# HeRAMS Bi-Annual Report

January - June 2020

**Public Hospitals** in the Syrian Arab Republic



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World Health Organization Health Resources and Services Availability Monitoring System Syrian Arab Republic



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 June 2020.

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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 Monitoring 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 Monitoring 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 113 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 since 2014.

**Completeness of hospitals' reporting** remained 100%, where all 113 public hospitals: 100 (MoH) hospitals and 13 (MoHE) hospitals reported to HeRAMS by end of June 2020.

#### Functionality status of the public hospitals

By the end of June 2020, and out of the 113 assessed public hospitals [MoH & MoHE], 50% (56) were reported fully functioning, 26% (30) hospitals were reported partially functioning (i.e., shortage of staff, equipment, medicines or damage of the building in some cases), while 24% (27) were reported non-functioning.

## Accessibility status of the public hospitals

By the end of June 2020, 79% (89) hospitals were reported accessible, 8% (9) hard-to-access, and 13% (15) were inaccessible.

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## Infrastructure of the public hospitals

By the end of June 2020, 43% (49) hospitals were reported damaged [10% fully damaged and 33% partially damaged], while 57% (64) 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 37.2% (32) are using main pipelines, 9.3% (8) are mainly using wells, 51.2% (44) are using both (main pipeline and well), while 2.3% (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 31% (27) of functional public hospitals across Syria are in need for electrical generators, mainly reported from 11 governorates: Damascus, Rural Damascus, Aleppo, Lattakia, Homs, Hama, Al-Hasakeh, Deir-ez-Zor, Dar'a, As-Sweida, and Quneitra.

#### Human resources for health

The general practitioner (0.2%) and emergency physician (0.3%) were the lowest proportion of health staff in public hospitals, followed by dentists (0.6%), pharmacists (0.7%), midwives (4.7%), laboratory (5.1%), specialists (12.6%), resident doctors (23.5%), and nurses (52.4%).

Trend analysis of available number of medical doctors, nurses, and midwives during 2020 has shown slight increase. In functional public hospitals the number of medical doctors [general practitioner, specialists, emergency doctors, resident doctors, dentists] has slightly increased by 1% in June 2020 compared to January 2020, similarly the number of nurses has slightly increased by 1%, while the number of midwives has slightly decreased by 2%.

Analysis of proportions of medical doctors [general practitioner, specialists, emergency doctors, resident doctors, dentists] working at MoHE hospitals versus MoH hospitals has shown that 26% of medical doctors work in MoHE, while 74% are in MoH hospitals.

Analysis of availability of medical doctors by gender has shown that lowest proportion of female to male medical doctors is in Ar-Ragga governorate (17%).

#### 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 2020 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.

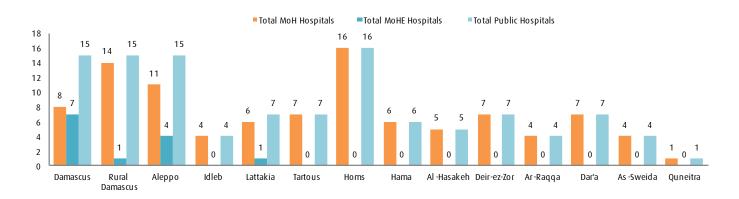
The key identified gaps of medicines and consumables at functional hospitals include the: Cancer related medicines (83%), Hepatitis vaccine (77%), Tetanus shot (73%), Medicines affecting the blood (73%), etc.

# 1. Completeness of hospitals reporting

The completeness of reporting from public hospitals across Syria remained at 100%, where all the 113 public hospitals: 100 Ministry of Health (MoH) Hospitals and the 13 Ministry of Higher Education (MoHE) hospitals continued to report to HeRAMS in June 2020.

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 June 2020.

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).
- **Non-functioning:** a hospital is out of service, because it is either fully damaged, inaccessible, no available staff, or no equipment.

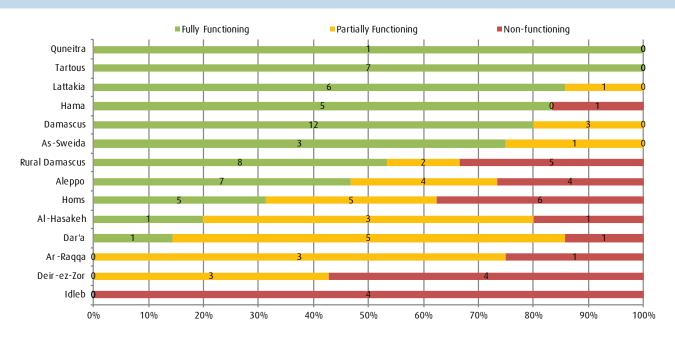
Figure 2: Functionality status - June 2020



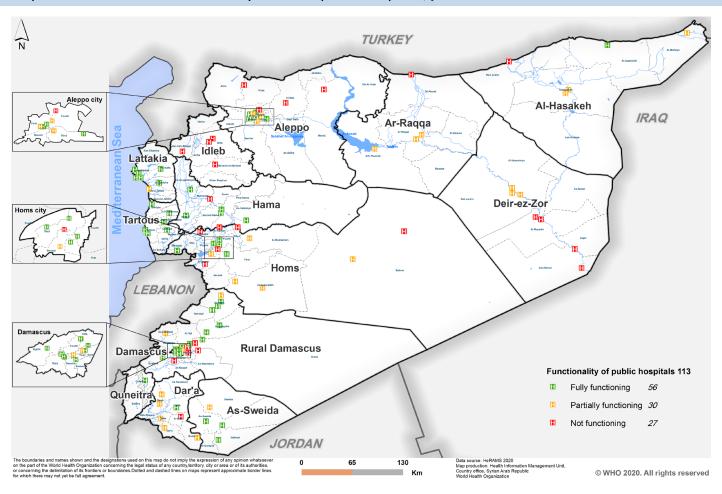
By the end of June 2020, and out of the 113 assessed public hospitals [MoH & MoHE], 50% (56) were reported fully functioning, 26% (30) hospitals were reported partially functioning (i.e., shortage of staff, equipment, medicines or damage of the building in some cases), while 24% (27) were reported non-functioning [Figure 2].

The hospitals reported partially functioning or non-functioning are in 12 out of a total 14 governorates (86% 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, June 2020

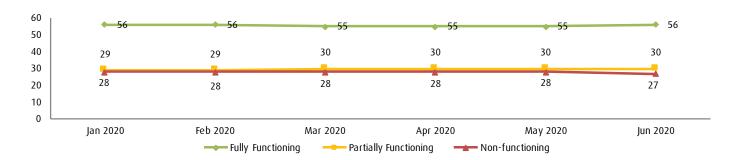


Map 1: Distribution and functionality status of public hospitals, June 2020



Slight variation of functionality status of public hospitals has been observed during 2020 [Figure 4].

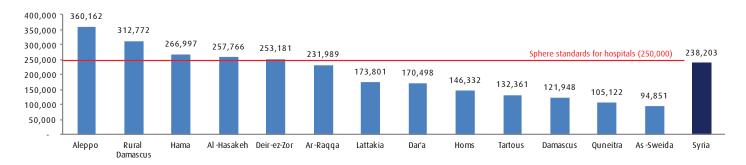
Figure 4: Trend analysis of functionality status of public hospitals, January to June 2020



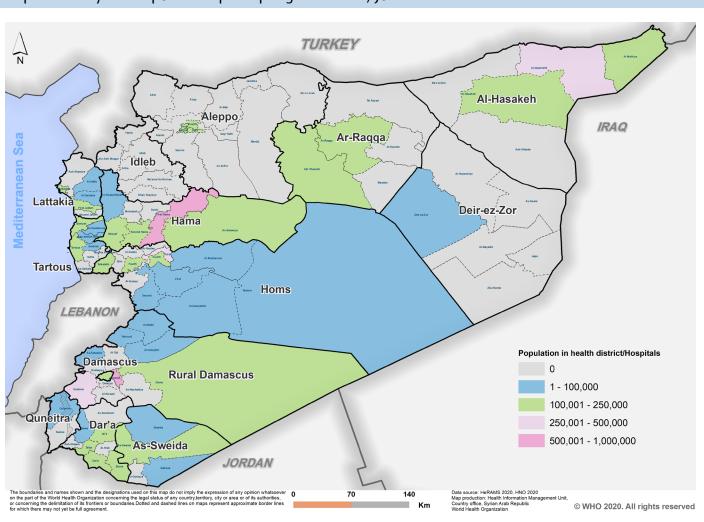
# 2.2 Density of the public hospitals

Hospitals density reflects the total number of hospitals relative to population size (based on OCHA HRP 2020), which helps measure physical access to outpatient health care services. Comparing with Sphere standards for hospitals (250,000), five governorates (Aleppo, Rural Damascus, Hama, Al-Hasakeh, and Deir-ez-Zor) are over the standard density reference; due to high number of population against the available functioning public hospitals [Figure 5] and Map 3.

Figure 5: Density of the public hospitals per governorate, June 2020



Map 3: Density of the public hospitals per governorate, June 2020



### 2.3 Special cases

The following public hospitals have been considered as non-functioning, but are providing health services by non-MoH staff with no information available, where data is being collected by cross-border partners:

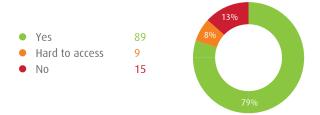
- 1. "Idleb National Hospital" in Idleb: partially damaged, providing health services by non-MoH staff since 2015.
- 2. "Ibn Seina Hospital" in Idleb: partially damaged, providing health services by non-MoH staff since 2015.

# 3. Accessibility to public hospitals

Accessibility to public hospitals is defined at three levels:

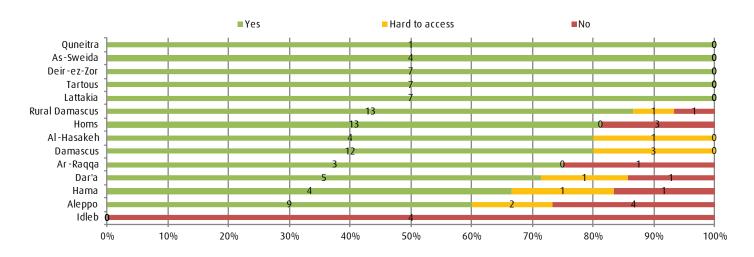
- Accessible: a hospital is easily accessible for patients and health staff.
- **Hard-to-reach:** a hospital is hardly reached, due to security situation or long distance.
- **Inaccessible:** a hospital is not accessible because of the security situation, or a hospital is accessible only to a small fraction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

Figure 6: Accessibility status - June 2020

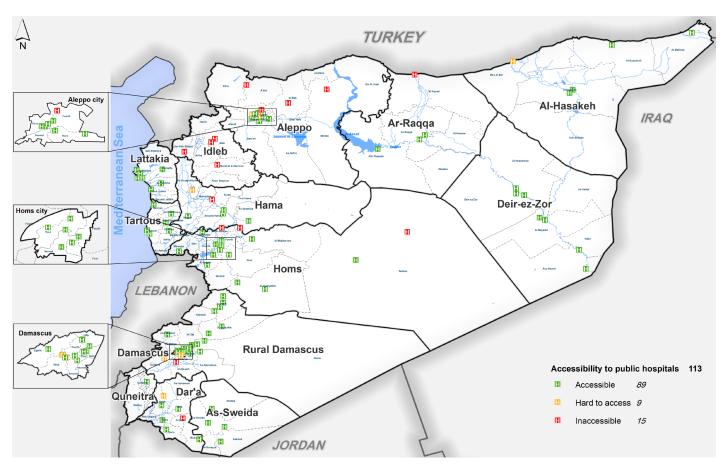


By the end of June 2020, 79% (89) hospitals were reported accessible, 8% (9) hard-to-access, and 13% (15) were inaccessible [Figure 6]. Distribution of public hospitals by accessibility status is presented in Map 4, while more details are provided at governorate's level in Figure 7.

Figure 7: Accessibilty status of the public hospitals per governorate, June 2020

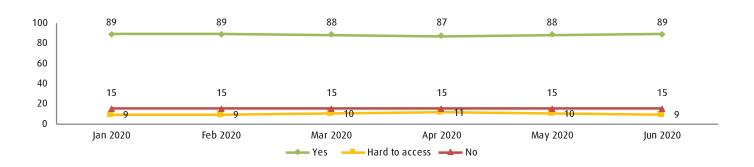


Map 4: Accessibility to public hospitals [MoH & MoHE], June 2020



Trend analysis on accessibility to public hospitals [MoH & MoHE] from January to June 2020, is presented in Figure 8.

Figure 8: Trend analysis of accessibility to public hospitals, January to June 2020



# 4. 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.

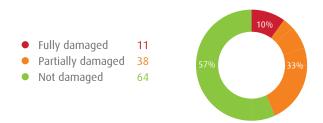
### 4.1 Level of damage of the hospitals' buildings

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.

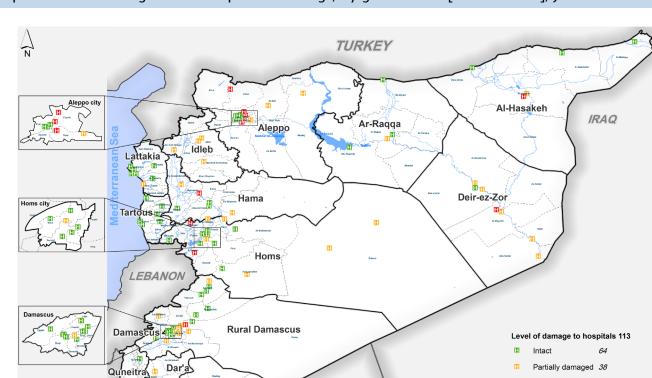
Figure 9: level of damage - June 2020



By the end of June 2020, 43% (49) hospitals were reported damaged [10% fully damaged and 33% partially damaged], while 57% (64) of public hospitals were reported intact [Figure 9]. Distribution of public hospitals by level of damage is presented in Map 5, while more details are provided at governorate's level in Figure 10.

As-Sweida

JORDAN



Map 5: Level of Damage of the Hospitals' buildings, by governorate [MoH & MoHE], June 2020

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:

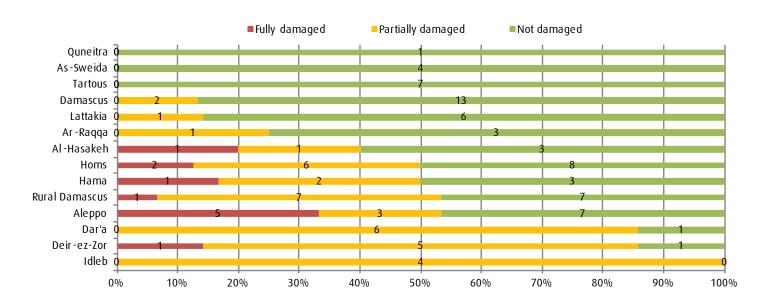
Fully damaged

Out of the 38 partially damaged hospitals, 16 hospitals were reported partially functioning and 18 out of service (non-functioning), while 4 hospitals (Ebn Khaldoun Psychiatric hospital in Aleppo, As-Salameyeh National hospital in Hama, As-Suqailbeyeh National hospital in Hama, and Al-Bairouni hospital in Rural Damascus) were reported to be fully functioning providing all services with full staffing capacity.

Out of the 11 fully damaged hospitals, 7 were reported non-functioning while 4 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 4 hospitals are available in the HeRAMS database.

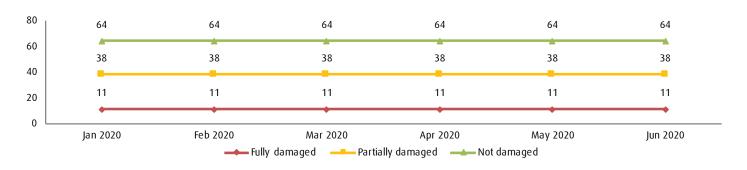
Then again, hospitals with intact buildings (64 hospitals) does not directly reflect full functionality, only 52 of the 64 intact hospitals are fully functioning, while 10 are partially functioning, and two hospitals are not functioning, due to limited access of patients and health staff to the facilities 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, June 2020



Trend analysis on condition of the public hospitals (level of damage of the building) from January to June 2020 is presented in Figure 11.

Figure 11: Trend analysis of public hospitals' level of damage, January to June 2020



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	МоН
2	Zahi Azraq general hospital	Aleppo	The fourth	МоН
3	E'zaz national hospital	Aleppo	E'zaz	МоН
4	Ophthalmology hospital	Aleppo	Third	МоН
5	Children hospital	Aleppo	Third	МоН
6	Al-Qusayr general hospital	Homs	Al-Qusayr	МоН
7	Taldaw hospital	Homs	Al-Quabu	МоН
8	Helfaya hospital	Hama	Muhardeh	МоН
9	Children hospital	Al-Hasakeh	Al-Hasakeh	МоН
10	Modern Medicine hospital	Deir-ez-Zor	Al-Mayadin	МоН
11	Al-Kindi university hospital	Aleppo	The fourth	МоНЕ

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

#	Hospital name	Province	District	Туре	Condition	Affiliation	New location
1	Zahi Azraq general hospital	Aleppo	The fourth	General	Fully damaged	МоН	Ar-Razi hospital
2	Ophthalmology hospital	Aleppo	Third	Specialized	Fully damaged	МоН	Ar-Razi hospital + Al-Bassel Heart Institute
3	Children hospital	Aleppo	Third	Specialized	Fully damaged	МоН	Ar-Razi hospital + Maternity hospital
4	Children hospital	Al-Hasakeh	Al-Hasakeh	Specialized	Fully damaged	МоН	New medical center in Al-hasakah

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

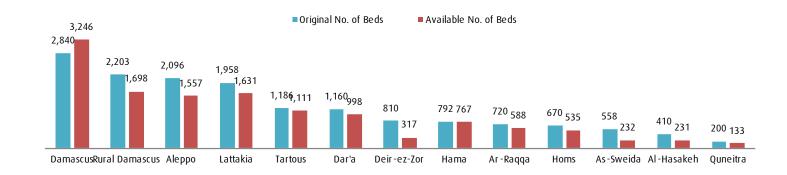
#	Hospital name	Province District		Туре	Condition	Affiliation	New location	
1	Al-Bassel-Qara hospital	Rural Damascus	Al-Nabak	General	Partially damaged	МоН	Qara Municipal	
2	Children and Obstetrics hospital	Deir-ez-Zor	Deir-ez-Zor	Specialized	Partially damaged	МоН	Al-Assad hospital	
3	Al-Furat hospital	Deir-ez-Zor	Deir-ez-Zor	Specialized	Partially damaged	МоН	Al-Assad hospital	

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.

# 4.2 Analysis of the inpatient capacity

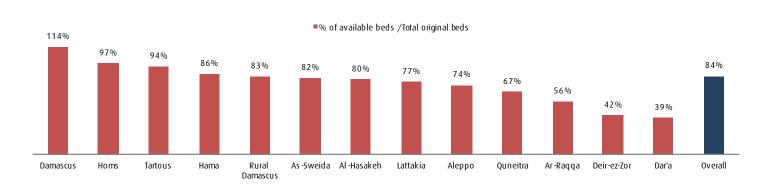
The inpatient capacity has been analyzed in terms of the total number of beds available in functional hospitals by end of 2020 compared to the original number of beds in these hospitals pre-crisis or the maximum inpatient capacity) [Figure 12].

Figure 12: Comparison of inpatient capacity (original vs. available) in functional hospitals per governorate, June 2020



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, June 2020

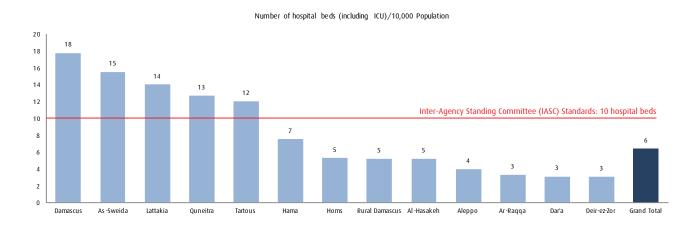


The lowest percentage (39%) of available beds in functional hospital versus original inpatient capacity is observed in Dar'a governorate, mainly reported from Jassem hospital, Nawa hospital, and the national hospital.

The follow figure shows the number of hospital beds (including ICU)/10,000 Population, given that the benchmark is greater than 10 health staff per 10,000 population (Inter-Agency Standing Committee (IASC) Standards).

The national levels in addition to eight governorates (Hama, Rural Damascus, Al-Hasakeh, Aleppo, Homs, Deir-ez-Zor, Dar'a, and Ar-Ragga) are below benchmark in [Figure 14].

Figure 14: number of hospital beds (including ICU)/10,000 Population in public hospitals, June 2020

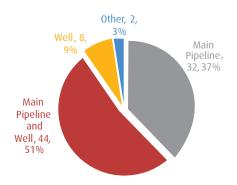


### 4.3 Water sources and functionality status

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)).

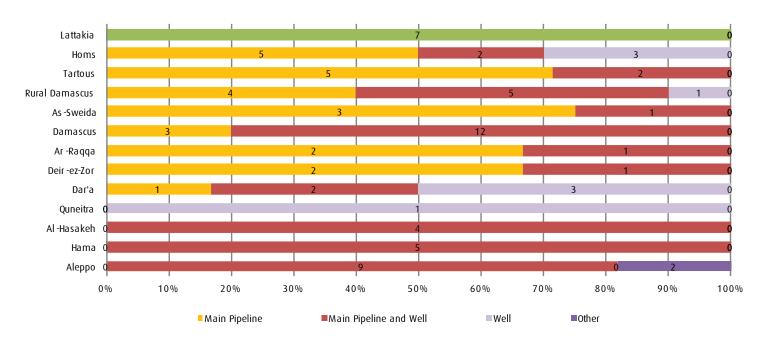
By the end of June 2020 and out of 86 functional public hospitals, 37% (32) are using main pipelines, 9% (8) are mainly using wells, 51% (44) are using both (main pipeline and well), while 3% (2) are using other sources of water [Figure 15].

Figure 15: Main sources of water, June 2020



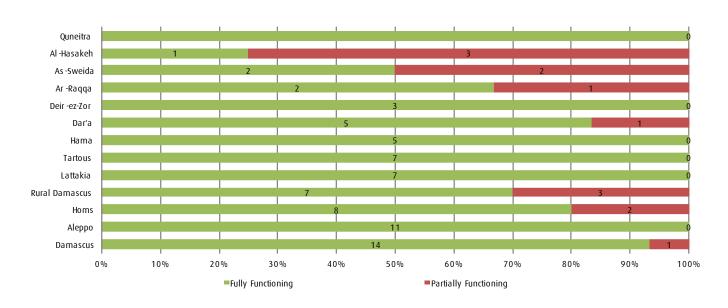
Detailed analysis on distribution of water sources at functional public hospitals is presented at governorate level on [Figure 16].

Figure 16: Distribution of water sources/ types at functional public hospitals, per governorate, June 2020



Functionality status of the water sources was measured at three levels; fully functional, partially functional, and not functional. Figure 17, provides details on functionality status of water sources at functional hospitals, (86/113) per governorate.

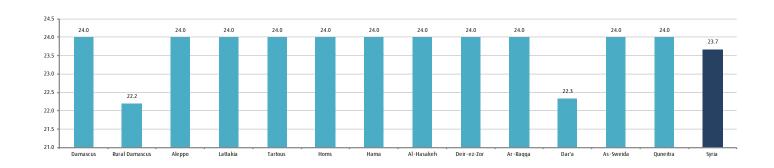
Figure 17: Functionality status of the water sources at functional public hospitals, June 2020



# 4.4 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.

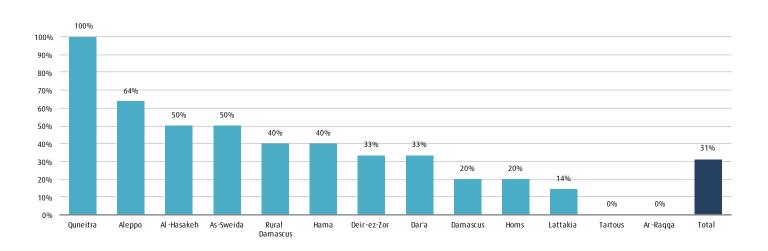
Figure 18: Hours of availability of electricity (from all sources) on average during the day in functional hospitals, June 2020



The percent of hospitals in need for electricity generators out of the total functional hospital is summarized at governorate level [Figure 19].

31% (27) of functional public hospitals across Syria are in need for electrical generators, mainly reported from 11 governorates: Damascus, Rural Damascus, Aleppo, Lattakia, Homs, Hama, Al-Hasakeh, Deir-ez-Zor, Dar'a, As-Sweida, and Quneitra.

Figure 19: Percent of hospitals in need for generators out of total functional hospitals, June 2020

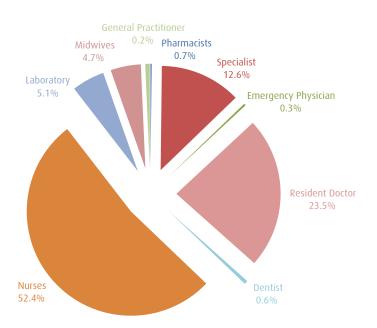


# 5. Availability of health human resources

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

Figure 20: Proportion of health staff in hospitals, June 2020



The proportion between different categories of health staff, among the total functional (fully and partially) MoH and MoHE hospitals (86/113), by the end of June 2020, is as follows: The general practitioner (0.2%) and emergency physician (0.3%) were the lowest proportion of health staff in public hospitals, followed by dentists (0.6%), pharmacists (0.7%), midwives (4.7%), laboratory (5.1%), specialists (12.6%), resident doctors (23.5%), and nurses (52.4%); [Figure 20].

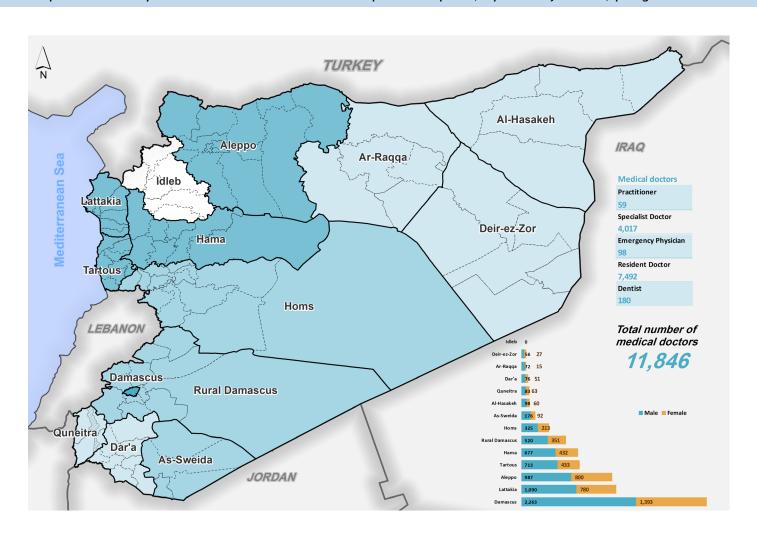
Table 4: Availability of human resources of functioning public hospitals, per governorate, June 2020

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	53	20	805	15	2,676	42	3,720	393	151	79	551	1,324	2,953
Rural Damascus	12	24	31	5	225	4	566	4	1,276	138	89	16	131	457	890
Aleppo	3	30	39	5	430	5	1,272	3	951	149	90	15	208	332	1,054
Idleb															
Lattakia	4	41	50	8	500	18	1,208	41	2,571	152	243	32	250	501	1,145
Tartous	4	38	60	10	420	20	562	32	2,409	238	121	28	246	925	1,605
Homs	13	31	37	5	238	16	189	9	1,632	158	234	14	70	723	437
Hama	4	30	46	9	351	12	621	36	1,531	151	239	13	130	736	806
Al-Hasakeh	6	4	7	3	62	0	74	2	290	40	37	2	24	146	161
Deir-ez-Zor	1	2	2	0	38	0	33	7	558	83	109	0	10	262	296
Ar-Raqqa	8	7	22	2	46	2	0	0	245	15	28	11	32	11	121
Dar'a	1	7	5	1	40	0	73	0	406	35	48	5	24	150	233
As-Sweida	3	7	13	2	118	2	122	1	1,006	56	94	4	80	306	587
Quneitra	0	2	3	1	37	4	96	3	109	10	16	3	11	70	226
Grand Total	59	268	368	71	3,310	98	7,492	180	16,704	1,618	1,499	222	1,767	5,943	10,514

<sup>\*</sup> Health workers in the hospitals who hold university degrees (engineer, law, trade and economics ......)

The availability and level of medical staffing (by category and gender) in public hospitals a, as is summarized at governorate's level in Map 6. The categories of staff included in the map are: general practitioner, specialists, emergency doctors, resident doctors, dentists.

Map 6: Availability of medical doctors in functional public hospitals, by end of Jun2020, per governorate



## 5.1 Availability of medical staff by category and affiliation

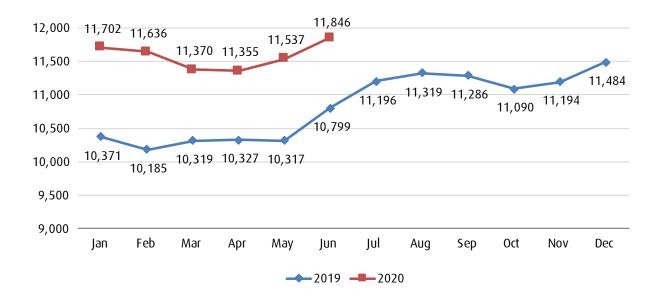
The availability medical staff in functional public hospitals is analyzed by category [i.e., medical doctors<sup>1</sup>, nurses, and midwives] and affiliation [MoH vs. MoHE hospitals], as follow:

# 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 1% in June 2020 (11,846 compared to January 2020 (11,702).

Figure [21] shows the trend analysis of reported medical doctors during 2018 and 2019, in functional public hospitals.

Figure 21: Trend analysis of number of doctors (a total of general practitioner, specialists, emergency physicians, resident doctors, and dentists) in public hospitals during 2019 and 2020



#### ii. Trend analysis of nurses:

The number of nurses in public hospital has slightly increased by 1% in June 2020 (16,704), compared to January 2020 (16,484).

Figure [22] shows trend analysis for the reported number of nurses during 2019 and 2020.

17,000 16,899 16,880 16,900 16,767 16,769 16,726 16,800 16,64 16,618 16,700 16,547 16,704 16,600 16,509 16,484 16,443 16,500 16,400 16,24 6,389 16,300 16,323 16,350 16,200 16,243 16,100 16,000 Jan Feb Mar Apr May Jun Jul Aug Sep 0ct Nov Dec **-**2019 **---**2020

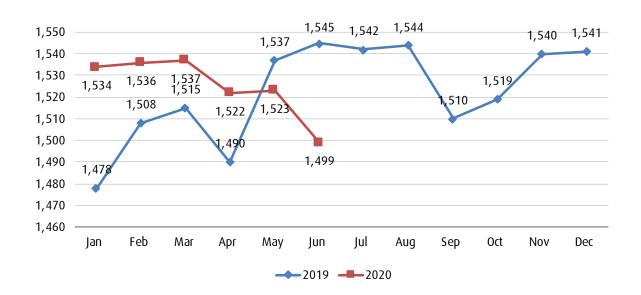
Figure 22: Trend analysis of number of nurses in public hospitals during 2019 and 2020

### iii. Trend analysis of midwives:

The number of midwives in public hospital has slightly decreased by 2% in June 2020 (1,499), compared to January 2020 (1,534).

Figure [23] shows trend analysis for the reported number of midwives during 2019 and 2020.

Figure 23: Trend analysis of number of midwives in public hospitals during 2019 and 2020

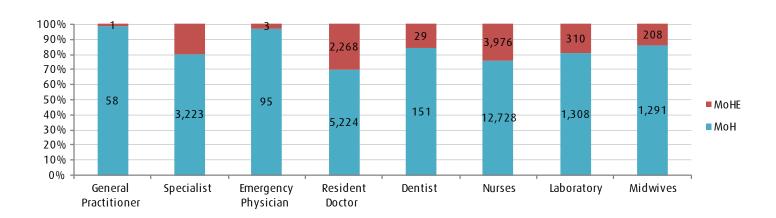


# 5.2 Availability of medical doctors by affiliation (MoH vs. MoHE hospitals)

Analysis of proportions of medical doctors [general practitioner, specialists, emergency physician, resident doctors, dentists] working at MoHE hospitals versus MoH hospitals in June 2020 has shown that 26% (3,095) of medical doctors (general practitioner, specialists, emergency physician, resident doctors, dentists) work in MoHE, while 74% (8,751) are in MoH hospitals.

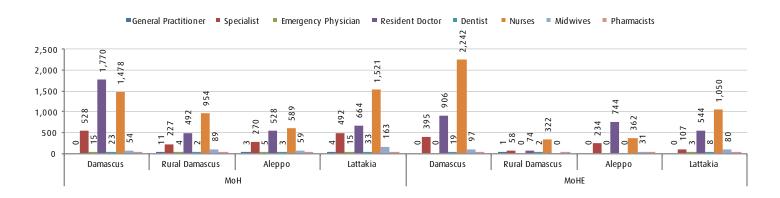
2% out of total general practitioner (59) work in public hospitals are in MoHE hospitals; 20% out of total specialists (4,017) work in public hospitals are in MoHE hospitals; 3% out of total emergency physician (98) work in public hospitals are in MoHE hospitals; 30% out of total resident doctors (7,492) are in MoHE hospitals; 16% out of total dentist (180) work in public hospitals are in MoHE hospitals and 23% out of total the nurses & midwives (18,203) are in MoHE hospitals. Details on proportions and numbers of key staff work in MoH vs. MoHE hospitals, by end of June 2020, are presented in [Figure 24].

Figure 24: Proportions and numbers of key staff work in MoH vs. MoHE hospitals, June 2020



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 25].

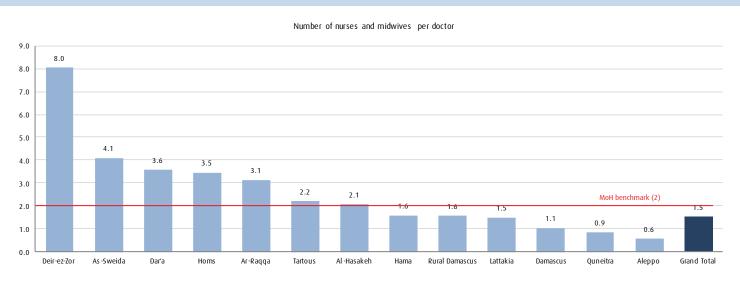
Figure 25: Comparison of the medical staff of MoH vs. MoHE hospitals, June 2020



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 levels in addition to six governorates (Hama, Rural Damascus, Lattakia, Damascus, Quneitra, and Aleppo) are below or equal benchmark in [Figure 26].

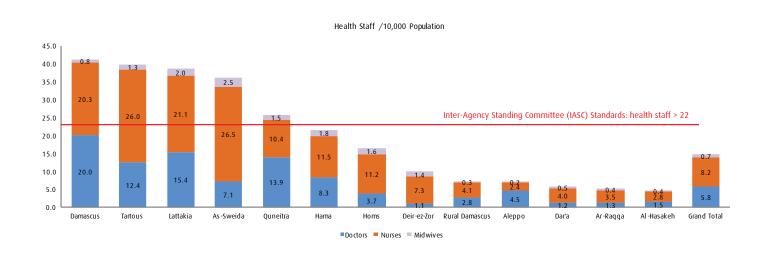
Figure 26: Number of nurses and midwives per doctor in public hospitals, June 2020



The follow figure shows the number of health staff (doctors, nurses and midwives) per 10,000 population, given that the benchmark is greater than 22 health staff per 10,000 population (Inter-Agency Standing Committee (IASC) Standards).

The national levels in addition to eight governorates (Hama, Homs, Deir-ez-Zor, Rural Damascus, Aleppo, Dar'a, Al-Hasakeh, and Ar-Raqqa) are below or equal benchmark in [Figure 27].

Figure 27: number of health staff (doctors, nurses and midwives) per 10,000 population in public hospitals, June 2020



# 5.3 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 Ar-Raqqa governorate (24%). [Figure 28].

Figure 28: Proportion of Doctors (a total of Specialists, Emergency Physicians, Resident Doctors, Dentists), by gender, per governorate, June 2020

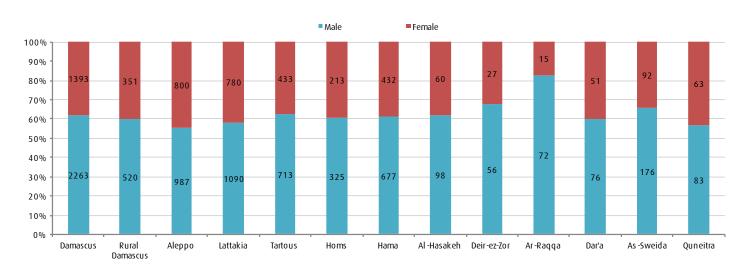
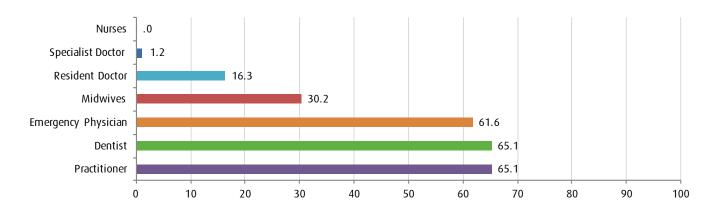


Figure 29: Percentage of functioning public hospitals without medical staff (gaps), June 2020

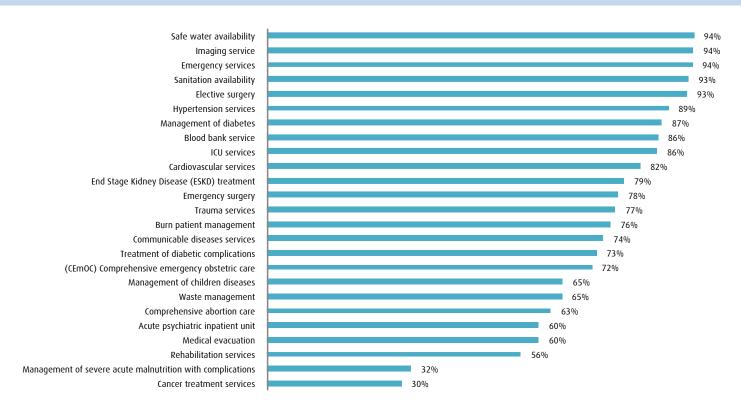


# 6. Availability and utilization of the health services

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]: (86/113). 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 30].

Figure 30: Availability of health services in the functional public hospitals, June 2020



<sup>\*\*</sup>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 June 2020 per governorate [Figure 31]. In 2020, the total estimated caseload in functional public hospitals is 2,945,140.

Figure 31: Estimated caseload of functional public hospitals (outpatient consultations and emergency cases), January to June 2020

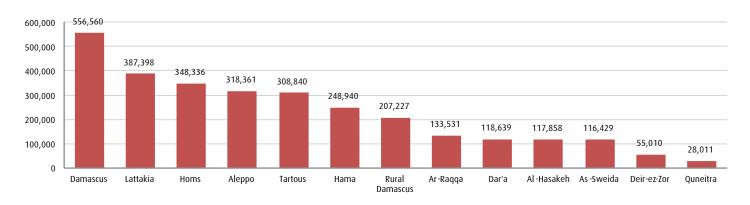
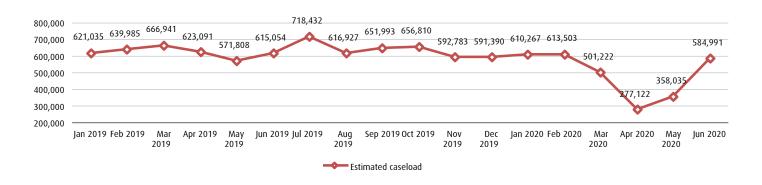


Figure 32: Trend analysis of estimated caseload in public hospitals, January 2019 to June 2020



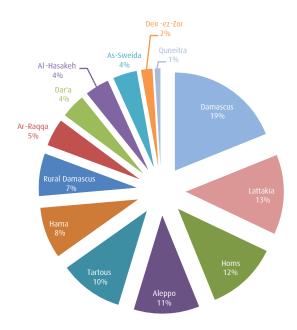
Most of healthcare services had a remarkable drop in April 2020; due to lockdown as part of COVID-19 response and then got back to previous level.

The proportion of workload of functional hospitals per governorate is provided on Figure 31.

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

Figure 33: Proportions of workload during 2020, per governorate



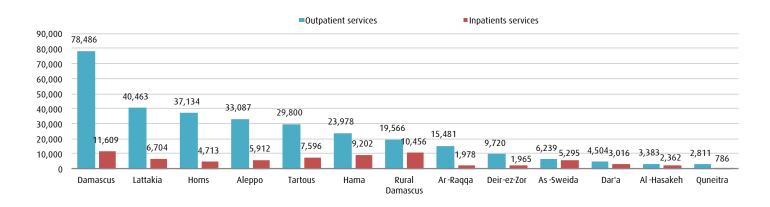
#### 6.1 General clinical services

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

## i. Outpatient and inpatient

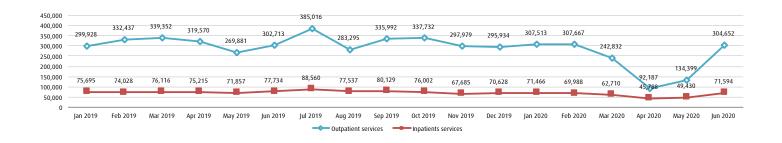
The number of outpatients to inpatients was assessed at a hospital level, and the total numbers reported in December 2019 were summarized and analyzed at governorate level [Figure 34].

Figure 34: The number of Outpatient and Inpatient in public hospitals, June 2020



Trend analysis of total reported numbers of outpatient and Inpatient from functional public hospitals [MoH & MoHE], for six months (January to June 2020), is presented in [Figure 35]. In 2020, the total reported outpatients are 1,389,250 while the inpatients are 370,976.

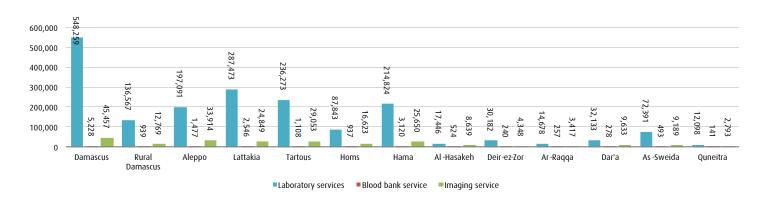
Figure 35: Trend analysis of outpatient and Inpatient in public hospitals, January 2019 to June 2020



# ii. Laboratories, blood bank, and imaging services

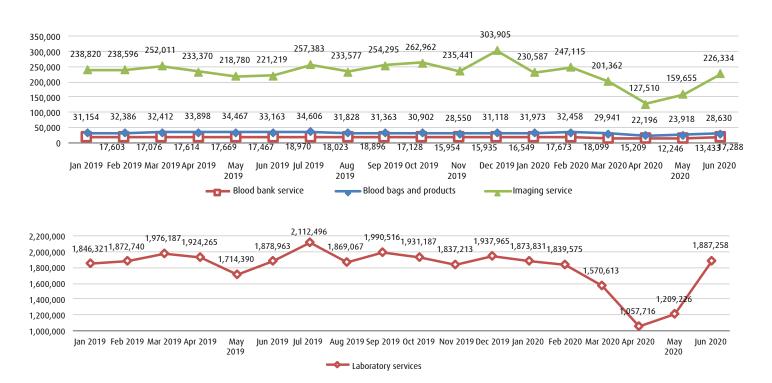
The number of patients received services in hospitals' laboratories, blood bank, and imaging departments was assessed at a hospital level, and the total number of cases from January to June 2020 analyzed at governorate level [Figure 36].

Figure 36: The number of patients received services in laboratories, blood bank, and imaging services in public hospitals, June 2020



Trend analysis of number of patients received services in hospitals' blood banks and imaging departments, from January to June 2020, is presented in [Figure 37]. In 2020, the total reported patients received services in blood banks are 93,948 [of note: the total number of blood bags and products in 2020 are 169,116], while patients received imaging services are 1,192,563 [of note: the total performed service (X-Ray, MRI, and CT Scan pictures) in 2020 are 1,495,680].

Figure 37: Trend analysis of number of patients received services in blood banks and imaging services in public hospitals, January 2019 to June 2020



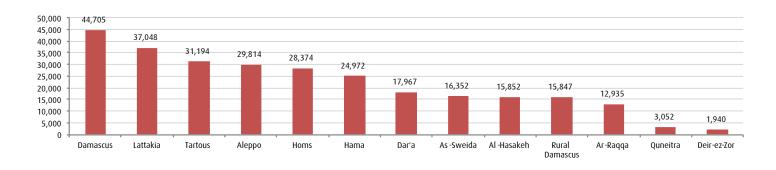
### 6.2 Surgical and trauma care

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

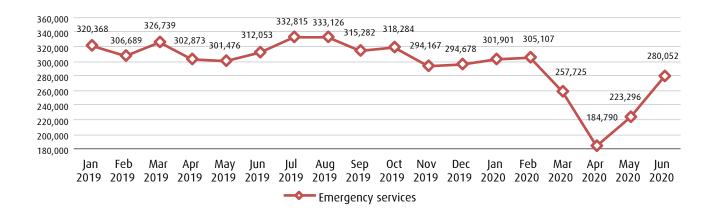
Figure 38 presents the total number of cases in emergency departments, reported during December 2019 from functional public hospitals at governorate level.

Figure 38: The number of reported cases in emergency department in public hospitals, June 2020



Trend analysis of total number of cases in emergency departments in functional public hospitals [MoH & MoHE], from January to June 2020, is presented in [Figure 39]. In 2020, the total number of cases in emergency departments are 1,552,871.

Figure 39: Trend analysis of number of reported cases in emergency department in public hospitals, January 2019 to June 2020



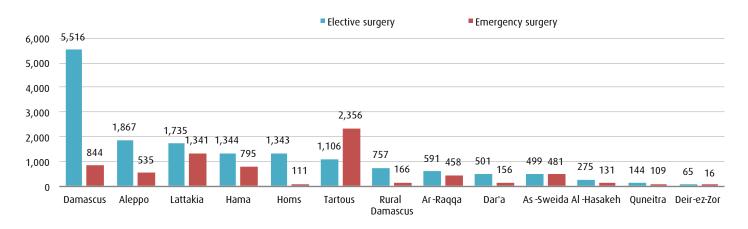
# iv. Emergency and elective surgeries

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 40].

During June 2020, the highest workload of elective surgeries is reported from Al-Assad university hospital in Damascus (1,126), followed by Tishreen university hospital in Lattakia (810), Damascus MoH Hospital (Al-Mojtahid (791), Hama national hospital (719), Dermatology and Venereology university hospital in Damascus (716), Al-Mouwasat university hospital (690) in Damascus, Ar-Razi MoH hospital in Aleppo (640), Children university hospital in Damascus (622), and Al-Bassel Heart Institute in Damascus (510).

While the highest workload of emergency surgeries is reported from Al-Bassel hospital in Tartous (2,002), followed by National hospital in Lattakia (892), National hospital in Ar-Raqqa (442), Zaid Ash-Shariti hospital in As-Sweida (440), Al-Mouwasat MoHE hospital (359), Hama national hospital (310), Tishreen university hospital in Lattakia (281), Aleppo university hospital (251), Damascus MoH Hospital (Al-Mojtahid (220)).

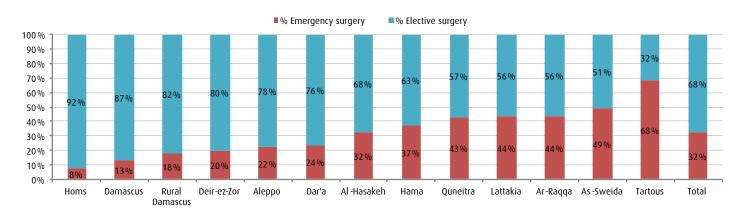
Figure 40: The number of emergency surgeries vs. elective surgeries in public hospitals, June 2020



By analyzing the percent of total emergency surgeries to elective surgeries during June 2020, the highest percent across different governorates is reported in Tartous, As-Sweida, Ar-Raqqa, and Lattakia governorates.

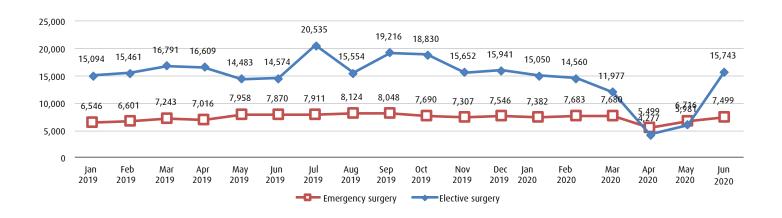
Across all reported functional public hospitals, 32% of surgeries are emergency while 68% are elective [Figure 41].

Figure 41: Percentage of total emergency surgeries to elective surgeries in public hospitals per governorate, June 2020



Trend analysis of total number of elective and emergency surgeries reported in functional public hospitals [MoH & MoHE], from January to June 2020 is presented in Figure 42. In 2020, the total reported emergency surgeries are 42,459 while the elective surgeries are 67,588.

Figure 42: Trend analysis of number of patients received emergency surgeries and elective surgeries in public hospitals, January 2019 to June 2020

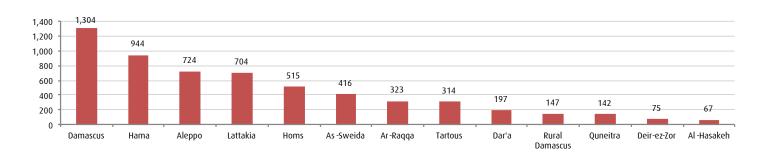


With note that increasing of the number if elective surgeries during June 2020 was due to desire of people to perform elective surgeries after the month of fasting in Ramadan (May 2020).

#### v. ICU services

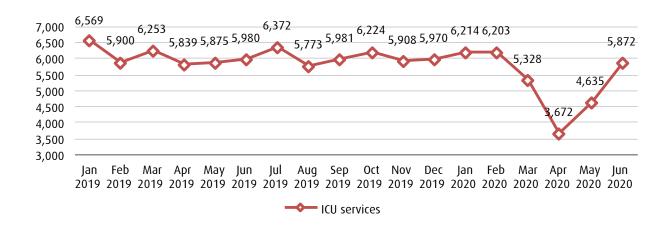
Figure 43 presents the total number of patients received ICU services reported during June 2020 from functional public hospitals at governorate level.

Figure 43: The number of patients received ICU services in public hospitals, June 2020



Trend analysis of total number of patients received ICU services reported in functional public hospitals [MoH & MoHE], from January to June 2020 is presented in Figure 44. In 2020, the total reported total number of patients received ICU services are 31,924.

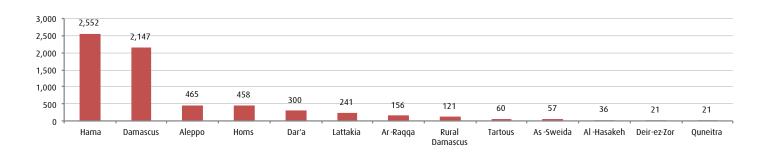
Figure 44: Trend analysis of number of patients received ICU services in public hospitals, January 2019 to June 2020



#### vi. Trauma services

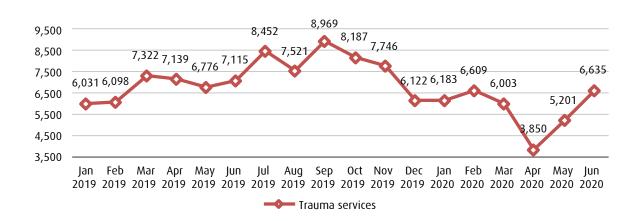
Figure 45 presents the total number of patients received Orthopaedic/trauma ward for advanced orthopaedic care reported during June 2020 from functional public hospitals at governorate level.

Figure 45: The number of patients received trauma services in public hospitals, June 2020



Trend analysis of total number of patients received trauma services reported in functional public hospitals [MoH & MoHE], from January to June 2020 is presented in Figure 46. In 2020, the total reported total number of patients received trauma services are 34,481.

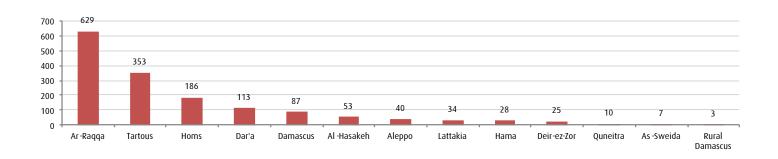
Figure 46: Trend analysis of number of patients received trauma services in public hospitals, January 2019 to June 2020



## vii. Burn patient management

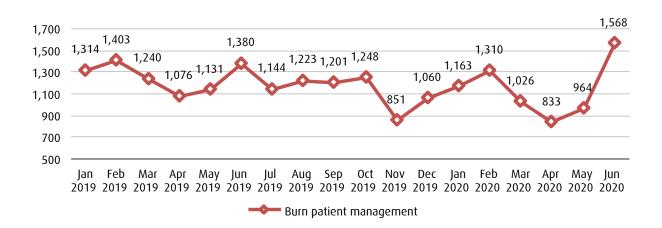
Figure 47 presents the total number of patients received burn patient management reported during June 2020 from functional public hospitals at governorate level.

Figure 47: The number of patients received burn patient management in public hospitals, June 2020



Trend analysis of total number of patients received burn patient management reported in functional public hospitals [MoH & MoHE], from January to June 2020 is presented in Figure 48. In 2020, the total reported total number of patients received burn patient management are 6,864.

Figure 48: Trend analysis of number of patients received burn patient management in public hospitals, January 2019 to June 2020



#### 6.3 Maternal health services

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

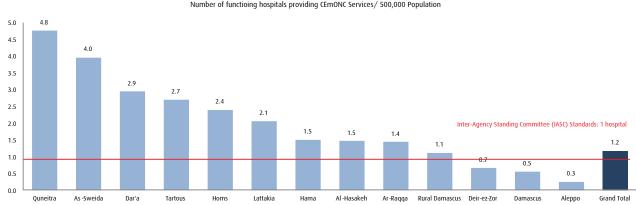
- Number of functioning hospitals providing CEmONC services / 500,000 Population, June 2020
- Utilization of service (caesarean sections (CS) vs. normal deliveries); June 2020 summary figures by governorate
- Percentage of CSs to normal deliveries, June 2020
- Trend analysis of the monthly normal deliveries vs. caesarean sections, January to June 202

# i. Number of functioning hospitals providing CEmONC services/ 500,000 Population

The follow figure shows the number of functioning hospitals providing (CEmOC) Comprehensive Emergency Obstetric Care (i.e., BEOC + caesarean section + safe blood transfusion) services / 500,000 Population, given that the benchmark is at least 1 hospital providing CEmONC services (Inter-Agency Standing Committee (IASC) Standards).

Three governorates (Deir-ez-Zor, Damascus, and Aleppo) are below benchmark in [Figure 49].

Figure 49: Number of functioning hospitals providing CEmONC services/ 500,000 Population, June 2020

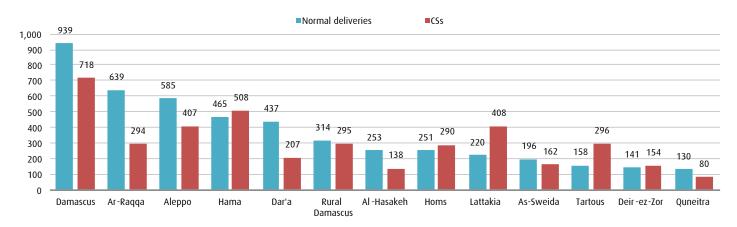


# ii. Utilization of service (caesarean sections vs. normal deliveries)

The numbers of caesarean sections performed at public hospitals (in June 2020) versus the normal deliveries have been analysed at governorates' level [Figure 50].

The highest numbers are reported from Obstetrics and Gynecology MoHE hospital in Damascus [normal deliveries are 409 while CSs are 513], followed by Az-Zahrawy hospital in Damascus [normal deliveries are 530 while CSs are 205], Gynecology MoHE Hospital in Aleppo [normal deliveries are 340 while CSs are 296], Ath-Thawrah National hospital in Ar-Raqaa [normal deliveries are 349 while CSs are 139], Al-Assad hospital in Hama [normal deliveries are 285 while CSs are 178], Maternity hospital in Ar-Raqaa [normal deliveries are 290 while CSs are 155], and Maternity hospital in Aleppo [normal deliveries are 245 while CSs are 111].

Figure 50: The No. of normal deliveries and caesarean sections (CSs) performed at public hospitals, June 2020

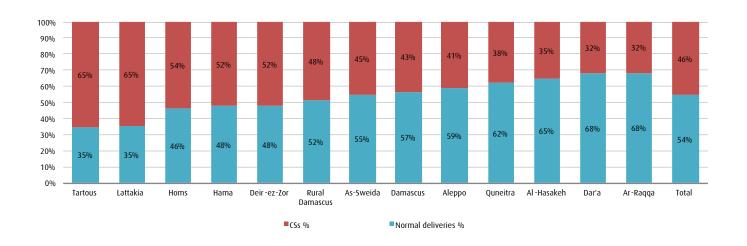


## iii. Percentage of CS to normal deliveries

The highest figures of caesarian sections in June 2020 are reported in Deir-ez-Zor (154 CSs compared to 141 normal deliveries), Lattakia (408 CSs compared to 220 normal deliveries), Homs (290 CSs compared to 251 normal deliveries), Hama (508 CSs compared to 465 normal deliveries), and Tartous (296 CSs compared to 158 normal deliveries).

Across all reported functional hospitals in June 2020, 46% (3,957) of deliveries are CSs while 54% (4,728) are normal deliveries. Details on percent of CSs to normal deliveries per governorate in June 2020, is provided in [Figure 51].

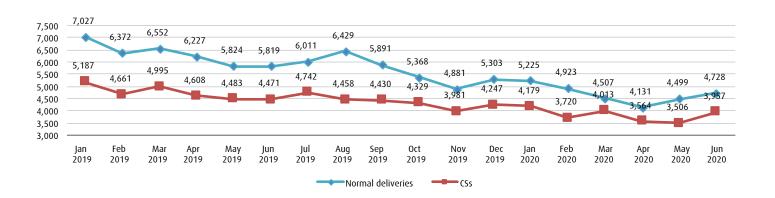
Figure 51: Percentage of caesarean sections to normal deliveries in public hospitals, June 2020



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

Trend analysis of the monthly numbers of normal deliveries vs. caesarean sections reported from the MoH & MoHE hospitals, from January to June 2020 is shown in Figure 52. In 2020, the total reported normal deliveries are 28,013 while the caesarean sections are 22,939.

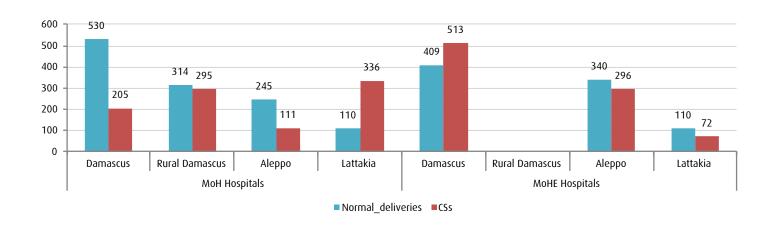
Figure 52: Trend analysis of the monthly numbers of normal deliveries vs. caesarean sections in public hospitals, January 2019 to June 2020



#### v. 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 is shown in [Figure 53].

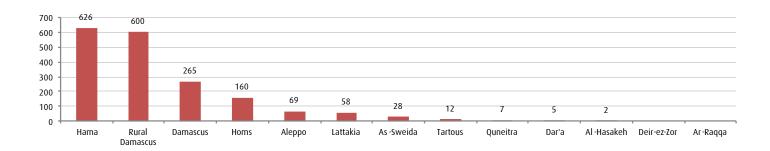
Figure 53: Comparison of MoH & MoHE hospitals workload of normal deliveries vs, CSs, June 2020



#### 6.4 Child health

Management of severe children diseases (such as acute respiratory diseases, Meningitis, blood diseases cancer, etc...) are assessed at hospitals level. Figure 54 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.

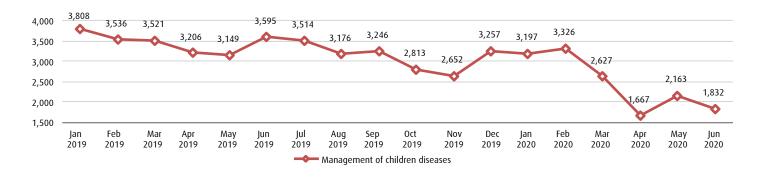
Figure 54: Number of children with severe diseases in public hospitals, June 2020



The high reported figures in Hama, Rural Damascus, Damascus, Homs, and Aleppo 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 June 2020, is presented in [Figure 55]. In 2020, the total reported cases of severe children diseases are 14,812.

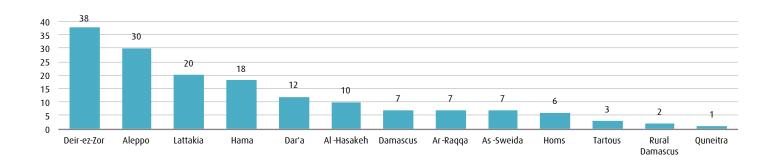
Figure 55: Trend analysis of reported cases of severe children diseases in public hospitals, January 2019 to June 2020



#### 6.5 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 56 demonstrates the number of cases reported in June 2020, at governorate level.

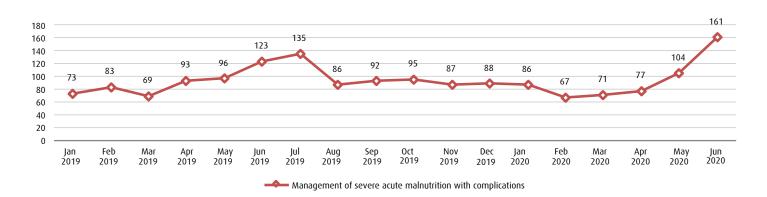
Figure 56: The number of children with severe acute malnutrition with complications in public hospitals, June 2020



The high reported figures in Deir-ez-Zor , Aleppo , Lattakia, Hama, and Dar'a, due to the high numbers of IDPs.

Trend analysis of reported cases of severe acute malnutrition from January to June 2020, is presented in [Figure 57]. In 2020, the total reported children with severe acute malnutrition are 566.

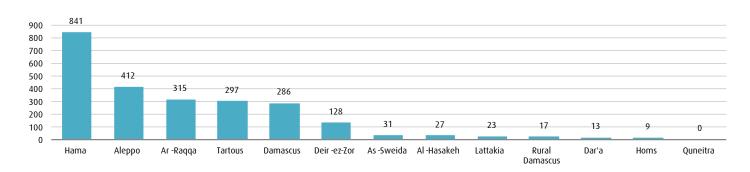
Figure 57: Trend analysis of number of children with severe acute malnutrition with complications in public hospitals, January 2019 to June 2020



#### 6.6 Communicable diseases services

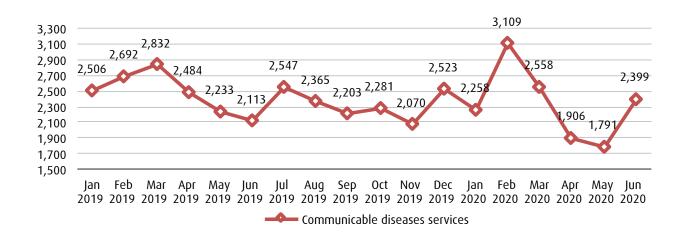
Management of severe and/or complicated communicable diseases (such as meningitis, measles, SARI, others) are assessed at hospitals level. Figure 58 shows the distribution of total reported cases of communicable diseases services by governorate.

Figure 58: The number of patients received communicable diseases in public hospitals, January to June 2020



Trend analysis of reported patients received communicable diseases from January to June 2020, is presented in [Figure 59]. In 2020, the total reported patients are 14,021.

Figure 59: Trend analysis of number of patients received communicable diseases in public hospitals, January 2019 to June 2020



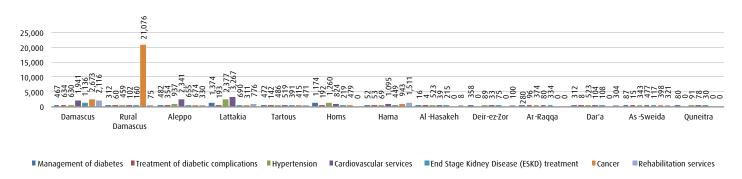
# 6.7 NCDs (non-communicable diseases)

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, and Cancer diseases) are from Damascus hospitals.

Among all NCDs during 2020, 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 2020, mainly in Lattakia (has one cardiovascular specialized hospitals), Damascus (has two cardiovascular specialized hospitals), and Aleppo (has two cardiovascular specialized hospitals, Homa, Hama, and Tartous [Figure 60]

Figure 60: The number of NCDs' consultations in public hospitals, June 2020



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The monthly trend of reported NCDs' consultations at functional public hospitals from January to June 2020 is shown in [Figure 61].

In 2020, the total reported NCDs' consultations are as follow:

Diabetes: 24,538

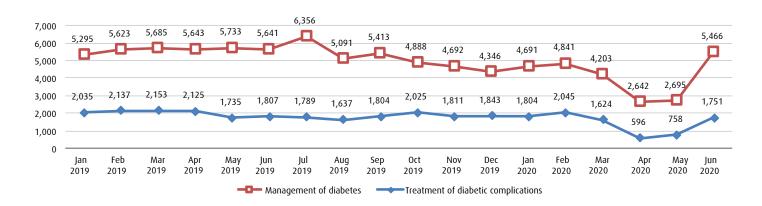
• Diabetic complications: 8,578

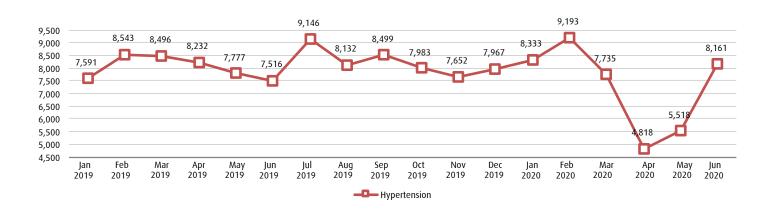
Hypertension: 43,758Cardiovascular: 52,005

• ESKD: 25,320 [of note: the total performed ESKD Sessions in 2017: 184,477]

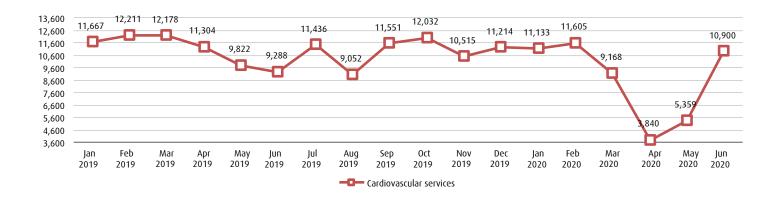
Cancer: 136,550

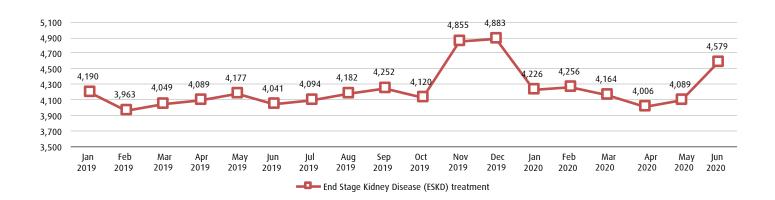
Figure 61: Trend analysis of total monthly number of NCDs' consultations reported in public hospitals, January 2019 to June 2020

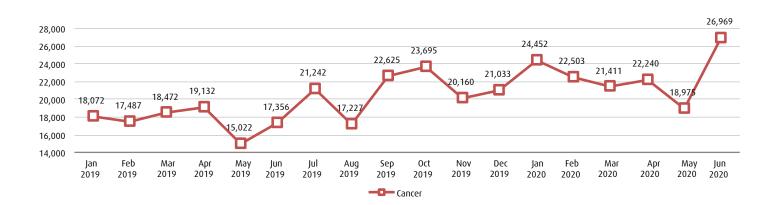




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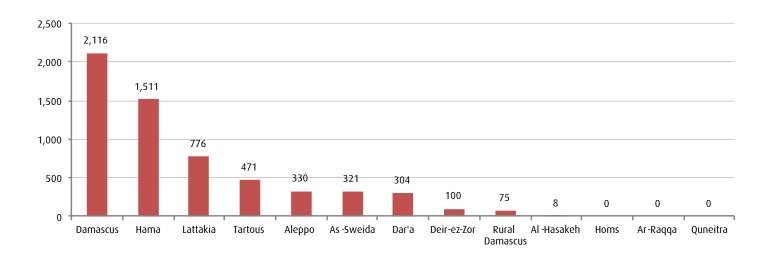




#### 6.8 Rehabilitation services

Rehabilitation services and assistive device provision, including post-operative rehabilitation for traumarelated injuries are assessed at hospitals level. Figure 62 shows the distribution of total reported cases of rehabilitation services by governorate.

Figure 62: The number of rehabilitation services in public hospitals, June 2020



Trend analysis of reported patients received rehabilitation services from January to June 2020, is presented in [Figure 63]. In 2020, the total reported patients are 30,344.

Figure 63: Trend analysis of number of rehabilitation services in public hospitals, January 2019 to June 2020

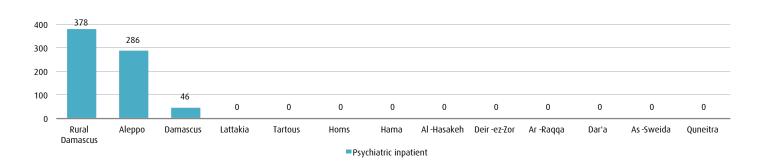


#### 6.9 Mental health

Inpatient care for management of mental disorders by specialized health-care providers are assessed at hospitals level. Figure 64 shows the distribution of total reported cases of Psychiatric inpatient by governorate.

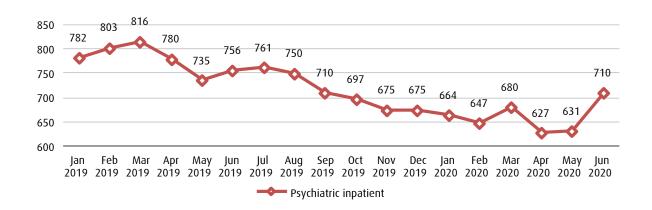
The key figures of Psychiatric inpatient during June 2020 are reported from Rural Damascus (Ibn-Sina Psychiatric MoH hospital (366 cases), followed by Aleppo (Ibn-Khaldoun MoH hospital (286 cases).

Figure 64: The number of psychiatric inpatients in public hospitals, June 2020



Trend analysis of monthly reported number of psychiatric inpatients in public hospitals [MoH & MoHE] from January to December 2018 is shown in [Figure 65]. In 2020, the total reported psychiatric inpatients cases are 3,959.

Figure 65: Trend analysis of number of psychiatric inpatient cases in public hospitals, January 2019 to June 2020



# 7. 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 checklist<sup>2</sup>.

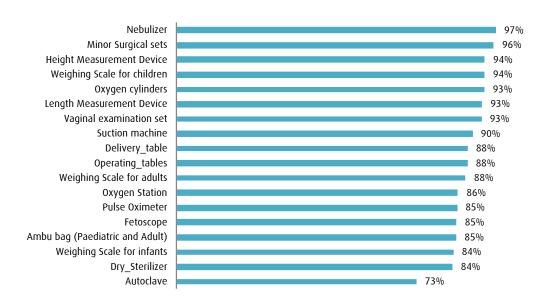
In its ninth year of crisis, Syria's hospitals (have a remarkable improvements) are still suffering from shortages and/or malfunction of medical devices/ equipment to provide secondary care services. In insecure governorates, medical devices are either destroyed, burned, or malfunctioned, while in safe 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] (86/113), 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.

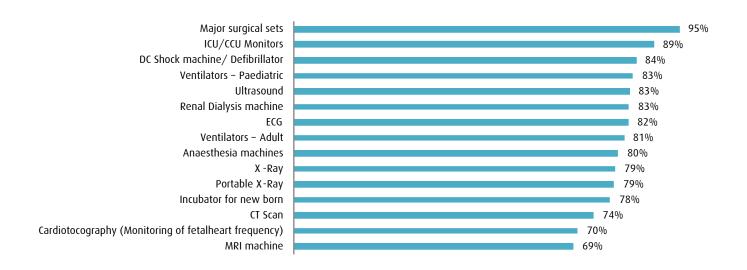
Gaps on essential and specialized equipment and machines were observed, even within the functional public hospitals. Further details are provided on [Figure 66] and [Figure 67].

Figure 66: Percentage of functional essential equipment/ total available equipment in functional public hospitals, June 2020



<sup>&</sup>lt;sup>2</sup> A more detailed list of essential equipment is available upon request.

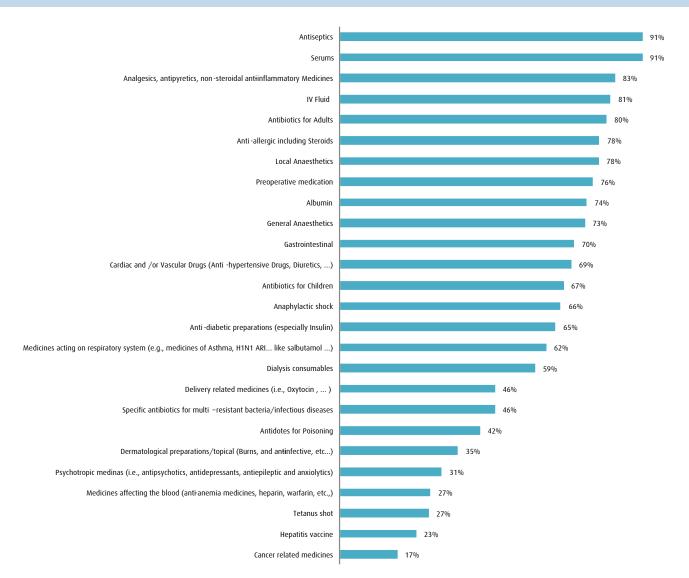
Figure 67: Percentage of functional specialized equipment/ total available equipment in the functional public hospitals, June 2020



# 8. 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 68].

Figure 68: Availability of medicines and medical supplies for one month in the functional public hospitals, June 2020



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.

# 9. Conclusions and recommendations

Slight variation of functionality status of public hospitals was observed throughout 2020. For example, 27 hospitals were reportedly out-of-service in June 2020 compared to 28 in January of the same year. Similarly, access to the public hospitals has no changes throughout 2020 with 15 hospitals reportedly non-accessible during 2020. 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, and nurses) with slight decreasing of the available number of midwives throughout 2020 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 and another survey on COVID-19 impact, using HeRAMS data as a baseline, will help in concretely measuring the impact of the crisis and COVID-19 on public health sector in terms of responsiveness of hospitals and quality of provided services.