

# SYRIA CRISIS | ALEPPO CITY

Key Informants Assessment Report June 2014

### REACH Informing more effective humanitarian action

### **SUMMARY**

Since January 2013, the extensive shelling of Aleppo has left part of the city in ruins and caused massive population displacement, as well as the regrouping of the remaining population in the southwestern parts of the eastern city area. As of early June 2014, significant population displacement out of eastern Aleppo was still ongoing due to the further intensification of the conflict. In a context where reliable information is scare and in support of contingency planning by the humanitarian community to provide aid before access to eastern Aleppo is further curtailed, **REACH conducted a Key Informants (KI) assessment in Aleppo between April and May 2014 to collect information on the needs of populations located in the eastern part of the city.** 

REACH conducted this assessment in close consultation with the Inter-sector Coordination Group and the Assessment Working Group for Northern Syria as well as local humanitarian partners and NGO coordination platforms. Funded by the Office of U.S. Foreign Disaster Assistance (OFDA), the assessment aimed to address an information gap regarding the humanitarian and displacement situation in Aleppo City. The methodology applied for this assessment is presented at the beginning of the report, including the ranking approach used to evaluate the reliability of the collected data. Population figures provided in the report should be interpreted as estimates only, valid as of early May 2014 for displacement figures and as of late April for remaining population figures.

This report provides first an **overview of population displacement** within and out of the area between January 2014 and early May, as well as estimates of the remaining population as of late April 2014. Second, this report also presents an analysis of **levels of damage to public and private infrastructures**. Third, focusing on the **humanitarian situation in terms of electricity, water, and health** in eastern Aleppo, REACH highlights new findings, and argues that deficiencies in these three sectors are significantly worsening the humanitarian situation in eastern Aleppo. Specifically, REACH provides in this report an **analysis of the humanitarian impact of the prolonged water and electricity networks shutdowns** that occurred in Aleppo in April and May 2014.

#### Displacement

- The extensive air bombing campaign, and to a certain extent the lack of basic services, have displaced an estimated 550,000 people from eastern Aleppo since January 2014. In addition, within eastern Aleppo, an estimated up to 220,000 people have gradually relocated to the southern area, closer to conflict hotspots, between January and early May 2014.
- The remaining population in eastern Aleppo was clustering in a southern area, near conflict hotspots. The area registered an estimated between 500,000 and up to 735,000 people as of late April 2014 and was assessed. Following large-scale displacement in 2013, a second assessed area in the north, registered only an estimated 15,000 people<sup>1</sup>. As of June 2014, these figures have, according to local reports and debriefings, drastically changed as several hundred thousands more people have left eastern Aleppo.

#### Damage

Private houses in the most populated southern and northern areas of eastern Aleppo were registering mostly
 "medium" level of damage. In regards to public infrastructures, the most heavily damaged buildings were located
 in areas where intense ground fighting took place, as well as in the eastern parts of the city that have experienced
 the most severe bombardments. Across assessed areas, all public infrastructures – hospitals, bakeries, schools,
 and water and electricity networks – have been damaged to different extents by the extensive aerial shelling.

<sup>&</sup>lt;sup>1</sup> An estimated up to 75,000 people were still residing in the northeastern and eastern parts of eastern Aleppo that were not assessed. This figure has low reliability and is therefore only mentioned as an indication. Overall, all the population figures collected mainly from Key Informants from local authorities are high estimates. During debriefings, it was established that population of the assessed areas should be ranging from 515,000 to 750,000.



 Findings suggest that the level of damage does not play a key role in hospitals being less functional, bakeries and schools closing, and the water and electricity networks not functioning. Other causes such as the lack of a power source (either electricity or fuel), the lack of qualified staff and/or the lack of equipment have been most reported.

#### Electricity

- Two complete electricity network shutdowns have been registered in eastern Aleppo: 18 April 28 April and 1 May – 5 May, after parties to the conflict attempted to use control over electricity supply as leverage. An estimated 200,000 to 300,000 people have been severely affected by the electricity shutdowns in eastern Aleppo. It should be noted that the electricity network plays a crucial role in supplying power to the water pumping stations.
- Before and after the shutdowns, electricity supply was already intermittent being on and off approximately every 3 hours – in eastern Aleppo. Sporadic power supply has been identified as a key factor exacerbating humanitarian needs in Aleppo, especially for water and health services.

#### Water

- Two complete water network shutdowns were registered in Aleppo for two periods: 23 April 27 April and 5 May 14 May, after parties to the conflict attempted to use control over the water supply as leverage. An estimated 200,000 to 300,000 people have been severely affected by the water shutdowns, having to rely on unsafe water sources across assessed areas of eastern Aleppo. The rest of the people in eastern Aleppo have reportedly been affected to a lesser extent, having more options to procure safe water through safe wells and/or markets.
- Before and after the shutdowns, water supply through the network was already intermittent. Water was available
  through the network for only 12h (continuous) in each 48h in assessed areas in eastern Aleppo. Across the
  southern assessed area, the current situation with water was identified as being very problematic, but still not lifethreatening. While most of the population in eastern Aleppo is heavily reliant on the water network for safe water
  supply, prolonged cuts would likely have a terrible humanitarian impact on the population.

#### Health

- Across all assessed areas, KI reported that although shortages in health services are affecting everyone, they are still not life threatening. Across most of the southern area (an estimated between 500,000 and up to 735,000 people as of late April 2014), only management of chronic diseases (60% of the needed coverage) and vaccination (80%) recorded levels of health services coverage above 50% compared to what is currently needed. Nutrition surveillance, emergency health services and medicine distribution were reportedly the less covered health services.
- In a small part of the southern area (estimated 13,000 people as of late April 2014), around the Salahaddin District, health coverage by types of health services was reportedly worse. In the northern assessed areas, health coverage was inferior to the entire southern area with all services, apart from vaccination, registering 15% or less coverage.

REACH already shared preliminary findings to local humanitarian stakeholders and will disseminate this full report through various inter-agency coordination mechanisms, including humanitarian clusters and various online platforms. As conflict has intensified in Northern Syria, REACH's goal is to better inform the ongoing humanitarian response. Following the release of this report, REACH plans to also produce a report on the situation in Aleppo Governorate with a specific focus on internal displacement and a humanitarian overview covering the food, heath and water sectors. By the end of July 2014, REACH will also develop a series of shorter urban reports analysing the humanitarian situation in several conflict-affected urban centres in Northern Syria.



### List of Abbreviations and Acronyms

ACU GIS	Assistance Coordination Unit Geographic Information System
HRW	Human Rights Watch
J-RANS	Joint Rapid Assessment of Northern Syria
KI	Key Informants
NGO	Non-Governmental Organization
OFDA	Office of U.S. Foreign Disaster Assistance
PHR	Physicians for Human Rights
SARC	Syrian Arab Red Crescent
SINA	Syria Integrated Needs Analysis
SOHR	Syrian Observatory for Human Rights
SYP	Syrian pound
UNICEF	United Nations Children's Fund
UNOSAT	United Nations Operational Satellite Applications Programme
WFP	World Food Programme

### **Geographic Classifications**

Governorate	Highest form of governance below the national level
District	Sub-division of a governorate in which government institutions operate
Sub-District	Sub-division of a district composed of towns and villages
City	Urban center located within a sub-district
Neighborhood	Lowest administrative unit in a city

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#### About REACH

REACH is a joint initiative of two international non-governmental organizations – ACTED and IMPACT Initiatives – and the UN Operational Satellite Applications Programme (UNOSAT). REACH's mission is to strengthen evidence-based decision making by aid actors through efficient data collection, management and analysis before, during and after an emergency. By doing so, REACH contributes to ensuring that communities affected by emergencies receive the support they need. All REACH activities are conducted in support to and within the framework of inter-agency aid coordination mechanisms. For more information please visit: <u>www.reach-initiative.org</u>. You can also write to us at: <u>geneva@reach-initiative.org</u> and follow us @REACH\_info.



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### INTRODUCTION

Aleppo, the largest city and former economic capital of Syria, has become one of the main battlegrounds of the Syrian conflict since opposition forces took control over the eastern, southern and northern parts of the city – areas formerly known as the "crescent of the poor" – in July 2012. The Government forces retained control of western and central areas that were considered wealthier prior to the conflict. Despite localized clashes and extensive ground fighting between opposition and Government forces, the frontlines have then changed little until October 2013, replicating a stalemate that established itself across most of Syria. Over the past six months, intensive shelling of eastern Aleppo coupled with renewed ground offensives from both sides have however gradually altered the status quo<sup>2</sup>.

With more areas being hit by the intense bombardment since January, eastern Aleppo witnessed a massive wave of displacement while people were fleeing the targeted areas to relocate to western Aleppo or leaving the city altogether. As of mid-May 2014, over 550,000 people have thus left eastern Aleppo fleeing the shelling, and at least in part the lack of services, while an up to 220,000 were displaced within eastern Aleppo leaving the most damaged areas since January. While these numbers remain indicative, they testify to the scale of the humanitarian disaster unfolding in the city. As of late May and June, massive displacement from eastern Aleppo was ongoing<sup>3</sup>.

While Aleppo's population had already been severely impacted by the protracted conflict in Syria, months of ground fighting along with intense shelling have left large swathes of eastern Aleppo in ruins. The extensive destruction affecting houses and public infrastructures have exacerbated the humanitarian needs in the city. In parallel, recurrent electricity shortages have further interfered with the functioning of such key facilities as the water supply network, hospitals, bakeries and schools.

This report provides an analysis of the impact of the extensive level of building damage and of the repeated electricity shutdowns have on the already dire humanitarian situation in opposition-controlled areas of Aleppo, referred hereafter as eastern Aleppo (Map 1). In addition, it provides an indicative estimate of the levels of displacement within and out of eastern Aleppo from January to early May 2014. With information being extremely scarce<sup>4</sup>, this report addresses a gap in information on humanitarian needs in an area where access remains to date severely constrained. The report is focusing on eastern Aleppo as this is area with the highest humanitarian needs<sup>5</sup>. The second part of the report presents an overview of the humanitarian needs in health and water sectors for which new findings have been identified. During the assessment, these two sectors have also been consistently ranked among Key Informant's top-three priority concerns in eastern Aleppo, just after the lack of food that remained as the main issue.

<sup>&</sup>lt;sup>5</sup> The almost complete lack of access for international NGOs makes it extremely challenging to carry out a comprehensive assessment of the humanitarian needs in western Aleppo.



<sup>&</sup>lt;sup>2</sup> Human Right Watch reported that, according to a local monitoring group, attacks have killed over 2,300 civilians in Aleppo governorate between November 1, 2013, and March 21, 2014 (<u>HRW</u>, 24/03/14).

<sup>&</sup>lt;sup>3</sup> According to information collected during debriefings, an additional 150,000 to 300,000 people were displaced from eastern Aleppo between mid-May and mid-June. This information has not been collected during the assessment, and is provided only indicatively.

<sup>&</sup>lt;sup>4</sup> Few estimates are available on the levels of displacement in and out of Aleppo city with the last comprehensive one dating back to February 2014 (<u>WFP</u>, 18/02/14). Regarding damage, specific reports date back to spring 2013 (<u>Assessment Working Group for Northern Syria</u>, 27/03/13). No comprehensive information has yet been released on the impact of the April electricity shutdowns on the humanitarian situation in Aleppo.

## METHODOLOGY

The assessment conducted in eastern Aleppo involved the collection of data from primary sources, through 63 Key Informants' (KI) interviews with local councils and relief offices, health and education officials, private providers of services, community leaders, as well as direct observation.

KI interviews and observation-based data collection were conducted across two densely populated areas, one south and one north, in eastern Aleppo, from 20 April to 4 May (Map 1 and Table 1). Three KI questionnaires have been completed for the larger southern assessed areas that proved to be rather uniform in reported humanitarian needs with the only difference being registered for health services' coverage; only one KI questionnaire has been completed for the smaller northern area.

Eastern Aleppo City	Area/ Neighborhood	# of KI Interviews		
North assessment area	Ashrafiyeh	2		
	Sheikh Maqsoud	3		
	Hullek	2		
	Haidaria	2		
	Bani Zaid	2		
	Al Shaba'a Park	3		
	Fardos	4		
	Shayek Saed	4		
	Mager	4		
	Bustan al-Qaser	5		
	Karm ad-Dada	4		
South assessment area	As-Sukkari	5		
South assessment area	Mansari Mashad	5		
	al-Kallasah	4		
	Bab Antakia Park (Old City)	4		
	Saad Al Ansari	4		
	Sayf Al-Dawla (only half controlled by the opposition)	4		
	Salah al-Din	2		
	63			

Table 1: Key Informants	Interview by area	/neighborhood by	assessment zone in E	Eastern Aleppo
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The data collection methodology was based on purposive sampling because of significant humanitarian access constraints in Aleppo. The assessment thus relied on information provided by KI identified as knowledgeable about the areas targeted by the assessment and who could safely accessed these different neighborhoods. The primary data obtained was nevertheless extensively triangulated with secondary sources such as prior assessments by international and Syrian relief actors, local and international media reports, and social media.

Specifically, displacement figures for Aleppo were obtained by aggregating numbered estimates obtained after several interview with officials of the two local bus companies which transport displaced households out of eastern Aleppo with the data on displacement provided by local administrative authorities. The figure obtained has then been cross-checked against the data gathered for Aleppo Governorate, and figures featured in recent assessment reports.

Across the whole report, a three-point scale was used to measure reliability. With important security constraints hindering information collection in Aleppo, if not mentioned otherwise, the reliability level of the information provided

by KI, notably for all population figures, is ranked 2 – the intermediate level. Some information with low reliability – ranked 3 – has been included in the displacement section, but it should be considered as being indicative only.

Data-collection tools for the assessment were developed in part by REACH and in part by the Inter-Sector Coordination Group, as well as by relying on data collection tools developed for the SINA conducted in November 2013 (<u>Assessment</u> <u>Working Group for Northern Syria</u>, 31/12/13). A total of 8 field researchers, organized around a local team leader, were involved in the assessment in Aleppo. In mid-April, the team leader was trained on assessment principles and tools, humanitarian principles, triangulation methodologies, a method for ranking KI's reliability, as well as on damage and water/ electricity remote mapping.

After data collection was completed, the field research team leader was debriefed by trained assessment staff, as well as GIS specialists. The debriefing process involved a review of completed questionnaires, entailing clarification and validation of written responses, as well as remote sensing mapping on satellite maps of the recorded damage levels and of the water/ electricity infrastructure in Aleppo. The team leader was also questioned about evidence seen, as well as asked to present evidence, including photos of damages or strategic water and electricity infrastructures, when possible. The assessment staff also conducted shorter debriefing interviews with field researchers in Aleppo to cross-check the information presented by the team leader.

Despite these checks and balances, the population figures provided in the present report should be interpreted as estimates only, valid as of early May 2014 for the population overview and as of mid-May 2014 for the displacement figures. The displacement figures especially, and given the intensification of conflict in Aleppo since the beginning of 2014, should be used with care, although they remain in line with the displacement patterns reported in secondary sources.



#### Map 1: Assessed Areas of Eastern Aleppo and Areas of Control by Parties to the Conflict, May 2014



# **FINDINGS**

### **POPULATION AND DISPLACEMENT OVERVIEW**

Registering an estimated population of 2.1 million people prior to the conflict, Aleppo has been extensively affected by the ongoing fighting that triggered important population displacement and re-displacement within and out of the city. As of early May 2014, various sources reported that an estimated 2.5 million people were living across eastern and western areas of Aleppo. Since the surge in shelling witnessed in November-December 2013, displacement from and within eastern Aleppo city has intensified. To a large extent displacement patterns correlate with the intensification of the bombardment, forcing people to leave the city or, at least, to relocate to safer areas within Aleppo.

As of mid-May 2014, over 550,000 people have thus left eastern Aleppo since January. This number remains indicative. Across the whole displacement section, if not mentioned otherwise, the reliability level has been reported to be of 2 – the intermediate level on the three-point scale used to measure reliability – by field researchers. For the whole section, figures are updated as of mid-May 2014 for displacement and as of late April 2014 for the remaining population overview; massive new displacement, numbering several hundred thousands, reportedly occurred from eastern Aleppo since and the figures are no longer accurate.

#### Population Overview and Displacement within Eastern Aleppo

Two densely populated areas have been identified in eastern Aleppo, one to the south and one to the north of eastern Aleppo. Prior to the conflict, and with information being difficult to ascertain and reliability low, an estimated roughly 423,000 people were living across these two areas.

Southern Area: An estimated between 500,000 and up to 735,000 people, many of which are IDPs originating from the city, have concentrated in the main southern area controlled by opposition forces as of late April 2014. According to information provided by Key Informants (KI) from the local authorities, this area spawning across several neighborhoods registered only an estimated 363,000 people prior to the conflict<sup>6</sup>. While the assessment initially attempted to distinguish between IDPs and local population, the massive scale of displacement and re-displacement in eastern Aleppo have gradually blurred these types of distinctions (Map 2)<sup>7</sup>.

Within eastern Aleppo, KI reported that an estimated up to 220,000 people have gradually relocated to the southern area, closer to conflict hotspots, since January 2014. An indicative breakdown, informed by field researchers and KI interviews, of these displacements per month, and taking into account that the IDPs only gradually relocated to the southern assessed area<sup>8</sup>, would be: up to 40,000 displaced in January, up to 60,000 in February, up to 45,000 in March, up to 55,000 in April, and up to 20,000 in the first half of May. The provided figure remains a rough estimate as information on this particular issue is extremely difficult to ascertain; its reliability is low, ranked 3 – the lowest level on the reliability scale used for this report (Map 2).

<sup>&</sup>lt;sup>8</sup> In eastern Aleppo, displacement patterns were mainly triggered by the extensive bombardment that has been ongoing since January 2014. Civilians gradually fled from their home areas – some had however already been previously displaced – to areas located to the south as more neighborhoods were hit by the spreading bombardment. During each displacement wave, part of the population relocated to the southern assessed area. Eventually, by May 2014, most of the population from the bombed areas had relocated to the southern assessed area.



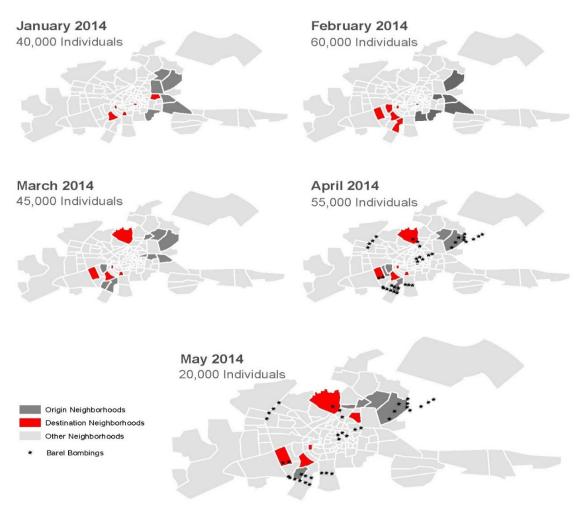
<sup>&</sup>lt;sup>6</sup> The reliability ranking for this pre-conflict number is however low, ranked 3 – the lowest level on the three-point scale used,

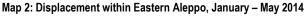
<sup>&</sup>lt;sup>7</sup> As reported during debriefings with field researchers, at least 50% of the population in eastern Aleppo may be considered to be IDPs. Overall, all the population figures collected mainly from Key Informants from local authorities appear as high estimates. During debriefings, it was established that population of the assessed areas should be ranging from 515,000 to 750,000. Since mid-May, field researchers have reported during debriefings that an additional 150,000 to 300,000 people were displaced from eastern Aleppo, and that the population of the southern assessed area has therefore been divided by at least half. New displacement has reportedly been triggered by intensified conflict as one of the parties to the conflict came close to besiege eastern Aleppo in June 2014.

Gradual displacement and secondary displacement closer to conflict areas was explained by KI as being mainly triggered by the extensive damage sustained by most of eastern Aleppo during the air bombing campaign. In parallel, displacement towards conflict zones is allegedly also motivated by the perceived safety of these areas for the remaining population. Until early April 2014, as reported by KI, strips of territory located around areas with extensive ground fighting between parties to the conflict were allegedly sparred the bulk of the aerial shelling because of its low accuracy.

Northern Area: As of late April 2014, an estimated 15,000 people were located in the northern area controlled by another armed political group and remained partly aside from the bulk of the fighting unfolding in the city. The northern area was mostly populated by ethnically Kurdish groups, with up to 60,000 people living in this part of the city prior to the conflict (Map 1)<sup>9</sup>.

**Rest of Eastern Aleppo:** In addition, as reported by KI from the local authorities, **an estimated up to 75,000 people** were still residing in the northeastern and eastern parts of eastern Aleppo where houses and infrastructure have been most heavily damaged by the air bombardment (Map 1). The reliability for this last number is low, ranked 3 – the lowest level on the reliability scale used for this report.





<sup>&</sup>lt;sup>9</sup> An estimated over 45,000 people have left the northern mostly ethnically Kurdish areas, in early 2013, according to KI from local authorities. To a large extent, these populations relocated to Afrin sub-district in the northwest and Ain Al-Arab sub-district in the south of Aleppo Governorate in March and April 2013 following increased violence in Aleppo.

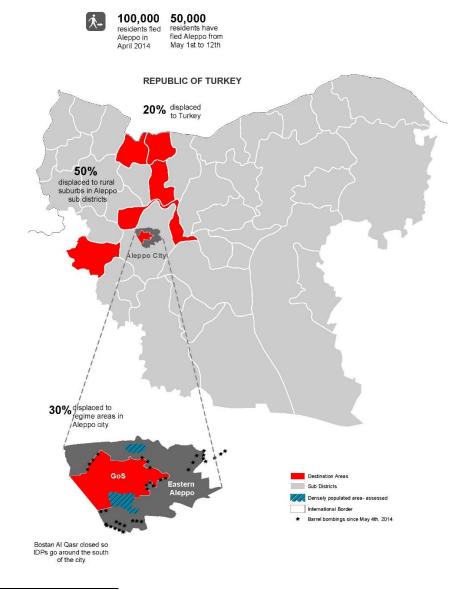


#### **Displacement out of Eastern Aleppo**

In mid-February, WFP reported that over 450,000 people were estimated to have fled from eastern Aleppo following surging violence. The figure included an estimated 200,000 people who fled to the western neighborhoods of the city, 250,000 people who fled to other areas of Aleppo Governorate, and approximately 2,000 who fled towards the Turkish border (<u>WFP</u>, 18/02/14). While displacement figures remain difficult to estimate, WFP's numbers attest to the massive displacement triggered by the intensification of conflict since October 2013.

Since January 2014, the extensive air bombing campaign, and to a certain extent the lack of services, have displaced almost 550,000 people from eastern Aleppo as of mid-May. This figure includes 225,000 people who have moved to western areas of the city, 250,000 people who have relocated to safer areas in northern parts of Aleppo Governorate, notably to A'zaz district, and an estimated 75,000 who left towards the Turkish border. On a month by month basis, an estimated 25,000 people were displaced in January, 175,000 in February, 150,000 in March, 150,000 in April, and 50,000 as of mid-May (Map 3)<sup>10</sup>.





<sup>10</sup> These figures are estimates only. Some of them may duplicate themselves as they fail to completely take into account possible secondary displacements.



The findings presented in this report are coherent with the findings featured in the REACH report on camps and informal settlements in northern Syria that identified massive exodus from Aleppo to a series of informal settlements and camps in Aleppo Governorate since January 2014. Similarly, in both cases, it was identified that A'zaz district was one of the area to which most people fled in March-April 2014.

### DAMAGE

#### **Damage to Houses**

In line with the findings of previous reports (<u>J-RANS</u>, <u>Aleppo City Assessment</u>, 28/03/2013; ACU, Rapid Assessment on Damage and Infrastructures, 04/2013), this report suggests that months of large-scale ground fighting and bombing have left large areas of Aleppo in ruins (Map 4). Across the eastern neighborhoods of the city, different levels of damage have been measured using a scale differentiating slight, medium, heavy and destroyed levels of damage.

Houses in the southern and northern areas of eastern Aleppo are registering mostly "medium" level of damage. Logically, most of the remaining population has, as of early May 2014, relocated to these areas, especially the central-southern area (Map 4). By contrast, most heavily damaged buildings (categories "heavy" and "destroyed") are located in areas of fighting hotspots, as well as in parts of the city that have experienced intense bombardment – east and southeast areas of eastern Aleppo. These zones are now scarcely populated, local KI from IDPs have all pointed toward massive displacement from these areas to safer and less damaged ones.

To a large extent, a brief overview of damages across eastern Aleppo suggests that the most damaged areas are no longer the most populated ones. While levels of damage from heavy bombardment were clearly a prominent factor explaining internal displacement in eastern Aleppo, most densely populated areas are now among the less damaged ones. This findings strongly suggest that other factors than levels of damage play a key role in driving up humanitarian needs in these areas of eastern Aleppo.

#### **Damage to Infrastructure**

The conflict and the intensive bombardment of eastern Aleppo have also had an impact on local public and private infrastructures. Hospitals, schools, bakeries, water and electricity networks have all been damaged to different extents across eastern Aleppo. Reports from early 2013 established high levels of destruction in Eastern Aleppo, especially in the South East (J-RANS, Aleppo City Assessment, 28/03/2013).

The information provided in this report confirms this and suggest that infrastructures across Eastern Aleppo are significantly more damaged. However, this study's findings suggest that lack of fuel and electricity, and lack of qualified staff and/or equipment may have a greater impact than damage on infrastructures' and network's functionality. Across all surveyed areas, the lack of a power source – electricity or fuel – has been indeed consistently mentioned as a key variable for infrastructures' capacity to be more or less operational.

These findings remain valid for the two assessed areas. The picture might be significantly different if heavily damaged and now relatively scarcely populated areas of the central and eastern parts of eastern Aleppo had been assessed.

#### Hospitals

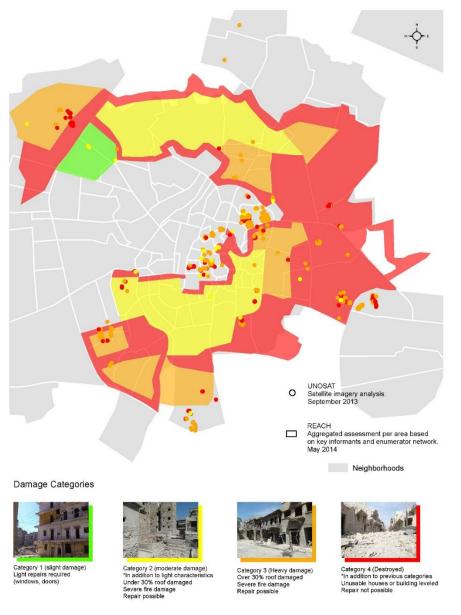
In spring 2013, the most impacting constraint to reach health facilities, for both workers and patients, was reported to be security in eastern Aleppo. In addition, health infrastructures had also been greatly impacted by the conflict, with



40% of the assessed infrastructure having been heavily damaged (ACU, Rapid Assessment on Damage and Infrastructures, 04/2013).

In May 2014, an independent study identified 150 attacks perpetrated between March 2011 and March 2014 against Syrian health facilities or practitioners. Since March 2011, Aleppo and Rif Dimashq, in Damascus suburbs, have reported the greatest number of attacks in Syria, with 35 in each location. The study further documented that twenty hospitals in Syria were hit multiple times, including Dar al-Shifa hospital in Aleppo, which were repeatedly targeted until they were completely destroyed.

Dar al-Shifa Hospital was bombed, first in August 2012, then in October 2012 and another time in November 2012. In July 2012, Aleppo's blood bank was one of the first targeted health structures in the city, leaving most of the population without blood supply or blood bags (PHR, 14/05/2014; PHR, 14/05/2014; PHR, 03/2014; LeMonde, 14/05/2014).



Map 4: Levels of Damage in Aleppo, May 2014

1 2 Kms Southern Area: As reported by KI from Health Officials in the southern area, all 4 available hospitals have been damaged to a certain extent. However, KI did not report conflict-related damages as one of the top-three reasons for any of these hospitals to be less functional. Lack of medical staff, and then respectively lack of medical equipment and lack of funding, were reported as the main reasons for hospitals being unable to process the increasing patients' caseload.

Northern Area: In the northern area, as reported by KI, of the two hospitals available prior to the conflict one has been damaged. However, KI did not report conflict-related damages as one of the top-three reasons for these two hospitals to be less functional. Lack of medical staff, and then respectively the lack funding and the lack of medical equipment were reported as reasons for them to be less functional.

#### Bakeries

**Southern Area:** Almost half of the bakeries in southern assessed areas have been damaged according to the interviewed KI. While the southern area registered a total of 22 functional bakeries pre-conflict, only 11 were functioning as of April 2014. Only a total of 9 bakeries have reportedly been damaged by the conflict, therefore suggesting that other reasons also come into play in explaining the diminution of the number of functioning bakeries. **Besides, conflict-related damage was not mentioned by KI among the reasons for bakeries to have closed.** As reported by KI, the reasons for bakeries to close were respectively: lack of staff, lack of fuel, and lack of wheat.

Northern Area: In the northern area, and although information on the number of now functioning bakeries out of the 8 existing pre-conflict proved impossible to collect, conflict-related damage was again not mentioned among the reasons for bakeries to have closed. As reported by KI, the main reasons were respectively: lack of staff, lack of flour, no electricity, and lack of fuel.

#### Schools

**Southern Area:** Out of the 16 schools registered in the southern assessed areas prior to the conflict, only 4 have reportedly been damaged by the conflict while 10 are still functional. Even assuming that damages are preventing 4 schools from functioning, 2 other schools are not functioning for other reasons.

Damages to schools have also not been mentioned as one of the main reasons for children not being able to access educations. According to interviewed KI from teachers and local authorities, the main reasons for children not being able to attend schools were respectively defined to be the lack of safety of travel routes, followed by people being unable to attend schools because they have been displaced that was added as a specific answer by KI. No third option was mentioned.

Northern Area: In the northern area, out of the 10 schools functioning before the conflict, only 2 are functioning now. However, again only 4 have been damaged, another 4 are not functioning for other reasons. Nonetheless, in a notable difference with the southern areas, KI in the north mentioned that the reasons for children not attending schools were respectively: the lack of safety along travel route, followed by damages to schools and the lack of school supplies.

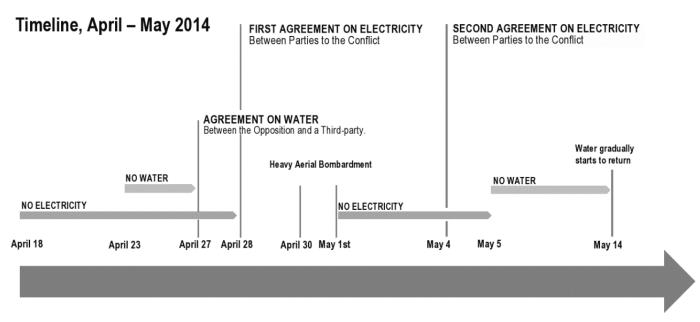
For the first time, damages to infrastructure, here to schools, has been mentioned as a reason for them being less functional. This could mainly relate to the local situation: unsafety makes it difficult to travel to some schools and the damaged schools might be located near the clustered remaining population. It would be reinforced by the previous finding that the number of non-functioning schools is greater than the number of damaged schools.

#### Water & Electricity Networks

As was reported in spring 2013, almost the totality of power stations and infrastructures that are located in eastern Aleppo had been targeted by air strikes, and were damaged or destroyed as a result. In the central-eastern Karm al Jabal area, half of the posts controlled by the opposition had been completely destroyed, while the shelling in this area resulted in several interruptions to the water network. In the south-western Salah al Din, in eastern Tareek al Bab and south-western Tal al Zarazer neighbourhoods, critical power supply infrastructures were no longer functional because of heavy shelling (ACU, Rapid Assessment on Damage and Infrastructures, 04/2013).

In mid-May 2014, as reported by various KI during interviews with field researchers trained to conduct remote mapping, the city's water and electricity network and infrastructure have not been heavily damaged in the assessed areas and remained relatively functional given that electricity is provided from the power plant.<sup>11</sup> To a certain extent, the discrepancy with earlier assessments may also be explained by the fact that, for this report, only densely populated areas that had experienced less heavy shelling, were assessed.

It was established during debriefings that while power cables and water pipes are often damaged during the aerial shelling, key water and electricity infrastructures and the rest of the networks are functional in assessed areas. Minor damages are reportedly mostly fixed on an ad-hoc basis, given that spare parts are available, by the authorities in eastern Aleppo. In April alone, the water grid was reportedly repaired dozens of times to fix damages caused by aerial bombardment and shelling (UN News Centre, 21/05/2014)<sup>12</sup>. According to field researchers' direct observation and information collected from KI, less than 20% of the water and electricity networks have however suffered extensive damaged that could totally prevent them from functioning as a result of the conflict<sup>13</sup>. The lack of damages to the networks made them a prized target for parties to the conflict as all of the remaining population in Aleppo is heavily dependent on water and electricity supplies to survive.



#### Figure 1: Electricity and water shutdowns in Aleppo, April-May 2014

<sup>&</sup>lt;sup>11</sup> While mostly dependent on electricity, the water pumping stations may also run from supplementary generators if fuel is available.

<sup>&</sup>lt;sup>12</sup> It was however reported that some damaged points on the water grid have not been repaired because of shortage of equipment or spare parts, ongoing attacks, and the inability to remove large chunks of rubble to access the damaged areas (UN News Centre, 21/05/2014).

<sup>&</sup>lt;sup>13</sup> In early May 2014, some information released directly by opposition groups suggested however that some key water infrastructures had been damaged by aerial shelling (<u>Daily Star</u>, 16/05/2014).

#### **ELECTRICITY**

Amidst surging conflict in eastern Aleppo since January, parties to the conflict have increasingly resorted to using control of the power supply network as leverage. The resulting complete and repeated shutdowns of electricity have extensively impacted on the civilian population in Aleppo. Two extended electricity shutdowns have been registered: 18 April – 28 April and 1 May – 5 May. In both cases, electricity was restored following agreements between parties to the conflict.

#### Context and Humanitarian Impact of the Electricity Shutdowns April-May 2014

The opposition areas in eastern Aleppo have long been located in-between the thermodynamic plant, controlled by a third-party armed group in eastern Al-Safira district, and the Government areas. For long, a secondary electricity transformer, located in the western suburbs of Aleppo and supplied with electricity coming from Lattakia province, represented an alternative power source for the main transformer located in Government areas.

Following its military advance in northern and southern Aleppo in the course of April 2014, the opposition took control of the secondary electricity transformer while coming close to encircling Government areas. This allowed the opposition complete control over Aleppo's electricity network. To a significant extent, control over the local electricity network also implied extensive control of the local water network mostly reliant on electricity to run.

Amidst widespread shelling of eastern Aleppo, the April electricity cuts impacted on significant numbers of people in western and eastern Aleppo. According to information provided by local sources, an estimated 200,000 to 300,000 people have been severely affected by the electricity shutdown across assessed areas of eastern Aleppo. Households owning private generators have been less affected. To a large extent, the electricity shutdowns have also impacted on a range of key public and private infrastructures, such as hospitals, bakeries, schools and water pumping stations.

#### **Electricity Availability**

As reported by KI, **prior to the April shutdowns, electricity supply was already intermittent.** Across assessed areas of eastern Aleppo, electricity was available more or less daily, but **the supply was highly irregular with power being on and off roughly every 3-4 hours**<sup>14</sup>. In the aftermath of the electricity shutdowns, KI reported that electricity availability returned to March and early April levels across both of the assessed areas.

As reported by local KI, several reasons come into play to explain the sporadic power supply prior and after the shutdowns. Among the most reported reasons during debriefings, the lack of control of the power sources that is under the control of a third-party armed group, as well as the damages suffered by electricity cables during aerial bombardment were reported to be the main ones.

The endemic unreliability of electricity supply greatly exposes the vulnerability of the population. Although, as reported by KI, the supply, even intermittent, remains largely predictable, the lack of a reliable power source vastly participates in the surge of humanitarian needs witnessed in eastern Aleppo. Especially, KI reported that the situation is difficult to bear for the most vulnerable and poorest groups of the population in the assessed area that do not always have access to costly private generators<sup>15</sup>. In addition to impacting on people's daily lives, the intermittent power

<sup>&</sup>lt;sup>15</sup> Similarly as for the water shortages, some people have reportedly set up their own large generators and are selling electricity by the ampere to those who can afford it in a city where complete electricity shutdowns occur (<u>Al-Monitor Syria Pulse</u>, 27/05/2014).



<sup>&</sup>lt;sup>14</sup> During debriefings, it was further reported that, in addition, electricity was not available in all of the neighborhoods at the same time in March 2014. The situation reportedly changed in May 2014 after electricity was restored.

supply results in the unreliability of a whole range of key public services such as hospitals and bakeries, as well as the water network.

The high need of the population for a power source may be further noted from the frequency with which the need for more fuel – an alternative power source to electricity – was reported by KI as being essential for hospitals, bakeries, and the water network to be better functioning. However, as always, in conflict-affected and access-constrained, fuel remains a rare and prized commodity that is usually controlled by armed groups that get priority access to it.

### HUMANITARIAN OVERVIEW

#### Water

#### Context and Humanitarian Impact of the Water Shutdowns in April – May 2014

Similarly to the electricity network, the water network also gradually became a bargaining tool between parties to the conflict in late April and May 2014. Following the electricity cuts, several water shutdowns were thus witnessed as armed groups interfered with the pumping stations located in areas controlled by various non-Government forces. Interferences with the water network concentrated around the main water pumping station in the city, the Sliman Halabi station located in eastern Aleppo, and the main water pumping station near the Euphrates, the Al Khafsa station controlled by a third-party armed group.

Although information remains contradictory as parties traded blame for the water shutdowns, water was nevertheless cut across most of eastern and western Aleppo for two periods: 23 April – 27 April and 5 May – 14 May. During these periods, water was shut for most of eastern and western Aleppo. After the first shutdown, water was restored after an agreement between the opposition and a third-party faction. According to information provided by local sources, an estimated 200,000 to 300,000 people have been severely affected by the water shutdown across assessed areas<sup>16</sup>.

As reported by local KI, water was widely insufficient during the shutdowns. As confirmed in secondary sources, the lack of water forced residents to stand in queues in order to get water from water wells and mosque taps, or even to use undrinkable water from fountains (SOHR, 10/05). With bottled water prices in western Aleppo soaring to over 100 SYP a bottle due to high demand, residents have resorted to drinking from wells and drains, which has led to illness (Daily Star Lebanon, 16/05/2014)<sup>17</sup>. While some distribution have been reportedly conducted in western parts of Aleppo, distributed water was sometimes contaminated as trucks used to manage waste water have reportedly been used to distribute water to the population in western Aleppo (The Independent, 13/05).

The rest of the population of assessed areas of eastern Aleppo has been less affected by the water shutdowns, since it has easier access to water through nearby wells, can run water pumps with its own fuel, or is rich enough to buy water from markets. This report established that only half of the population of the assessed areas had been severely affected because the water cuts have been relatively short. If similar incidents were to affect eastern Aleppo for longer periods of time, for instance a month, all the population of the assessed areas is likely to be severely affected.

<sup>&</sup>lt;sup>17</sup> Other sources have reported that prices were significantly lower, averaging 5,000 SYP for 1,000 L, the capacity of a water tank (<u>Middle East Monitor</u>, 19/05/2014; <u>All4Syria</u>, 13/05/14). In eastern Aleppo, KI interviewed by field researchers reported that water prices were significantly lower, averaging 35-50 SYP for 1.5 L of water. Various sources have reported that some people have been selling water at extremely high prices, taking advantage of the water shutdowns (<u>Al-Monitor</u> <u>Syria Pulse</u>, 27/05/2014; <u>All4Syria</u>, 13/05/14).



<sup>&</sup>lt;sup>16</sup> During the water shutdowns, a limited number of additional water tanks had however been reportedly disposed across eastern Aleppo.

In mid-May 2014, as reported by field researchers, the water situation was progressively returning to preshutdowns levels, although large areas of Aleppo reportedly remained affected. As reported in secondary sources, 1 million people remained affected across eastern and western Aleppo as of 15 May, despite water returning to some neighborhoods (<u>Daily Star</u>, 16/05/2014).

Eventually, local sources reported that all of the neighborhoods of the assessed areas of eastern Aleppo had access to the water network as of 8 June. According to information collected during debriefings, the Bustan al-Qaser area was reconnected to the network last. At the same period, it was reported during debriefings that people living in high grounds areas, as well as people living in tall buildings, remained particularly affected in eastern Aleppo, as water tanks remained empty after the shutdowns and not all of them had the required private generators to pump the water from the network to higher areas.

#### Water Network Availability

This report found that water shortages were already common in eastern Aleppo prior to the shutdowns. Until April 2014, water was available through the network for only 12h (continuous) in each 48h, in the two assessed areas of eastern Aleppo. This situation is partly similar to what was observed in early 2013 for eastern areas of Aleppo, when water was only pumped for an average of 4 hours a day (UNICEF 2013/03/07).

As reported by KI, electricity shortages and intermittency have resulted in the water pumping stations being unable to run at full power during most of the time. The main problem reportedly is related to the fact that electricity and water are often not available at the same time. The electricity had then to be accumulated to run the pumping stations that were then powered as long as enough power was available.

Within the southern assessed area of eastern Aleppo, KI reported two smaller areas that have especially acute water problems. An estimated up to 15,000 people located on high grounds on the southwestern margins of the southern assessed area are reportedly particularly affected by the water shortages due to the water network not being robust enough to pump water to high grounds. It was also reported by KI that people living in high building across the southern assessed areas faced similar problems<sup>18</sup>.

#### Humanitarian Overview

**Southern Area: Prior to the shutdowns**, as reported by KI from southern assessed areas, **water was already ranked among the top-three priority concerns of the population.** While the population reportedly tries to, as much as possible, stock the water coming from the network as it generally knows in advance when the latter is available, it is still heavily reliant on wells when the network is not functional. As reported during debriefings with KI, around 30 wells are available in southern assessed areas of eastern Aleppo. Only half of them have been chlorinated by the Syrian Arab Red Crescent (SARC), which means that the remaining wells cannot provide safe drinking water<sup>19</sup>.

KI in the southern assessed areas reported that the **situation with water is currently very problematic, but still not life-threatening** ("shortages in safe water are affecting everyone, but they are not life-threatening"). The perspective of new extensive shutdowns in a foreseeable future may lead to greater problems, with the water shortages becoming life-threatening. Answering about their concerns regarding water, KI in the southern assessed areas ranked, among the three options provided, respectively access to water, availability of water, and quality of water as being the most pressing issues.



<sup>&</sup>lt;sup>18</sup> Even within the assessed areas however, secondary sources reported that not all have access to the water from the water network. For instance, some blocs in the Old City did not have access to potable water for five months as of May 2014 (<u>UN News Centre</u>, 21/05/2014).

<sup>&</sup>lt;sup>19</sup> An additional issue is that the population does not always know which wells have been chlorinated.

Reports from KI highlighted more specific issues related to water including the use of unsafe water sources for drinking, the insufficient water storage capacity, and the reduction of the daily water consumption. This data correlates with the information provided above on water availability from the network, as well as with the context information.

With water supply through the network being intermittent, but still available, main issues are logically linked to storage and daily consumption of water. The data also suggests that water supplied through the network is of a relative good quality, since KI did not mark water not tasting good, not looking good or being unsafe for drinking as priority concerns. In fact, as the provided questionnaire differentiated "use of unsafe water sources for drinking water" and "water unsafe for drinking" among the possible answers, the choice by KI of the first option over the second clearly points toward the **problem being related to water from wells and not to water from the network**.

Answering an additional question related specifically to the **lack of safe water**, KI across the southern assessed areas respectively ranked as **priority concerns: the deficiency of the water network system**, **the lack of electricity to operate the network and the lack of chemical to treat the water**. As for the previous question, the data reported here perfectly correlates with the information provided above. The lack of safe water is related to the lack of reliability of water provision from the network, forcing the population to sometimes rely on non-chlorinated water from wells. Moreover, it points toward the lack of electricity as the key problem preventing the water network to fully function.

Northern Area: Interestingly enough, the water situation seems however to be **significantly better in the smaller** assessed areas of northern Aleppo, where KI reported that only a limited number of people were affected by water shortages ("a few people are facing shortages in safe water, but they are not life-threatening"). While no major issue related to water was emphasized, KI in this area still respectively ranked: insufficient storage capacity, use of unsafe water sources for drinking, and water prices increase, as being major concerns. Answering to the question specific to safe water availability, KI from the northern area pointed toward respectively: the lack of electricity to operate the network, the lack of fuel for generators, and the lack of containers to collect water.

While the needs appear to be less important in the northern area, they are also related to the water network being unable to function continuously because of power/ fuel shortages, forcing people to rely on unsafe water from wells.<sup>20</sup>

Eventually, this humanitarian overview on water issues strongly suggests that **prolonged shutdowns of the water network in the city are likely to have a very severe impact on the availability of safe water in eastern Aleppo**, further exacerbating the dire humanitarian situation. If extensive water cuts occur, the southern assessed area, which concentrates over 80% of the remaining population of eastern Aleppo, is likely to be especially severely affected<sup>21</sup>.

#### Health

#### Humanitarian Overview

As documented by KI from Health officials across the assessed areas, although shortages in health services are affecting everyone, they are still not life threatening. Nevertheless, Health has been consistently reported among the top-three priorities by KI from both assessed areas.

Southern Area: In the southern assessed area, when asked to rank the top-three most serious health problems, KI reported that conflict-related injuries, severe diseases affecting children under 5, and chronic diseases were

<sup>&</sup>lt;sup>21</sup> Largely destroyed and not assessed areas in the east of eastern Aleppo are likely to be even more severely affected as they are already hosting some of the most affected population of the city.



<sup>&</sup>lt;sup>20</sup> A possible explanation for the difference in humanitarian needs recorded between the northern and the southern assessed areas might be related to the extensive displacement out of the northern area witnessed in early 2013. The massive population exodus may have significantly decreased the pressure on existing water resources.

the most pressing issues. As mentioned above, only 4 hospitals, providing a little more than first aid, are available in the southern areas. While, according to debriefings and KI interviews, medical trillage points/ health centres have been set across these areas, provision of health services remains greatly insufficient.

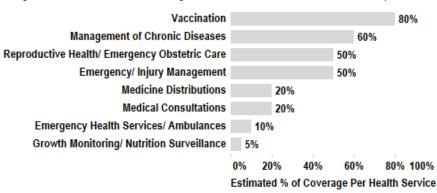
**Northern Area:** In the northern areas, the picture for the top-three most serious health problems is slightly different with KI reporting that respectively polio, followed by leishmaniasis and chronic diseases, (diarrhoea, respiratory diseases, etc.), are the most acute issues. In the northern area, only 1 hospital is currently functioning.

#### Health Services' Coverage

As of March 2014, of all health centers in eastern Aleppo, only four pediatric centers and five trauma clinics are still functional, and, of the city's 17 pre-war ambulances, only seven remain functional. An estimated 10 to 12 general surgeons, three to five orthopedic surgeons, and fewer than 10 internal medicine specialists were left in eastern areas of Aleppo (PHR, 14/05/2014; PHR, 14/05/2014; PHR, 03/2014; LeMonde, 14/05/2014).

For the assessment that informed the present report, KI from Health Officials estimated the percentage of coverage of different health services compared to what would be needed given the current increased caseload. For this particular aspect, the assessment identified that needs were not completely uniform across the southern area.

Most of Southern Area: Across the overwhelming majority of the southern assessed area (an estimated between 500,000 and up to 735,000 people as of late April 2014), KI reported that major gaps in health services coverage existed across all needed services. The situation appears especially problematic with regards to nutrition surveillance, emergency health services and medicine distribution. It is also reportedly dire regarding key health services such as medical consultations, reproductive health and emergency and injury management.



#### Figure 2: % Health services' coverage in most of the southern assessed area, April 2014

All of the services listed above recorded 50% or significantly less of the needed coverage. Only management of chronic diseases (60% of the needed coverage) and vaccination (80%) recorded levels above 50%. To a certain extent, this data correlates with the findings of the previous section that mentioned conflict-related injuries and diseases affecting children under 5 among the most pressing issues.

**Salah al-Din District (Southern Area):** Areas located near Salah al-Din district, on the western margin of the assessed area, reported different levels of health coverage for a population of over 12,500 people. The discrepancy can be easily explained by the fact that this area is located closer to conflict hotspots and was identified during debriefings as having even lesser health services coverage, as well as lower security levels, than the rest of the southern assessed area.

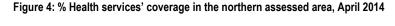


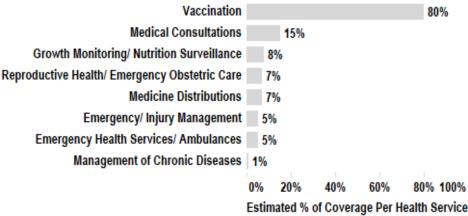
Vaccination					80%
Management of Chronic Diseases			30%		
Medicine Distributions		20%	b		
Emergency/ Injury Management		15%			
Reproductive Health/ Emergency Obstetric Care		10%			
Medical Consultations		10%			
Growth Monitoring/ Nutrition Surveillance		10%			
Emergency Health Services/ Ambulances	5	%			
	0%	20%	40%	60%	80% 100%
	Estin	nated %	of Covera	age Per H	ealth Service

Figure 3: % Health services' coverage in Salah al-Din district, April 2014

In Salah al-Din district, health services coverage was thus recorded to be significantly inferior. Coverage levels of health services are only the same for vaccination, while they remain at 30% or less for all the other services.

**Northern Area:** In the northern assessed areas, Health Sector KI also reported that coverage was inferior to the main southern area, and even inferior to Salah al-Din district with all services, apart from vaccination, registering 15% or less coverage.





Overall, the presented data, confirming findings from previous assessments, also points toward the **significant lack** of medical specialists that could provide more advanced medical care in eastern Aleppo<sup>22</sup>.

<sup>&</sup>lt;sup>22</sup> Across all assessed areas, the surprisingly high coverage of vaccination services, primarily related to polio vaccination, may be explained, according to local KI, by distributions and the vaccination campaign conducted by the Local Councils in eastern Aleppo, after vaccination medicine was provided by ACU and the Turkish Red Crescent, in January 2014.

## CONCLUSION

Between January and May 2013, the extensive shelling of Aleppo has left part of the city in ruins, leading to up to 220,000 people being displaced within eastern Aleppo as the population attempted to relocate to safer and less damaged areas. The massive scale of displacement has also led to the clustering of the remaining population in southwestern parts of eastern Aleppo that were assessed for this report. An additional over 550,000 people have left eastern areas over the same period, relocating to the western parts of the city or leaving Aleppo altogether. As of mid-June 2014, massive displacement out of eastern Aleppo was ongoing while conflict had further intensified.

As documented throughout the report, extensive aerial shelling has led to very high levels of damage being sustained by different neighborhoods in eastern Aleppo. Public infrastructures, such as hospitals, have been particularly affected by the shelling. However, as the remaining population of eastern Aleppo has relocated to less damaged areas closer to conflict hotspots, this report suggests that levels of damage, to public infrastructure and/or to private buildings, are not among the population's priority concerns for displaced households. Other issues are perceived as more acute by the population of eastern Aleppo, representing key factors that escalate humanitarian needs in the city.

Aside from widespread safety and security issues commonly linked to such a high-intensity conflict, the population appears to be particularly concerned with the intermittent functioning of the power and water networks. Experiencing recurrent shortages, which were further exacerbated by power struggles between warring parties in April and May 2014, regular electricity supply is key for all public infrastructures to function. Power shortages may deeply impact on such critical infrastructures as hospitals and the water network. While the provision of different health services is already highly insufficient, with most critical health services registering less than 50% of coverage across all eastern Aleppo, power cuts affecting hospitals are likely to further escalate health needs. Eventually, most of the population of eastern Aleppo is relying on the water network, which is heavily dependent on electricity to function, to access safe water.

In June 2014, humanitarian access to Aleppo was further curtailed while less international and local NGOs managed to maintain operations and to enter supplies into the city because of the heavy security concerns plaguing the remaining access roads that were reportedly shelled daily. As military operations and shelling have intensified, local reports indicated that the humanitarian situation had further worsened causing additional population displacements since early May 2014 – figures ranging from 150,000 to 300,000 displaced people as of June according to local sources – from eastern Aleppo. For the several hundred thousand people remaining in eastern Aleppo, including the most vulnerable and poorest groups who do not have the means to leave the city, the humanitarian needs are acute and coping options are limited as they are preparing for a siege-like situation. To date, there is an urgent need to provide humanitarian aid, including food and medical kits, to the affected population as the city may soon become completely inaccessible for all aid actors.

With humanitarian information being scarce and disaggregated, notably on displacement levels and population figures, the urgency is also to better inform the humanitarian response. To further support the humanitarian response, **REACH will continue to monitor the situation in Aleppo City** and to provide updated population figures. Addressing widespread information gaps on the Syrian crisis, REACH will also release a series of reports as part of an effort to document displacement and humanitarian needs in key urban centres in Northern Syria.

