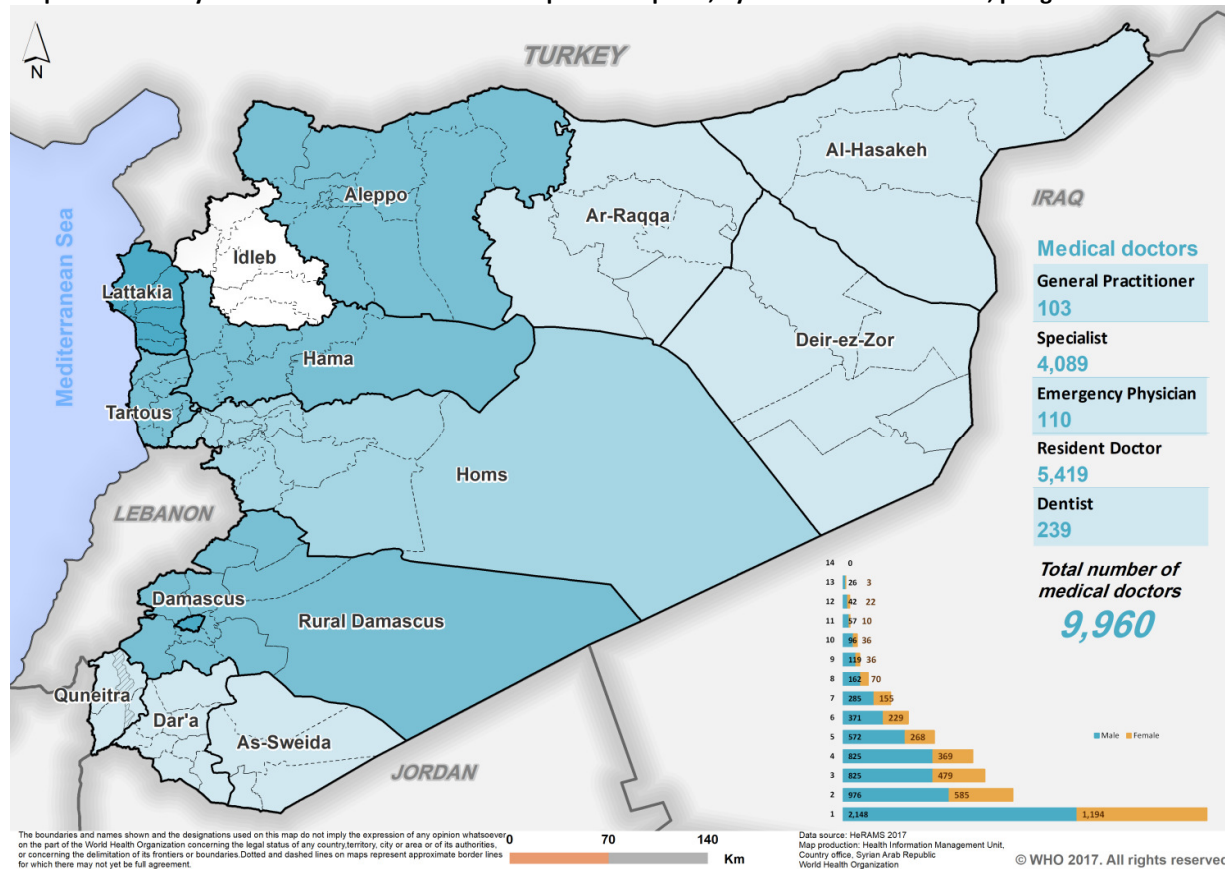
The **proportion** between different categories of health staff, among the total functional (fully and partially) MoH and MoHE hospitals (82/111), by the end of December 2017, is as follows: The general practitioner and emergency physician were the lowest proportion of health staff in public hospitals with (0.4%), followed by dentists (0.8%), pharmacists (0.9%), midwives (4.8%), laboratory (5.8%), specialists (14.2%), resident doctors (18.8%), and nurses (54%); [Figure 18].

Table 4: Availability of human resources of functioning public hospitals, per governorate, , December 2017

Governorate	General Practitioner	Orthopedic surgery	General surgery	Neurological surgery	Other Specialists	Emergency Physician	Resident Doctor	Dentist	Nurses	Laboratory	Midwives	Pharmacists	University	Technicians	Others
Damascus	0	45	65	20	840	17	2315	40	3708	437	140	87	539	1274	3074
Rural Damascus	14	20	29	3	244	3	277	10	1241	129	106	27	121	454	948
Aleppo	5	27	36	4	384	7	796	45	916	182	108	13	169	262	958
Idleb	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Lattakia	15	40	52	8	516	21	861	48	2532	147	233	27	209	484	1112
Tartous	18	45	69	4	475	20	525	38	2388	249	123	29	231	1087	1519
Homs	18	23	33	4	224	14	105	19	1108	150	138	14	60	657	410
Hama	5	27	39	8	388	12	330	31	1443	164	231	16	134	743	833
Al-Hasakeh	2	7	7	1	95	2	38	3	443	67	79	6	37	199	187
Deir-ez-Zor	7	0	1	0	15	0	6	0	200	27	59	15	13	59	108
Ar-Raqqqa	14	5	9	0	26	7	6	0	238	10	29	5	11	22	4
Dar'a	3	4	3	1	40	0	13	0	251	23	37	6	22	109	180
As-Sweida	2	7	16	3	110	4	87	3	940	63	83	7	60	299	472
Quneitra	0	4	4	3	56	3	60	2	123	9	9	5	17	41	221
Grand Total	103	254	363	59	3413	110	5419	239	15531	1657	1375	257	1623	5690	10026

The availability and level of medical staffing (by category and gender) in public hospitals a, as is summarized at governorate's level in Map 5. The categories of staff included in the map are: general practitioner, specialists, emergency doctors, resident doctors, dentists.

Map 5: Availability of medical doctors in functional public hospitals, by end of December 2017, per governorate



4.1 Availability of medical staff by category and affiliation

The availability medical staff in functional public hospitals is analyzed by category [i.e., medical doctors¹, nurses, and midwives] and affiliation [MoH vs. MoHE hospitals], as follow:

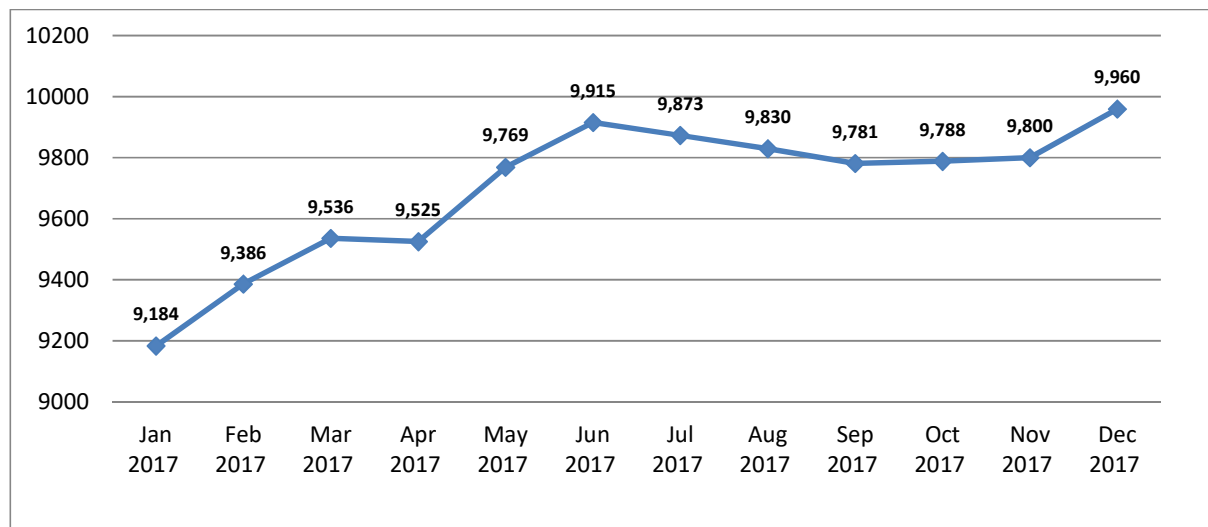
- i. **Trend analysis of medical doctors [a total of general practitioner, specialists, emergency doctors, resident doctors, dentists]:**

The number of medical doctors in public hospital has slightly increased by 8% in December 2017 (9,960 compared to January 2017 (9,184).

Figure [19] shows the trend analysis of reported medical doctors from January to December 2017, in functional public hospitals.

¹ A total of general practitioner, specialists, emergency doctors, resident doctors, and dentists

Figure 19: Trend analysis of number of doctors (a total of General Practitioner, Specialists, Emergency Physicians, Resident Doctors, and Dentists) in public hospitals during 2017

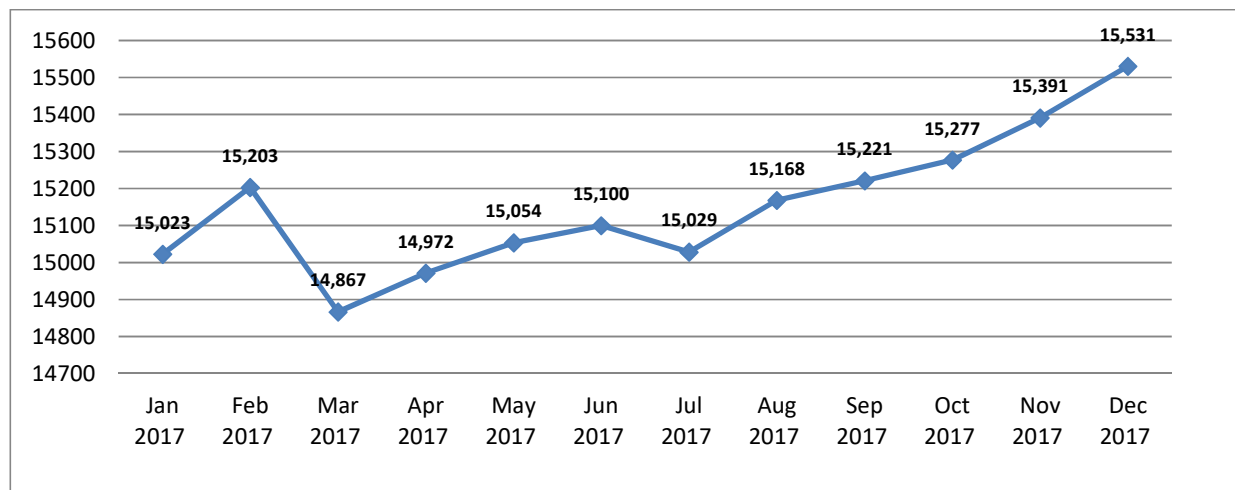


ii. Trend analysis of nurses:

The number of **nurses** in public hospital has slightly increased by 3% in December 2017 (**15,531**), compared to January 2017 (**15,023**).

Figure [20] shows trend analysis for the reported number of nurses from January to December 2017.

Figure 20: Trend analysis of number of Nurses in public hospitals during 2017

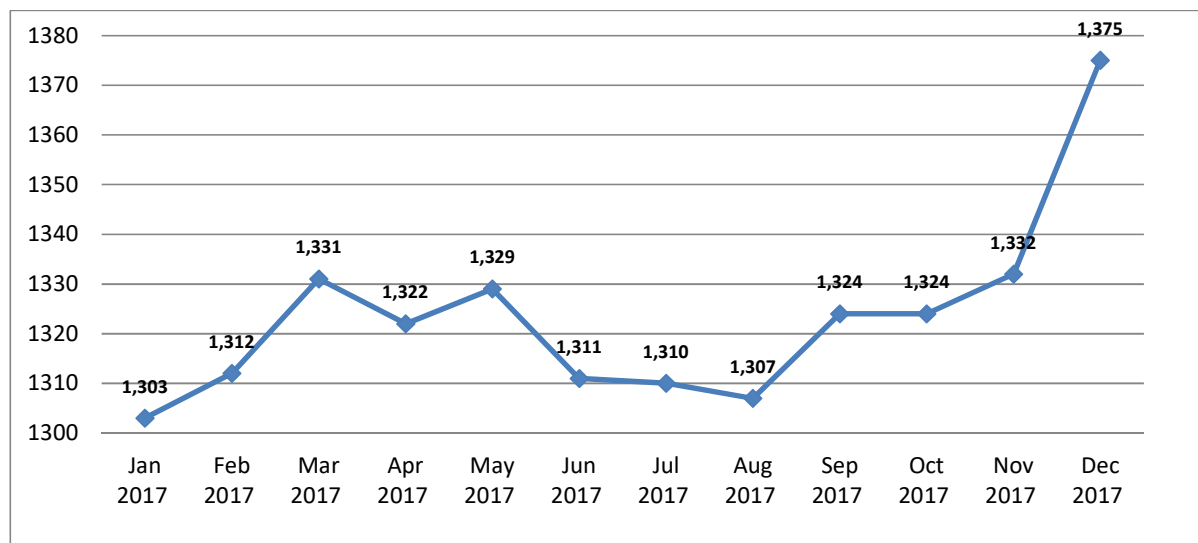


iii. Trend analysis of midwives:

The number of **midwives** in public hospital has slightly increased by 6% in December 2017 (**1,375**), compared to January 2017 (**1,303**).

Figure [21] shows trend analysis for the reported number of midwives from January to December 2017.

Figure 21: Trend analysis of number of midwives in public hospitals during 2017

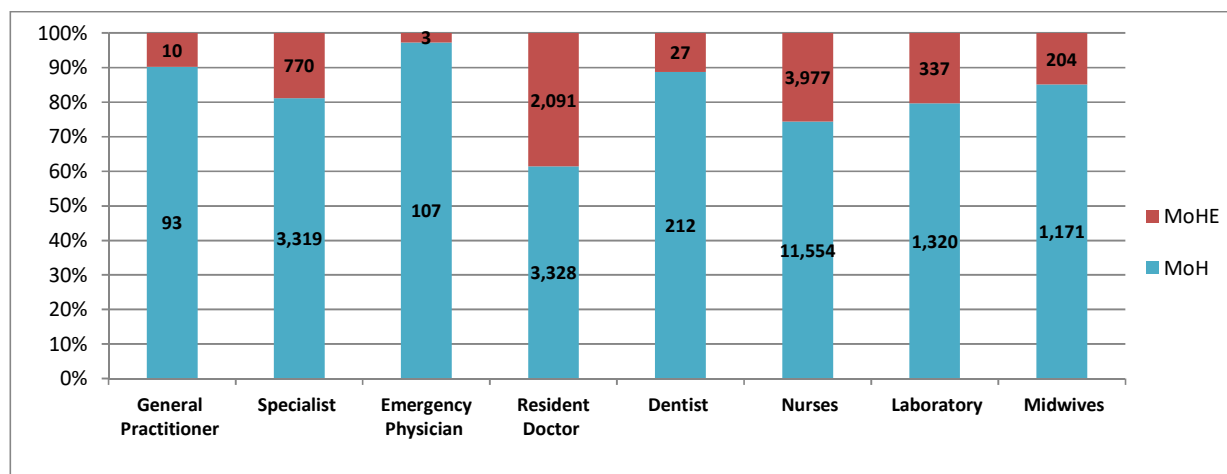


4.2 Availability of medical doctors by affiliation (MoH vs. MoHE hospitals)

Analysis of **proportions of medical doctors** [general practitioner, specialists, emergency physician, resident doctors, dentists] working at MoHE hospitals versus MoH hospitals in December 2017 has shown that **29%** (2,901) of medical doctors (general practitioner, specialists, emergency physician, resident doctors, dentists) work in MoHE, while **71%** (7,059) are in MoH hospitals.

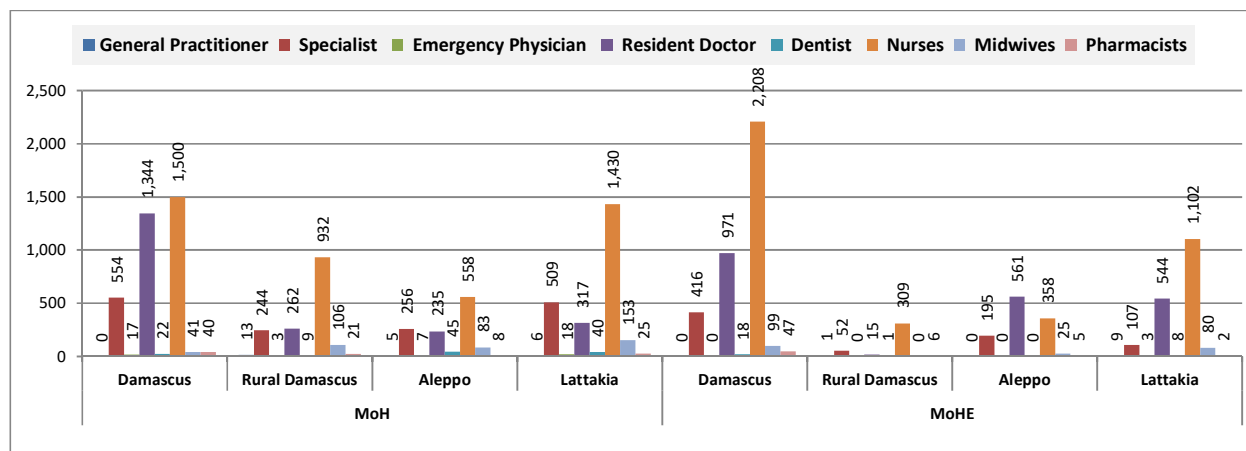
10% out of total general practitioner (103) work in public hospitals are in MoHE hospitals; **19%** out of total specialists (4,089) work in public hospitals are in MoHE hospitals; **3%** out of total emergency physician (110) work in public hospitals are in MoHE hospitals ; **39%** out of total resident doctors (5,419) are in MoHE hospitals; **11%** out of total dentist (239) work in public hospitals are in MoHE hospitals and **25%** out of total the nurses & midwives (16,906) are in MoHE hospitals. Details on proportions and numbers of key staff work in MoH vs. MoHE hospitals, by end of December 2017, are presented in [Figure 22].

Figure 22: Proportions and numbers of key staff work in MoH vs. MoHE hospitals, December 2017



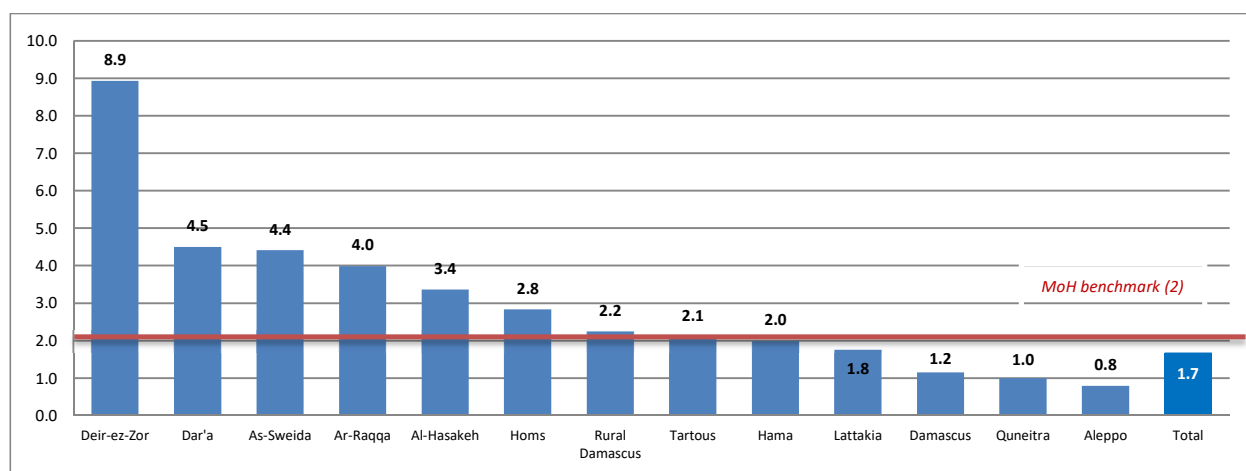
However, MoHE hospitals are located in four governorates (Damascus, Rural Damascus, Aleppo, and Lattakia), they serve the whole country. A **comparison** between the total available medical-related staff in MoH vs. MoHE hospitals is shown in [Figure 23].

Figure 23: Comparison of the medical staff of MoH vs. MoHE hospitals, December 2017



The follow figure shows the number of nurses and midwives per doctor, given that the benchmark is at least 2 nurses and midwives for each doctor (MoH, 2011). The national level in addition to five governorates (Hama, Lattakia, Damascus, Quneitra, and Aleppo) are below or equal benchmark in [Figure 24].

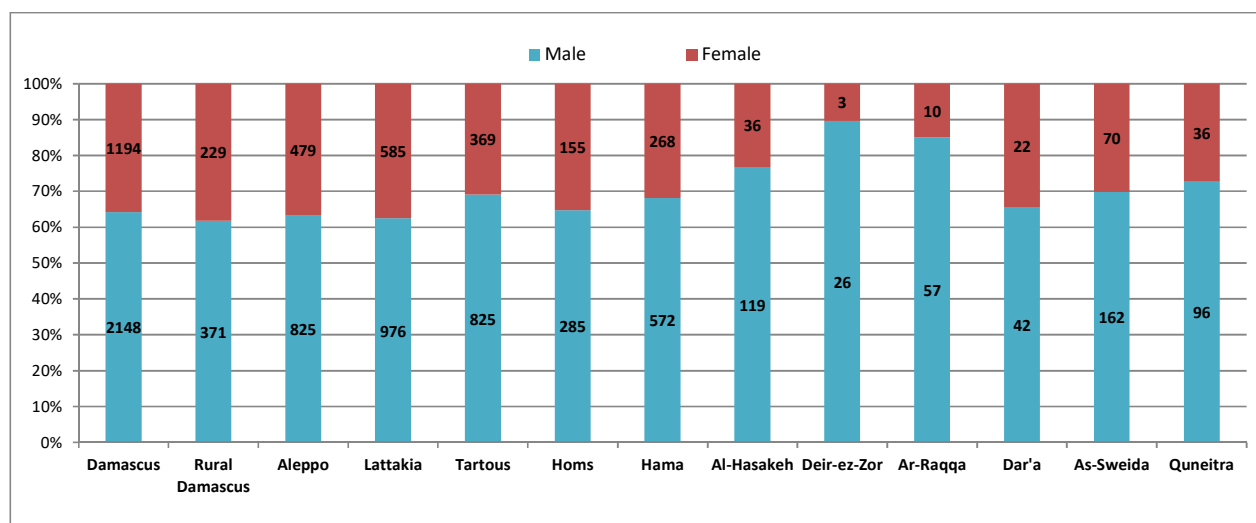
Figure 24: Number of nurses and midwives per doctor in public hospitals, December 2017



4.3 Availability of medical doctors by gender (MoH vs. MoHE hospitals)

By analyzing the proportion of male to female doctors (a total of: general practitioner, specialists, emergency physician, resident doctors, dentists), lowest proportions are seen in Deir-ez-Zor, Ar-Raqqa, and Al-Hasakeh governorates [Figure 25].

Figure 25: Proportion of Doctors (a total of Specialists, Emergency Physicians, Resident Doctors, Dentists), by gender, per governorate, December 2017

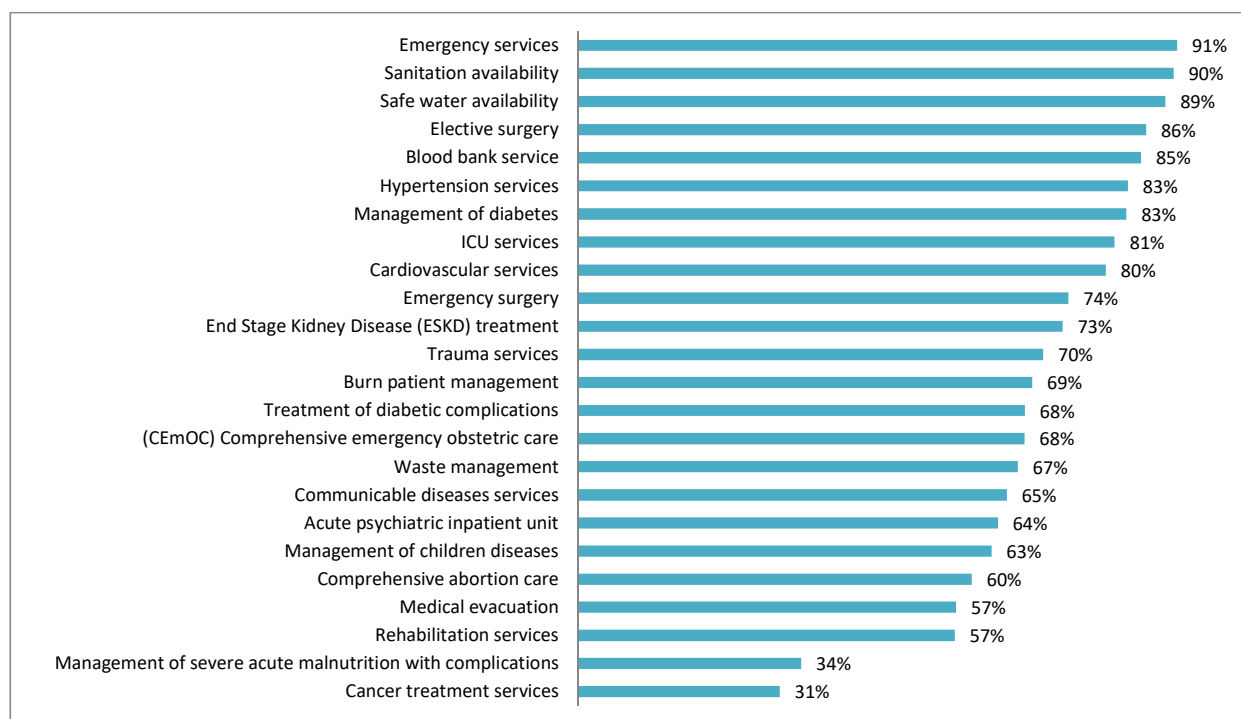


5. Availability and utilization of the health services

The availability of core healthcare services is monitored through HeRAMS at hospital's level, considering a standard list of health services (including: General Clinical Services, Surgical and Trauma care, Child Health, Nutrition, Maternal & Newborn Health, Communicable Diseases, Non-communicable Diseases, and Mental Health).

Analysis of availability of health services has been conducted across all functional public hospitals [MoH & MoHE]: (82/111). As a result of disrupted healthcare delivery and non-functionality of hospitals, limited provision of health services was observed across governorates, even within functional hospitals [Figure 26].

Figure 26: Availability of health services in the functional public hospitals, December 2017



** Detailed information on availability of services per governorate is available in the HeRAMS database.

The workload and utilization of the health services were analyzed in terms of the total estimated serviced people in all functional public hospitals during January and December 2017 per governorate [Figure 27]. In 2017, the total estimated caseload in functional public hospitals is **6,525,255**.

Figure 27: Estimated caseload of functional public hospitals (outpatient consultations and emergency cases), January to December 2017

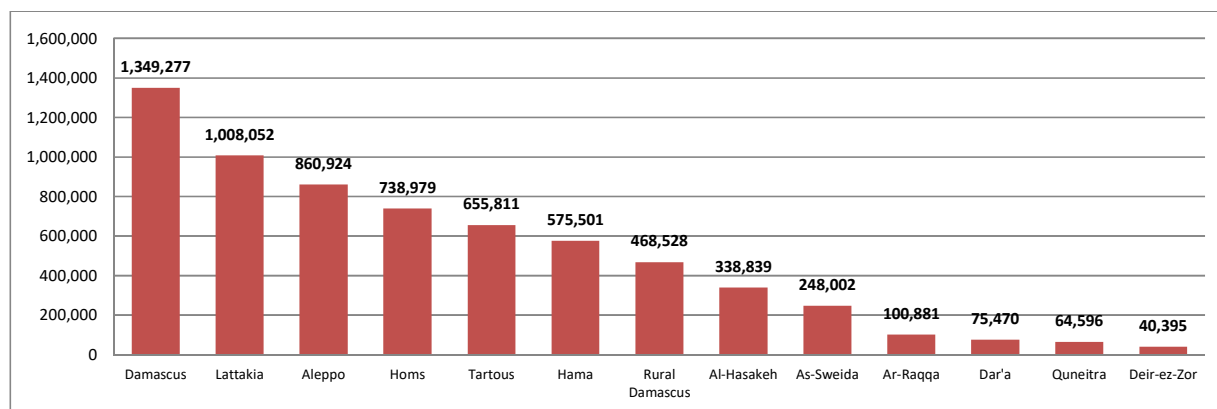
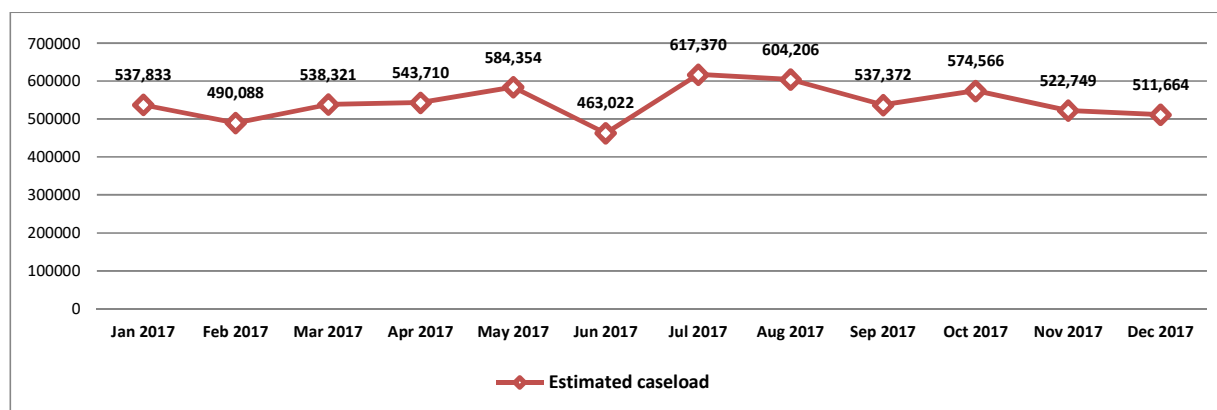


Figure 28: Trend analysis of estimated caseload in public hospitals, January to December 2017

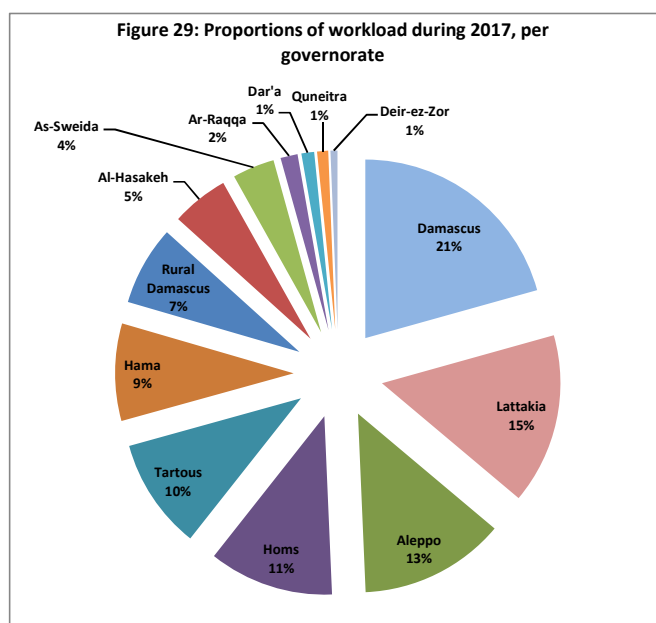


Most of healthcare services had a remarkable drop in June; due to the limited medical visits in Ramadan (fasting month)

The proportion of workload of functional hospitals per governorate is provided on Figure 29.

Detailed analysis on utilization of the core health services is provided on the following sub-sections, including:

1. General Clinical Services (Outpatient, Inpatient, Laboratory, Blood bank services, Imaging services)
2. Surgical and Trauma care
3. Maternal health services [normal deliveries, caesarean sections, and CEmOC]
4. Nutrition
5. Child Health
6. Communicable diseases
7. Non-communicable diseases
8. Mental Health



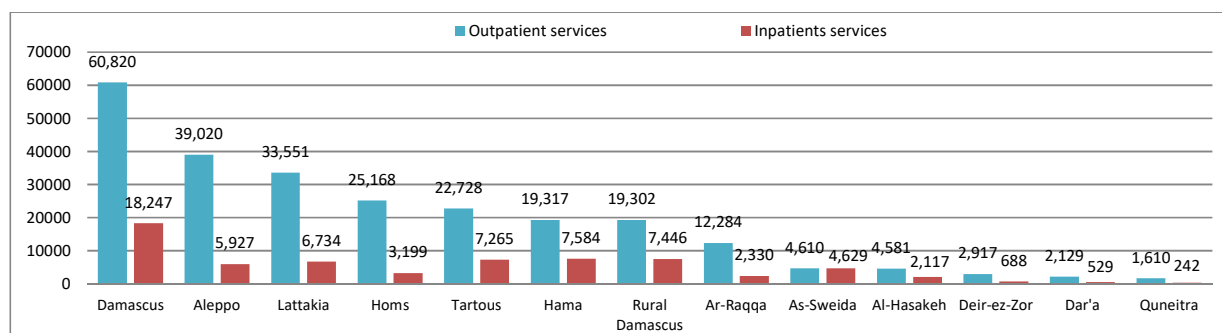
5.1 General clinical services

The following sections provide analysis on the utilization of health services in functional public hospitals at governorate level.

i. Outpatient and inpatient:

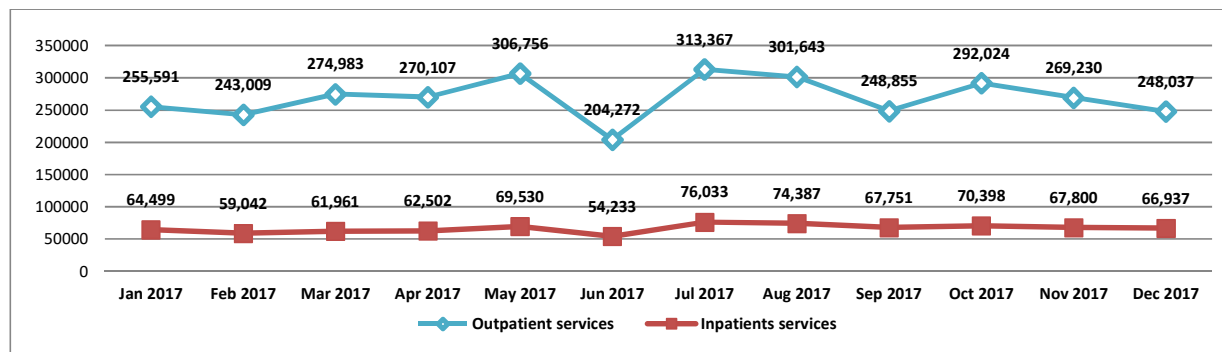
The number of outpatients to inpatients was assessed at a hospital level, and the total numbers reported in December 2017 were summarized and analyzed at governorate level [Figure 30].

Figure 30: The number of Outpatient and Inpatient in public hospitals, December 2017



Trend analysis of total reported numbers of outpatient and Inpatient from functional public hospitals [MoH & MoHE], for twelve months (January to December 2017), is presented in [Figure 28]. In 2017, the total reported outpatients are **3,227,874** while the inpatients are **795,073**.

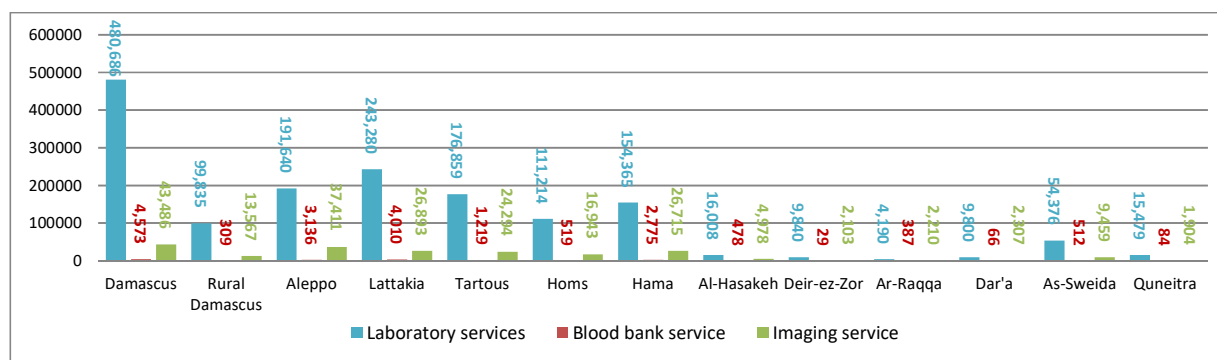
Figure 31: Trend analysis of outpatient and Inpatient in public hospitals, January to December 2017



ii. Laboratories, blood bank, and imaging services

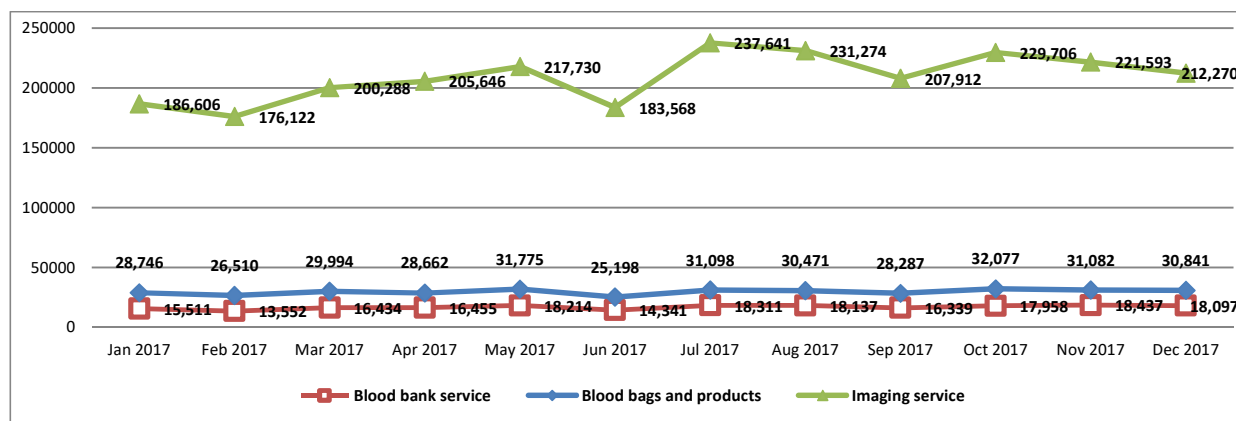
The number of patients received services in hospitals' laboratories, blood bank, and imaging departments was assessed at a hospital level, and the total number of cases from January to December 2017 analyzed at governorate level [Figure 32].

Figure 32: The number of patients received services in laboratories, blood bank, and imaging services in public hospitals, December 2017



Trend analysis of number of patients received services in hospitals' blood banks and imaging departments, from January to December 2017, is presented in [Figure 33]. In 2017, the total reported patients received services in blood banks are **201,786** [of note: the total number of blood bags and products in 2017 are **354,741**], while patients received imaging services are **2,510,356** [of note: the total performed service (X-Ray, MRI, and CT Scan pictures) in 2017 are **3,559,054**].

Figure 33: Trend analysis of number of patients received services in blood banks and imaging services in public hospitals, January to December 2017



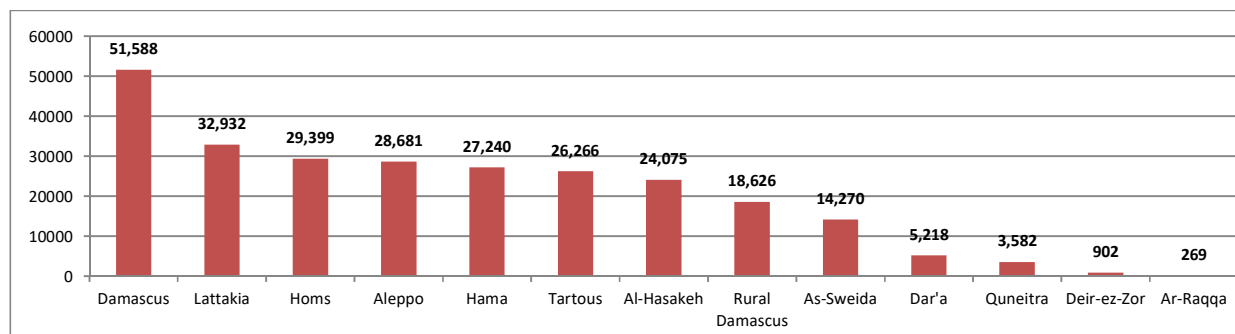
5.2 Surgical and trauma care

The surgical and trauma care services is assessed at hospitals' level. Descriptive analysis is conducted at governorate's level for the number of reported emergency cases, and surgeries (elective and emergency).

iii. Emergency cases reported in emergency departments

Figure 34 presents the total number of cases in emergency departments, reported during December 2017 from functional public hospitals at governorate level.

Figure 34: The number of reported cases in emergency department in public hospitals, December 2017



iv. Emergency and elective surgeries:

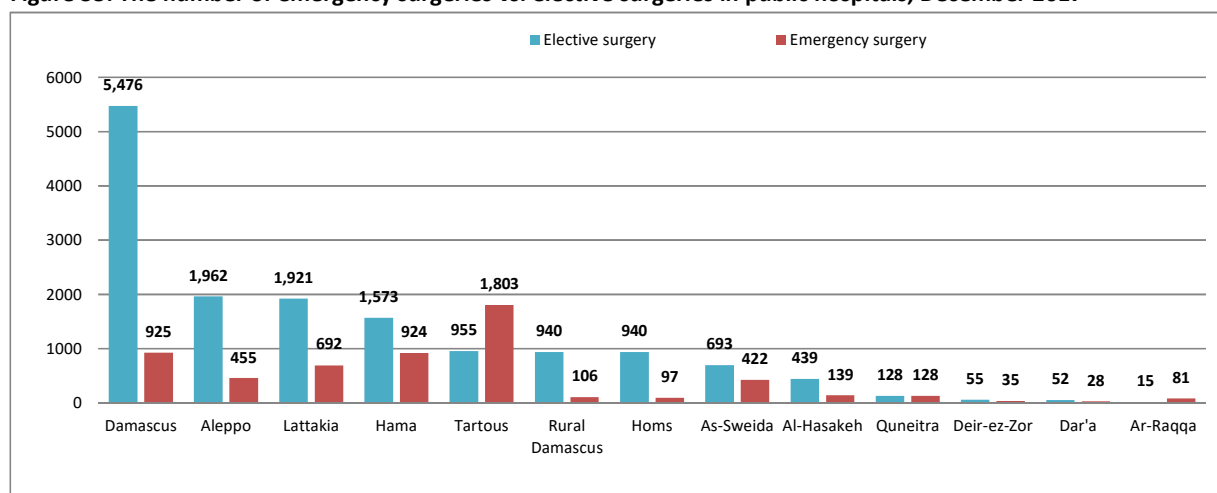
The number of emergency surgeries to elective surgeries was assessed at a hospital level, and total numbers were summarized and analyzed at governorate level [Figure 35].

During December 2017, the highest workload of elective surgeries is reported from Damascus MoH Hospital (Al-Mojtahid: 1,152), followed by Hama national hospital (957), Tishreen university hospital in Lattakia (891), Al-Assad university hospital in Damascus (849), Aleppo university hospital (807), Al-Mouwasat university hospital (737), Zaid Ash-Shariti hospital in As-Sweida (580), Al-Bassel Heart Institute in Damascus (549), and Ar-Razi MoH hospital in Aleppo (535).

While the highest workload of emergency surgeries is reported from Al-Bassel hospital in Tartous (1,460), followed by Al-Mouwasat MoHE hospital (443), Zaid Ash-Shariti hospital in As-Sweida (384), Hama national hospital (360), National hospital in Lattakia (302), Tishreen university hospital in Lattakia (234), Obstetrics and Gynecology Hospital in Aleppo (217), Damascus MoH Hospital (Al-Mojtahid: 200), As-Salameyeh national hospital (197), Hama national hospital (195), and Aleppo university hospital (171).

***Of note**, the highest number of functional public hospitals is in Damascus, of which 14 out of 15 hospitals provide elective surgeries, except Ibn-Roshd hospital for Mental Health.

Figure 35: The number of emergency surgeries vs. elective surgeries in public hospitals, December 2017



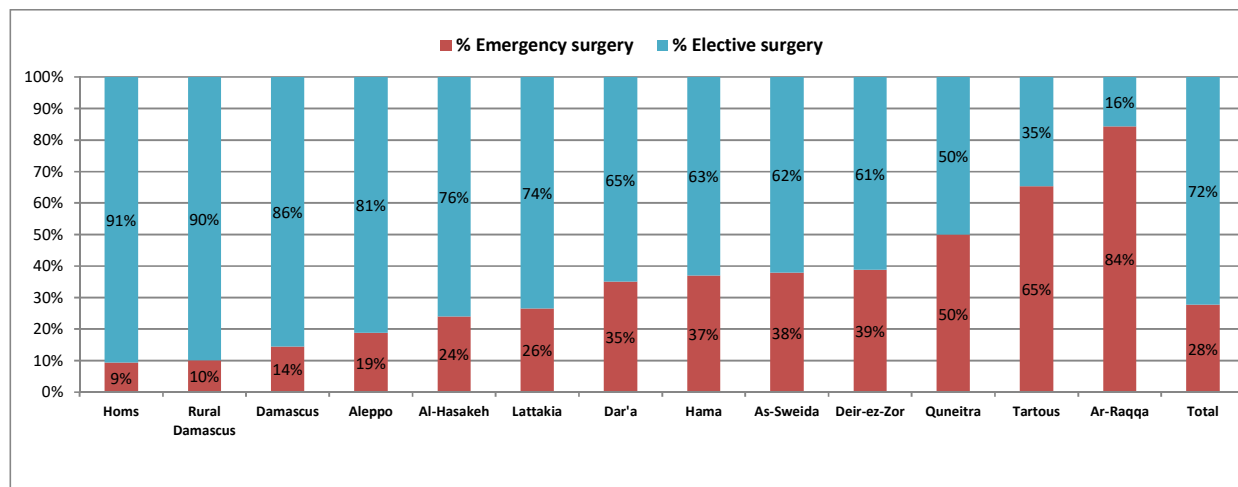
By analyzing the percent of total emergency surgeries to elective surgeries during December 2017, the highest percent of emergency surgeries across different governorates is reported in Ar-Raqqa, Tartous, Quneitra, Deir-ez-Zor, and As-Sweida governorates. Across all reported functional public hospitals, 28% of surgeries are emergency while 72% are elective [Figure 36].

In **Ar-Raqqa** and **Deir-ez-Zor**, the number of emergency surgeries is relatively high because of emergency cases received from surrounding in-secure areas.

In **Tartous**, the highest figures are reported from Al-Basil surgical hospital, which is the biggest hospital in Tartous, located in the south eastern part of the governorate and adjacent to Hama and Homs. The location of this hospital is also very close to the highway, and majority of the road incidents are received there.

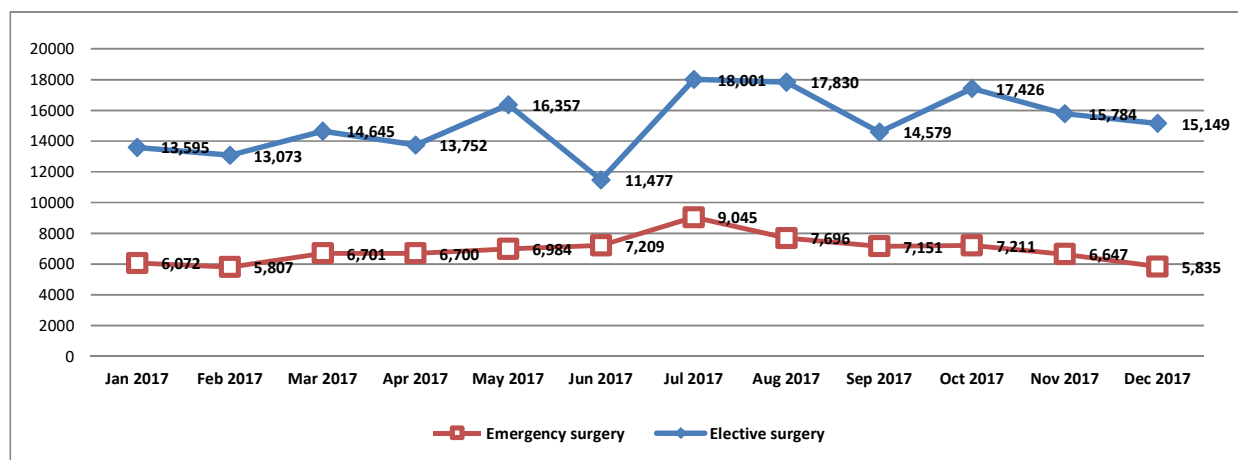
In **Quneitra** and **As-Sweida**, the high percent of emergency surgeries is due to the escalating security situation; emergency surgeries are given higher priority than cold surgeries.

Figure 36: Percentage of total emergency surgeries to elective surgeries in public hospitals per governorate, December 2017



Trend analysis of total number of elective and emergency surgeries reported in functional public hospitals [MoH & MoHE], from January to December 2017 is presented in Figure 37. In 2017, the total reported emergency surgeries are **83,058** while the elective surgeries are **181,668**.

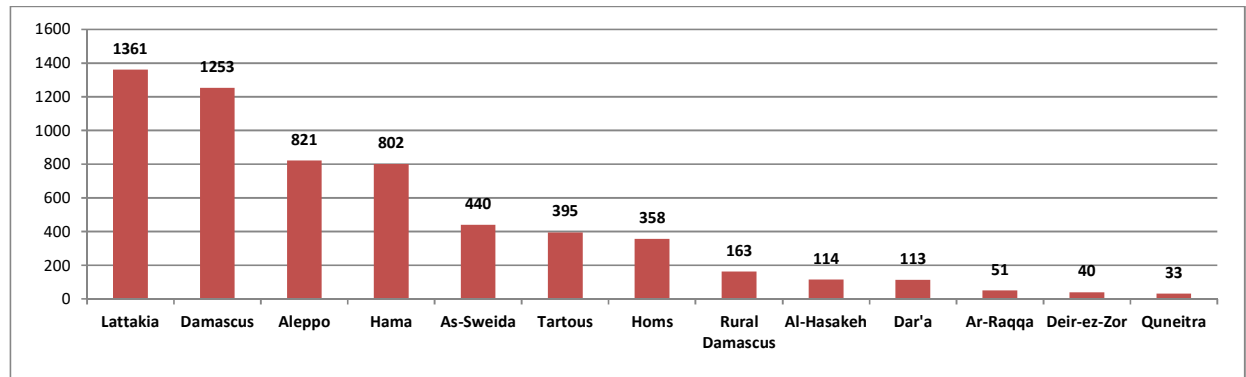
Figure 37: Trend analysis of number of patients received emergency surgeries and elective surgeries in public hospitals, January to December 2017



v. ICU services:

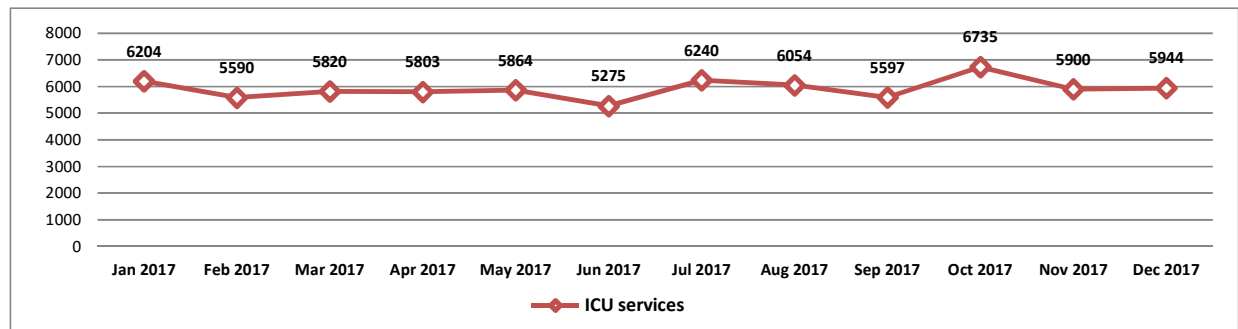
Figure 38 presents the total number of patients received ICU services reported during December 2017 from functional public hospitals at governorate level.

Figure 38: The number of patients received ICU services in public hospitals, December 2017



Trend analysis of total number of patients received ICU services reported in functional public hospitals [MoH & MoHE], from January to December 2017 is presented in Figure 39. In 2017, the total reported total number of patients received ICU services are **71,026**.

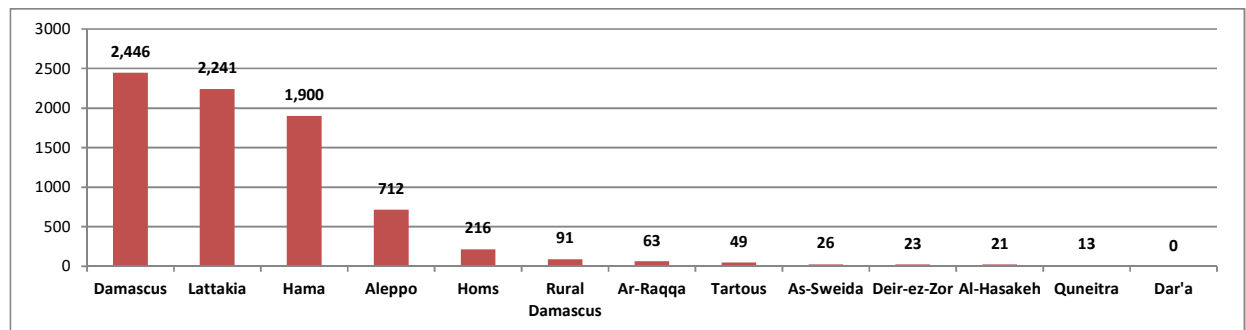
Figure 39: Trend analysis of number of patients received ICU services in public hospitals, January to December 2017



vi. Trauma services:

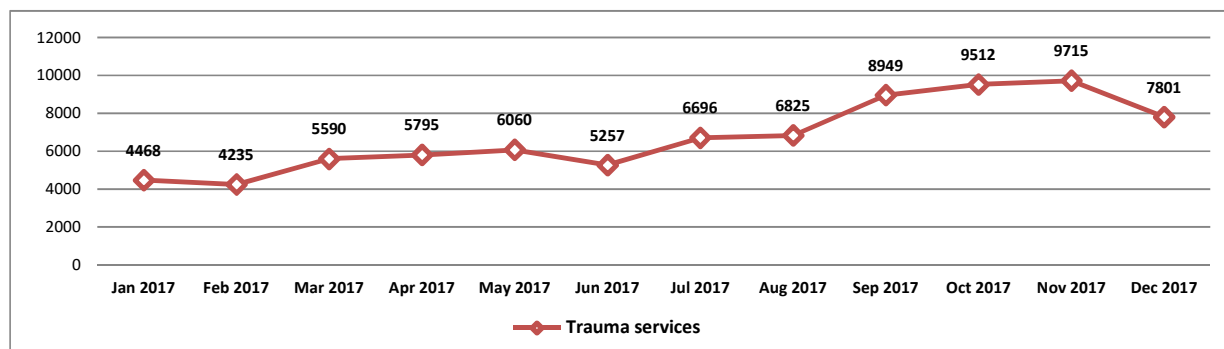
Figure 40 presents the total number of patients received Orthopaedic/trauma ward for advanced orthopaedic care reported during December 2017 from functional public hospitals at governorate level.

Figure 40: The number of patients received trauma services in public hospitals, December 2017



Trend analysis of total number of patients received trauma services reported in functional public hospitals [MoH & MoHE], from January to December 2017 is presented in Figure 41. In 2017, the total reported total number of patients received trauma services are **80,903**.

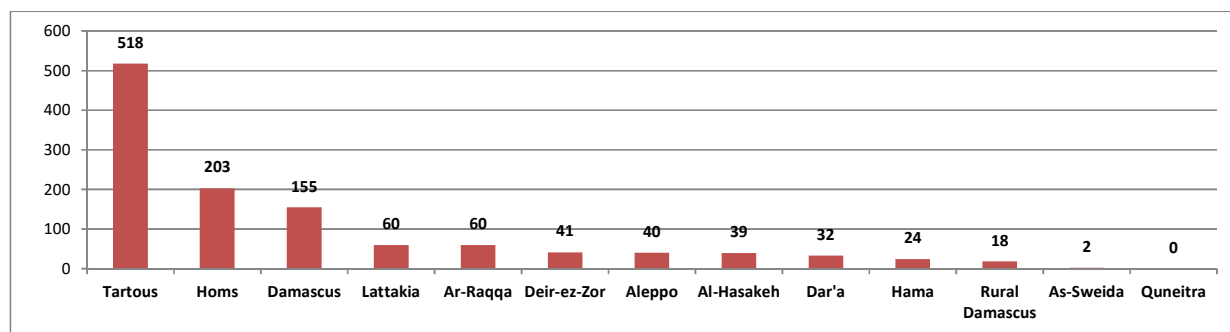
Figure 41: Trend analysis of number of patients received trauma services in public hospitals, January to December 2017



vii. Burn patient management:

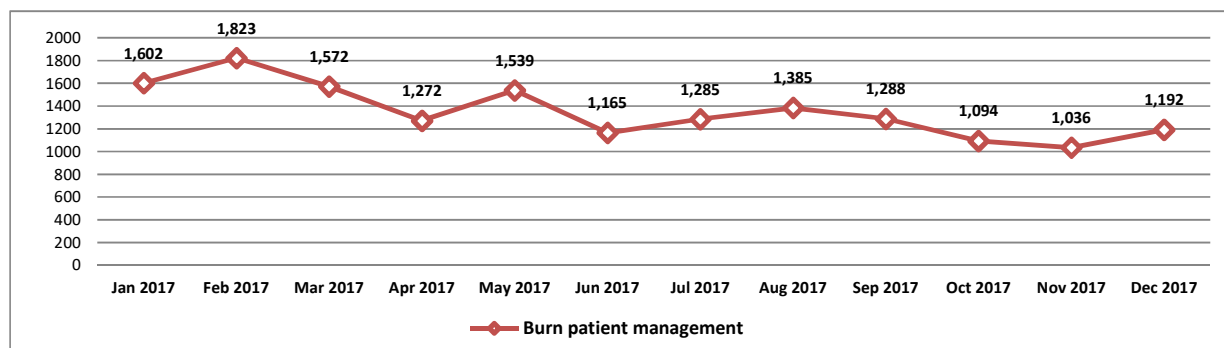
Figure 42 presents the total number of patients received burn patient management reported during December 2017 from functional public hospitals at governorate level.

Figure 42: The number of patients received burn patient management in public hospitals, December 2017



Trend analysis of total number of patients received burn patient management reported in functional public hospitals [MoH & MoHE], from January to December 2017 is presented in Figure 43. In 2017, the total reported total number of patients received burn patient management are **16,253**.

Figure 43: Trend analysis of number of patients received burn patient management in public hospitals, January to December 2017



5.3 Maternal health services

Analysis of availability and utilization of maternal health services was conducted considering three scopes:

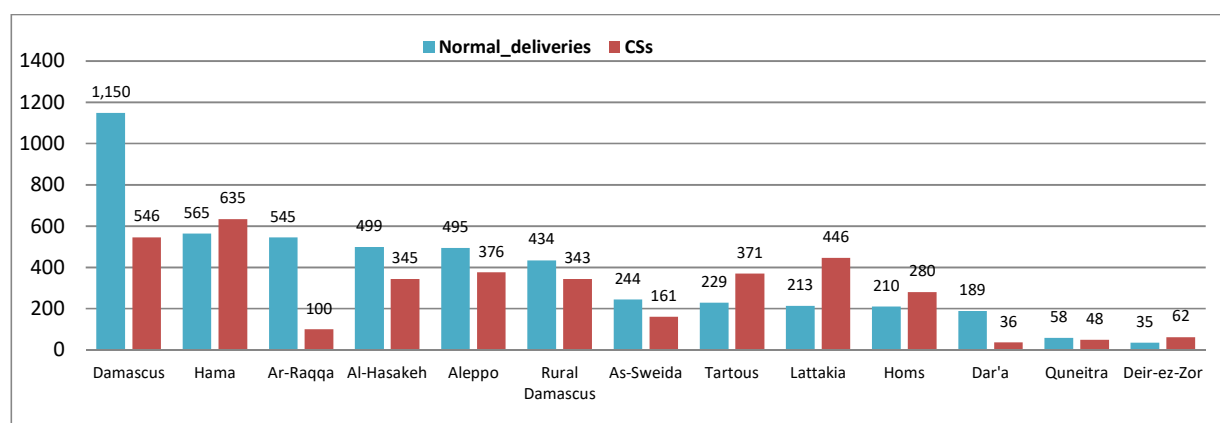
- Utilization of service (caesarean sections (CS) vs. normal deliveries); December 2017 summary figures by governorate
- Percentage of CSs to normal deliveries, of December 2017
- Trend analysis of the monthly normal deliveries vs. caesarean sections, January to December 2017

i. Utilization of service (caesarean sections vs. normal deliveries)

The numbers of caesarean sections performed at public hospitals (in December 2017) versus the normal deliveries have been analysed at governorates' level [Figure 44].

The highest numbers are reported from Obstetrics and Gynecology MoHE hospital in Damascus [normal deliveries are 560 while CSs are 447], followed by Mesyaf hospital in Hama [normal deliveries are 131 while CSs are 235], and Obstetrics and Gynecology Hospital in Aleppo [normal deliveries are 243 while CSs are 228].

Figure 44: The No. of normal deliveries and caesarean sections (CSs) performed at public hospitals, December 2017

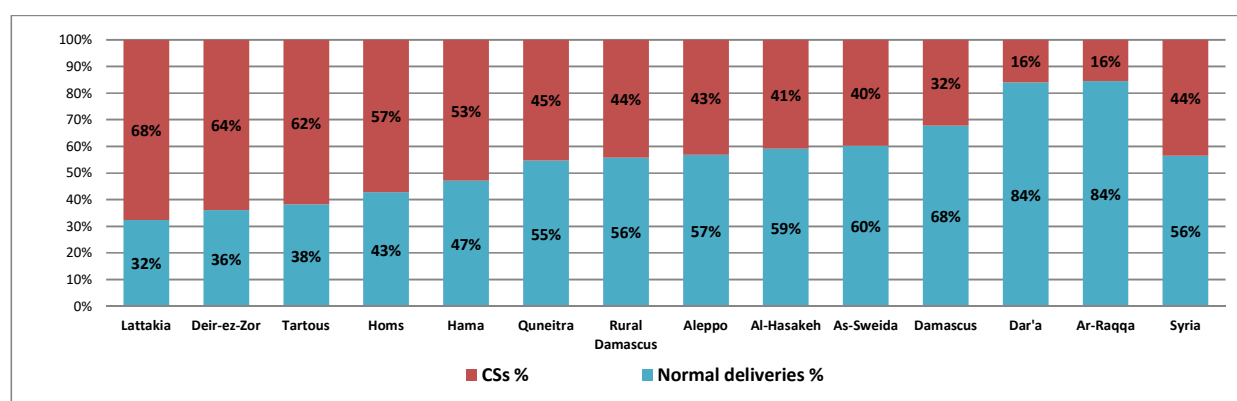


ii. Percentage of CS to normal deliveries

The highest figures of caesarian sections in December 2017 are reported in Lattakia (446 CSs compared to 213 normal deliveries), Deir-ez-Zor (62 CSs compared to 35 normal deliveries), and Tartous (371 CSs compared to 229 normal deliveries).

Across all reported functional hospitals in December 2017, 44% (3,749) of deliveries are CSs while 56% (4,866) are normal deliveries. Details on percent of CSs to normal deliveries per governorate in December 2017, is provided in [Figure 45].

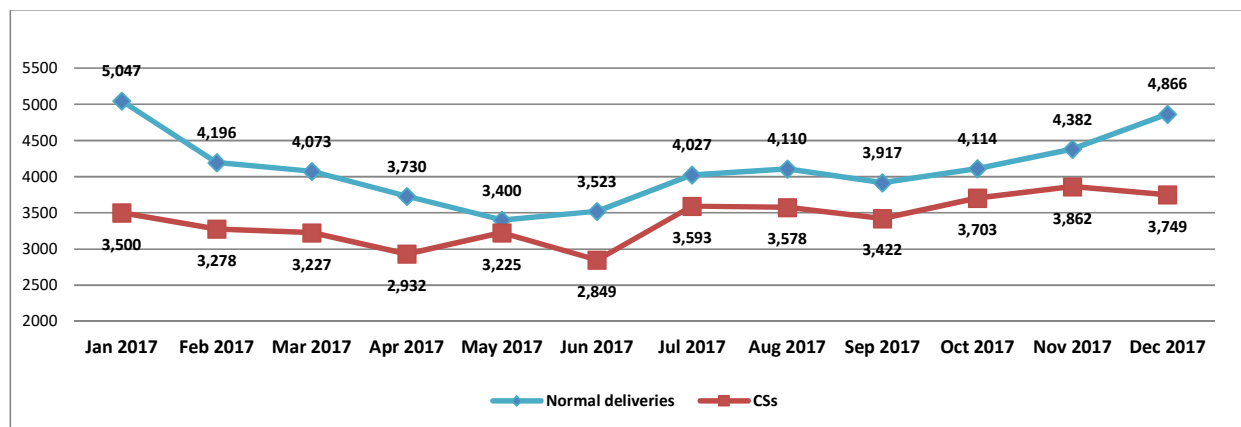
Figure 45: Percentage of caesarean sections to normal deliveries in public hospitals, December 2017



iii. Trend analysis of the monthly numbers of normal deliveries vs. caesarean sections

Trend analysis of the monthly numbers of normal deliveries vs. caesarean sections reported from the MoH & MoHE hospitals, from January to December 2017 is shown in Figure 46. In 2017, the total reported normal deliveries are **49,385** while the caesarean sections are **40,918**.

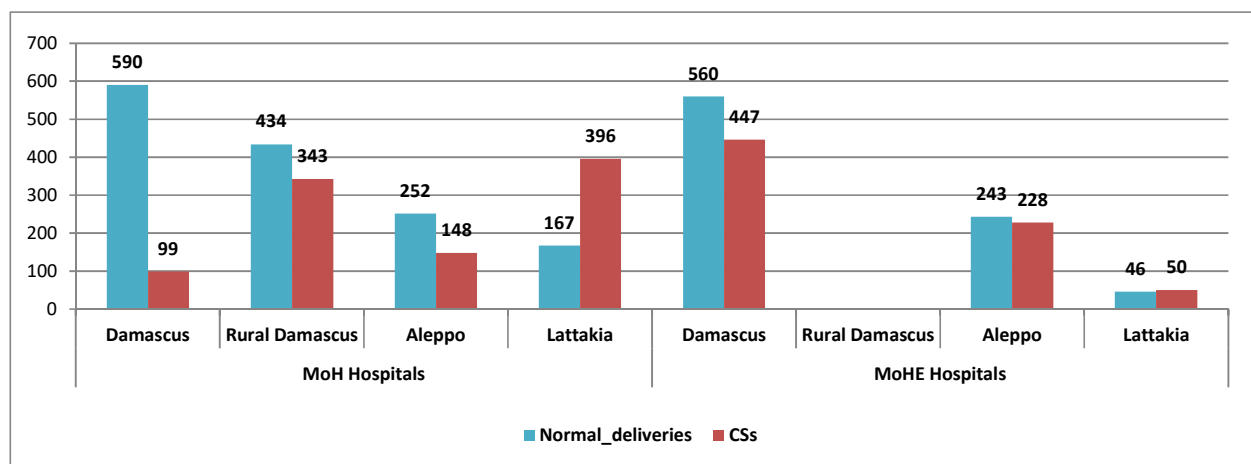
Figure 46: Trend analysis of the monthly numbers of normal deliveries vs. caesarean sections in public hospitals, January to December 2017



iv. Comparison of MoH and MoHE hospitals workload of normal deliveries vs. CSs:

Comparison analysis between MoH and MoHE hospitals that provide Obstetrics & Gynecology services across four governorates, has shown higher workload for the MoHE hospitals mainly in Damascus governorate (Al-Tawleed [Obstetrics and Gynecology] hospital for MoHE); [Figure 47].

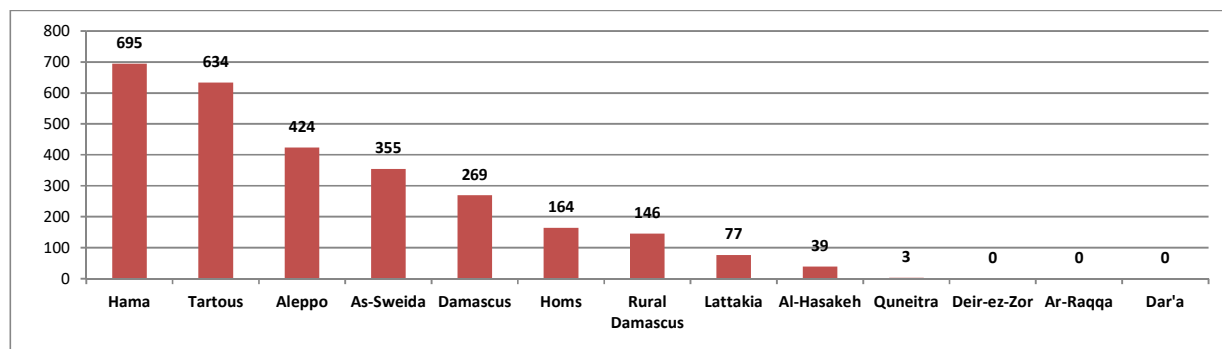
Figure 47: Comparison of MoH & MoHE hospitals workload of normal deliveries vs, CSs, December 2017



5.4 Child health

Management of severe children diseases (such as acute respiratory diseases, Meningitis, blood diseases cancer, etc...) are assessed at hospitals level. Figure 48 shows the distribution of total reported cases of management of children classified with severe or very severe diseases (parenteral fluids and drugs, oxygen) by governorate.

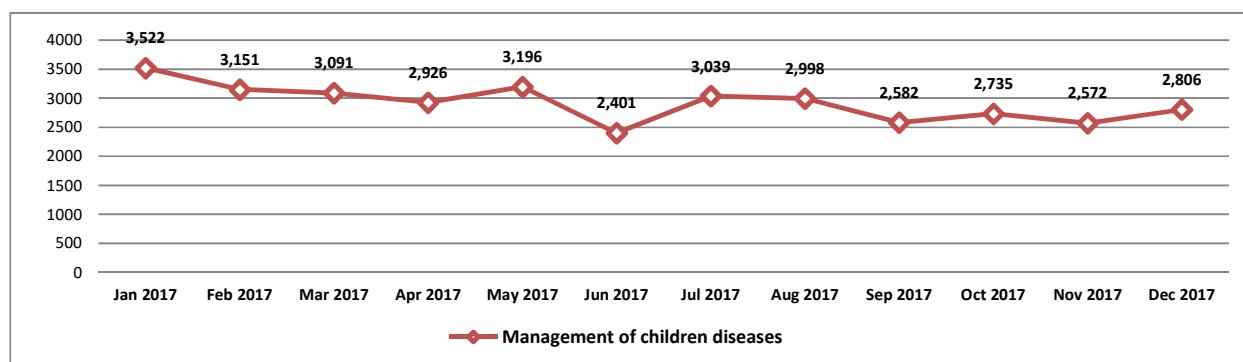
Figure 48: Number of children with severe diseases in public hospitals, December 2017



The high reported figures in Hama, Tartous, Aleppo, As-Sweida, Damascus, and Homs are due to the high numbers of IDPs, and also availability of MoHE referral hospitals for children in some of these areas.

Trend analysis of reported cases of severe children diseases from January to December 2017, is presented in [Figure 49]. In 2017, the total reported cases of severe children diseases are **35,019**.

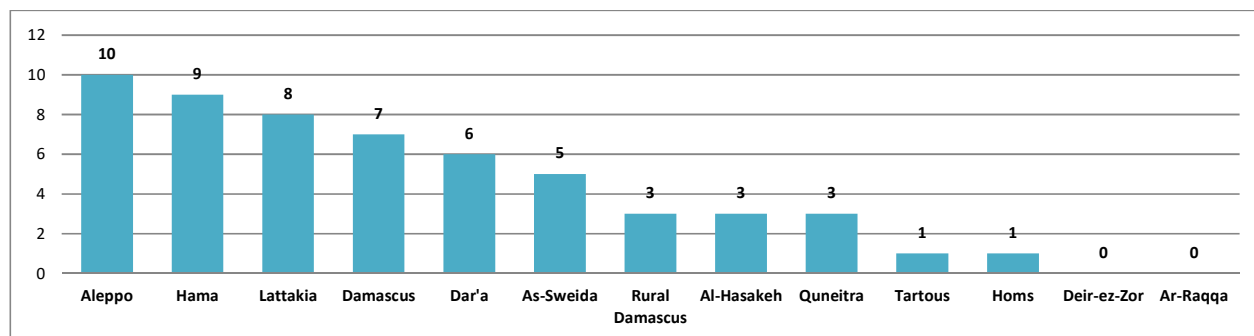
Figure 49: Trend analysis of reported cases of severe children diseases in public hospitals, January to December 2017



5.5 Nutrition

Monitoring of cases in stabilization centre for the management of severe acute malnutrition with medical complications, with availability of ready-to-use therapeutic foods and dedicated trained team of doctors, nurses, and nurse aids, 24/7 is systematically conducted at public hospitals level; Figure 50 demonstrates the number of cases reported in December 2017, at governorate level.

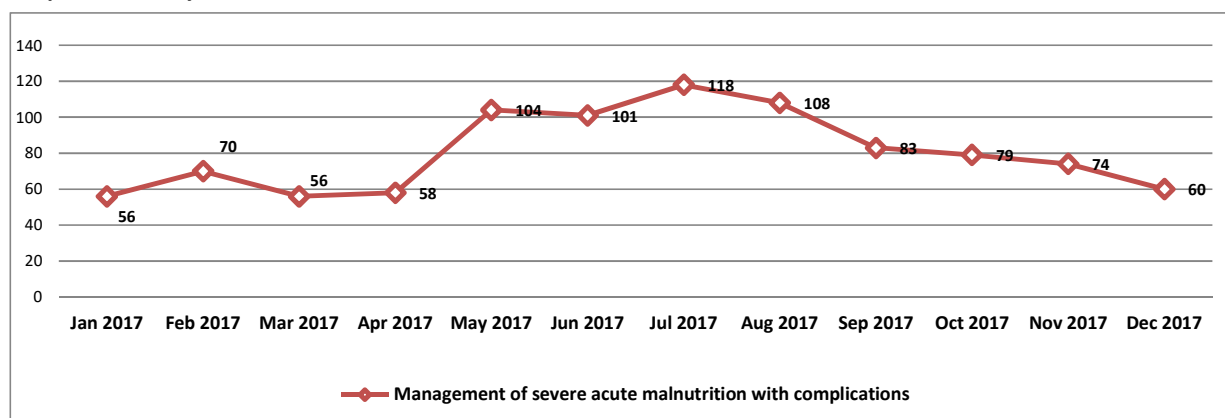
Figure 50: The number of children with severe acute malnutrition with complications in public hospitals, December 2017



The high reported figures in Aleppo, Hama, Lattakia, Damascus, Dar'a, and As-Sweida due to the high numbers of IDPs.

Trend analysis of reported cases of severe acute malnutrition from January to December 2017, is presented in [Figure 51]. In 2017, the total reported children with severe acute malnutrition are **928**.

Figure 51: Trend analysis of number of children with severe acute malnutrition with complications in public hospitals, January to December 2017



5.6 Communicable diseases services

Management of severe and/or complicated communicable diseases (such as meningitis, measles, SARI, others) are assessed at hospitals level. Figure 52 shows the distribution of total reported cases of communicable diseases services by governorate.

Figure 52: The number of patients received communicable diseases in public hospitals, January to December 2017

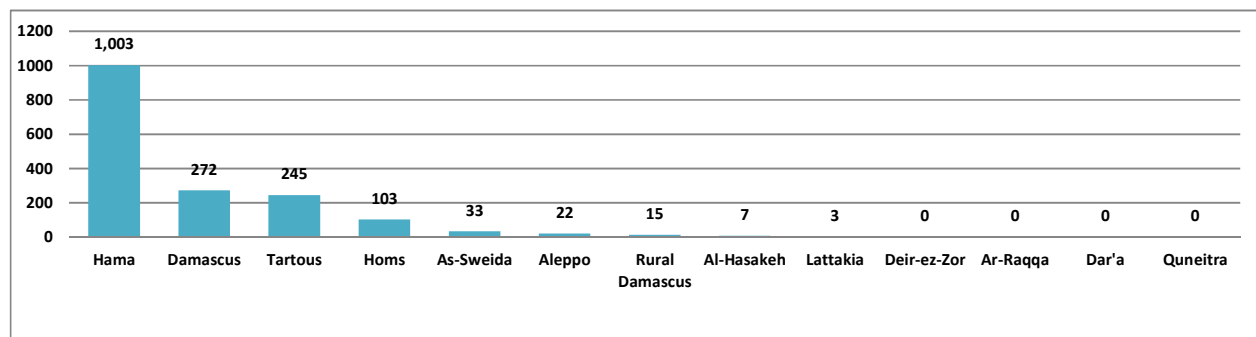
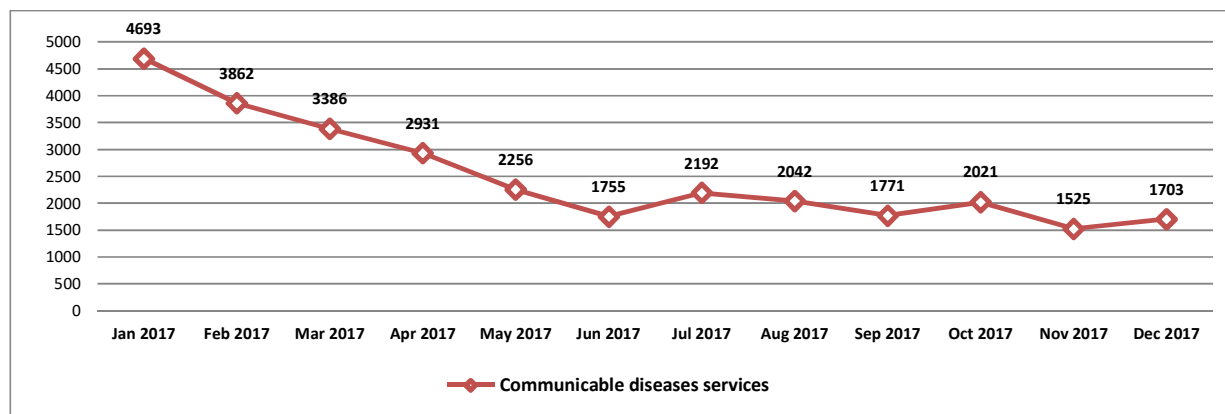


Figure 53: Trend analysis of number of patients received communicable diseases in public hospitals, January to December 2017



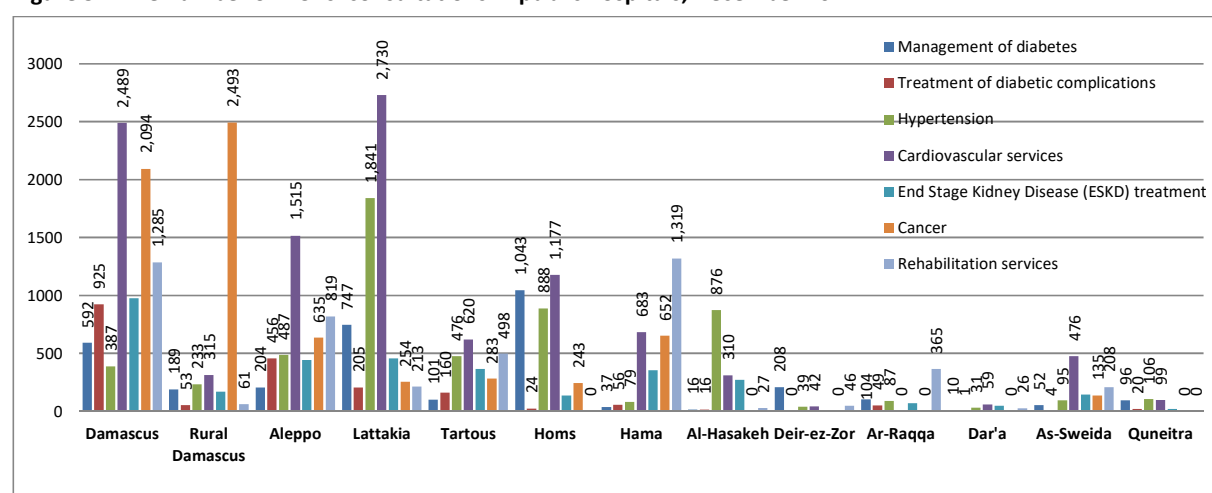
5.7 NCDs (non-communicable diseases)

NCDs were assessed through HeRAMS by checking the availability and utilization of services at hospitals level. The majority of high reported figures of NCDs (Diabetes, Treatment of diabetic complications, Hypertension, Cardiovascular, Kidney, Cancer diseases, and Rehabilitation services) are from Damascus hospitals.

Among all NCDs during 2017, Cancer patients' consultations are the highest reported figures, mainly in Damascus, Rural Damascus (has one cancer specialized hospital). It worth mentioning that cancer is treated at secondary and tertiary levels only, while other NCDs (diabetes and hypertension, etc...) usually managed at primary and secondary care levels, unless patients develop complications.

Cardiovascular consultations are the second highest reported figures during 2017, mainly in Lattakia (has one cardiovascular specialized hospital), Damascus (has two cardiovascular specialized hospitals), and Aleppo (has two cardiovascular specialized hospitals, Hama, Hama, and Tartous [Figure 54]

Figure 54: The number of NCDs' consultations in public hospitals, December 2017

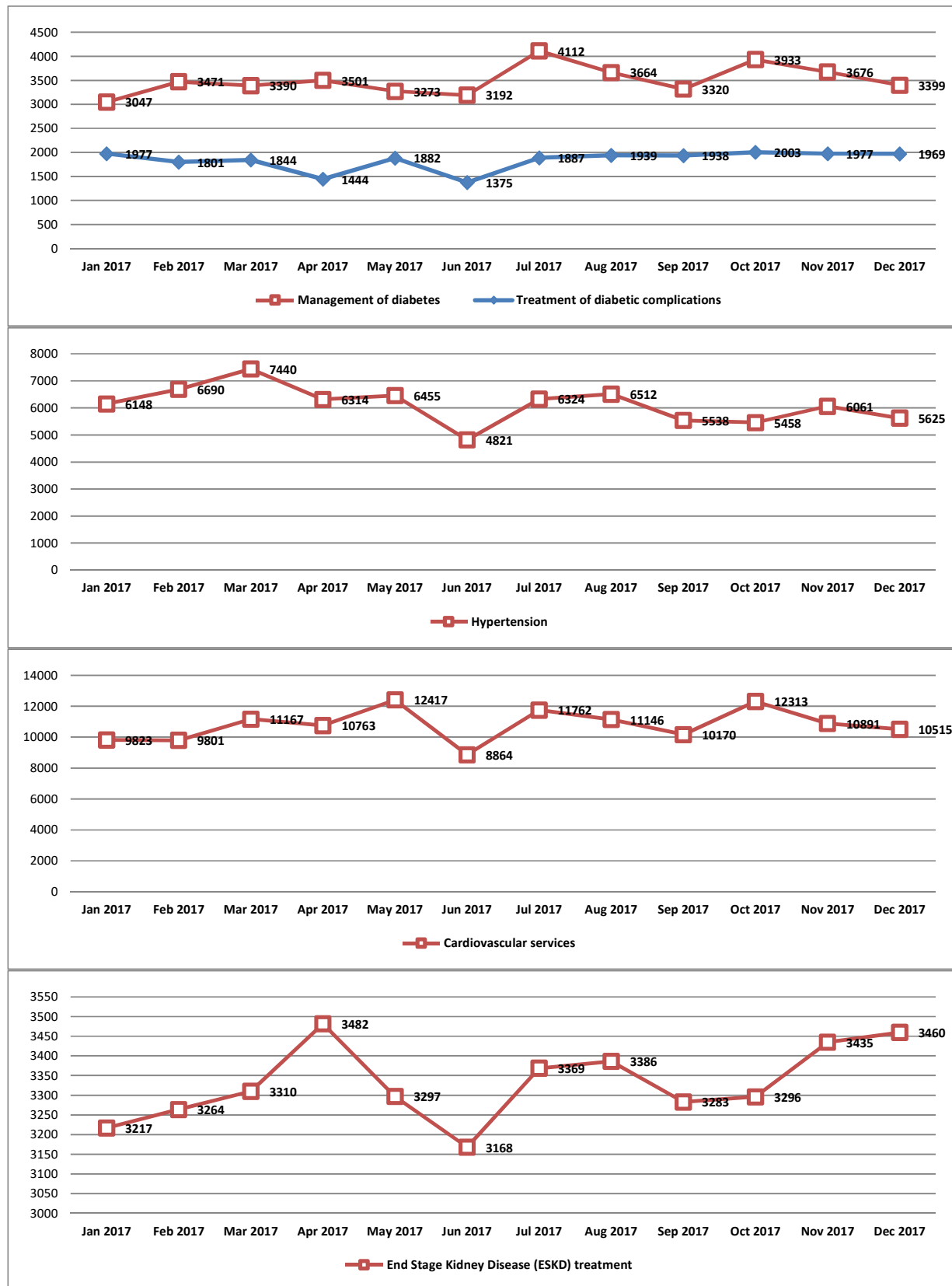


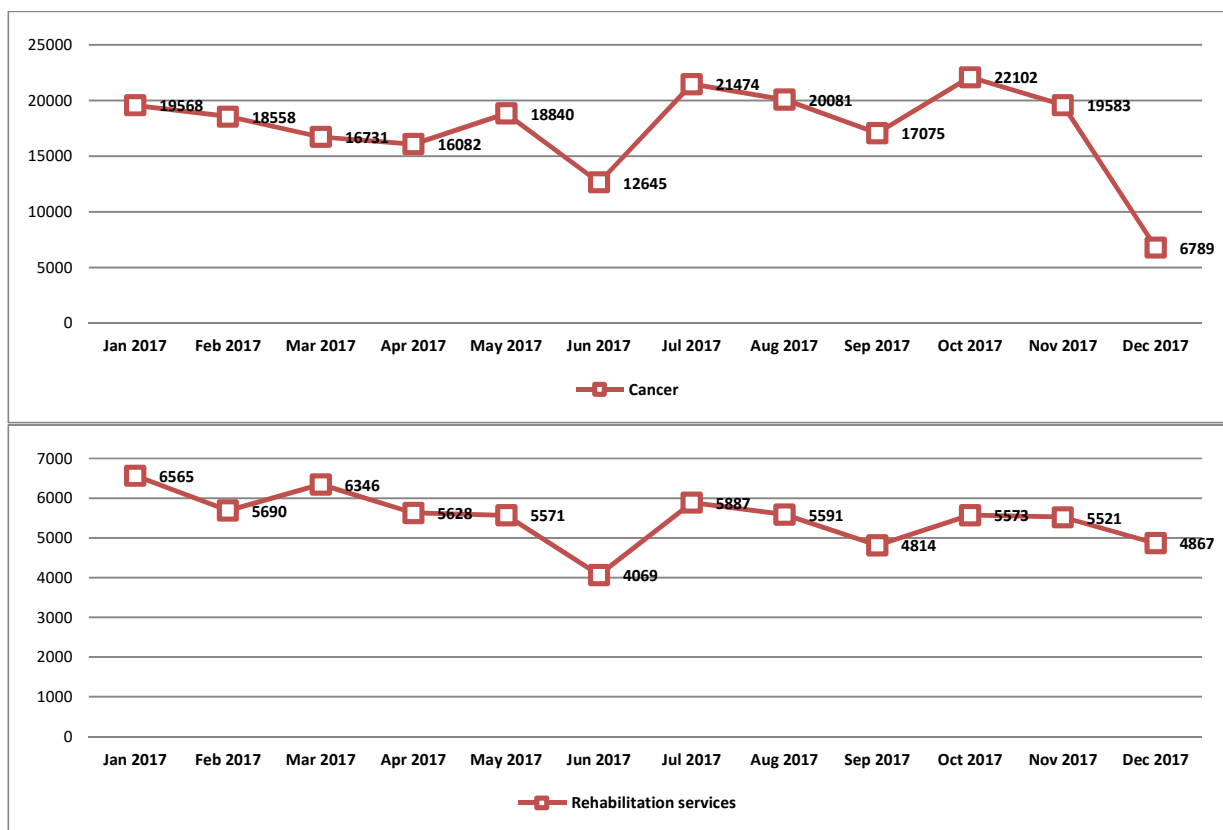
The monthly trend of reported NCDs' consultations at functional public hospitals from January to December 2017 is shown in [Figure 55].

In 2017, the total reported NCDs' consultations are as follow:

- Diabetes: **41,978**
- Diabetic complications: **22,036**
- Hypertension: **73,386**
- Cardiovascular: **129,632**
- ESKD: **39,967** [of note: the total performed ESKD Sessions in 2017: **300,254**]
- Cancer: **209,528**
- Rehabilitation services (and/or assistive device provision, including post-operative rehabilitation for trauma-related injuries): **66,122**

Figure 55: Trend analysis of total monthly number of NCDs' consultations reported in public hospitals, January to December 2017



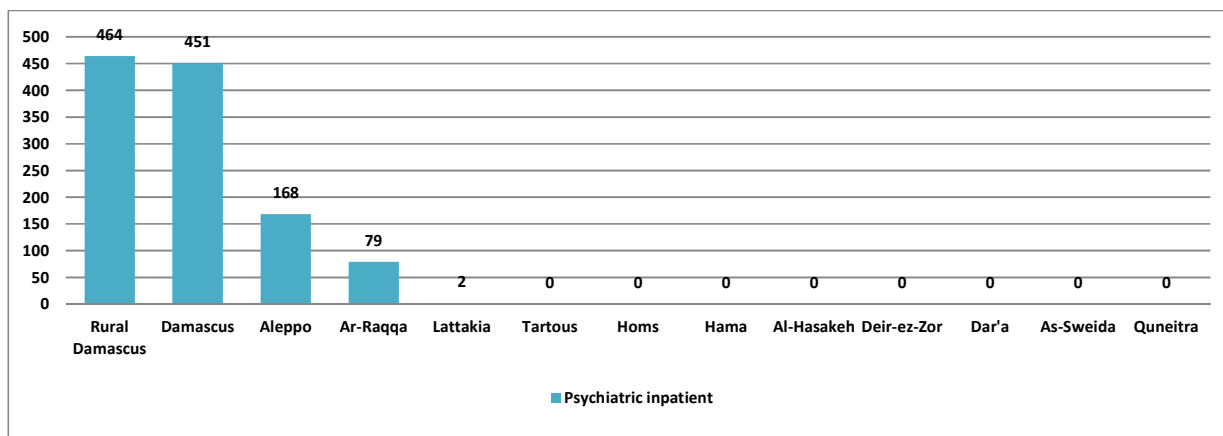


5.8 Mental health

Inpatient care for management of mental disorders by specialized health-care providers are assessed at hospitals level. Figure 56 shows the distribution of total reported cases of Psychiatric inpatient by governorate.

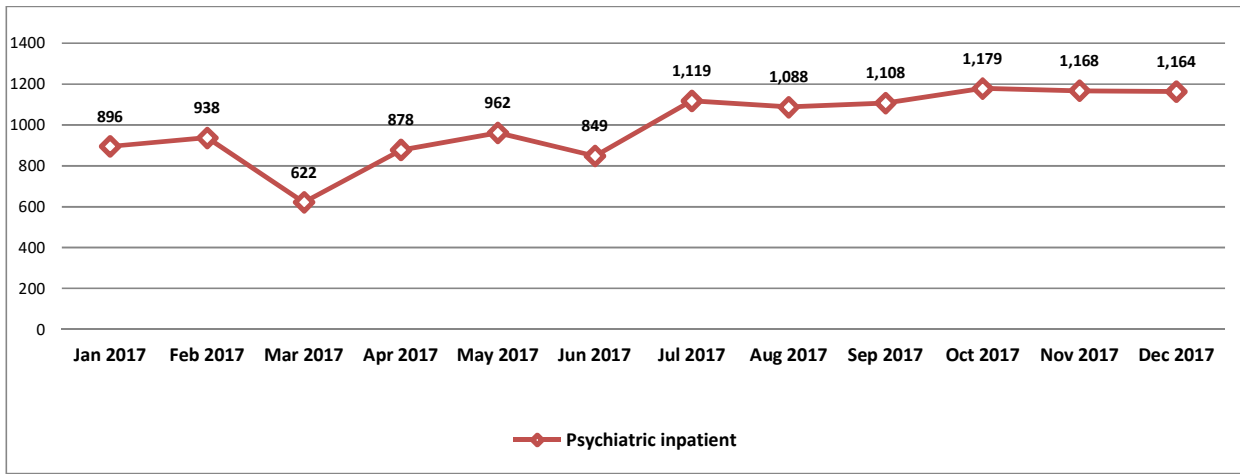
The key figures of Psychiatric inpatient are reported from Rural Damascus (Ibn-Sina Psychiatric MoH hospital (464 cases), Damascus (Ibn-Roshod hospital (435 cases), followed by Aleppo (Ibn-Khaldoun MoH hospital (168 cases).

Figure 56: The number of psychiatric inpatients in public hospitals, December 2017



Trend analysis of monthly reported number of psychiatric inpatients in public hospitals [MoH & MoHE] from January to December 2017 is shown in [Figure 57]. In 2017, the total reported psychiatric inpatients cases are **11,971**.

Figure 57: Trend analysis of number of psychiatric inpatient cases in public hospitals, January to December 2017



6. Availability of medical equipment

The availability of different types of essential and specialized equipment and supplies was assessed at hospital level, based on a standard checklist².

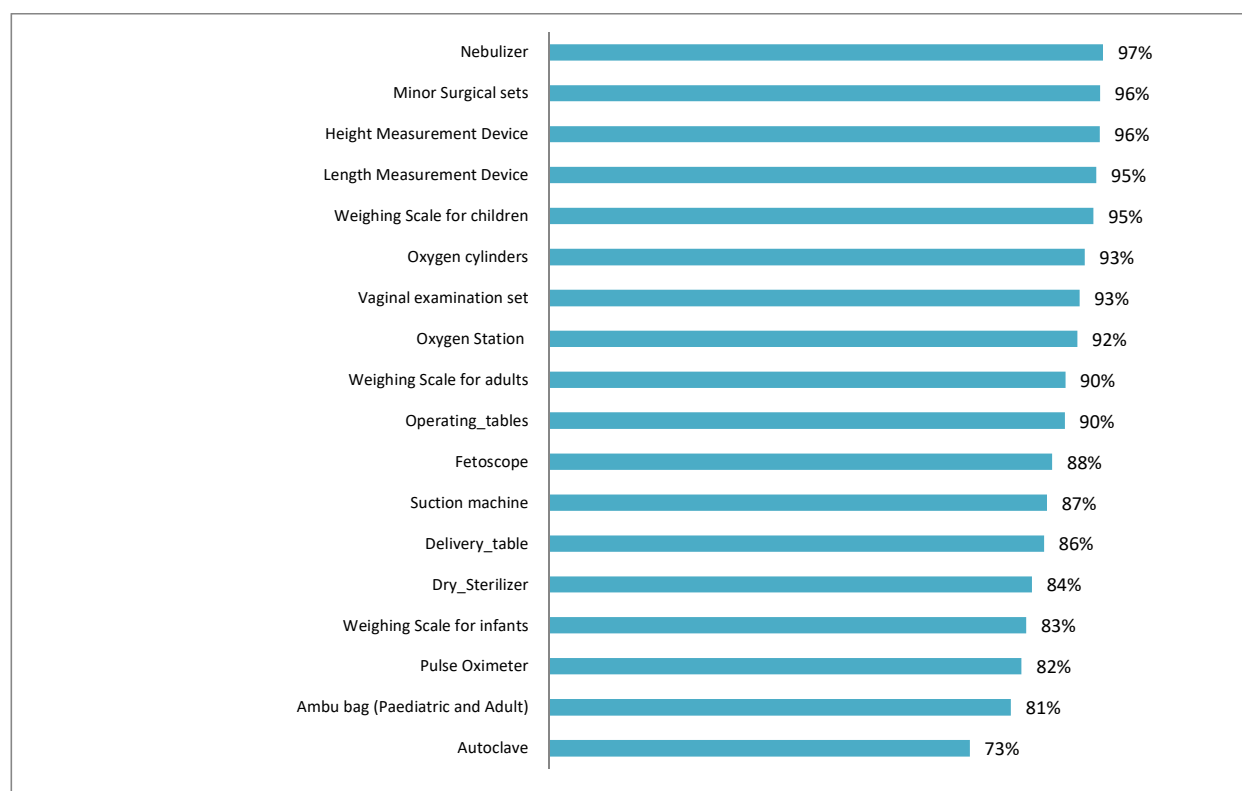
In its seventh year of crisis, Syria's hospitals (have a remarkable improvements) are still suffering from shortages and/or malfunction of medical devices/ equipment to provide secondary care services. In insecure governorates, medical devices are either destroyed, burned, or malfunctioned, while in safe areas the medical devices are overburdened by increased numbers of people (actual numbers of people in the area, in addition to IDPs and patients /injured people from surrounding areas).

Maintenance of malfunctioned devices remains a concern, due to non-availability of spare parts, accredited agent to provide maintenance support, or difficulty of accessibility in many cases.

Analysis of availability of essential and specialized equipment was measured across all functional public hospitals [MoH & MoHE](82/111), in terms of functional equipment out of the total available equipment in the hospital. The produced analysis provides good indication of the current readiness of the hospitals to provide the health services, and also to guide focused planning for procurement of equipment and machines, to fill-in identified gaps.

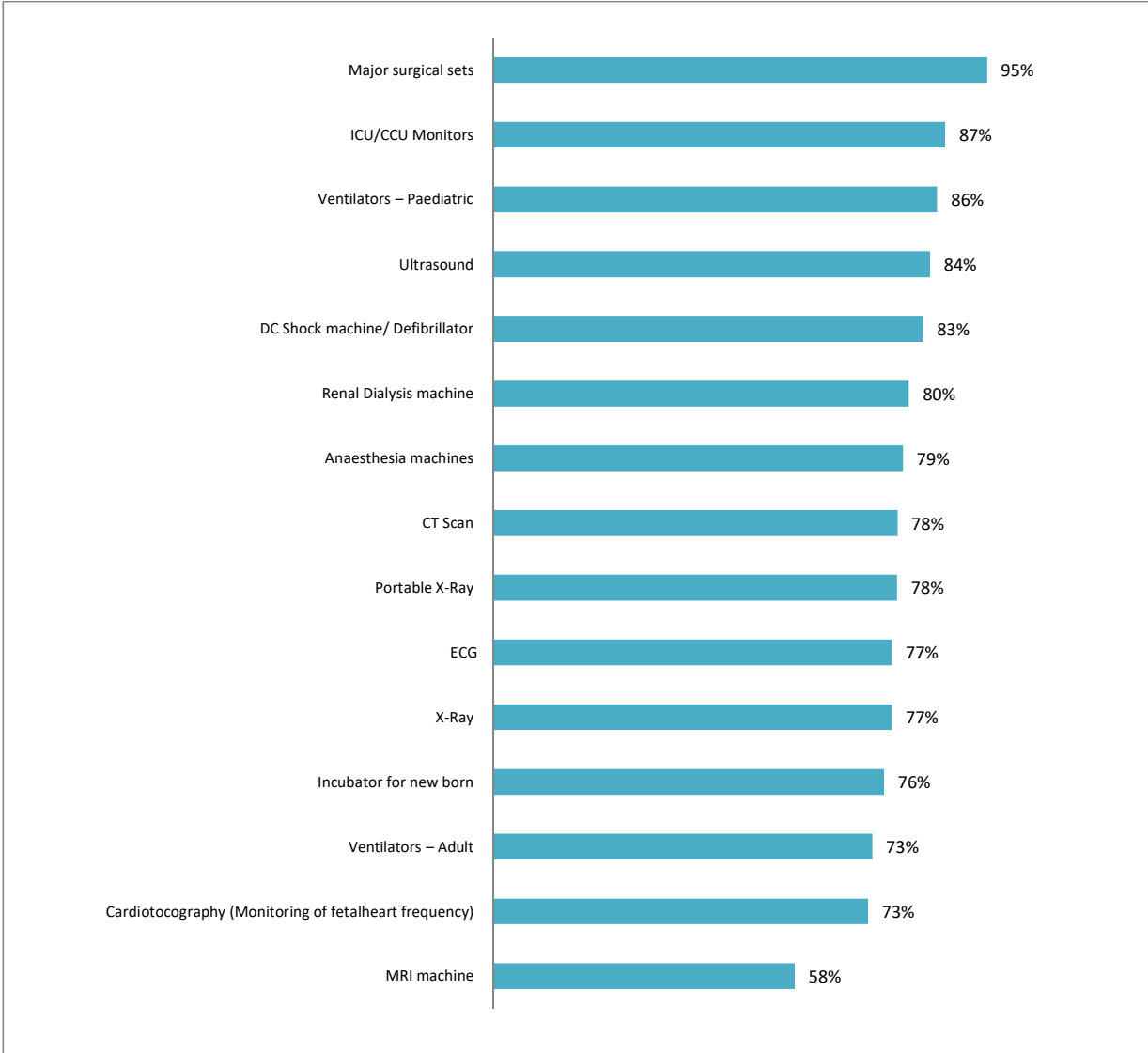
Gaps on essential and specialized equipment and machines were observed, even within the functional public hospitals. Further details are provided on [Figure 48] and [Figure 58].

Figure 58: Percentage of functional essential equipment/ total available equipment in functional public hospitals, December 2017



² A more detailed list of essential equipment is available upon request.

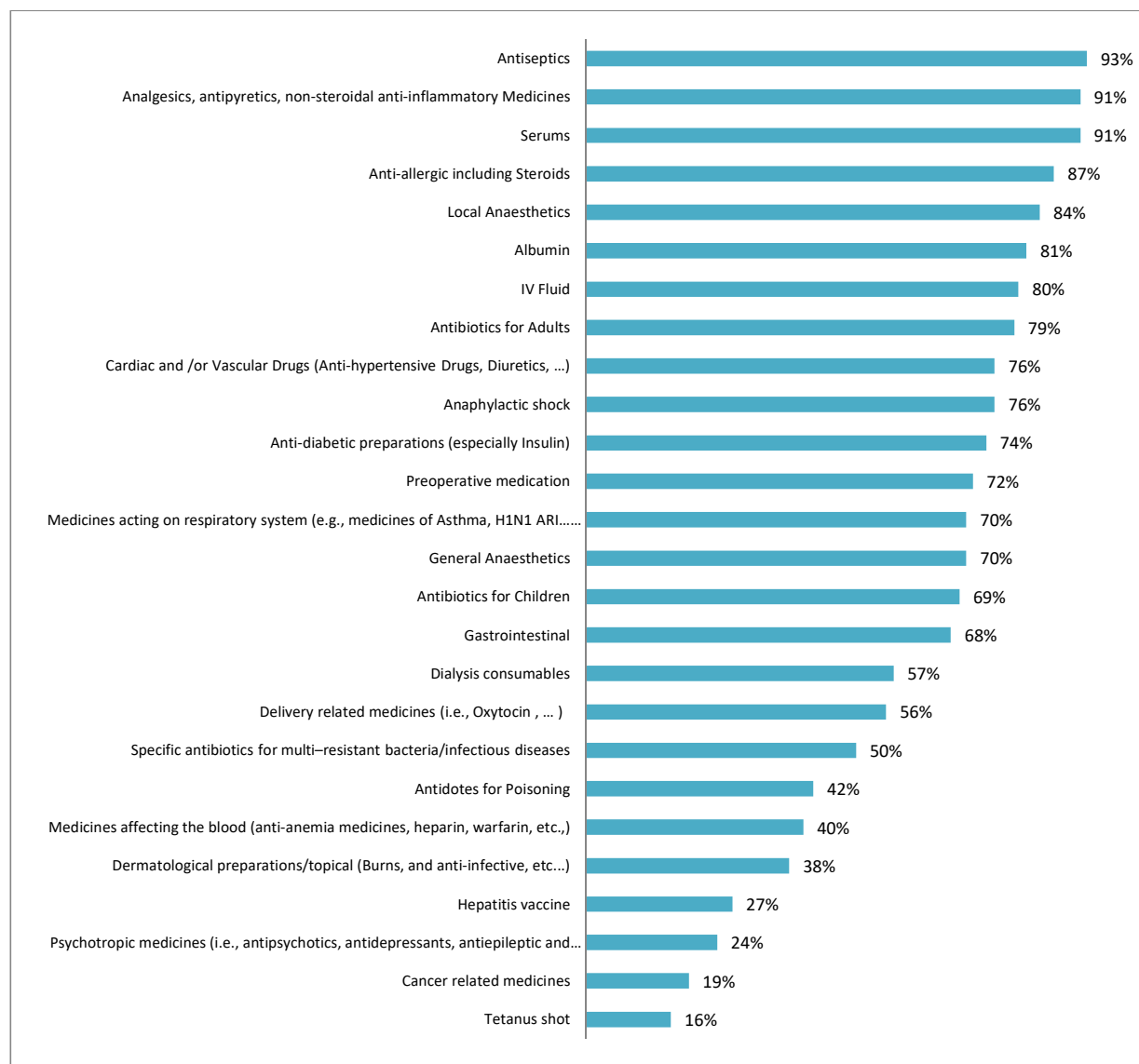
Figure 59: Percentage of functional specialized equipment/ total available equipment in the functional public hospitals, December 2017



7. Availability of medicines & medical supplies

Availability of medicines and medical supplies at hospitals' level was evaluated based on a standard list of identified priority medicines (driven from the national Essential Medicine List), and medical supplies for duration of one month [Figure 60].

Figure 60: Availability of medicines and medical supplies for one month in the functional public hospitals, December 2017



Based on the priority medicines list agreed by MoH and WHO, WHO has managed to address the gaps of medicines identified at all levels of health care.

More details on availability of medicines and medical supplies at governorate level are available in HerAMS database.

8. Conclusions and recommendations

Slight variation of functionality status of public hospitals was observed throughout 2017. For example, 29 hospitals were reportedly out-of-service in December 2017 compared to 29 in January and 31 in June of the same year. Similarly, access to the public hospitals has minor changes throughout 2017 with 26 hospitals reportedly non-accessible in December 2017 compared to 25 in January of the same year. Functionality status of hospitals was highly affected by the dire security situation and limited access by health staff and patients as well as critical shortages of supplies.

Levels of damages of the hospitals' buildings directly affected the functionality status and provision of health services; however some hospitals have resiliently continued to provide services regardless of levels of damage to the building and by utilizing intact parts of the building or operating from other neighboring facilities in a few cases. Rehabilitation of the damaged hospitals' infrastructure, in addition to provision of supplies and medical equipment will significantly improve functionality of hospitals, readiness and provision of essential health services at secondary care level.

Slight improvement of the available number of medical staff (doctors, nurses and midwives) throughout 2017 was observed. However, increased capacity building activities and training courses of the national health staff will help in improving technical capacity of healthcare providers and filling gaps in certain areas.

Limited functionality and accessibility to public hospitals in addition to large displacement of people have greatly overburdened the few functional public hospitals' resources. Increasing provision of specialized medical machines, as well as medicines and supplies especially for NCDs (such as cancer treatment, as observed the highest consultations among other NCDs) provides an affordable alternative compared to the high cost of healthcare in the private sector.

Furthermore, the crisis aggravated the inequalities among regions, leaving many people deprived of the minimum level of health services. HeRAMS can help in directing the interventions of different players to the most vulnerable groups and those with the greatest needs, and in assessing the efficiency of interventions

Conducting a qualitative survey on provision of health services from the populations' point of view, *using HeRAMS data as a baseline*, will help in concretely measuring the impact of the crisis on public health sector in terms of responsiveness of hospitals and quality of provided services.

