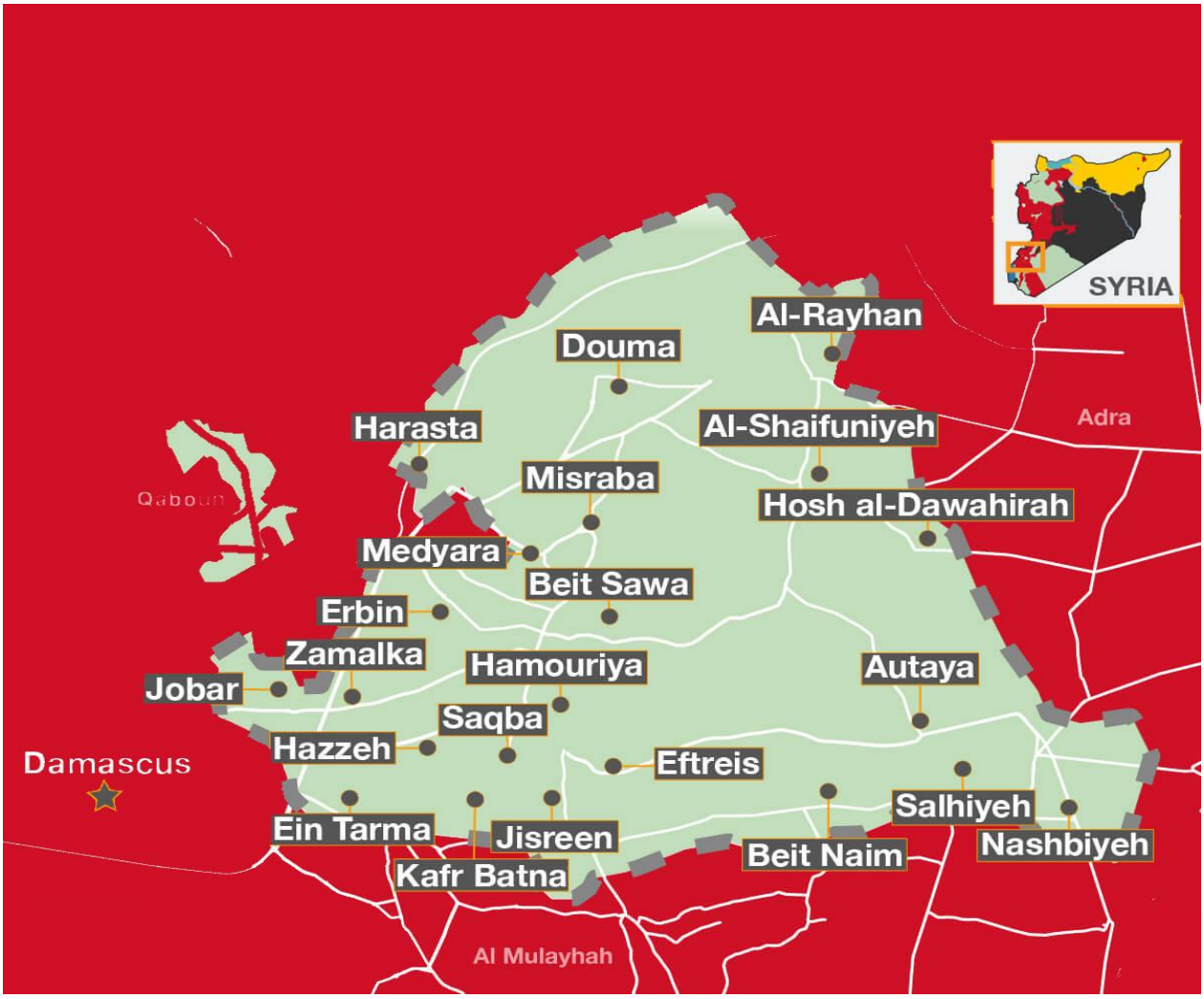
Nutrition SMART Survey Report

Eastern Ghouta, Syria
November 2017



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Strengthening Humanitarian response

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EXECUTIVE SUMMARY

The East Ghouta area in Rural Damascus contains approximately 70 communities, including an internally displaced person (IDP) ratio of around 33% of the population.

Parts of East Ghouta have been classified as besieged by the UN since November 2013, and since November 2016 the entire enclave is considered besieged, with an estimated population of 393,000 people. East Ghouta has been subject to periods of intense military activity during 2017, with a significant escalation in hostilities between the Government of Syria (GoS) and non-state armed groups (NSAGs) notably Jaish al Islam (JAI) and Faylaq Al-Rahman starting from February and March. This was followed by an eruption of infighting between NSAGs in the enclave during April and May, which reportedly killed scores of civilians. Patterns of short-term displacement within the besieged enclave have also been reported in response to temporary and localized deteriorations in the security situation and evolving according to the dynamics amongst the NSAGs present on the ground.

Humanitarian needs in East Ghouta are dire and humanitarian conditions are rapidly deteriorating, with reportedly up to 70% of the 393,000 are people in need in multiple sectors. In 2017, despite of regular request to reach all locations in East Ghouta, only 15 convoys have delivered humanitarian assistance to locations in East Ghouta; four of these convoys took place before the establishment of the de-escalation area. Delays in regular access of convoys are also common.

The deteriorating humanitarian situation has had a significant impact on the nutrition status of children and women in East Ghouta. In light of this, the nutrition sector organized a SMART survey to be conducted in the area with the objective of assessing the prevalence of malnutrition for children 6-59 months of age.

The survey was conducted on 29 Oct – 14 Nov 2017. 27 cluster from all Eastern Ghouta region were surveyed. These clusters were selected randomly to represent all Eastern Ghouta region communities (NPM and CCCM data was used to know the Population of each location) Household selection was done using Simple or Systematic random sampling methods in each cluster. 314 children 6 – 59 month from 243 Household (HH) were included in the survey. Table 1 shows the summary of the nutrition indicators.

Table 1: Summary of key indicators

Prevalence of acute malnutrition based on weight-height z-scores[1]	**(n)**	**% (95% CI)**
Prevalence of global acute malnutrition (WFH <-2 z-score and/or edema)	37	11.9 (9.5-14.8)
Prevalence of moderate acute malnutrition (WFH <-2 z-score and >=-3 z-score, no edema)	32	10.3 (7.7-13.5)
Prevalence of severe acute malnutrition (WFH <-3 z-score and/or edema)	5	1.6 (0.7- 3.7)
Prevalence of underweight based on weight-for-age z-scores[1]		
Prevalence of underweight (WFA <-2 z-score)	69	22.4 (18.4-27.0)
Prevalence of moderate underweight (WFA <-2 z-score and >=-3 z-score)	46	14.9 (11.4-19.4)
Prevalence of severe underweight (WFA <-3 z-score)	23	7.5 (4.8-11.4)
Prevalence of stunting based on height-for-age z-scores[1]		
Prevalence of stunting (HFA <-2 z-score)	111	36 (28.9-43.9)
Prevalence of moderate stunting (HFA <-2 z-score and >=-3 z-score)	75	24.4 (18.4-31.4)
Prevalence of severe stunting (HFA <-3 z-score)	36	11.7 (8.5-15.8)

[1] Based on WHO Child Growth Standards (2006)

INTRODUCTION

The conflict in Syria has taken a significant toll on the country's health and nutrition infrastructure and human resources, with health facilities in Syria operating under severe human and material resource constraints. The delivery of essential services remains challenged by numerous conflict-related threats: aerial attacks; politicization of aid; control of health facilities and schools by armed actors during times of peak conflict and the targeting of health workers, including kidnap, detention and extortion for political, ideological or financial reasons.
Eastern Ghouta is besieged area for five years; SMART survey had conducted in Jan 2017 showed the GAM rate was 2.1%.
the situation still deteriorate rapidly and in the last days, there is many reports of malnutrition death in the area, and due to these reports, there is an emergency need to assess the situation, therefore a SMART assessment had been planning to conducted within November, this survey will collect the anthropometrics measurement and the presence of bilateral oedema

A January 2017 needs assessment conducted by World Vision and UOSSM found that declining livelihoods was the main challenge affecting the area. Populations are increasingly at risk of communicable diseases. The area has limited community-level health education and outreach services to encourage preventative practices and positive health behaviours.

These inter-related challenges mean that the targeted region suffers from a comparatively high level of SAM & MAM cases among children aged 6-59 months. Based on previous experience with a pilot program in the region, we believe that MAM cases are likely also prevalent among Pregnant and Lactating women.

SURVEY OBJECTIVES

BROAD OBJECTIVE

- To estimate the prevalence of undernutrition of 6-59 months children in the besieged areas of Eastern Ghouta.

SPECIFIC OBJECTIVE

- To determine prevalence of wasting, stunting, underweight and overweight among children 6-59 months old

METHODOLOGY

SURVEY DESIGN, AREA AND POPULATION

A cross-sectional two-stage cluster sampling following SMART methodology was adopted. The first stage involved selection of the clusters. The communities were considered as the smallest geographical unit (clusters). Due to the large size of the population of interest, the large communities were divided to small segments, then these segments were used to select the clusters, Clusters were selected using the PPS (Probability Proportional to size) method. The second stage of sampling used either simple random selection of households particularly within rural clusters or systematic random sampling especially in urban clusters. In rural clusters, the team leaders were responsible for using a complete and updated list of all households in the cluster, and then using a random number table to randomly select the households to be included in the survey. In urban clusters, systematic random sampling was applied by calculating the sampling interval, and a random number table was used to randomly select the first household to be included in the survey. A Household[2] was considered as the basic sampling unit.

The survey focused on all the besieged areas of Eastern Ghouta. The sampling frame contained only the list of villages considered secure and accessible. A of total population **(55,535)** of besieged areas of East Ghouta were included in this survey. This represents 60% of the entire population living in East Ghouta.

The survey was conducted between 29 Oct – 14 Nov 2017 (17 days) inclusive of both training and data collection.

SAMPLE SIZE CALCULATION

Emergency Nutrition Assessment (ENA) for SMART software updated version July 9, 2015 was used for sample size calculation. The purpose of the sample calculation is to get a sample having the optimal units so results are reliable, with reasonable precision. The following assumptions based on the given context were made to obtain the number of children to survey:

Table 2: Sample Size calculation, Eastern Ghouta SMART, Nov 2017

Parameters		Assumptions
Estimated Prevalence of GAM	3.5 %	According to SMART survey conducted in Jun 2017 the GAM rate was 2.1 (1.2- 3.5 95% CI),
Desired precision	±3%	The desired precision for this survey (± 3%) was chosen based on SMART recommendations for the estimated GAM prevalence (± 3% for estimated prevalence <10%).
Design Effect	1.5	The design effect chosen for this survey (1.5) had chosen to reflect potential differences between rural, urban and camp/informal settlements in conflict-affected districts.
Children to be included	**235**	**Based on the above three parameters, using ENA software.**

The SMART Methodology recommends converting the number of children into number of households (fixed household method) for the numerous reasons:
It is easier to create lists of households than lists of children in the field; sample sizes calculated in number of children can encourage teams to skip households without any children (thus introducing a bias for household-level indicators); and households can provide a common metric for comparing sample size of many indicators. In order to do the conversion of number of children to sample into number of households, the following assumptions were made:

[2] All people eating from the same pot and living together (WFP definition).

Table 3: Conversion of Children to Households, Eastern Ghouta SMART, Nov 2017

Parameters		Assumptions
Average HH Size	5	Due to study in south
% Children under-5	20%	The proportion of under-five based on the Nutrition Cluster data for the 2017 response. The concentration of U5 in some locations are higher as noted in the earlier surveys. Nevertheless, 16 % is used for this survey.
% Non-response Households	3 %	A non-response rate of 3.5 % was observed during the Jun 2017 SMART survey.
Households to be included	**270**	**Based on the above three parameters, using ENA software.**

SAMPLING PROCEDURE

This involves two stages: Clusters selection and Household selection.
A two stage sampling methodology was employed. In the first stage is the cluster selection. Clusters were sampled using probability proportional to population size (PPS).
The Number of households to be completed per day was determined according to the time the team could spend on the field excluding transportation, other procedures and break times. The details below were taken into consideration when performing this calculation based on the given context:

1. Departure from office at 9 am and back at 3 pm.
2. Average travel time to reach each cluster (one-way): 30 min.
3. Duration for initial introduction and selection of households: 1.5h.
4. Time spent to move from one household to the next: 5 min.
5. Average time in the household: 15 min.
6. Breaks: One lunch break of 30 min.

The above gives on average 6h (180 min) of working time in each cluster. On average teams were expected to spend 15 min in each HH and 5 min traveling from one HH to another, each team can comfortably reach 9 HH per day.
To get the number of Clusters to be included in the survey, the total number of households in the sample was divided by the number of households to be completed in one day. The number of clusters was based on visiting 9 HH per day taking into account that each area (cluster) will be covered in one day: 270 HH/ 9 HH per day = 30 clusters

FINAL SAMPLING STRATEGY

The sampling strategy most appropriate for each cluster will recommended in advanced based on the size and distribution of the population in the cluster (depending on the available information in each cluster). However, the final sampling strategy will be determined on arrival at the cluster.

CLUSTER SELECTION

A complete sampling frame was built using population data collected by SDI teams. All settlement locations included in the sampling frame were determined to be accessible for the teams. The large communities were segmented to small segments and all these segments were added to the sampling frame. In building the sampling frame, all communities with less than 30 children were combined with the nearest community to avoid random selection of a cluster with less children to complete the cluster. The final sampling frame was transferred to ENA for SMART software that randomly selected 30 clusters and 4 Reserve clusters. Clusters were selected using the PPS (Probability Proportional to size) method. The selected samples is part of the annex 1 of the survey report.

Household Selection Techniques

The households to be surveyed were randomly selected using the simple random sampling methodology based on the developed/consolidated exhaustive list of households particularly applicable in small rural communities/cluster or through systematic random sampling particularly in large clusters or urban settings where a sampling interval will be calculated and random selection of the first household is picked. Alternatively, especially in large clusters, random number tables will used to select randomly the specific households will be surveyed and tracing them.

Survey Teams and Responsibilities

The nutrition survey will be conducted by 3 teams. Each team will consist of 3 members (1 measurer, 1 measurer assistant, and 1 team leader at least one of them should be female). The team leader will be responsible for the coordination of fieldwork, introductions to all district and village authorities, the random selection of households, send daily data during the data collection will entered into ENA software, ensuring a high level of data quality collected by the team and a positive, productive and safe work environment for the team.

Two data entry of the questionnaires will be done separately and compare the accuracy of the data entry by the consultant. These individuals will learn how to enter the collected data into the electronic versions of the field questionnaires into the ENA.

Supervisor:

- Responsible for directing the team and HH selection
- Community and HH introductions
- Watches and advises measurements
- Fills questionnaire
- Enters data

Measurer:

- Records information on all variables for anthropology
- Takes all measurements
- Data entry of all anthropometric variables

Team leader:

- Responsible for meeting the community leader and selecting the HHs.
- Supports measurer
- Supports with calming children
- Supports with logistics

Training and Quality Control

Given security constraints, training was conducted online with a support from the ground, 4-day training was organized to ensure the quality and understanding of the training participants. Key topics included in this 4-day training include survey team organization, anthropometry, and second stage sampling (household selection). This training also had session on practising correct anthropometric measurement, including standardization test.
The quality of the data was assessed during the data collection on a daily basis and feedback provided to the survey teams inside Syria. The standardization test was organized as described in the SMART Manual to ensure the accuracy and precision of anthropometry measurements.

Data Collection

The data collection took place between Nov 3rd -15th 2017. Based on the geographical locations, a detailed schedule for data collection for all the clusters was generated before the data collection commences, with full consideration of the security reality on the ground.

RESULTS

This section summarizes the findings of the survey on nutrition indicators. Two cluster were not surveyed due to security constraints. Despite this, the samples for the anthropometry have been sufficient to get reliable and representative results. It was however recommended that the results from this survey should be interpreted as proportions.

QUALITY ASSURANCE MECHANISM

The survey data was reviewed, analysed and validated by Centre for Disease and Control Atlanta and members of the Nutrition sector assessment-working group. The overall plausibility score was acceptable (19%). The results indicate a deterioration in the nutrition situation among children under the age of five years old. It is recommended to conduct a follow up SMART in the next 6-8 months.

DESCRIPTION OF THE SAMPLE

A total of 314 children aged 6-59 months, from 270 sampled households were assessed for their nutritional status. The ratio of boys to girls in the survey and age ratio of the sampled children was considered to be excellent (p value = p=0.652) and problematic (p value = p=0.000) respectively. This is mainly explained by the fact that most of the surveys inside Syria are reflecting a bias towards the younger age group. It is recommended to investigate this further in future surveys.

Table 4: Distribution of age and sex of sample

	Boys		Girls		Total		Ratio
AGE (mo)	no.	%	no.	%	no.	%	Boy:girl
6-17	61	50.0	61	50.0	122	38.9	1.0
18-29	38	50.0	38	50.0	76	24.2	1.0
30-41	21	43.8	27	56.3	48	15.3	0.8
42-53	29	65.9	15	34.1	44	14.0	1.9
54-59	12	50.0	12	50.0	24	7.6	1.0
Total	161	51.3	153	48.7	314	100.0	1.1

ANTHROPOMETRIC RESULTS (CHILDREN 6-59)

Data quality analysis

The anthropometric data were analysed using ENA for SMART Software (version 2011, 9th July 2015 updated). Exclusion of z-scores is computed from the Observed mean (SMART flags): WHZ -3 to 3; HAZ -3 to 3; WAZ -3 to 3.

Table 2 summarizes overall mean Z-Score and Standard Deviation, Design effect and out of range z-scores per anthropometric index. The overall quality of the survey as evaluated by the ENA software is reported as acceptable, with plausibility score of 19% (Acceptable). A detailed data quality analysis is presented in Annex 2 (automatically generated plausibility check on anthropometric results).

Table 5: Mean z-scores, Design Effects and excluded subjects

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	311	-0.49±1.12	1.00	0	3
Weight-for-Age	308	-1.27±1.05	1.00	0	6
Height-for-Age	308	-1.72±1.03	1.81	0	6

* contains for WHZ and WAZ the children with edema.

ACUTE MALNUTRITION DEFINED BY WEIGHT-FOR-HEIGHT INDEX (WHO 2006)

The sex and age disaggregated results are presented in Table 4 and 5 respectively. There was slight difference in WHZ point estimates boys and girls, but this difference was not significant. Both genders were equally affected. There were no edematous cases **(Table 6).**

Table 4: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

Table 6: Prevalence of acute malnutrition, based on weight-for-height z-scores and/or oedema, Eastern Ghouta SMART Nov 2017

	All n = 311	Boys n = 159	Girls n = 152
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(37) 11.9 % (9.5 - 14.8 95% C.I.)	(21) 13.2 % (9.9 - 17.4 95% C.I.)	(16) 10.5 % (6.9 - 15.8 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(32) 10.3 % (7.7 - 13.5 95% C.I.)	(17) 10.7 % (7.4 - 15.2 95% C.I.)	(15) 9.9 % (6.1 - 15.6 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(5) 1.6 % (0.7 - 3.7 95% C.I.)	(4) 2.5 % (1.0 - 6.4 95% C.I.)	(1) 0.7 % (0.1 - 4.7 95% C.I.)

The prevalence of oedema is 0.0 %

Table 7: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema, Eastern Ghouta SMART, Nov 2017

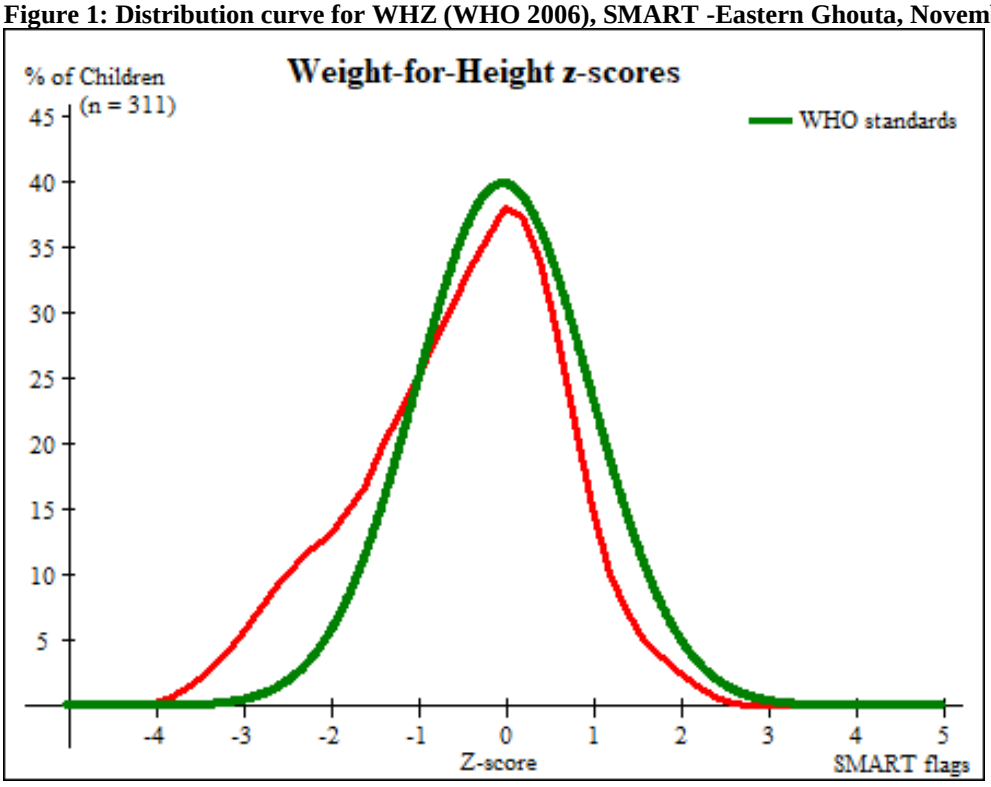
		Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	119	5	4.2	20	16.8	94	79.0	0	0.0
18-29	76	0	0.0	11	14.5	65	85.5	0	0.0
30-41	48	0	0.0	0	0.0	48	100.0	0	0.0
42-53	44	0	0.0	0	0.0	44	100.0	0	0.0
54-59	24	0	0.0	1	4.2	23	95.8	0	0.0
Total	311	5	1.6	32	10.3	274	88.1	0	0.0

Table 8: Distribution of acute malnutrition and oedema based on weight-for-height z-scores, Eastern Ghouta SMART, Nov 2017

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 8 (2.5 %)	Not severely malnourished No. 306 (97.5 %)

Overall, the normal (Gaussian) distribution curve of the observed population (with SMART flags excluded) was equally distributed and slightly shifted to the left from the reference WHO 2006 WHZ curve (**Figure 3** below). The mean ±SD of WHZ (n=311) was negative and the SD was within the accepted limits of 1,2: -0.49±1.12. This confirms that there were more malnourished children in the surveyed districts of Eastern Ghouta when compared with the reference population.

Figure 1: Distribution curve for WHZ (WHO 2006), SMART -Eastern Ghouta, November 2017



UNDERWEIGHT (WHO 2006)

The underweight is defined by weight-for-age z-scores (WAZ). The sex and age disaggregated results are represented in **Table 7 and 8**. The usual accumulation of underweight cases in younger age group was observed.

Table 9: Prevalence of underweight based on weight-for-age z-scores by sex, Eastern Ghouta SMART, Nov 2017

	All n = 308	Boys n = 155	Girls n = 153
Prevalence of underweight (<-2 z-score)	(69) 22.4 % (18.4 - 27.0 95% C.I.)	(36) 23.2 % (17.5 - 30.2 95% C.I.)	(33) 21.6 % (17.5 - 26.2 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(46) 14.9 % (11.4 - 19.4 95% C.I.)	(25) 16.1 % (10.9 - 23.2 95% C.I.)	(21) 13.7 % (10.7 - 17.5 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(23) 7.5 % (4.8 - 11.4 95% C.I.)	(11) 7.1 % (3.7 - 13.3 95% C.I.)	(12) 7.8 % (4.7 - 12.7 95% C.I.)

Table 10: Prevalence of underweight by age, based on weight-for-age z-scores, Eastern Ghouta SMART, Nov 2017

		Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
Age (mo)	Total no.	No.	%	No.	%	No.	%	No.	%
6-17	116	15	12.9	18	15.5	83	71.6	0	0.0
18-29	76	7	9.2	14	18.4	55	72.4	0	0.0
30-41	48	1	2.1	6	12.5	41	85.4	0	0.0
42-53	44	0	0.0	5	11.4	39	88.6	0	0.0
54-59	24	0	0.0	3	12.5	21	87.5	0	0.0
Total	308	23	7.5	46	14.9	239	77.6	0	0.0

STUNTING (WHO 2006)

The chronic malnutrition or stunting is defined by Height-for-age Z-scores (HAZ) <-2 (see **Table 9**). The sex and age disaggregated results are represented in **Table 10**. Both genders were equally affected.

Table 11: Prevalence of stunting based on height-for-age z-scores and by sex, Eastern Ghouta SMART, Nov 2017

	All n = 308	Boys n = 159	Girls n = 149
Prevalence of stunting (<-2 z-score)	(111) 36.0 % (28.9 - 43.9 95% C.I.)	(64) 40.3 % (30.1 - 51.4 95% C.I.)	(47) 31.5 % (23.8 - 40.5 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(75) 24.4 % (18.4 - 31.4 95% C.I.)	(42) 26.4 % (17.8 - 37.4 95% C.I.)	(33) 22.1 % (16.7 - 28.8 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(36) 11.7 % (8.5 - 15.8 95% C.I.)	(22) 13.8 % (8.9 - 20.8 95% C.I.)	(14) 9.4 % (5.3 - 16.2 95% C.I.)

Figure 2 shows the distribution of HAZ of the observed population (SMART flags excluded) compared to WHO Reference curve. In Eastern Ghouta, it was strongly shifted to the left, suggesting restricted linear growth of the observed population.

Figure 2: Distribution curve for HAZ (WHO 2006), SMART - Eastern Ghouta, November 2017

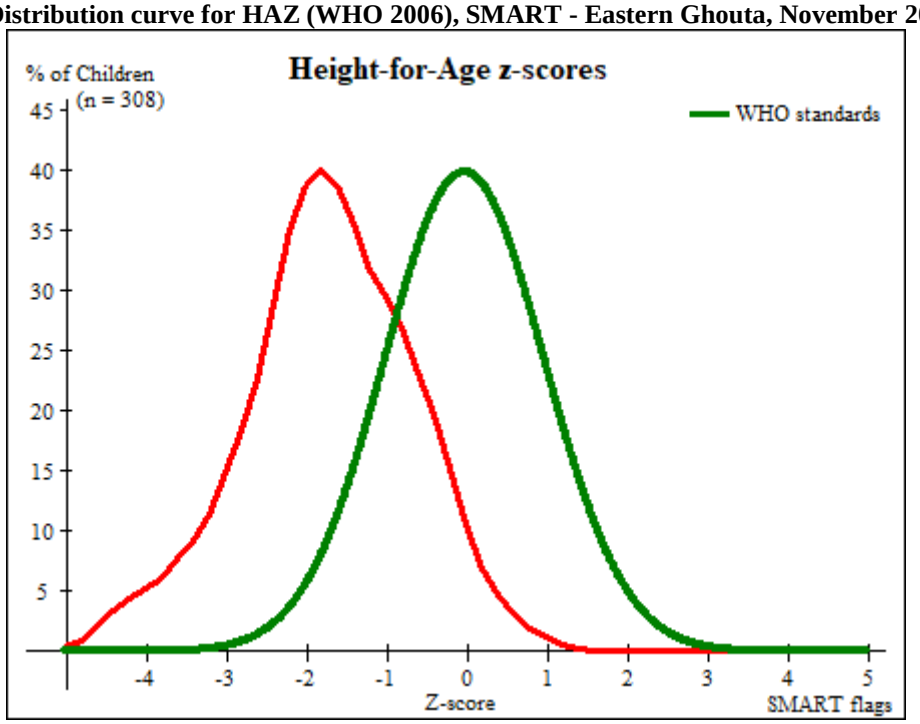


Table 12: Prevalence of stunting by age based on height-for-age z-scores, Eastern Ghouta, SMART Nov 2017

		Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	118	18	15.3	24	20.3	76	64.4
18-29	74	10	13.5	22	29.7	42	56.8
30-41	48	3	6.3	14	29.2	31	64.6
42-53	44	2	4.5	11	25.0	31	70.5
54-59	24	3	12.5	4	16.7	17	70.8
Total	308	36	11.7	75	24.4	197	64.0

CONCLUSION

The GAM rate reported in this survey using WHZ-score **11.9%** (9.5 - 14.8 95% C.I.) can be classified as "serious"[3] according to the WHO 2006 threshold. This is an indication of increased level of Acute malnutrition in this area compared to the previous survey that was conducted in January 2017 which indicated a GAM by WHZ-score of **2.1%** (1.2- 3.5 95% CI). Since the survey did not cover all required clusters, (two clusters were missed) it was recommended that the results be reported as proportions instead of prevalence. The findings from this survey clearly indicate that there are more acutely malnourished children in Eastern Ghouta in November 2017 compared to January 2017. This could be explained by the fact that the humanitarian situation in Eastern Ghouta has significantly deteriorated in the last few months, Food security situation is reported to be at an all-time low and access to the affected population remains a big challenge for humanitarian agencies. Younger children (6-29 months) were significantly more wasted then older children following WHZ criteria. However, this has to be interpreted with caution as it might be due to the lower occurrence of older children in the sample (significant difference in age ratio). It would be good to follow the data collected through other sources such as SAM admission data, sentinel sites, screenings data in the zones so this assumption is confirmed.

Chronic Malnutrition levels can be classified as "serious" with 36% (28.9-43.9 95% CI) of stunting rate. These rates remain worryingly high and contribute to the general low nutritional status and resilience capacity of the studied population. This is a deterioration from the prevalence rate of stunting from the reported prevalence in January 2017 of 30.5% (25.7 – 35.8 95% CI). There is vast evidence that indicates that children who suffer from chronic malnutrition because of poor diets or recurrent infections tend to be at greater risk for illness and death.

A recent inter agency assessment conducted by World Food program in Eastern Ghouta[4] indicated that, Local agricultural production has been the primary mode of survival for many households living under siege and due to lack of staple food commodities and severe shortfall of cooking fuel; residents have been reduced to subsist on raw vegetables such as maize corn, cabbage and cauliflower. Bread was also not readily available during October. On average households are consuming one meal per day with priority given to the children. Vegetables and water are the main food consumed by almost all households on daily basis. Some families drink large quantities of water to suppress their feeling of hunger. Most of the households derive over 80 percent of their caloric intake from vegetables, reflecting poor access to a nutritious and balanced diet. These poor feeding practices over a prolonged period are a major contribution to increased cases of chronic malnutrition. Stunting is the result of long-term nutritional deprivation and often results in delayed mental development, poor school performance and reduced intellectual capacity. Boys and girls were equally affected by stunting.

RECOMMENDATIONS AND PRIORITIES

1- Scale up IYCF interventions in 100% of the communities in Eastern Ghouta. Five sector partners have a plan in place to cover 23 communities out of the 23 in Eastern Ghouta with IYCF counselling and education.
2- Scale up CMAM services in Eastern Ghouta. Five sector partners have a plan in place to establish six additional CMAM sites (5 fixed and 1 mobile).
3- Scale up a multi-sector response with the food security, WASH and health sectors to ensure adequate coverage with the basic required services to prevent malnutrition.
4- Advocate for additional preventative nutrition supplies to be delivered to Eastern Ghouta via UN convoys so that blanket supplementary feeding can be delivered to 25,152 children between 6-24 months (according to availability of supplies).
5- Establish nutrition surveillance sites for monitoring in order to activate a timely response.

[3] < 5% Acceptable; 5 – 9 % Poor ; 10 – 14 % Serious; > 15 % Critical

[4] Food Security Update: October 30, 2017

APPENDICIES

APPENDIX 1: *PLAUSIBILITY REPORT*

Plausibility check for: al ghota (2).as

Standard/Reference used for z-score calculation: WHO standards 2006
(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	Score
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (1.0 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.652)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**10** (p=0.000)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (5)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**5** (1.12)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**3** (-0.41)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**1** (-0.23)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=0.981)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**19** %

The overall score of this survey is 19 %, this is acceptable.
There were no duplicate entries detected.
Percentage of children with no exact birthday: 6 %
Anthropometric Indices likely to be in error (-3 to 3 for WHZ, -3 to 3 for HAZ, -3 to 3 for WAZ, from observed mean - chosen in Options panel - these values will be flagged and should be excluded from analysis for a nutrition survey in emergencies. For other surveys this might not be the best procedure e.g. when the percentage of overweight children has to be calculated):
Line=5/ID=5: WAZ (-4.900), Weight may be incorrect
Line=60/ID=11: **WHZ (-3.607)**, Height may be incorrect
Line=84/ID=1: WAZ (-4.857), Weight may be incorrect
Line=113/ID=6: WAZ (-4.794), Age may be incorrect
Line=115/ID=8: HAZ (1.673), Age may be incorrect
Line=143/ID=1: HAZ (-5.982), WAZ (-5.491), Age may be incorrect
Line=144/ID=2: HAZ (-4.884), Age may be incorrect
Line=162/ID=9: HAZ (-5.282), Age may be incorrect
Line=188/ID=3: **WHZ (-5.271)**, HAZ (-6.749), WAZ (-6.956)
Line=193/ID=8: HAZ (1.325), Age may be incorrect
Line=200/ID=1: **WHZ (-3.737)**, WAZ (-4.896), Weight may be incorrect
Percentage of values flagged with SMART flags:WHZ: 1.0 %, HAZ: 1.9 %, WAZ: 1.9 %

Age distribution:
Month 6 : #
Month 7 : ##########
Month 8 : ##########
Month 9 : ##################
Month 10 : ##################
Month 11 : ######
Month 12 : #######
Month 13 : ########
Month 14 : #####
Month 15 : ###########
Month 16 : ##########
Month 17 : #########
Month 18 : ##########
Month 19 : #########
Month 20 : #####
Month 21 : ######
Month 22 : ########
Month 23 : ######
Month 24 : ########
Month 25 : ####
Month 26 : ##########

Month 27 : #######
Month 28 : #####
Month 29 : ####
Month 30 : ####
Month 31 : #####
Month 32 : #####
Month 33 : ###
Month 34 : #######
Month 35 : ####
Month 36 : ##
Month 37 : ###
Month 38 : ###
Month 39 : ####
Month 40 : #####
Month 41 : ##
Month 42 : ###
Month 43 : ####
Month 44 : ####
Month 45 : #####
Month 46 : #####
Month 47 : #
Month 48 : ###
Month 49 : ###
Month 50 : ##
Month 51 : #####
Month 52 : #####
Month 53 : ####
Month 54 : ######
Month 55 : #
Month 56 : ##########
Month 57 : #####
Month 58 : ####
Age ratio of 6-29 months to 30-59 months: 1.71 (The value should be around 0.85).:
p-value = 0.000 (significant difference)

Statistical evaluation of sex and age ratios (using Chi squared statistic):

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	61/37.4 (1.6)	61/35.5 (1.7)	122/72.9 (1.7)	1.00
18 to 29	12	38/36.4 (1.0)	38/34.6 (1.1)	76/71.0 (1.1)	1.00
30 to 41	12	21/35.3 (0.6)	27/33.5 (0.8)	48/68.8 (0.7)	0.78
42 to 53	12	29/34.7 (0.8)	15/33.0 (0.5)	44/67.8 (0.6)	1.93
54 to 59	6	12/17.2 (0.7)	12/16.3 (0.7)	24/33.5 (0.7)	1.00
6 to 59	54	161/157.0 (1.0)	153/157.0 (1.0)		1.05

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.652 (boys and girls equally represented)
Overall age distribution: p-value = 0.000 (significant difference)
Overall age distribution for boys: p-value = 0.000 (significant difference)
Overall age distribution for girls: p-value = 0.000 (significant difference)
Overall sex/age distribution: p-value = 0.000 (significant difference)

Digit preference Weight:
Digit .0 : ##############################
Digit .1 : ##
Digit .2 : ###########################
Digit .3 : ############################
Digit .4 : ##########################
Digit .5 : ##################################
Digit .6 : ######################
Digit .7 : ############################
Digit .8 : ##################################
Digit .9 : ############################
Digit preference score: **5** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0.701

Digit preference Height:
Digit .0 : ##############################
Digit .1 : ####################
Digit .2 : ####################################
Digit .3 : ##
Digit .4 : ##############################
Digit .5 : ##############################
Digit .6 : ################################
Digit .7 : ################################
Digit .8 : ############################
Digit .9 : ##################
Digit preference score: **6** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0.300

Digit preference MUAC:

Digit .0 : ##################################
Digit .1 : ###################################
Digit .2 : ##########################
Digit .3 : ############################
Digit .4 : ##################################
Digit .5 : ############################
Digit .6 : ###################################
Digit .7 : ##################################
Digit .8 : ####################
Digit .9 : ####################
Digit preference score: **6** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0.415

Evaluation of Standard deviation, Normal distribution, Skewness and Kurtosis using the 3 exclusion (Flag) procedures

.	no exclusion	exclusion from reference mean (WHO flags)	exclusion from observed mean (SMART flags)
WHZ			
Standard Deviation SD:	1.17	1.14	1.12
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	12.7%	12.5%	11.9%
calculated with current SD:	10.5%	9.7%	8.9%
calculated with a SD of 1:	7.1%	6.9%	6.6%
HAZ			
Standard Deviation SD:	1.15	1.12	1.03
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	36.6%	36.4%	36.0%
calculated with current SD:	41.4%	40.6%	39.3%
calculated with a SD of 1:	40.1%	39.5%	38.9%
WAZ			
Standard Deviation SD:	1.19	1.15	1.05
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	23.9%	23.6%	22.4%
calculated with current SD:	29.0%	27.8%	24.3%
calculated with a SD of 1:	25.6%	25.0%	23.2%

Results for Shapiro-Wilk test for normally (Gaussian) distributed data:

WHZ	p= 0.000	p= 0.000	p= 0.000
HAZ	p= 0.000	p= 0.014	p= 0.126
WAZ	p= 0.000	p= 0.000	p= 0.018

(If p < 0.05 then the data are not normally distributed. If p > 0.05 you can consider the data normally distributed)

Skewness

WHZ	-0.61	-0.47	-0.41
HAZ	-0.55	-0.36	-0.25
WAZ	-0.88	-0.65	-0.32

If the value is:
-below minus 0.4 there is a relative excess of wasted/stunted/underweight subjects in the sample
-between minus 0.4 and minus 0.2, there may be a relative excess of wasted/stunted/underweight subjects in the sample.
-between minus 0.2 and plus 0.2, the distribution can be considered as symmetrical.
-between 0.2 and 0.4, there may be an excess of obese/tall/overweight subjects in the sample.
-above 0.4, there is an excess of obese/tall/overweight subjects in the sample

Kurtosis

WHZ	0.44	-0.12	-0.23
HAZ	1.54	0.84	0.01
WAZ	1.81	0.73	-0.14

Kurtosis characterizes the relative size of the body versus the tails of the distribution. Positive kurtosis indicates relatively large tails and small body. Negative kurtosis indicates relatively large body and small tails.
If the absolute value is:
-above 0.4 it indicates a problem. There might have been a problem with data collection or sampling.
-between 0.2 and 0.4, the data may be affected with a problem.
-less than an absolute value of 0.2 the distribution can be considered as normal.

Test if cases are randomly distributed or aggregated over the clusters by calculation of the Index of Dispersion (ID) and comparison with the Poisson distribution for:

WHZ < -2: ID=0.51 (p=0.981)
WHZ < -3: ID=0.85 (p=0.689)
GAM: ID=0.51 (p=0.981)
SAM: ID=0.85 (p=0.689)
HAZ < -2: ID=1.47 (p=0.059)
HAZ < -3: ID=0.87 (p=0.661)
WAZ < -2: ID=0.67 (p=0.894)
WAZ < -3: ID=1.06 (p=0.385)

Subjects with SMART flags are excluded from this analysis.
The Index of Dispersion (ID) indicates the degree to which the cases are aggregated into certain clusters (the degree to which there are "pockets"). If the ID is less than 1 and p > 0.95 it indicates that the cases are UNIFORMLY distributed among the clusters. If the p value is between 0.05 and 0.95 the cases appear to be randomly distributed among the clusters, if ID is higher than 1 and p is less than 0.05 the cases are aggregated into certain cluster (there appear to be pockets of cases). If this is the case for Oedema but not for WHZ then aggregation of GAM and SAM cases is likely due to inclusion of oedematous cases in GAM and SAM estimates.

Are the data of the same quality at the beginning and the end of the clusters?

Evaluation of the SD for WHZ depending upon the order the cases are measured within each cluster (if one cluster per day is measured then this will be related to the time of the day the measurement is made).

```
Time                                          SD for WHZ
point                 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.47 (n=27, f=1)  ############################
02: 0.89 (n=27, f=0)  ####
03: 1.43 (n=27, f=1)  ##########################
04: 1.18 (n=27, f=0)  ################
05: 1.20 (n=27, f=0)  ##################
06: 1.06 (n=27, f=0)  ###########
07: 1.12 (n=27, f=0)  #############
08: 1.00 (n=27, f=0)  ########
09: 1.20 (n=26, f=0)  ##################
10: 1.09 (n=25, f=0)  ############
11: 1.19 (n=18, f=1)  ##################
12: 1.23 (n=12, f=0)  OOOOOOOOOOOOOOOOO
13: 0.79 (n=10, f=0)
14: 1.43 (n=06, f=0)  ~~~~~~~~~~~~~~~~~~~~~~~~~~
(when n is much less than the average number of subjects per cluster different symbols are
used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART
flags found in the different time points)
```

Analysis by Team

Team	**1**	**2**	**3**
n =	98	107	109
Percentage of values flagged with SMART flags:			
WHZ:	1.0	0.0	1.8
HAZ:	0.0	1.9	3.7
WAZ:	2.0	0.9	2.8
Age ratio of 6-29 months to 30-59 months:			
	1.80	1.43	1.95
Sex ratio (male/female):			
	1.09	1.38	0.79
Digit preference Weight (%):			
.0 :	10	10	10
.1 :	17	7	15
.2 :	8	12	7
.3 :	11	11	6
.4 :	10	9	7
.5 :	10	10	13
.6 :	8	9	6
.7 :	5	12	11
.8 :	9	11	14
.9 :	10	7	10
DPS:	10	6	10

Digit preference score (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)

Digit preference Height (%):			
.0 :	10	11	11
.1 :	9	7	6
.2 :	12	9	15
.3 :	11	12	14
.4 :	7	12	11
.5 :	13	6	12
.6 :	8	16	8
.7 :	14	9	9
.8 :	8	11	7
.9 :	6	7	6
DPS:	9	10	9

Digit preference score (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)

Digit preference MUAC (%):			
.0 :	7	17	9
.1 :	16	10	10
.2 :	8	9	9
.3 :	6	17	6
.4 :	10	10	11
.5 :	12	6	13
.6 :	13	11	13
.7 :	9	10	12
.8 :	8	5	9
.9 :	9	5	7
DPS:	10	14	7

Digit preference score (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)

Standard deviation of WHZ:

SD	1.16	1.09	1.26

Prevalence (< -2) observed:

%	11.2	14.0	12.8

Prevalence (< -2) calculated with current SD:

%	8.5	9.4	13.6

Prevalence (< -2) calculated with a SD of 1:

%	5.5	7.5	8.3

Standard deviation of HAZ:

SD	0.99	1.13	1.29

observed:

%		37.4	44.0

calculated with current SD:

%		43.4	45.1

calculated with a SD of 1:

%		42.5	43.7

Statistical evaluation of sex and age ratios (using Chi squared statistic) for:

Team 1:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	20/11.8 (1.7)	19/10.9 (1.7)	39/22.7 (1.7)	1.05
18 to 29	12	15/11.5 (1.3)	9/10.6 (0.8)	24/22.2 (1.1)	1.67
30 to 41	12	6/11.2 (0.5)	9/10.3 (0.9)	15/21.5 (0.7)	0.67
42 to 53	12	6/11.0 (0.5)	6/10.1 (0.6)	12/21.1 (0.6)	1.00
54 to 59	6	4/5.4 (0.7)	4/5.0 (0.8)	8/10.5 (0.8)	1.00
6 to 59	54	51/49.0 (1.0)	47/49.0 (1.0)		1.09

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.686 (boys and girls equally represented)
Overall age distribution: p-value = 0.001 (significant difference)
Overall age distribution for boys: p-value = 0.019 (significant difference)
Overall age distribution for girls: p-value = 0.080 (as expected)
Overall sex/age distribution: p-value = 0.000 (significant difference)

Team 2:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	20/14.4 (1.4)	14/10.4 (1.3)	34/24.8 (1.4)	1.43
18 to 29	12	12/14.0 (0.9)	17/10.2 (1.7)	29/24.2 (1.2)	0.71
30 to 41	12	8/13.6 (0.6)	8/9.9 (0.8)	16/23.5 (0.7)	1.00
42 to 53	12	15/13.4 (1.1)	4/9.7 (0.4)	19/23.1 (0.8)	3.75
54 to 59	6	7/6.6 (1.1)	2/4.8 (0.4)	9/11.4 (0.8)	3.50
6 to 59	54	62/53.5 (1.2)	45/53.5 (0.8)		1.38

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.100 (boys and girls equally represented)
Overall age distribution: p-value = 0.093 (as expected)
Overall age distribution for boys: p-value = 0.287 (as expected)
Overall age distribution for girls: p-value = 0.025 (significant difference)
Overall sex/age distribution: p-value = 0.001 (significant difference)

Team 3:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	21/11.1 (1.9)	28/14.2 (2.0)	49/25.3 (1.9)	0.75
18 to 29	12	11/10.9 (1.0)	12/13.8 (0.9)	23/24.7 (0.9)	0.92
30 to 41	12	7/10.5 (0.7)	10/13.4 (0.7)	17/23.9 (0.7)	0.70
42 to 53	12	8/10.4 (0.8)	5/13.2 (0.4)	13/23.5 (0.6)	1.60
54 to 59	6	1/5.1 (0.2)	6/6.5 (0.9)	7/11.6 (0.6)	0.17
6 to 59	54	48/54.5 (0.9)	61/54.5 (1.1)		0.79

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.213 (boys and girls equally represented)
Overall age distribution: p-value = 0.000 (significant difference)
Overall age distribution for boys: p-value = 0.008 (significant difference)
Overall age distribution for girls: p-value = 0.001 (significant difference)
Overall sex/age distribution: p-value = 0.000 (significant difference)

Evaluation of the SD for WHZ depending upon the order the cases are measured within each cluster (if one cluster per day is measured then this will be related to the time of the day the measurement is made).

Team: 1

```
Time                                          SD for WHZ
point                 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.51 (n=09, f=1)  ##############################
02: 1.03 (n=09, f=0)  ##########
03: 1.09 (n=09, f=0)  ############
04: 0.82 (n=09, f=0)  #
05: 1.51 (n=09, f=1)  ##############################
06: 0.63 (n=09, f=0)
07: 1.48 (n=09, f=0)  ############################
```

```
08: 0.84 (n=09, f=0)  ##
09: 1.55 (n=08, f=0)  ################################
10: 0.64 (n=07, f=0)
11: 0.95 (n=05, f=0)  OOOOOO
12: 1.39 (n=03, f=0)  OOOOOOOOOOOOOOOOOOOOOOOO
13: 0.29 (n=02, f=0)
(when n is much less than the average number of subjects per cluster different symbols are
used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART
flags found in the different time points)
```

Team: 2

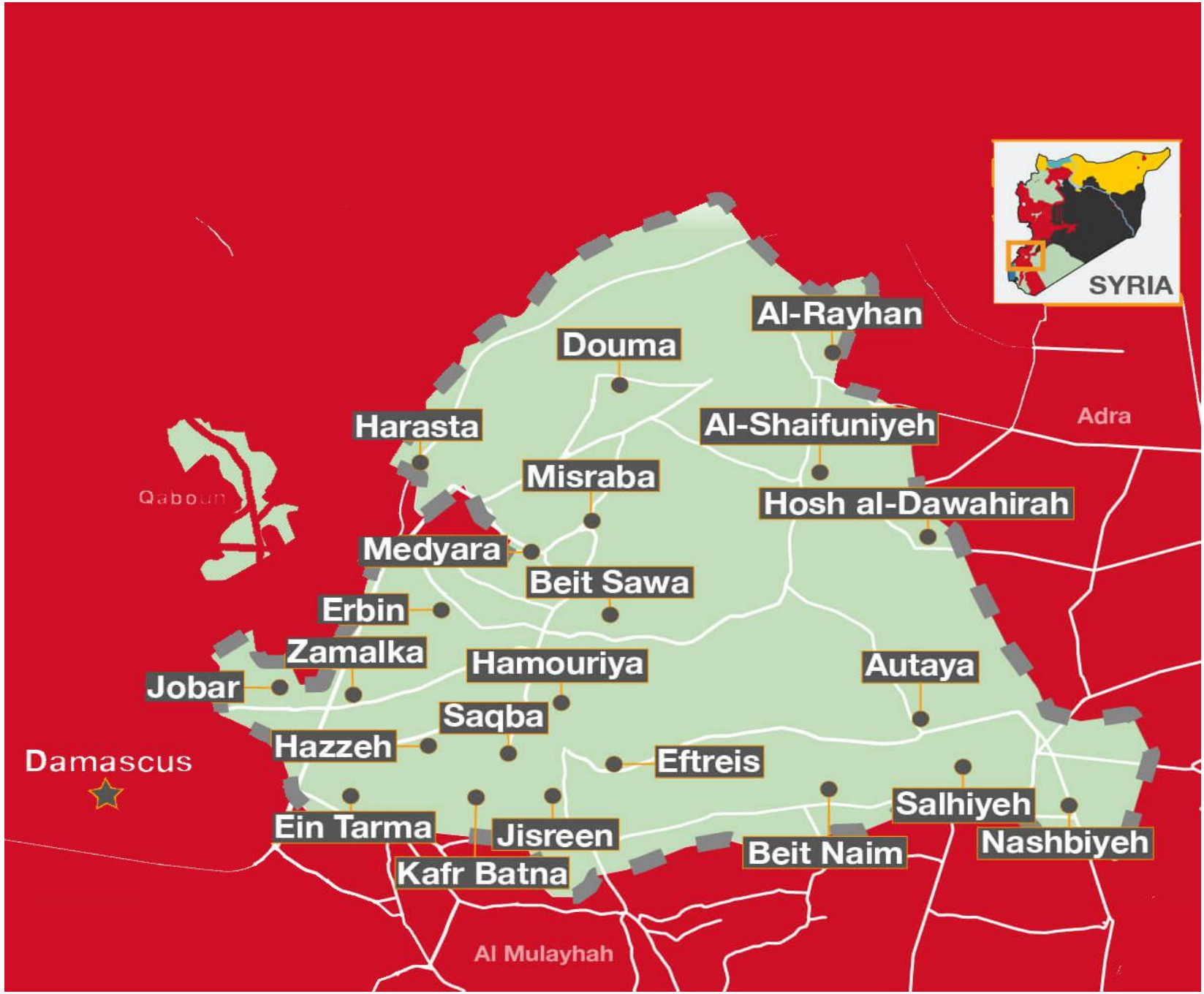
```
Time                                                SD for WHZ
point                 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.35 (n=09, f=0)  ########################
02: 0.81 (n=09, f=0)
03: 1.47 (n=09, f=0)  ############################
04: 1.21 (n=09, f=0)  ##################
05: 0.94 (n=09, f=0)  ######
06: 0.84 (n=09, f=0)  ##
07: 0.93 (n=09, f=0)  ######
08: 1.27 (n=09, f=0)  ####################
09: 0.90 (n=09, f=0)  ####
10: 0.98 (n=09, f=0)  ########
11: 1.09 (n=06, f=0)  OOOOOOOOOOOO
12: 1.30 (n=05, f=0)  OOOOOOOOOOOOOOOOOOOO
13: 0.95 (n=04, f=0)  OOOOOO
14: 1.88 (n=02, f=0)  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
(when n is much less than the average number of subjects per cluster different symbols are
used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART
flags found in the different time points)
```

Team: 3

```
Time                                                SD for WHZ
point                 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.59 (n=09, f=0)  ##################################
02: 0.89 (n=09, f=0)  ####
03: 1.81 (n=09, f=1)  ##########################################
04: 1.52 (n=09, f=0)  ##############################
05: 0.93 (n=09, f=0)  #####
06: 1.16 (n=09, f=0)  ################
07: 0.66 (n=09, f=0)
08: 0.91 (n=09, f=0)  ####
09: 1.02 (n=09, f=0)  #########
10: 1.38 (n=09, f=0)  ########################
11: 1.47 (n=07, f=0)  ############################
12: 1.31 (n=04, f=0)  OOOOOOOOOOOOOOOOOOOO
13: 0.87 (n=04, f=0)  OOO
14: 1.66 (n=03, f=0)  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
(when n is much less than the average number of subjects per cluster different symbols are
used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART
flags found in the different time points)
```

(for better comparison it can be helpful to copy/paste part of this report into Excel)

Geographical unit	Population size	Cluster	عمود4	عمود5	عمود6	عمود7	عمود8
D73a	200	RC	دوما	دوما	البغدادي غربي	D73a	
D19	351	1	دوما	دوما	حي صفا	D19	
M2	286	2	حرستا	مسرابا	جامع عبيد	M2	
A204	2240	3,4	عربين	عربين	قالش	A204	في وسط البلد
449g	200	5	كفربطنا	جسرين	طريق الافتريس	g449	الطريق المجاور لجامع الحسن من الجهة الشرقية
D17	123	6	دوما	دوما	حي عبد الرؤوف	D17	
D22	256	7	دوما	دوما	العاقولة والمزرعة	D22	
D7	285	8	دوما	دوما	حي الحجارية	D7	
D76	248	9	دوما	دوما	حي الساحة	D76	
D41	191	RC	دوما	دوما	حي الشمس	D41	
D24a	257	10	دوما	دوما	حي العب	D24a	
D37b	350	11	دوما	دوما	حي المنفوش	D37b	
D66a	180	12	دوما	دوما	حي توحيد	D66a	
D59	303	13	دوما	دوما	حي شرقية	D59	
D51b	216	14	دوما	دوما	حي قصارنة	D51b	
D36a	225	15	دوما	دوما	حي مساكن	D36a	
D47	287	16	دوما	دوما	خلف المشفى	D47	
D71a	150	17	دوما	دوما	ساحة وحميرة	D71a	
D26a	249	18	دوما	دوما	طريق مسرابا	D26a	
M5	190	19	حرستا	مسرابا	جامع حمزة بن عبد المطلب	M5	
M7e	246	20	حرستا	مسرابا	الجامع القديم	M7e	
A210	250	RC	عربين	عربين	ابن الخطاب	A210	محازي للعسقلاني
A206	240	21	عربين	عربين	الحرية	A206	في وسط البلد
A216	203	22	عربين	عربين	الفصول	A216	مقابل حي سنو
A235	250	23	عربين	زملكا	خضر	A235	في حي خضر الأخضر
A264	81	24	كفربطنا	حزة	البحصة	A264	شرقي البلد
A258	152	25	كفربطنا	حزة	الجناين	A258	أمام مسجد حزة
471h	190	26	كفربطنا	حمورية	الروضة b	h471	الحي المقابل لمحل المجرة الجانب الجنوبي
442g	80	27	كفربطنا	جسرين	العواميد	g442	جانب الجامع الكبير في شمال بلدة جسرين
402k	170	RC	كفربطنا	كفربطنا	الكرم b	k402	غرب كفر بطنا وحدودها مع عين ترما /القسم الجنوبي
A246	115	28	كفربطنا	عين ترما	المزرعة-1-	A246	في شرق الوادي
A249	80	29	كفربطنا	عين ترما	حارة الفار	A249	في جنوب البلد
A274	225	30	كفربطنا	بيت سوا	قطاع – س-1	A274	خلف حي المروش


SYRIA
Al-Rayhan
Douma
Harasta
Al-Shaifuniyeh
Adra
Misraba
Qaboun
Hosh al-Dawahirah
Medyara
Beit Sawa
Erbin
Zamalka
Hamouriya
Autaya
Jobar
Saqba
Hazzeh
Damascus
Eftreis
Salhiyeh
Ein Tarma
Jisreen
Nashbiyeh
Beit Naim
Kafr Batna
Al Mulayhah