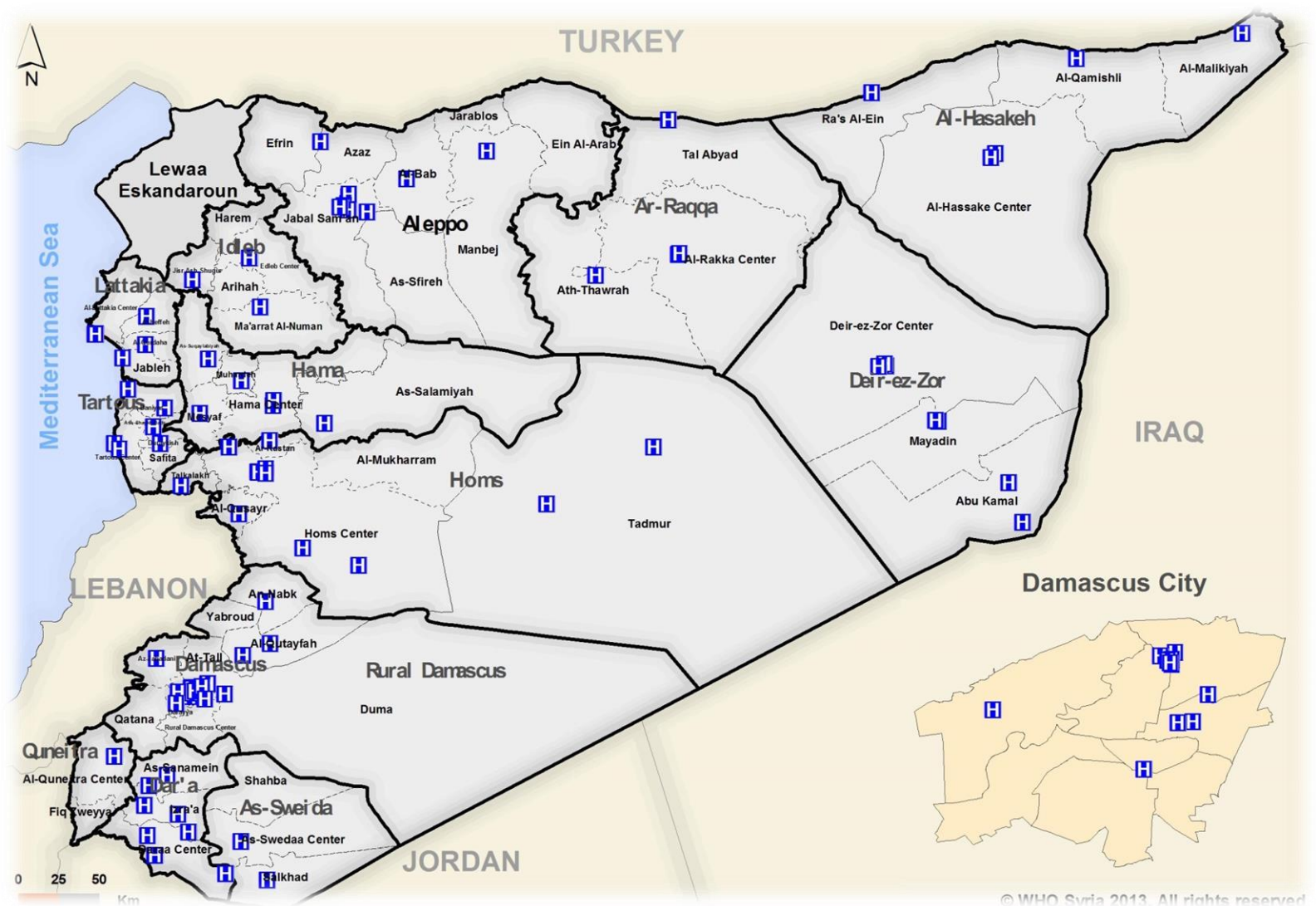




Availability of the Health Resources and Services in Public Hospitals in Syria

Using HeRAMS



3rd Quarter 2013

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Executive summary

HeRAMS (Health Resources & services Availability Mapping System) is a Standardized Approach supported by a software-based Platform that aims at strengthening the collection, collation and analysis of information on the availability of health resources and services in Humanitarian Emergencies.

Started early 2008 in Sudan, considering Darfur Crisis as a model and using its data as the first dataset to be tested on the system, HeRAMS has been evolved to be one of the key information management tools that the global health cluster is using to assist implementing the Health Cluster/Sector Coordination mechanism. HeRAMS has been further implemented in many crises situations (such as; Haiti 2009, Pakistan Floods 2010)

HeRAMS has been adapted to Syria early 2013, after many consultative meetings with the Syrian ministry of Health (MOH) and health sector partners to customize the tool according to the priority identified areas of the health sector. The key information that HeRAMS is assessing includes the availability of the health services, accessibility, functionality status, health infrastructure and human resources at PHC centres and secondary care level. The current assessment considered the public hospitals (MOH general and autonomous hospitals) and public PHC centres.

Information generated out of the HeRAMS strongly supports the decision makers in monitoring the health situation for PHC centres and Secondary care provision, enhancing coordination & accountability of the sector, measuring gaps and improving planning of resources (*i.e., better achieve the provision of equitable, relevant and efficient health services and better allocate resources towards fulfilling humanitarian needs and ensuring their sustainability beyond Humanitarian interventions*).

This report provides descriptive analysis for the public MOH hospitals reported to HeRAMS during the 3rd quarter of 2013. Analysis is conducted at governorate level and it covers the distribution and functionality of the public hospitals, patterns of infrastructure, availability of health Human Resources, health services, and equipment. Analysis is also conducted in relation to the population¹ (*i.e., proportion of average number of people to the functioning public hospital, and proportion of average number of people to doctors at governorate level*). Detailed analysis of provision of services at governorate level is also provided.

Process and Methodology

Starting with MOH public hospitals and centres, HeRAMS assessment has been conducted across Syria, led by MOH health staff who attended a TOT training workshop in Damascus to roll-out the system. New data collection mechanisms (*i.e., remote reporting*) have been introduced to fill in the gap of the shortage of timely, relevant, and reliable information that decision makers in need of, to build informative decision and evidence based humanitarian interventions.

In September 2013, a total of 64 (70%) out of 91 MOH public hospitals from 11 governorates reported to the HeRAMS; disaggregated as 39 public (General & specialized) and 25 with autonomous administration (according to the national health system setup).

Functionality of the public hospitals

According to MOH the hospital is considered functioning if it is open and provides services. Out of the 91 public hospitals; 49% (45) is reported functioning and accessible, 21% (19) is not Functioning, while 30% (27) hospitals did not report due to security reasons and accessibility challenges.

The non-reporting 27 hospitals are mostly from 6 governorates, (*i.e., all hospitals of Idelb, Deir-ez-Zor, Ar-Raqqa (15), and 10 of Homs hospitals, one hospital in Lattakia, and one in Al-Hasakeh*).

The average of population per functioning hospital at governorate level has been explored. The highest average is found in Aleppo; one functioning public hospital against 1,217,000 people, followed by Homs [1:901,500], Rural Damascus [1:567,200], and Dar'a [1:342,333].

¹ Source of Population data is OCHA Syria

Infrastructure of the public hospitals

Level of Damage to the hospitals' buildings have been measured in terms of either fully damaged, partially damaged (where part of the building is damaged), and Intact (building with no damage).

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

Out of 91 public hospitals, two hospitals are reported fully damaged, 21% (19) are partially damaged, and 47% (43) are intact, while 30% (27) have not reported. The fully damaged hospitals are in Aleppo; *Zahi Azraq2 hospital in Elhalak district, and E'zaz national hospital in E'zaz city.*

The inpatient capacity has been analyzed in terms of the total number of beds within the functioning MOH hospitals (45) and how many of them are assigned for emergency. The proportion of the number of beds assigned for emergency is disparate among different governorates

Human Resources

The balance between different staff categories in public hospitals has been analyzed; among the 45 reporting functional hospitals, emergency physicians represent the lowest percent (0.3%) compared to other staff categories (i.e., specialist (10.6%), resident doctors (9.7%), technicians (21%), nurses & midwives (35.7%), pharmacists (0.6%), and other staff categories (22%).

Increasing number of affected health facilities and staffing shortages make access problems to the population in "hot" areas.

By analyzing the proportion of the medical doctors (incl. Emergency physicians + Specialists + Resident doctors) to the total population at governorate level, high proportions appear in mostly affected governorates. For instance, in Homs the proportion of doctors is one to 29,557 people [1: 29,557]. Compared to Aleppo governorate, Homs has the worst situation in terms of doctor's ratio to people.

Health Services

Adequacy and equity of provision of free-of-charge secondary health services in the MOH Hospitals across Syria has been affected widely by the current crisis. Presently, there is an average of one **functioning** hospital per almost 400,000 people.

Availability of core services is assessed in terms of percentage of the hospitals provide the service, out of a total of 45 MOH functioning hospitals, while utilization of the services is assessed in terms of number of cases seen in those 45 hospital during month of September 2013.

The main gaps of services availability are as follow:

Child health and nutrition: management of children diseases is provided in 66% of the functioning public hospitals, while management of severe acute malnutrition is provided in 22% of the hospitals.

Mental Health: 11% (5) of the public hospitals provide Mental Health outpatient services, and two only provide inpatient psychiatric care (Ibn Roshd hospital in Damascus, and Ibn Seena hospital In Rural Damascus).

Surgical and Trauma care: Over 86% of the MOH public hospitals provide emergency and elective surgeries; number of cases during September 2013 was **5,747** and **16,545** respectively.

Mass causality management is available in 69% (31) of the hospitals with total cases **22,713**.

Availability of Essential Equipment

Availability and functionality of different types of essential and specialized equipment and supplies has been evaluated at hospital level, based on a standard checklist. The average of essential equipment availability within 45 functioning public hospitals is varied among hospitals and governorates. More details at governorate level are provided in the report.

² Zahi Azraq hospital is fully damaged but the staff is operating from Elrazi public hospital in Aleppo city/ Aleppo governorate.

1. Functionality and Infrastructure Patterns of the Public Hospitals

Descriptive analysis for the MOH public hospitals reported to the HeRAMS during the 3rd quarter of 2013 is provided in this report. Analysis is conducted across all governorates for the functionality status of the hospitals and average number of people covered by functioning hospitals at governorate level, condition of the hospital's building, inpatient capacity, staffing level, availability of health services and equipment. Completeness of reporting during the 3rd quarter of 2013 was 70% (a total 64 out of 91 public hospitals). The types of MOH public reporting hospitals are either General or Specialized hospital.

1.1 Functionality of the MOH Public Hospitals

Functionality of the public hospitals has been defined and assessed at two levels;

- ◆ **Functioning:** the hospital is open and provides healthcare services; either with full capacity or partial capacity (i.e., considering staffing, equipment, or infrastructure).
- ◆ **Not functioning:** hospital is out of service (either, fully damaged, inaccessible, or no staff)

Out of the 91 public hospitals; 45 (49%) is reported functioning and accessible, 19 (21%) is not Functioning, while 27 (30%) hospitals have not reported due to security reasons and accessibility challenges [Figure 1].

The non-reporting 27 hospitals are *mostly from 6 governorates*, (i.e., all hospitals of Idelb, Deir-ez-Zor, Ar-Raqqa, and 10 of Homs hospitals, one hospital in Lattakia, and one in Al-Hasakeh, [Figure 2].

Figure1: Reporting completeness

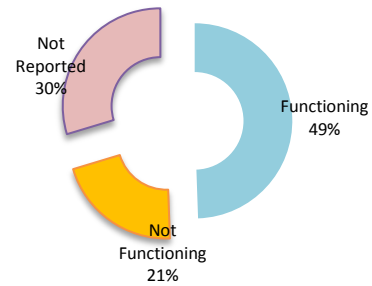
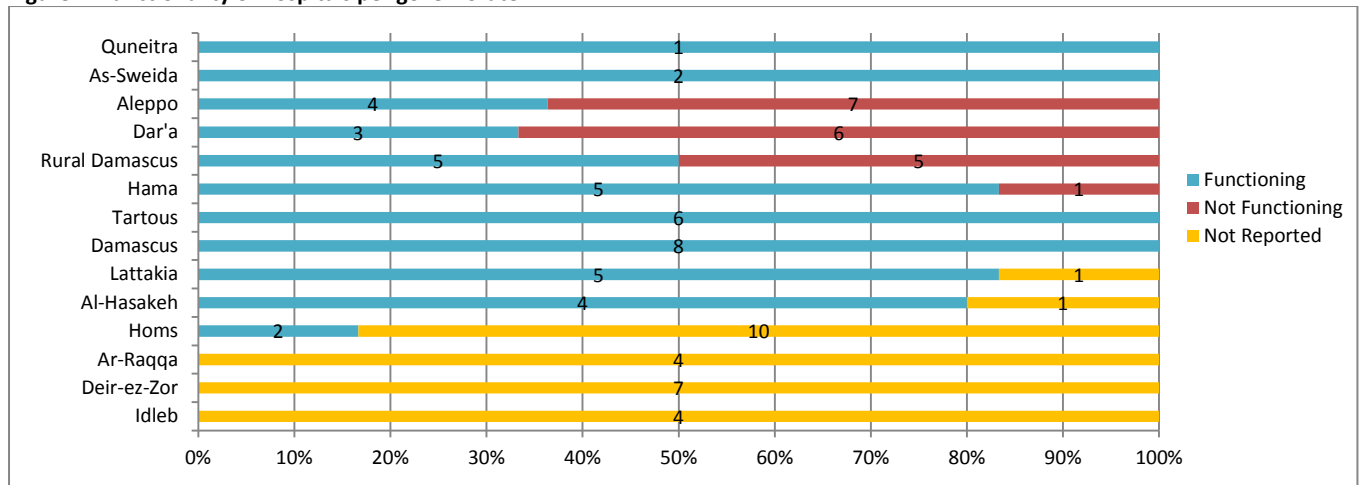
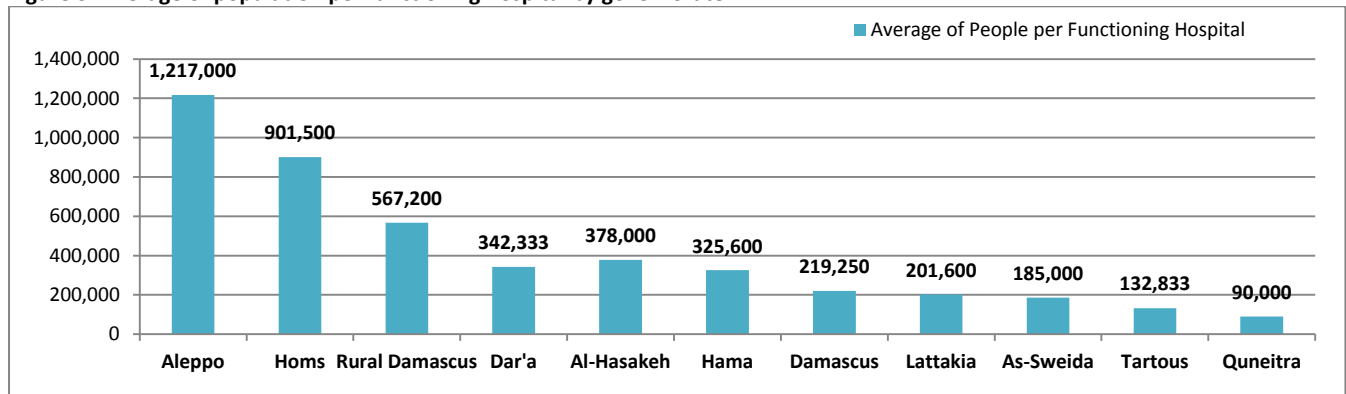


Figure 2: Functionality of hospitals per governorate



By looking into the coverage of functioning public hospitals per population³, presently there is an average of one hospital for almost 400,000 people. In Aleppo one functioning public hospital is against 1,217,000 people, followed by Homs, Rural Damascus, and Dar'a [Figure 3].

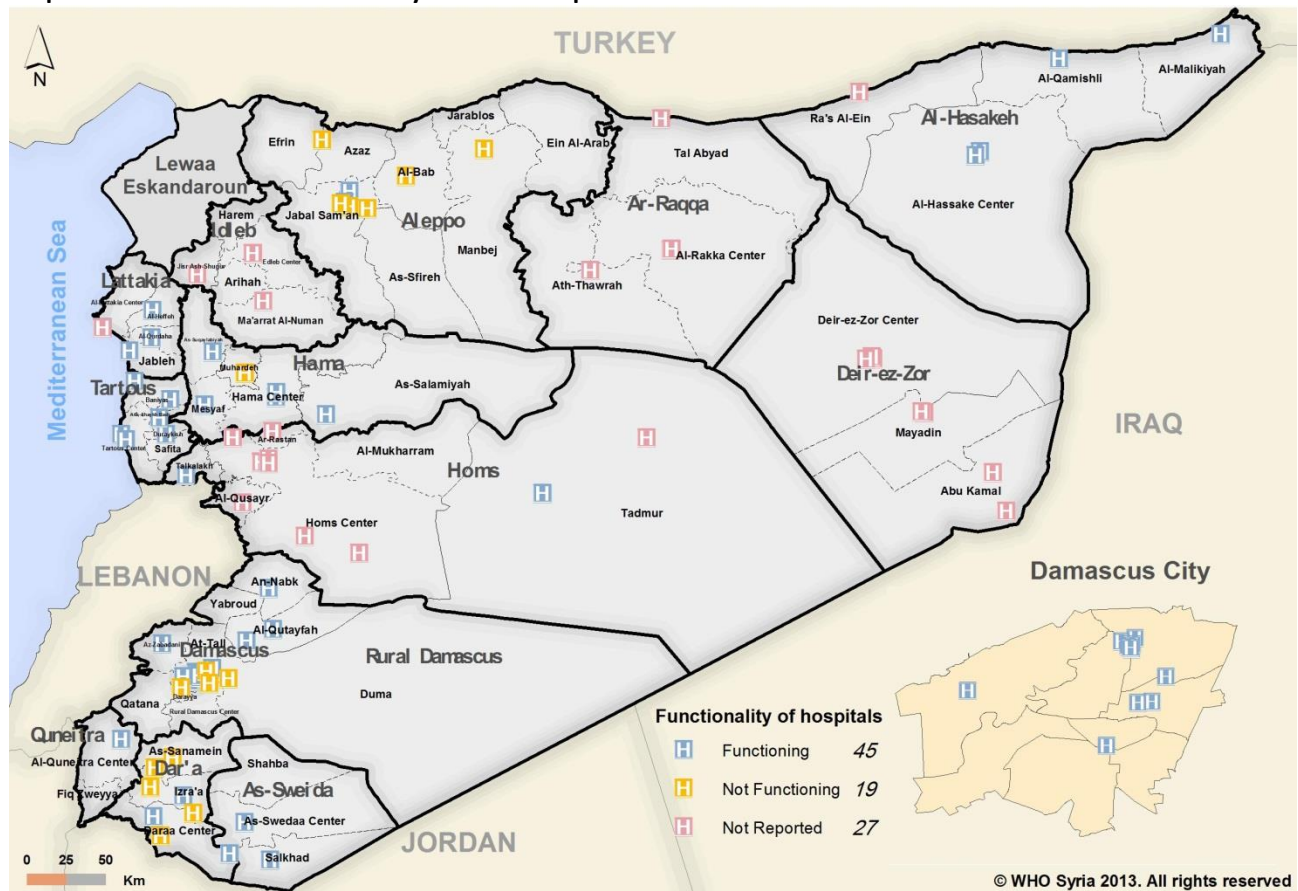
Figure 3: Average of population per functioning hospital by governorate



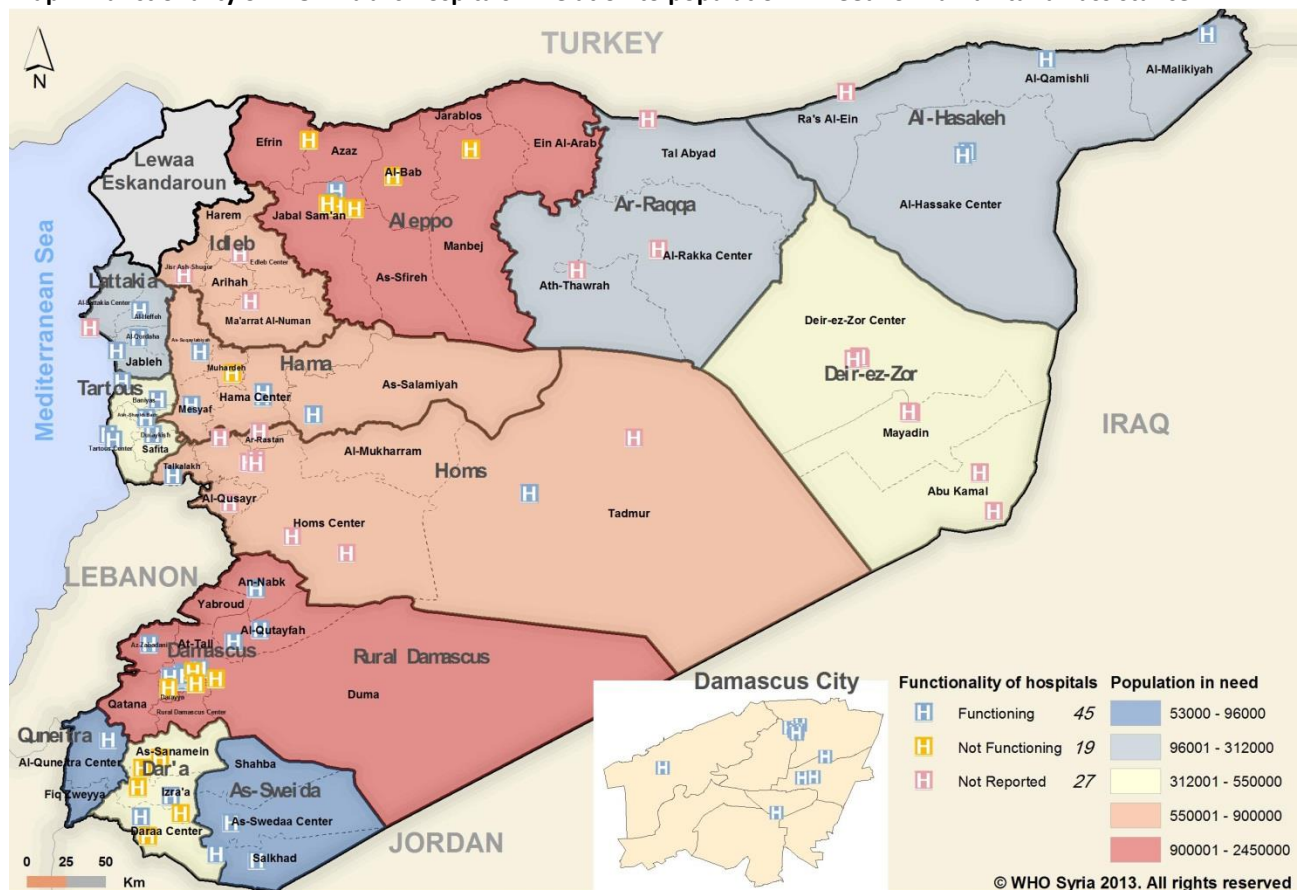
³ Source of population data is OCHA Syria

The following maps show the distribution of the functioning MOH public hospitals (Map-1), and distribution of the functioning MOH public hospitals in relation to the population in need for humanization assistance (source of population data is OCHA).

Map 1: Distribution and Functionality of Public Hospitals



Map 2: Functionality of MOH Public Hospitals in relation to population in need for humanitarian assistance



1.2 Analysis of the condition of the hospitals' buildings

Level of Damage to the hospitals' buildings have been measured in terms of either fully damaged, partially damaged (where part of the building is damaged), and Intact (building with no damage). Analysis of the level of damage provides good indication on the potential costs for reconstruction.

Out of 91 public hospitals, two hospitals are reported fully damaged, 21% (19) are partially damaged, and 47% (43) are intact, while 30% (27) have not reported [Figure 4]. The fully damaged hospitals are in Aleppo; *Zahi Azraq⁴ hospital in Elhalak district, and E'zaz national hospital in E'zaz city.*

Details of level of damage to the hospitals by governorate, is presented in Figure 5 and Map 3.

Figure 4: Level of Damage to Hospitals

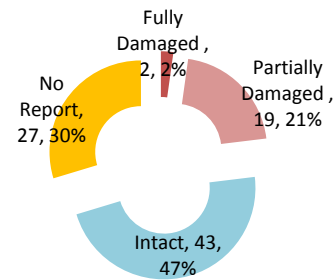
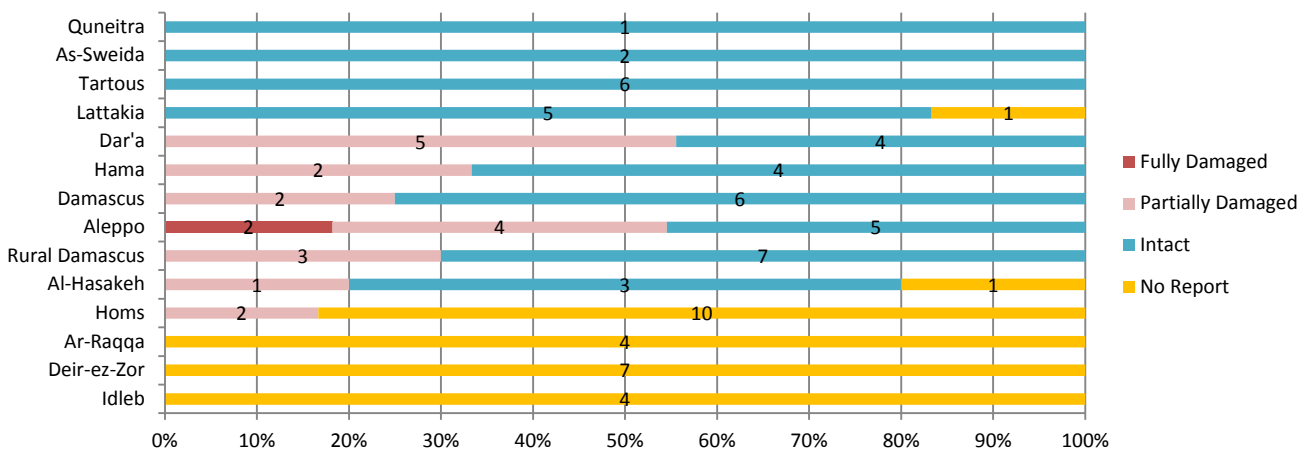
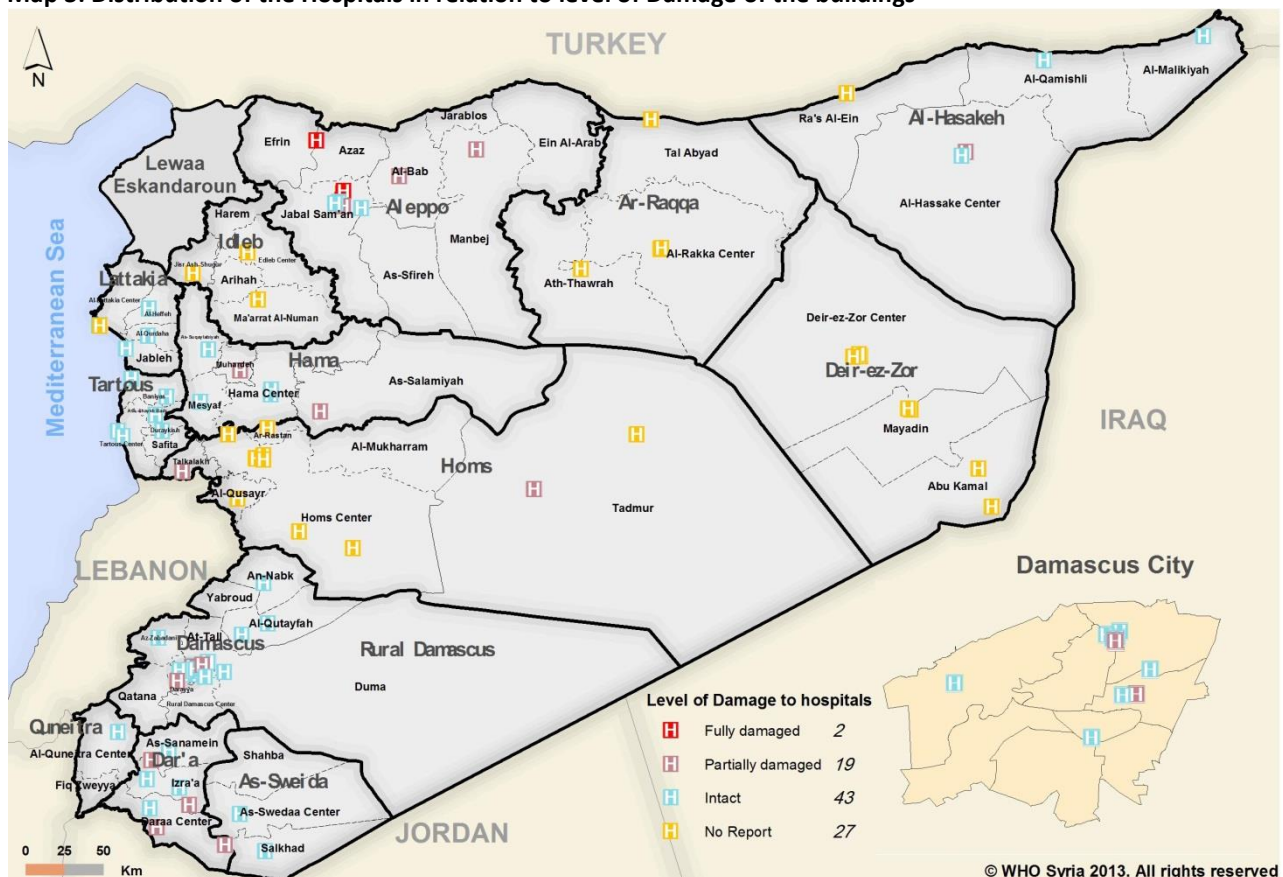


Figure 5: Level of damage of public hospitals per governorate



Map 3: Distribution of the Hospitals in relation to level of Damage of the buildings



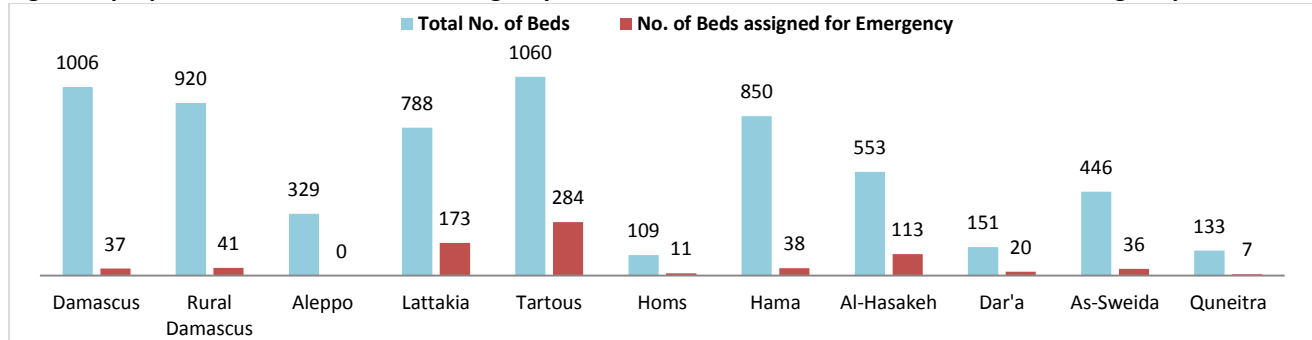
⁴ Zahi Azraq hospital is fully damaged but the staff is operating from Elrazi public hospital in Aleppo city/ Aleppo governorate.

1.3 Analysis of the inpatient Capacity

The inpatient capacity has been analyzed in terms of the total number of beds within the functioning MOH hospitals (45) and how many of them are assigned for emergency⁵.

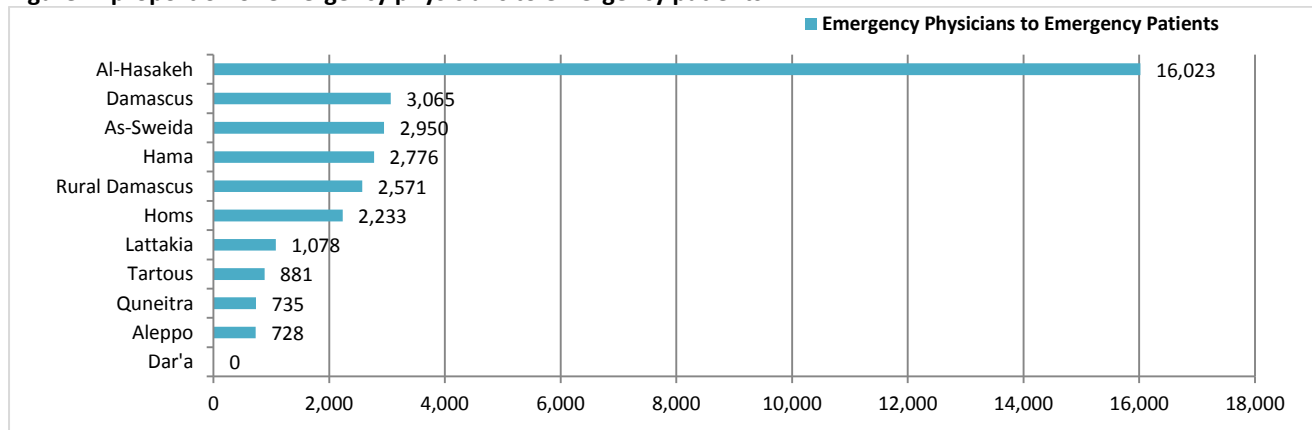
The proportion of the number of beds assigned for emergency is disparate among different governorates (Figure 6). In Aleppo, no beds are assigned for emergency within the only two functioning MOH hospitals.

Figure 6: proportion of the number of emergency beds to the total number of beds in the functioning hospitals



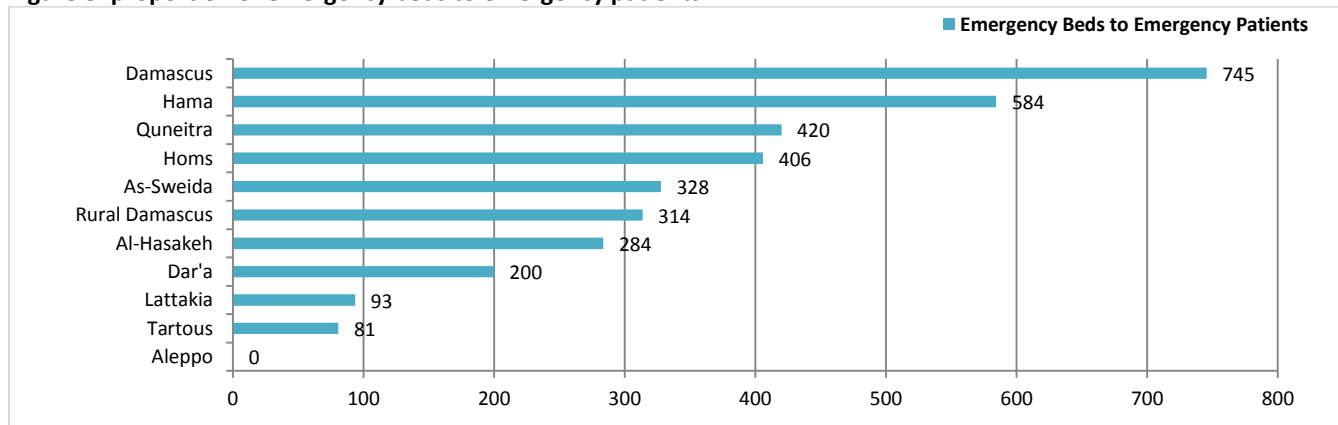
By analyzing the proportion of emergency physicians to the patients in the emergency department at governorate level, the highest number is reported in Al-Hasakeh; *one emergency physician for every 16,023 inpatient in Al-Hasakeh (Figure 7)*. There is no reported emergency physician in Dar'a.

Figure 7: proportion of emergency physicians to emergency patients



The proportion of emergency beds to the patients in the emergency department at governorate level is shown in Figure 8. The highest proportion is in Damascus; one emergency bed for every 745 emergency patients, while in Al-Hasakeh hospitals the proportion is one bed for every 284 emergency patient.

Figure 8: proportion of emergency beds to emergency patients



It should be noted that other inpatient departments in the hospitals could be occupied by emergency cases in cases of mass casualties or trauma events, however the analysis above has been carried out for the number of beds exclusively assigned for emergency.

⁵ The beds assigned for emergency is part of the total number of beds in the hospital

2. Availability of Human Resources for Health

Overall Health Staff patterns show the distribution of staff per category based on the national health system set-up of Syria. The balance between different staff categories in public hospitals has been analyzed; among the 45 reporting functional hospitals, emergency physicians represent the lowest percent (0.3%) compared to other staff categories (i.e., specialists represent 11%, resident doctors (10%), midwives (36%), pharmacists (0.6%), and technicians (21%); [Figure 9].

The increasing number of affected health facilities and staffing shortages challenges provision and accessibility to quality care services, especially to the population in “hot” areas.

By analyzing the proportion of the medical doctors (incl. Emergency physicians + Specialists + Resident doctors) to the total population at governorate level, high proportions appear in mostly affected governorates.

For instance, in Homs the proportion of doctors is one to 29,557 people [1: 29,557]. Compared to Aleppo governorate, Homs has the worst situation in terms of doctor’s ratio to people [Figure 10].

Figure 9: Proportion of Health Staff

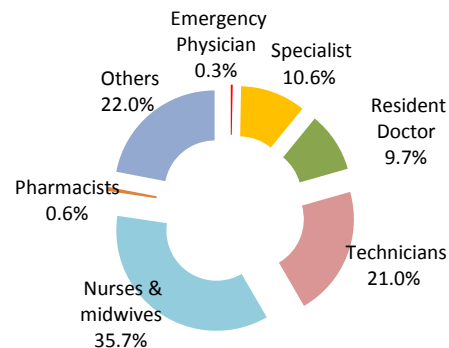
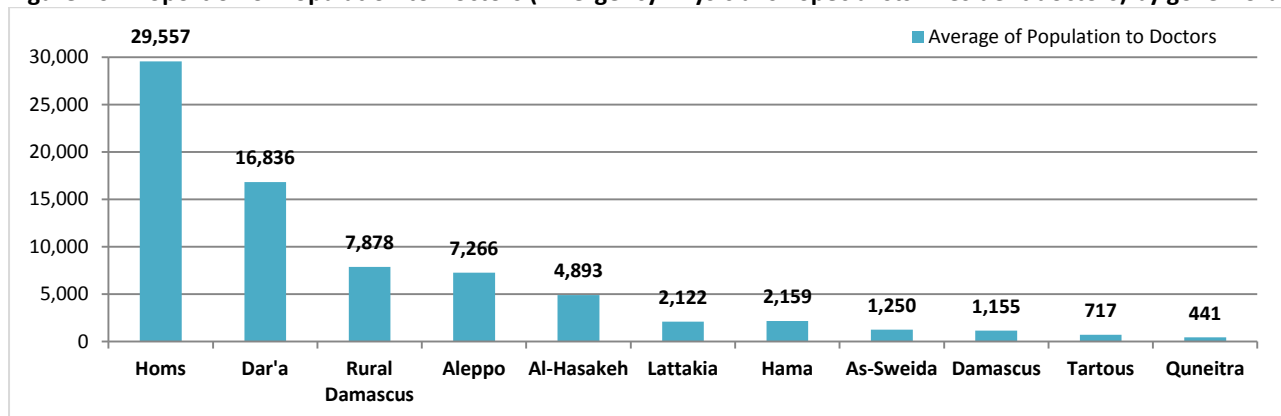
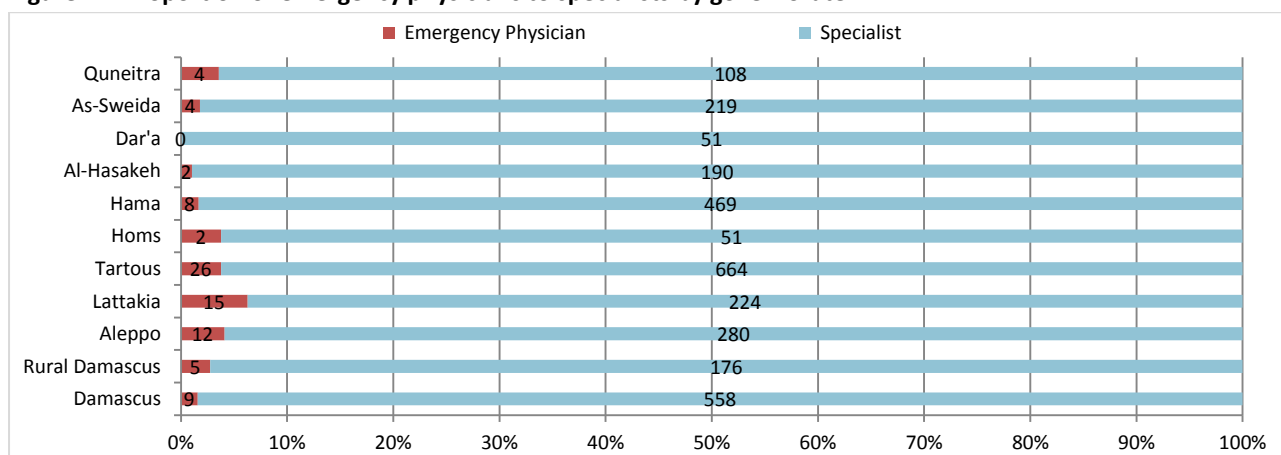


Figure 10: Proportion of Population to Doctors (Emergency Physicians +Specialists +Resident doctors) by governorate



Proportion of emergency physicians to specialists has been presented in Figure 11. By comparing the governorates, Dar’a has no emergency physician, while high proportions are reported in Al-Hasakeh, Damascus and Rural Damascus (for instance; one emergency physician in Al-Hasakeh against 95 specialists).

Figure 11: Proportion of emergency physicians to specialists by governorate



3. Availability of Health Services at Public Hospitals

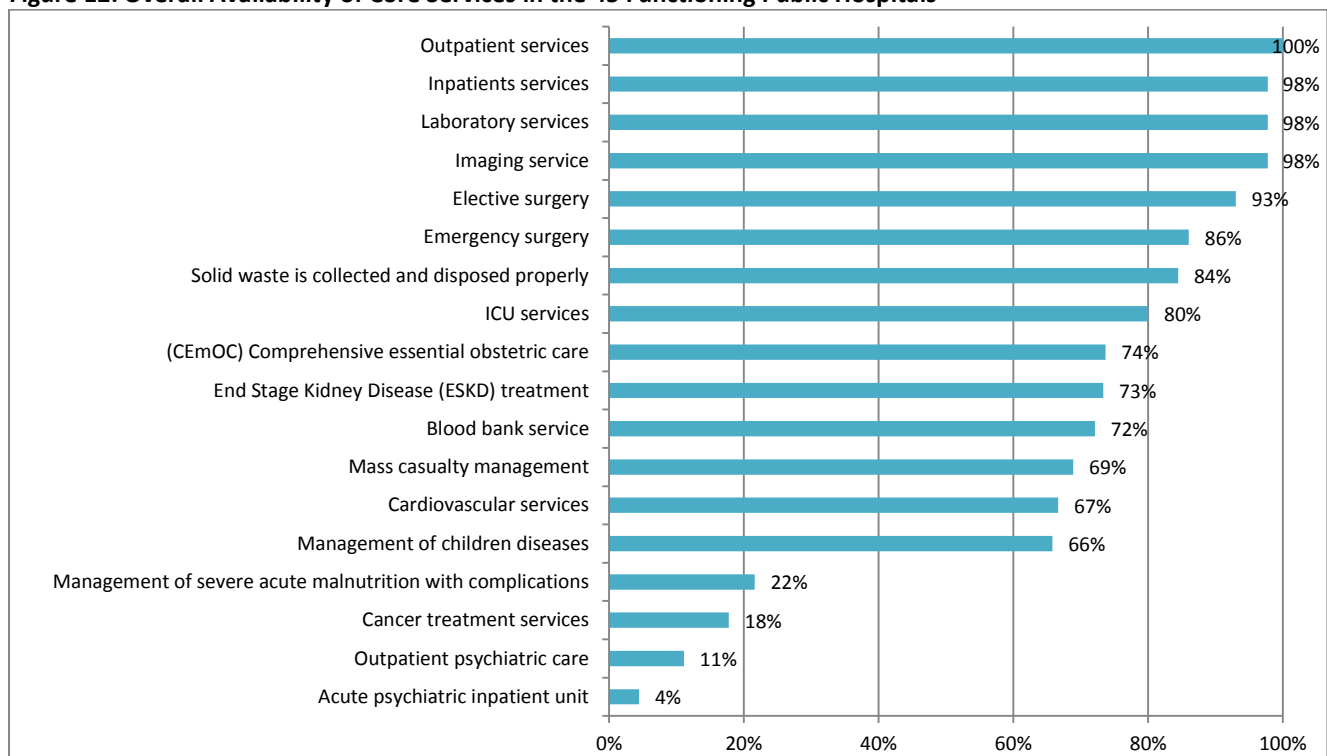
Adequacy and equity of provision of free-of-charge secondary health services in the Public Hospitals across Syria has been affected widely by the current crisis. Presently, there is an average of one hospital for over 500,000 people.

Provision of core healthcare services is monitored through HeRAMS at hospital level, considering a standard list of health services:

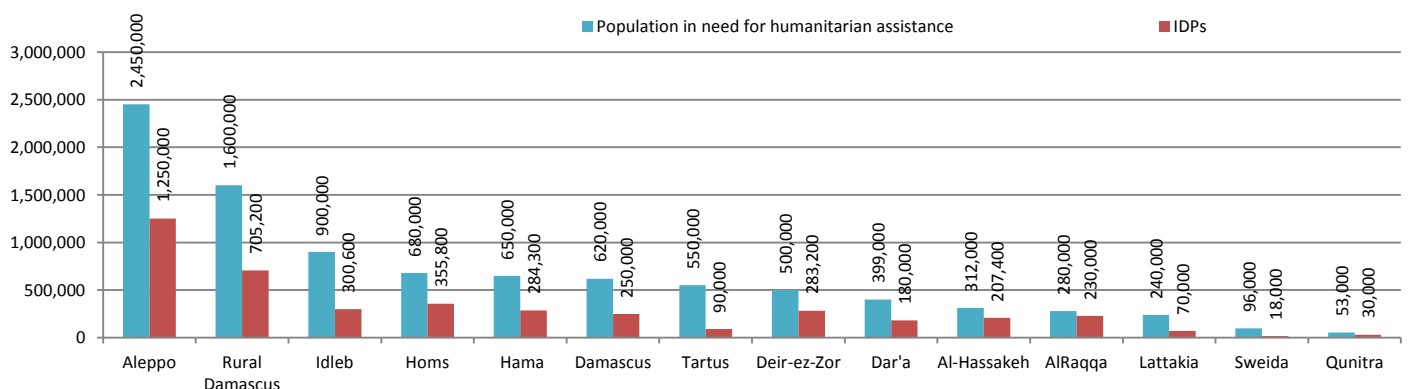
- i. General Clinical Services
- ii. Surgical and Trauma care
- iii. Child Health
- iv. Nutrition
- v. Maternal & Newborn Health
- vi. Non-communicable Diseases
- vii. Mental Health
- viii. Health care waste management

Availability of core services is assessed in terms of percentage of the hospitals provide the service, out of a total of 45 public functioning hospitals (Figure 12), while utilization of the services is assessed in terms of number of cases seen in the functioning 45 hospitals⁶ during month of September 2013:

Figure 12: Overall Availability of Core Services in the 45 Functioning Public Hospitals



The figures of the IDPs and population in need for humanitarian assistance have been considered while analyzing the availability of the health services. Population Figures, *up to Sep 2013*, as reported by OCHA as follow:



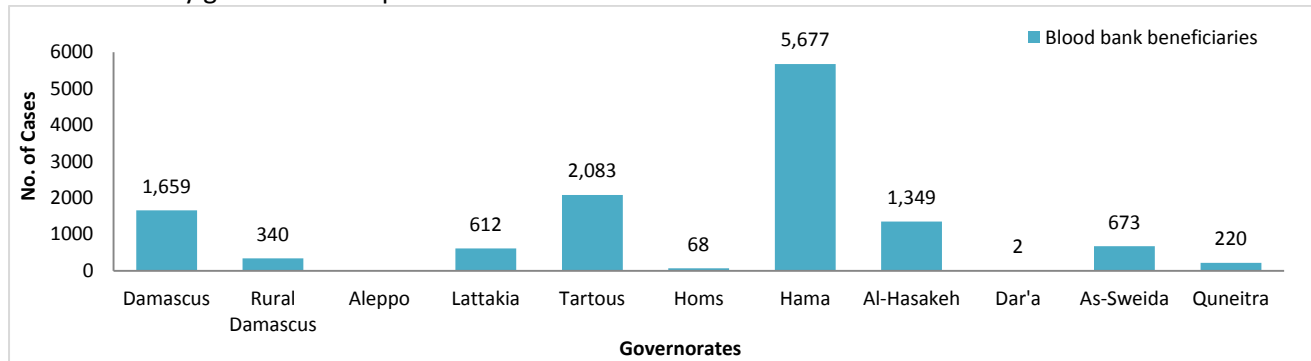
⁶ The disaggregated number of functioning Hospitals by governorate was provided in Section 1.1

3.1 General & specialized clinical services

Outpatient services are 100% available across all MOH function hospitals. Total number of cases seen during Sep 2013 was **138,819**.

Inpatient and Laboratory services are available in 98% (44 out of 45 functioning hospitals). The hospital with no inpatient service is Zahi Azraq hospital in Aleppo which is fully damaged but we considered it partially functioning as the staff is operating from Elrazi public hospital in Aleppo city/ Aleppo governorate. The total number of inpatients reported from 45 functioning hospital during Sep 2013 is **122,296**.

Blood bank services are available in 72% of the functioning hospitals (**12,683** beneficiaries). Distribution of beneficiaries by governorate is provided below:

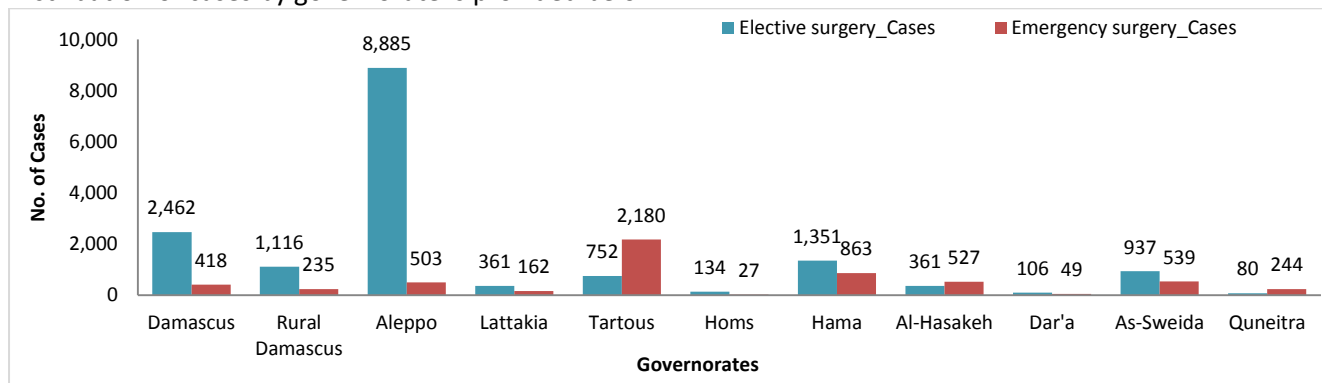


Hama has reported the highest number of blood bank beneficiaries, which might be due to high numbers of mass causality reported in the section (3.2), below.

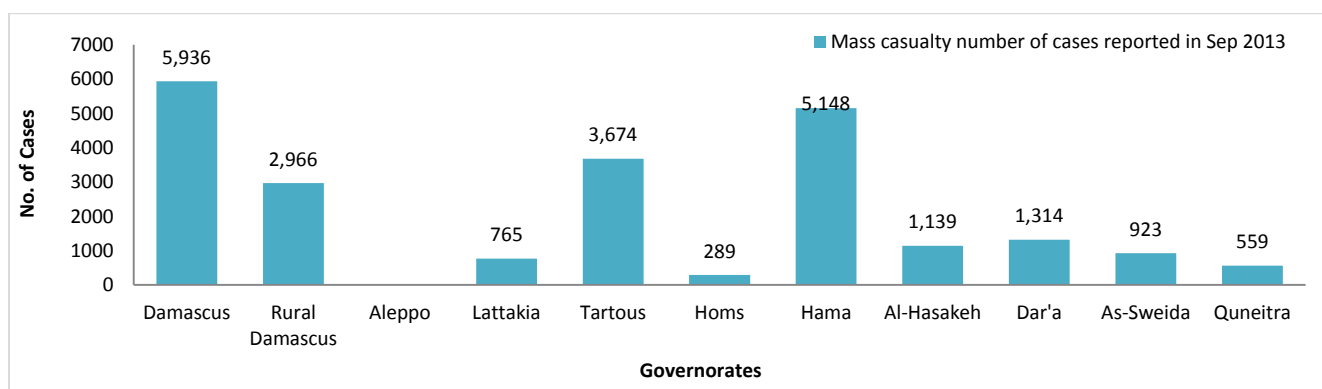
3.2 Surgical and Trauma care

Over 86% of the functioning public general hospitals provide emergency and elective surgeries; number of reported cases during September 2013 was **5,747** and **16,545** respectively.

Distribution of cases by governorate is provided below:

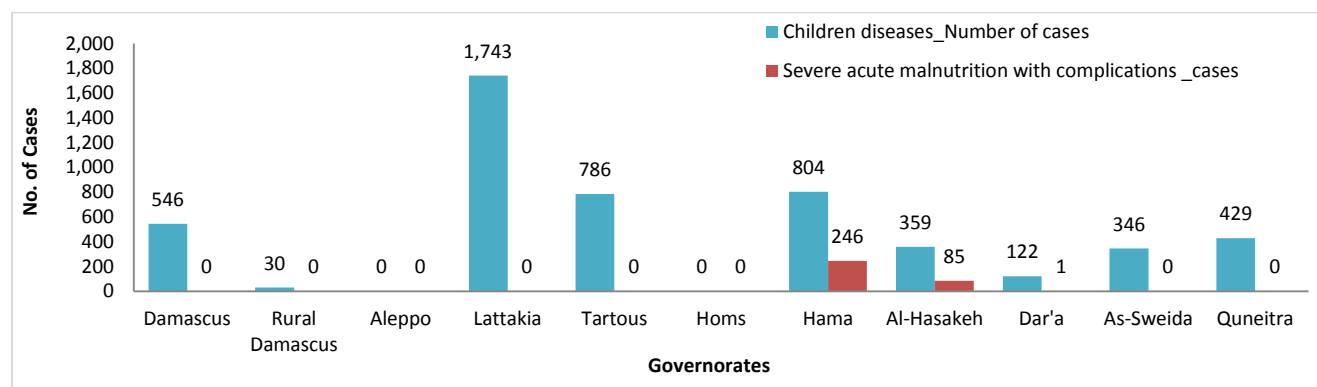


Mass causality management is available in 69% (31) of the hospitals with total cases **22,713**. Distribution of cases by governorate is provided below:



3.3 Child Health and Nutrition

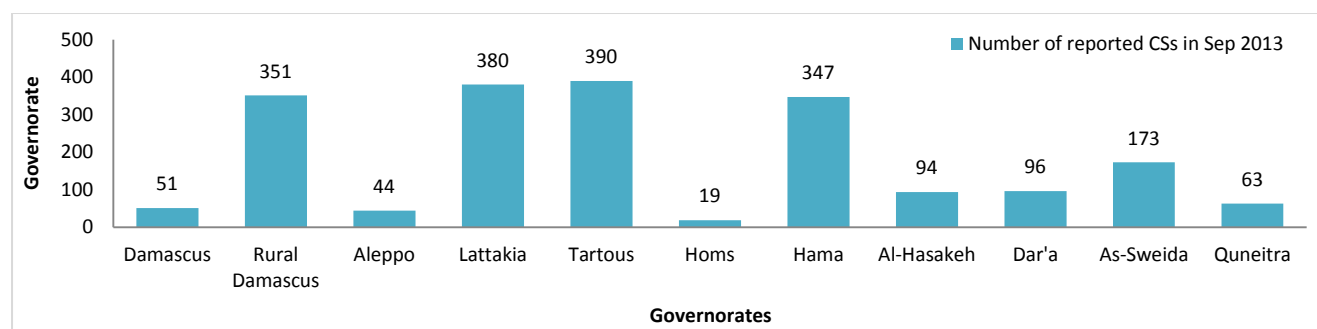
Management of children diseases is provided in 66% of the functioning public hospitals, while Management of severe acute malnutrition is provided in 22% of the hospitals. Total number of reported cases during September 2013 was **5,165** and **332** respectively. Distribution of cases by governorate is provided below:



The highest number of reported cases of children diseases is in Lattakia, which might be due to the high proportion of displaced people in the governorate (one third of the population in need for humanitarian assistance).

3.4 Maternity and Reproductive Health

Comprehensive Emergency Obstetric Care (CEmOC) is provided in 74% of the functioning public hospitals; the total reported Cesarean Sections during Sep 2013 are **2,008**; distribution by governorate is provided below:



The number of functioning MOH hospitals provide the CEmOC is shown below by governorate:

Governorate	Damascus	Rural Damascus	Aleppo	Lattakia	Tartous	Homs	Hama	Al-Hasakeh	Dar'a	As-Sweida	Quneitra	Total
No. of Functioning MOH Hospitals provide CEmOC	1	4	1	4	5	2	4	3	2	2	1	29

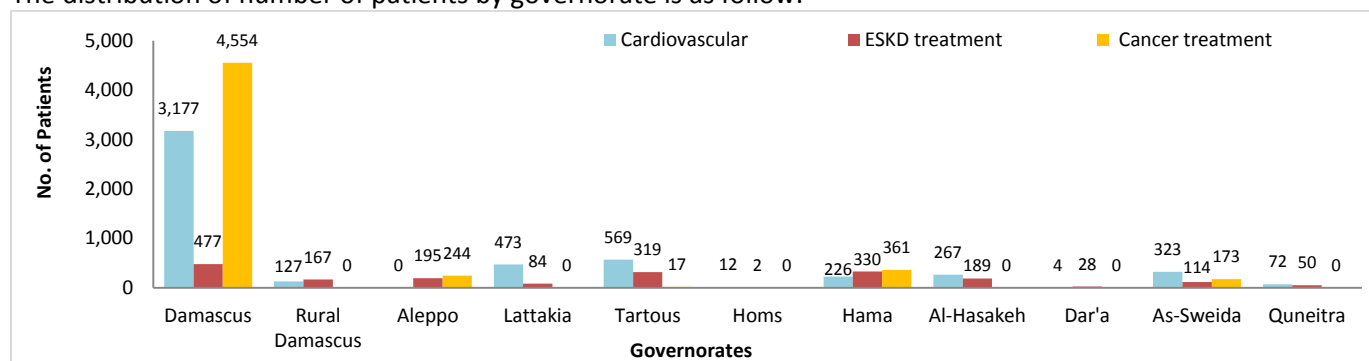
High numbers of CSs reported in Rural Damascus are linked to the security and accessibility challenges where both beneficiaries and health providers prefer the CSs with fixed date and time.

3.5 Non-Communicable Diseases (NCDs)

The total numbers of patients reported with chronic diseases during Sep 2013 from 45 functioning hospitals are as follow:

- Diabetes: **1,699** patients
- Hypertension: **1,270** patients
- Cardiovascular: **5,250** patients
- End stage kidney disease (ESKD): **1,955** patients; while the number of sessions is **13,874**.
- Cancer treatment: **5,349** patients

The distribution of number of patients by governorate is as follow:



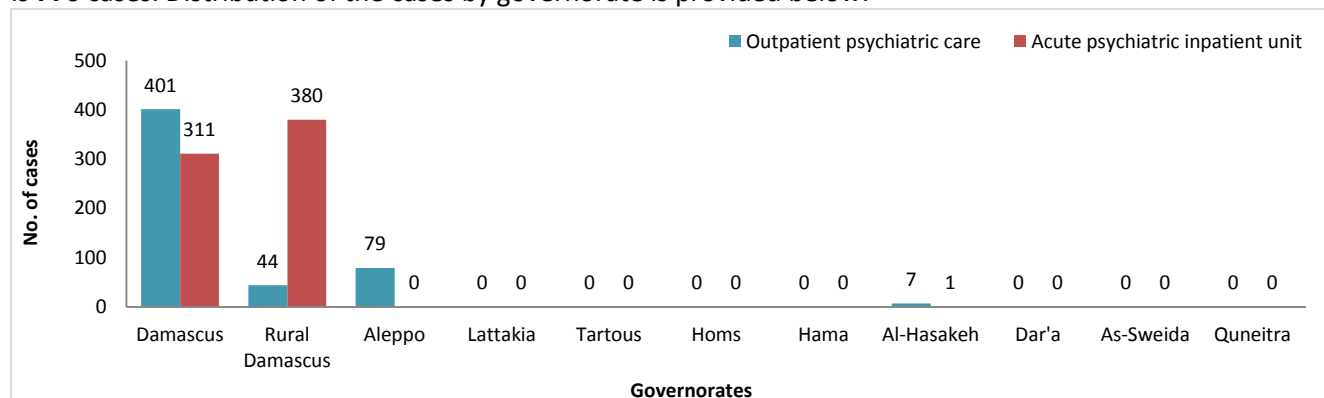
The highest figures of cardiovascular, kidney and cancer treatments are reported in Damascus, which could be related to the fact that majority of the specialized referral hospitals are based in Damascus and also there are high numbers of displaced people.

3.6 Mental Health

11% (5) of the public hospitals provide Mental Health outpatient services, and two hospitals only provide (outpatient and Inpatient unit); distributed as follow:

- In Damascus: Ibn Roshd (outpatient and Inpatient); Elmujtahid public hospitals (only outpatient)
- In Rural Damascus: Ibn Seena specialized hospital (outpatient and Inpatient)
- In Aleppo: Zahi Azraq public hospital (only outpatient)
- In Al-Hasakeh: Qamishli national public hospital (only outpatient, but an inpatient service has been provided to one person within the hospital inpatient units)

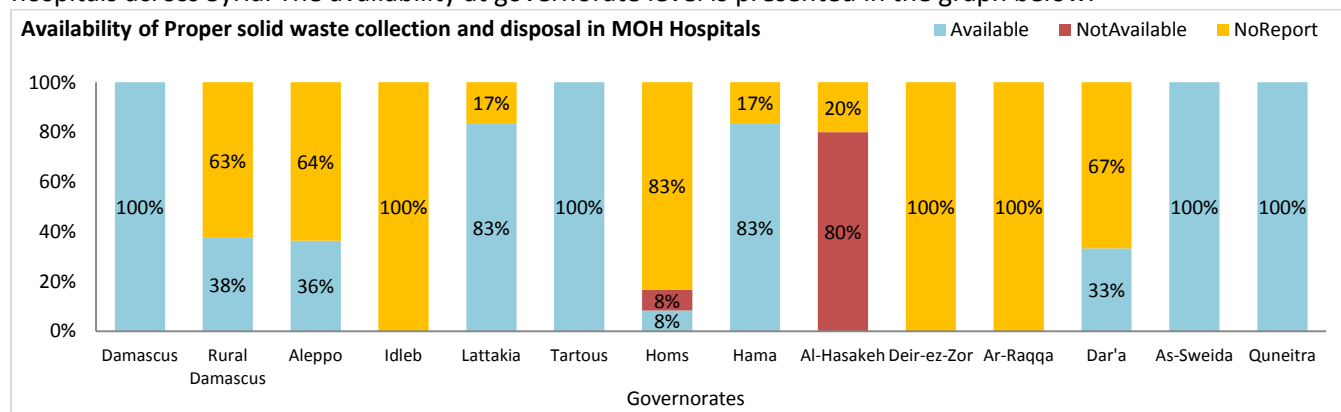
The total cases seen in the outpatient psychiatric care are **531**, while in the acute psychiatric inpatient unit is **770** cases. Distribution of the cases by governorate is provided below:



The World Health Organization (WHO) Syria is planning to support MOH Mental hospitals with psychotropic medicines and capacity building activities (training on integration of mental health services into outpatient clinics).

3.7 Environmental Health

Solid waste management (proper collection and disposable) is available in 84% out of the total 91 public hospitals across Syria. The availability at governorate level is presented in the graph below:

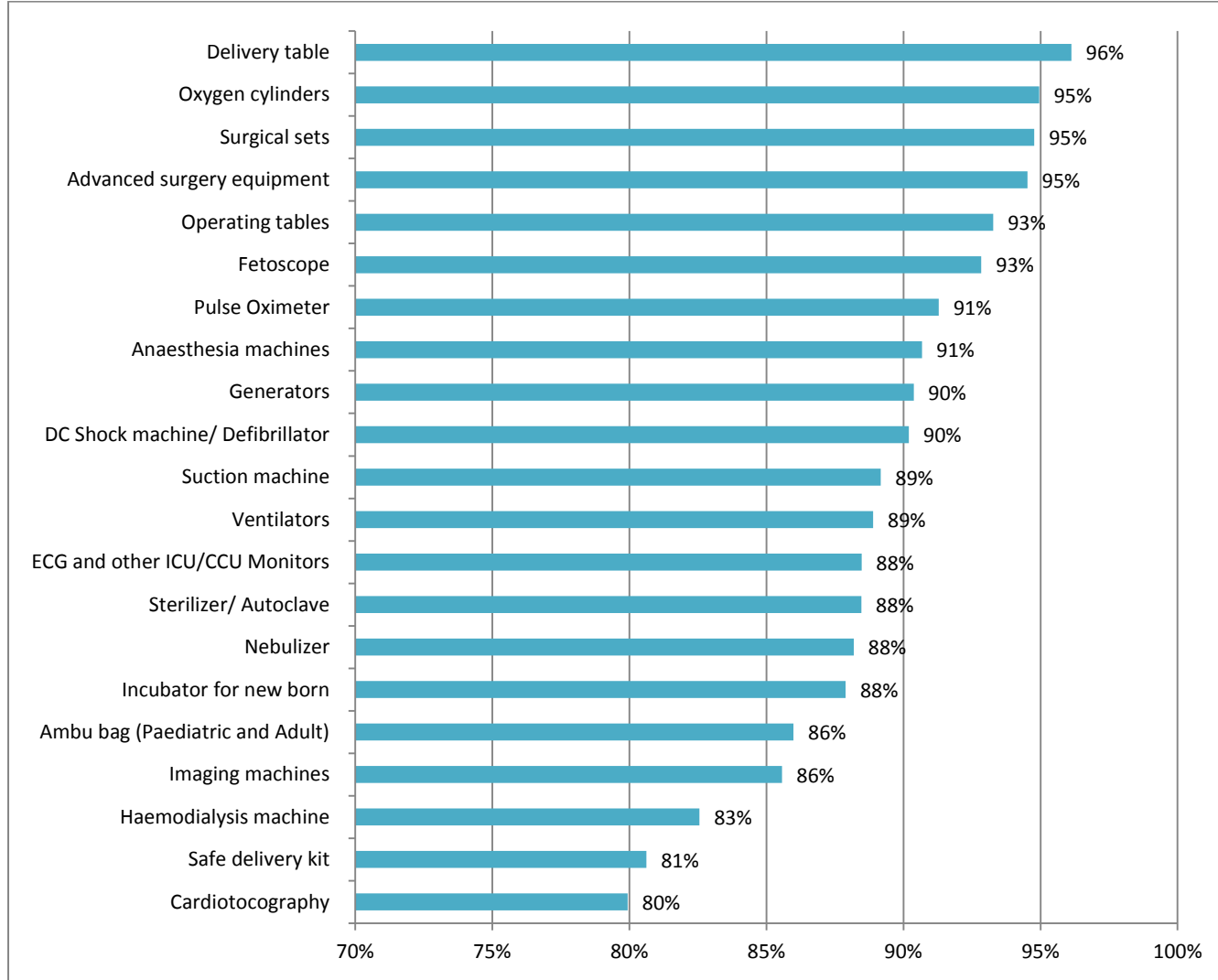


4. Availability of Essential Equipment

Availability and functionality of different types of essential and specialized equipment and supplies has been evaluated at hospital level, based on a standard checklist.

The average of essential equipment availability within 45 functioning public hospitals is above 80%, as shown in Figure 13.

Figure 13: Average of the Availability of Essential Equipment in the functioning hospitals overall governorates



Detailed analysis of availability of the equipment in functioning public hospitals at governorate level is shown in summary Table 1. Items with less than 70% availability are highlighted in yellow.

Table 1: Availability of the essential and specialized equipment by governorate⁷

Essential Equipment	Damascus	Rural Damascus	Aleppo	Lattakia	Tartous	Homs	Hama	Al-Hasakeh	Dar'a	As-Sweida	Quneitra
Generators	86%	92%	100%	100%	100%	80%	94%	75%	100%	100%	67%
Ambulances	92%	92%	-	72%	-	50%	92%	-	-	100%	100%
Pulse Oximeter	87%	100%	100%	94%	94%	100%	100%	44%	-	93%	100%
Oxygen cylinders	95%	88%	76%	98%	100%	100%	92%	96%	100%	99%	100%
Safe delivery kit	50%	88%	33%	94%	100%	100%	100%	91%	88%	43%	100%
Fetoscope	55%	100%	100%	100%	92%	100%	100%	100%	100%	75%	100%
Delivery table	100%	89%	100%	100%	92%	100%	100%	93%	100%	83%	100%
Sterilizer/ Autoclave	95%	76%	100%	83%	89%	87%	92%	75%	84%	93%	100%
Ambu bag (Paediatric and Adult)	78%	82%	100%	100%	84%	100%	90%	22%	100%	90%	100%
Suction machine	87%	92%	100%	95%	95%	63%	78%	100%	83%	88%	100%
Nebulizer	90%	85%	100%	88%	96%	73%	76%	63%	100%	100%	100%
Operating tables	91%	77%	100%	91%	97%	89%	96%	91%	100%	93%	100%
Surgical sets	82%	100%	-	100%	99%	100%	100%	98%	76%	93%	100%
Anaesthesia machines	89%	92%	100%	84%	84%	67%	96%	94%	100%	90%	100%
DC Shock machine/ Defibrillator	86%	88%	100%	80%	95%	77%	76%	88%	100%	100%	100%

Specialized Equipment	Damascus	Rural Damascus	Aleppo	Lattakia	Tartous	Homs	Hama	Al-Hasakeh	Dar'a	As-Sweida	Quneitra
Incubator for new born	76%	93%	100%	92%	92%	75%	87%	78%	91%	84%	100%
Haemodialysis machine	88%	84%	100%	100%	95%	38%	75%	50%	88%	90%	100%
ECG and other ICU/CCU Monitors	92%	92%	100%	69%	90%	85%	82%	97%	75%	91%	100%
Imaging machines	84%	84%	100%	73%	89%	79%	90%	61%	100%	82%	100%
Cardiotocography (Monitoring of fetalheart frequency)	0%	57%	-	100%	73%	100%	100%	91%	100%	79%	100%
Ventilators	81%	73%	100%	89%	100%	85%	69%	94%	100%	87%	100%
Advanced surgery equipment	99%	100%	100%	100%	89%	100%	90%	78%	83%	100%	100%

⁷ Details of the equipment per hospital are available in the HeRAMS dataset.

5. Recommendations

- ◆ There is a need to rehabilitate the damaged hospitals to provide more equitable and improved secondary health care services (e.g., in Aleppo and Dar'a almost half of the MOH hospitals are damaged; 2 fully and 4 partially damaged in Aleppo, while 4 are partially damaged in Dar'a). It should be noted that one functioning hospital in Aleppo has a catchment population of an average 1.2 million.
- ◆ The medical cadre in severely affected areas (such as Homs and Dar'a) needs to be increased and their capacity to be strengthened to enhance quality of services.
- ◆ Emergency physicians need be deployed to Al-Hasakeh and Dar'a.
- ◆ There is shortage of psychotropic medicines at the MOH Mental Health hospitals, and these need to be supplied. In addition, there is a need to capacitate the health staff and to integrate mental health services in the outpatient clinics of the MOH hospitals.
- ◆ Regular assessments are required to provide better understanding of availability and level of functionality of the MOHE facilities, NGOs' supported facilities, and private hospitals.
- ◆ The prioritization tool of OCHA will benefit from the information produced by the HeRAMS (i.e., ranking of the governorates according to health situation).