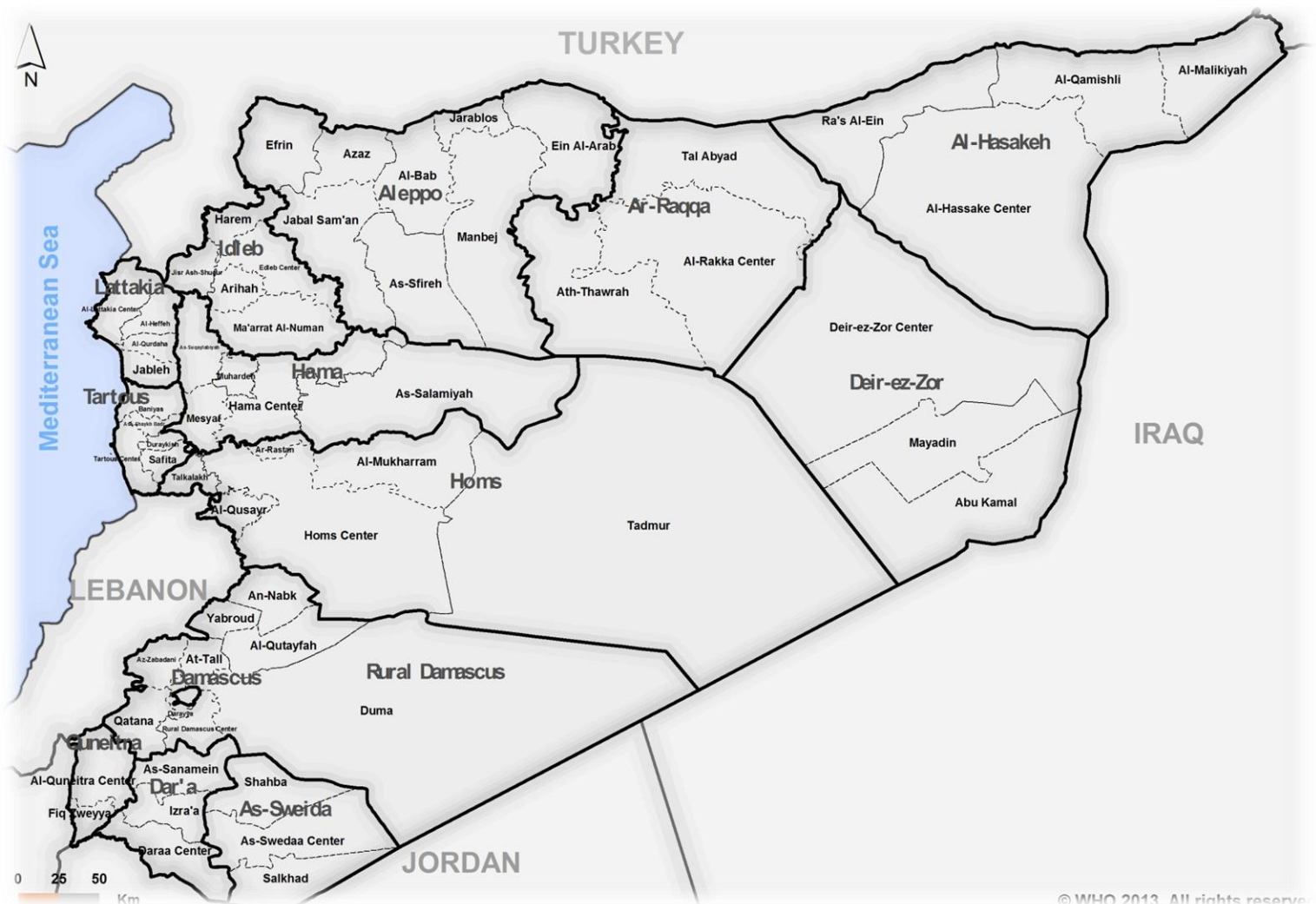




# Availability of the Health Resources and Services at Public Hospitals in Syria

## Using HeRAMS



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## Executive summary

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**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 3<sup>rd</sup> 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 population<sup>1</sup> (*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 40 public (General & specialized) and 24 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].

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<sup>1</sup> 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.*

## **Human Resources**

The balance between different staff categories in public hospitals has been analysed; 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%).

The increasing number of health staff turn-over due to the current crisis becomes a major barrier in the provision of quality services.

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 Public Hospitals across Syria has been affected widely by the current crisis. Presently, there is an average of one hospital for 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 public 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 56% of the functioning public hospitals, while management of severe acute malnutrition is provided in 18% 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 80% of the public general 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 above 80%. More details are governorate level is provided in the report.

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

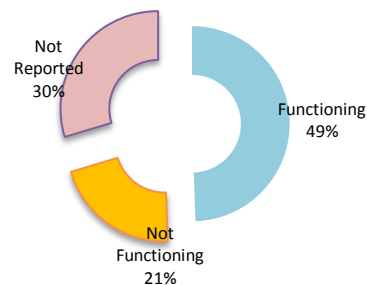
# 1. Functionality and Condition Patterns of the Public Hospitals

Descriptive analysis for the public hospitals reported to the HeRAMS during the 3<sup>rd</sup> quarter of 2013, is provided in this report. Analysis is conducted at governorate level and it covers: Completeness of reporting during the 3<sup>rd</sup> quarter of 2013 was 70% (a total 64 out of 91 public hospitals). The types of public reporting hospitals are either General or Specialized hospital. 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)

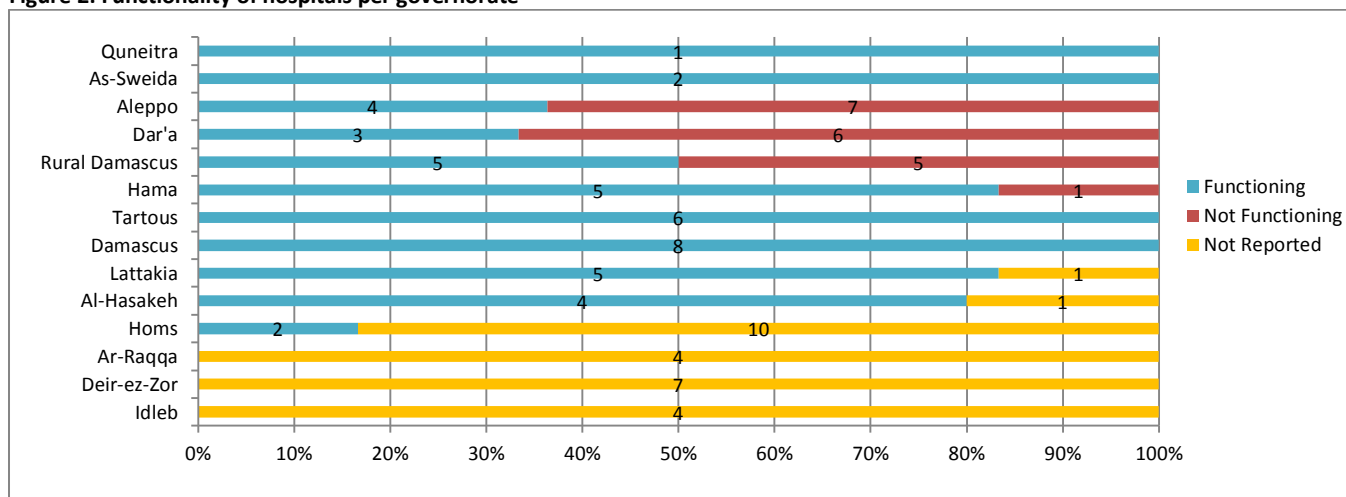
Out of the 91 public hospitals; 45 (49%) is reported functioning and accessible, 19 (21%) is not Functioning, while 27 (30%) hospitals have not reported due to security reasons and accessibility challenges [Figure 1].

Figure1: Reporting completeness



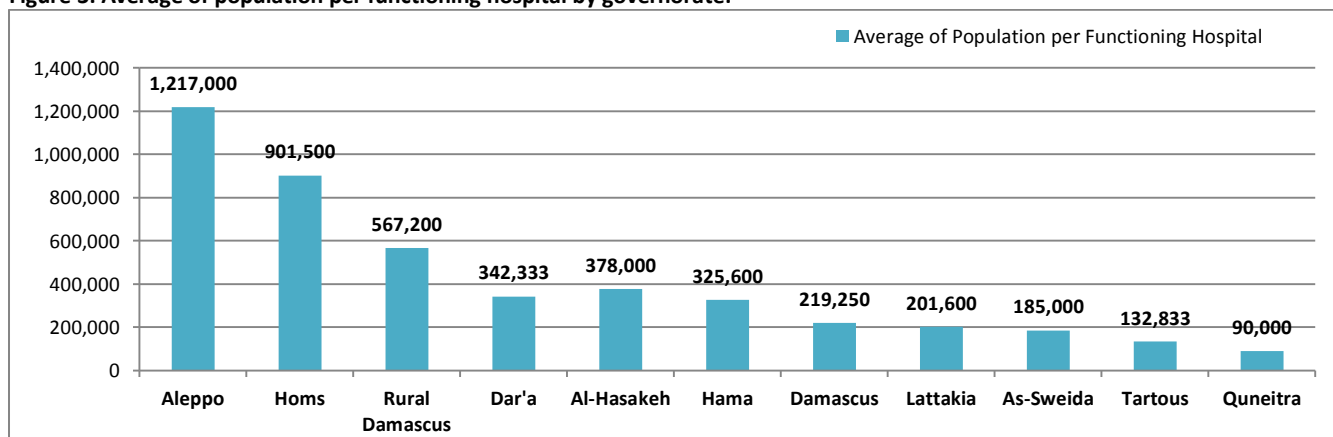
The non-reporting 27 hospitals are *mostly from 6 governorates*, (i.e., all hospitals of Idelb, Deir-ez-Zor, Ar-Raqqa, and 10 of Homs hospitals, one hospital in Lattakia, and one in Al-Hasakeh, [Figure 2].

Figure 2: Functionality of hospitals per governorate



By looking into the coverage of functioning public hospitals per population<sup>3</sup>, 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].

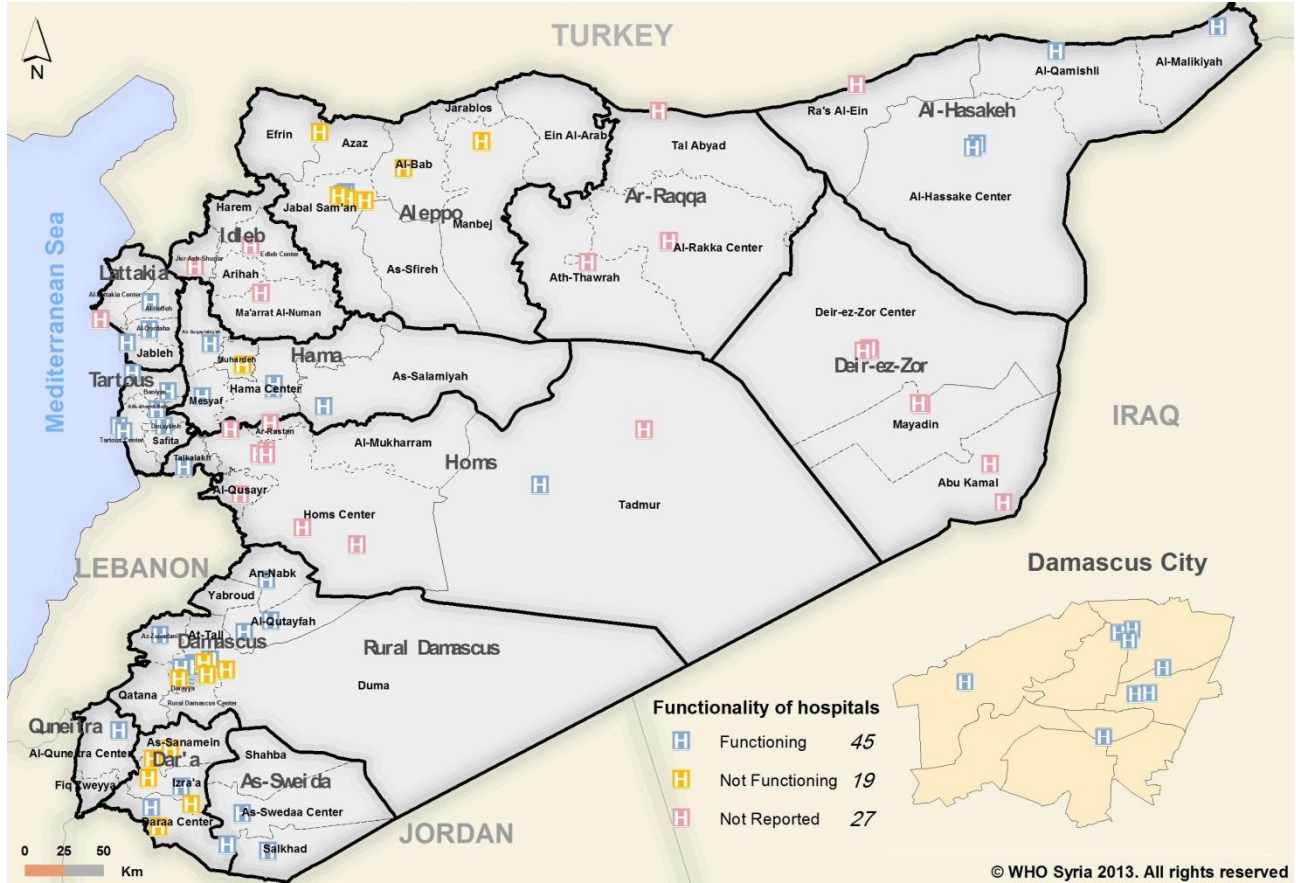
Figure 3: Average of population per functioning hospital by governorate:



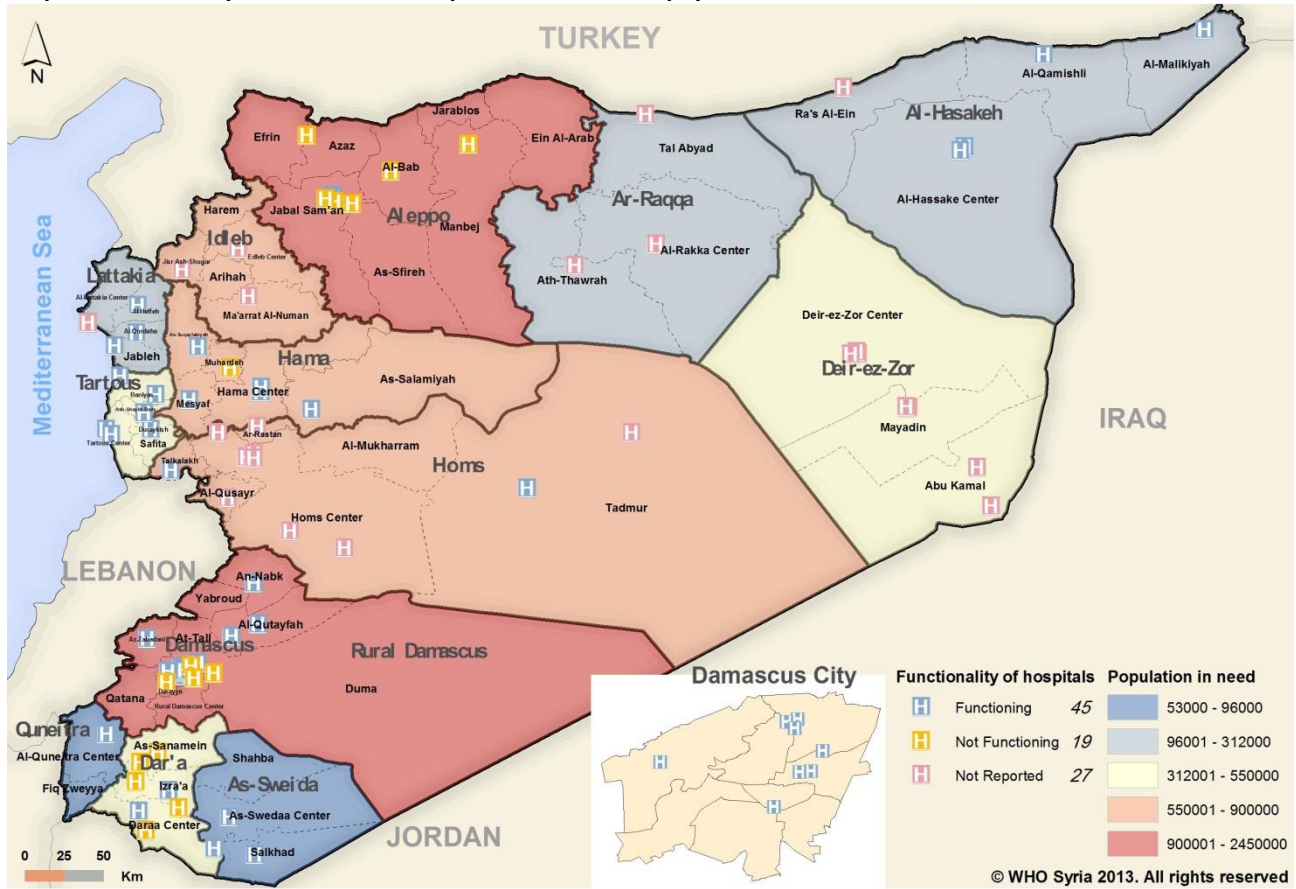
<sup>3</sup> Source of population data is OCHA Syria



**Map 1: Distribution and Functionality of Public Hospitals**



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



## Analysis of the condition of the building:

**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).

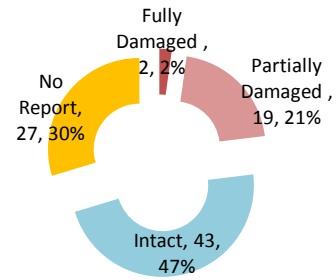
Analysis of the level of damage provides good indication on the potential costs for reconstruction.

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].

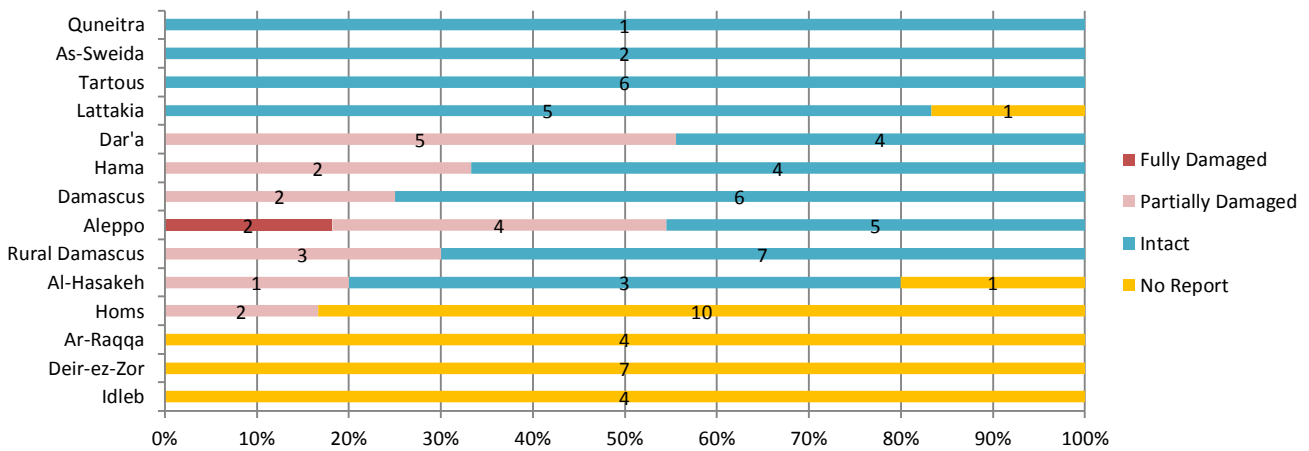
The fully damaged hospitals are in Aleppo; *Zahi Azraq<sup>4</sup> hospital in Elhalak district, and E'zaz national hospital in E'zaz city.*

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

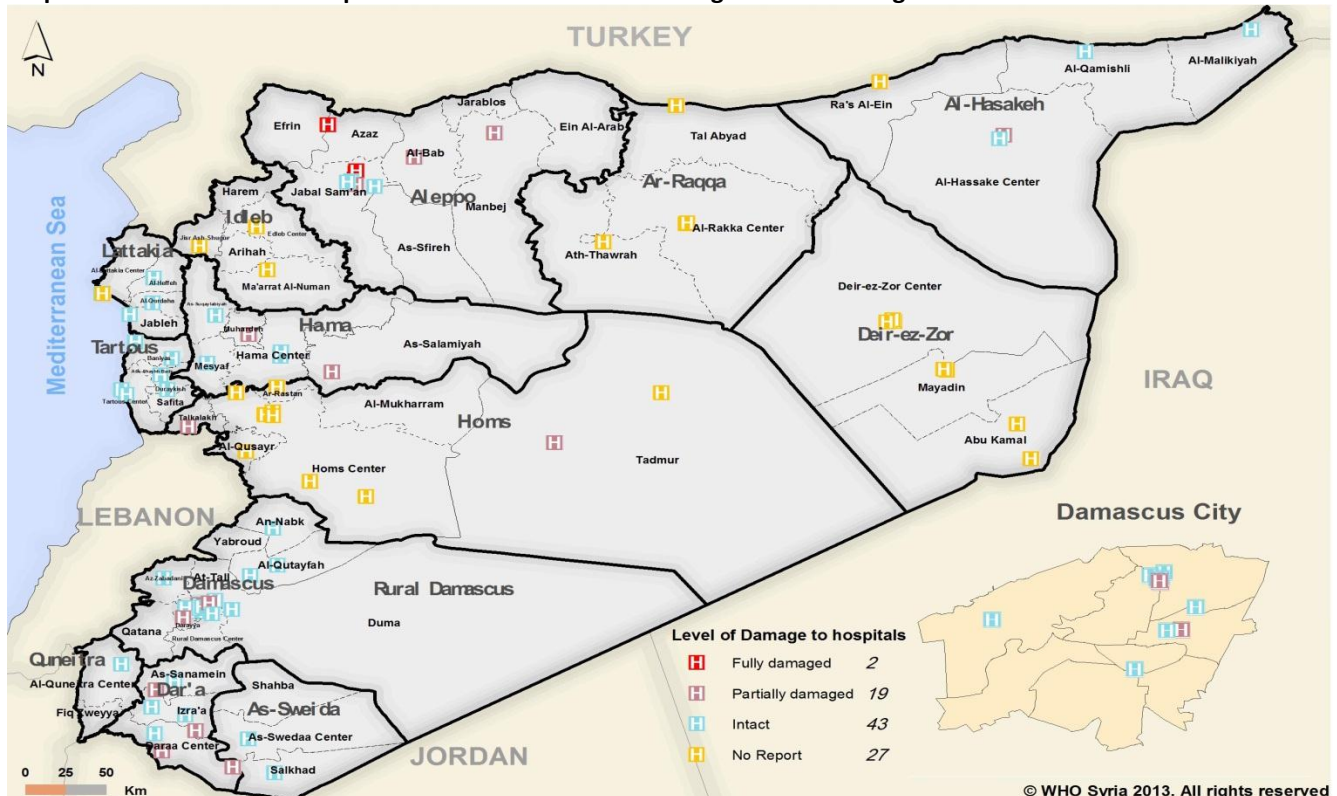
**Figure 4: Level of Damage to Hospitals**



**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**



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

## 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 6].

The increasing number of health staff turn-over due to the current crisis becomes a major barrier in the provision of quality services.

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 7].

Figure 6: Proportion of Health Staff

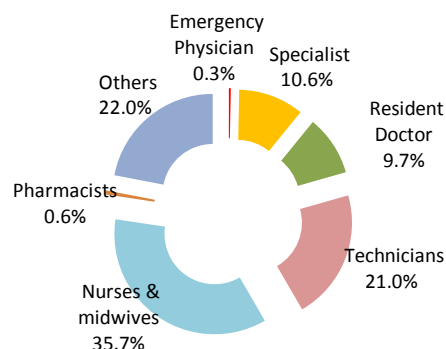
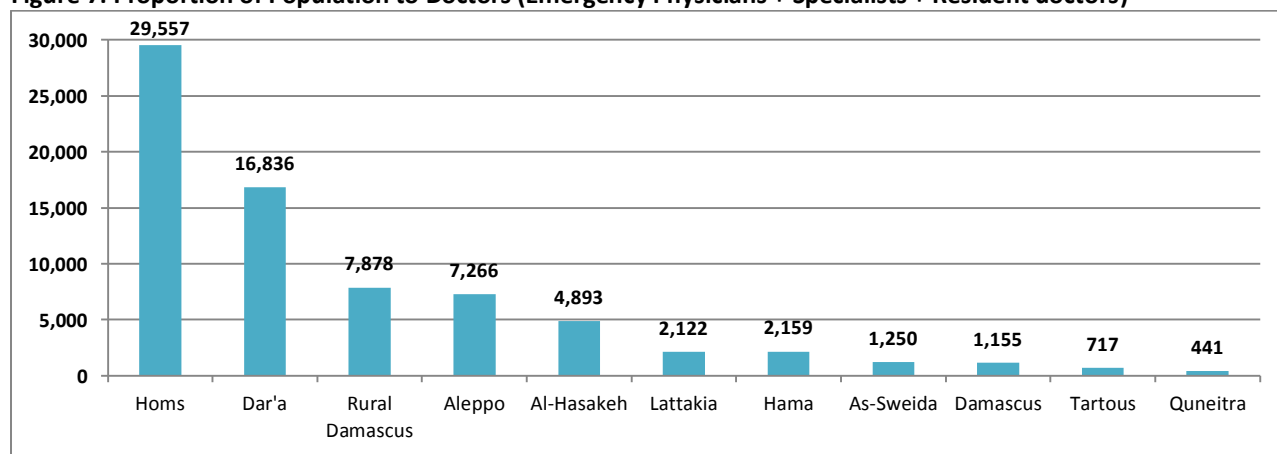
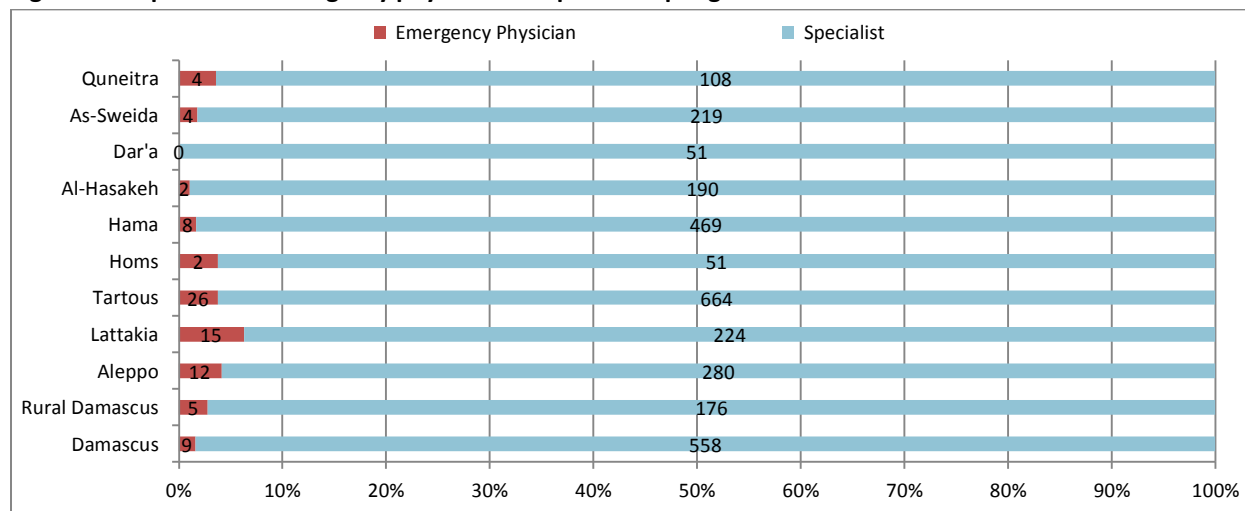


Figure 7: Proportion of Population to Doctors (Emergency Physicians + Specialists + Resident doctors)



Proportion of emergency physicians to specialists has been presented in Figure 8. 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 8: Proportion of emergency physicians to specialists per 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.

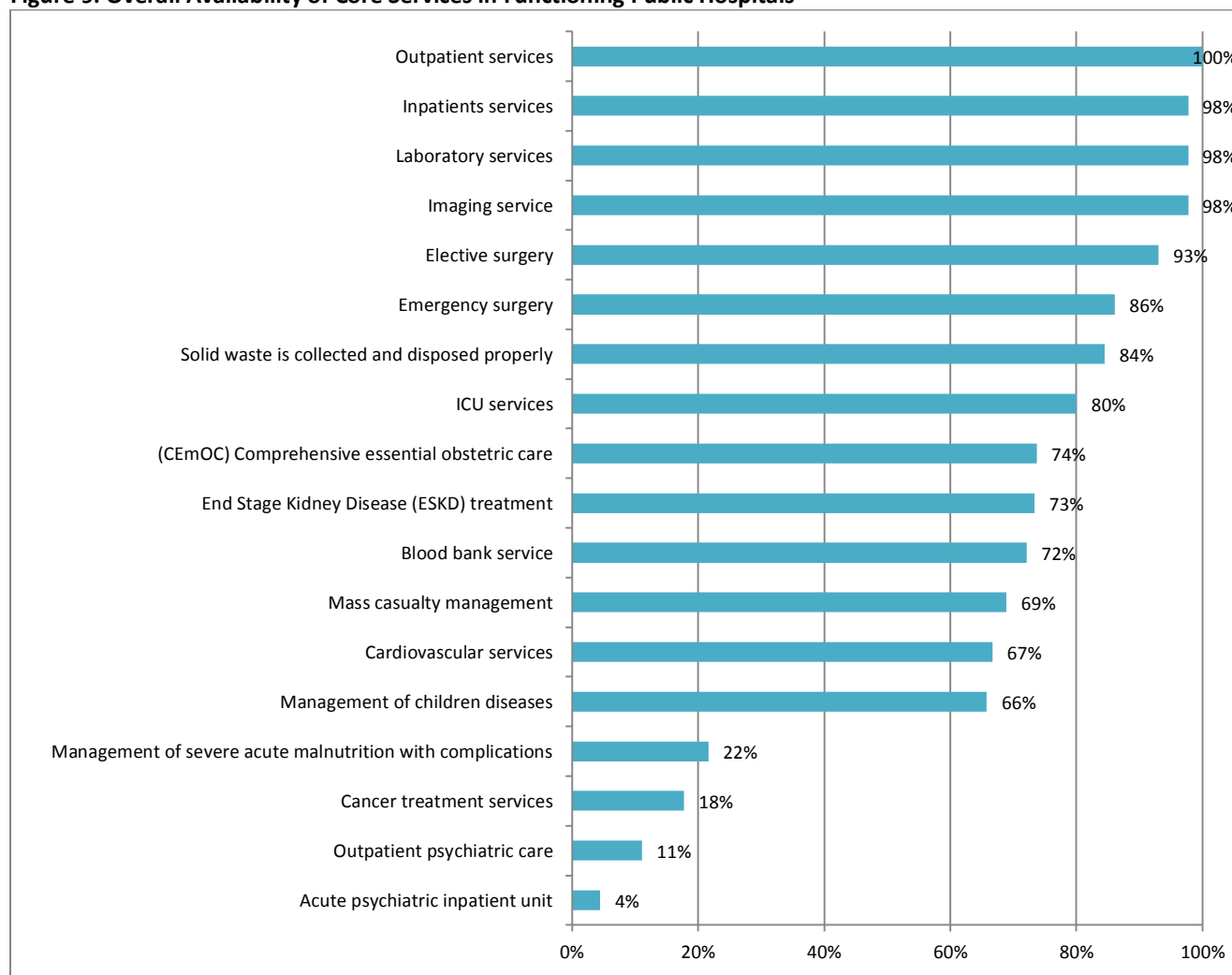
Provision of core healthcare services is monitored through HeRAMS at hospital level, considering a standard list of health services:

- 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

#### 3.1 Availability of Services within the functioning Public Hospitals (45)

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, while utilization of the services is assessed in terms of number of cases seen in those 45 hospital during month of September 2013:

**Figure 9: Overall Availability of Core Services in Functioning Public Hospitals**



### 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** and **119,180** respectively.

Inpatient and Laboratory service is 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.

Blood bank services is available in 72% of the functioning hospitals (**12,682** cases)

### Surgical and Trauma care:

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

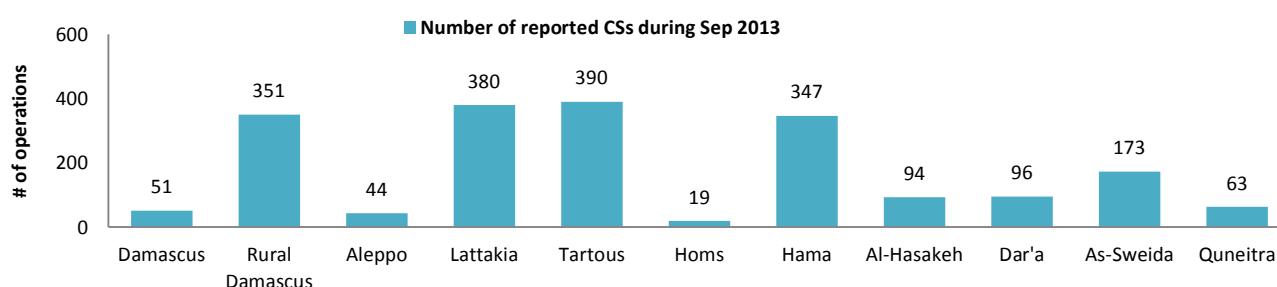
Mass causality management is available in 69% (31) of the hospitals with total cases **22,713**.

### 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.

### Maternity and Reproductive Health:

Comprehensive Emergency Obstetric Care (CEmOC) is provided in 74% of the functioning public hospitals; total cases seen during Sep 2013 are **2,008**.



### NCDs:

The number of cases seen with chronic diseases is as follow:

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

### Mental Health:

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

The total cases seen in the outpatient psychiatric care are **531**, while in the acute psychiatric inpatient unit is **770** cases.

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).

### Environmental Health:

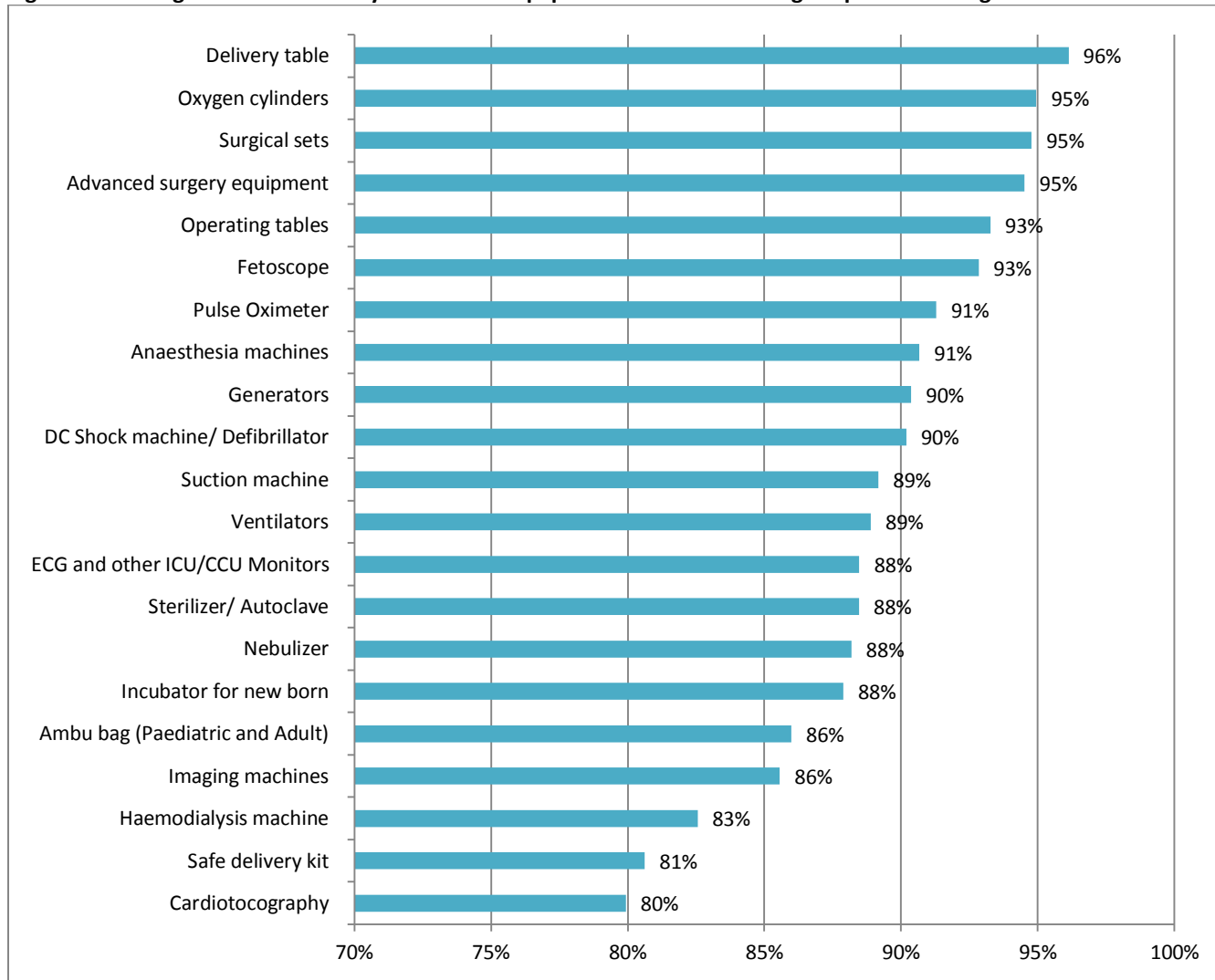
Solid waste management (proper collection and disposable) is available in 84% of the public hospitals.

## 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 low availability highlighted in yellow.

**Table 1: Availability of the essential and specialized equipment by governorate<sup>5</sup>**

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%

## 5. Analysis per Governorate –out of the total 91 public hospital

The following sections provide more detailed information and analyses for the service provision at public hospitals (free-of-charge) per reporting governorate (11):

1. Damascus
2. Rural Damascus
3. Aleppo
4. Homs
5. Al-Hasakeh
6. Lattakia
7. Tartous
8. Hama
9. Dar'a
10. As-Sweida
11. Quneitra

The non-reporting governorates are:

Governorate	Total Population	Population in need for humanitarian assistance as of September 2013
1. Idleb	1,501,000	900,000
2. Deir-ez-Zor	1,239,000	500,000
3. AlRaqqqa	944,000	280,000

<sup>5</sup> Details of the equipment per hospital are available in the HerAMS dataset.

## Recommendations

- ◆ There is a strong need to rehabilitate the damaged hospitals to ensure better and equitable provision of the public secondary care services (i.e., in Aleppo there are 6 damaged hospitals (2 fully and 4 partially)).
- ◆ Increase the number of medical cadre in severely affected areas (such as Homs and Dar'a), to improve the provision and accessibility to quality care services.
- ◆ Increase the number of emergency physicians in Al-Hasakeh and Dar'a.
- ◆ Support the MOH Mental Health hospitals with psychotropic medicines and capacity building activities, as well as support integration of mental health services into outpatient clinics.
- ◆ It is also recommended to include the MOHE facilities, health sector partners' supported facilities, and private hospitals to provide broader picture on the available resources on the ground.