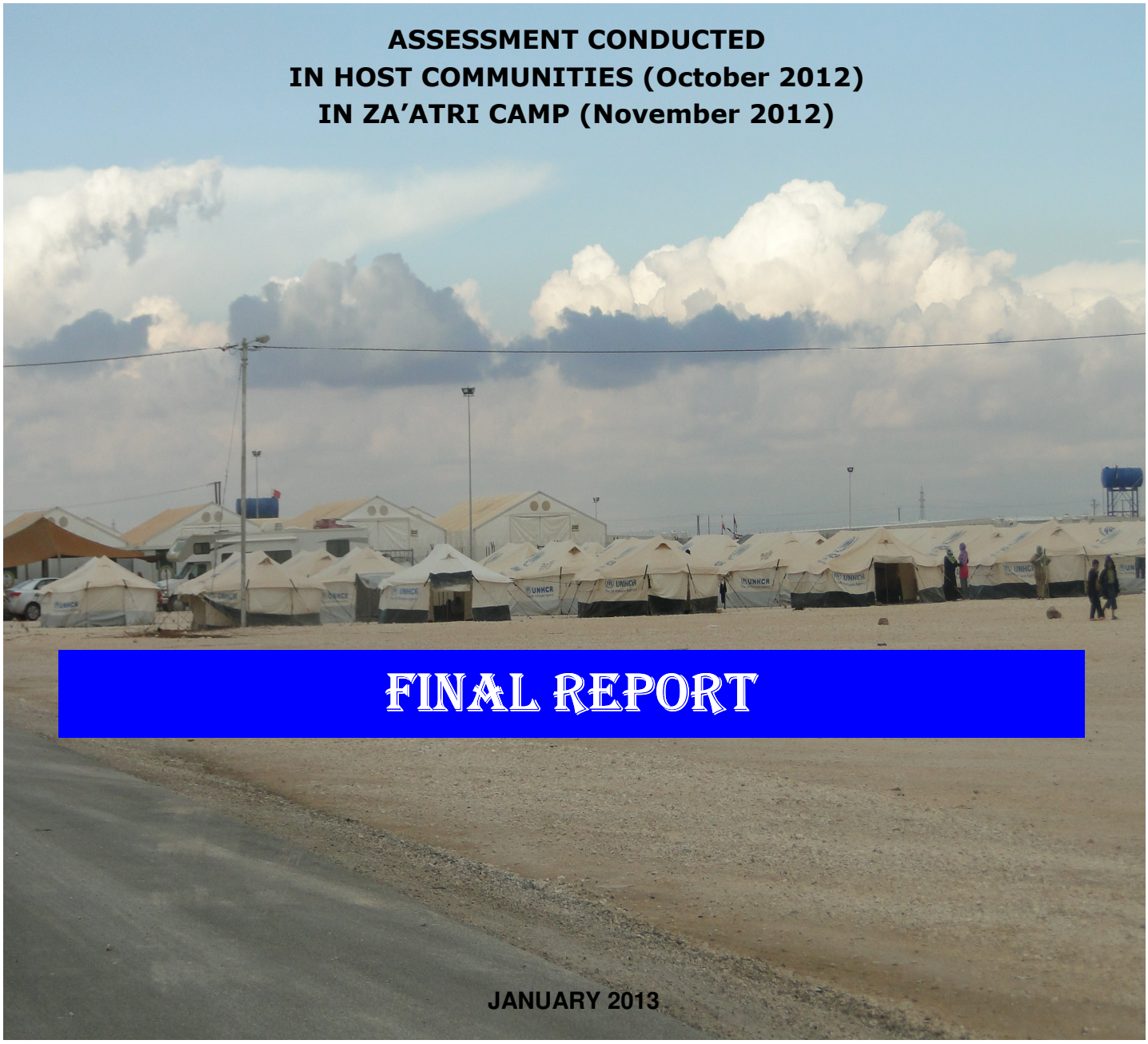
INTER-AGENCY NUTRITION ASSESSMENT
SYRIAN REFUGEES IN JORDAN
HOST COMMUNITIES AND ZA'ATRI CAMP

ASSESSMENT CONDUCTED
IN HOST COMMUNITIES (October 2012)
IN ZA'ATRI CAMP (November 2012)



FINAL REPORT

JANUARY 2013

Nutrition Assessment Report for Syrian Refugees in host communities and in Za'atri camp in Jordan, using SMART methodology

ACKNOWLEDGMENTS

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Most importantly, thanks to the women, men and children from different Syrian refugees' families (in host communities and in Za'atri camp) who agreed to be interviewed, measured and weighed during the assessment.

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ACRONYMS AND ABBREVIATIONS

CDC	Centers for Disease Control and prevention
CFSA	Comprehensive Food Security Assessment
CI	Confidence Interval
CSI	Coping Strategy Indices
DEFF	Design effect
DOS	Department Of Statistics
EFSNA	Emergency Food Security and Nutrition Assessment
ENA	Emergency Nutrition Assessment
EPI	Expanded Programme on Immunization
FCS	Food Consumption Score
GAM	Global Acute Malnutrition
HAZ	Height-for-Age z-score
HH	Household
InterSOS	Italian Humanitarian NGO in Jordan
IRD	International Relief and Development
IYCF	Infant and Young Child Feeding
JHCO	Jordan Hashemite Charity Organization
MAM	Moderate Acute Malnutrition
MCH	Maternal and Child Heath
MICS	Multiple Indicators Cluster Survey
MOH	Ministry of Health
MUAC	Middle Upper Arm circumference
NCHS	National Centre for Health Statistics
NGO	Non-Government Organization
PPS	Probability Proportional to Size
ProGres	UNHCR registration database for refugees
SAM	Severe Acute Malnutrition
SD	Standard Deviation
SMART	Standardized Monitoring & Assessment of Relief & Transitions
SOWC	The State of the World's Children
SPSS	Statistical Package for Social Sciences (Statistical software)
U5	Children under 5 years old
UN	United Nations
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Funds
VAM	Vulnerability Analysis and Mapping
WASH	Water Sanitation and Hygiene
WAZ	Weight-for-Age z-score
WHZ	Weight-for-Height z-score
WFP	World Food Programme
WHO	World Health Organization

EXECUTIVE SUMMARY

The Arab Spring, which swept across the Middle East and North Africa, struck Syria in January 2011. While the protests started off peacefully, they erupted into a popular uprising by mid-March 2011. According to the media reports fighting has been taking place over the past months in Syria resulting to thousands of Syrians being displaced and many seeking protection in neighboring countries of Lebanon, Iraq, Turkey, Egypt and Jordan.

To assess the needs of displaced Syrian Refugees in Jordan, UNICEF and WFP proposed the joint nutrition assessment for Syrian children between the age of 6 – 59 months and lactating and pregnant women in Jordan. This survey intended to establish the nutrition wellbeing of vulnerable Syrian women and children for potential nutrition and health related interventions taking into consideration existing public health programmes and strategies.

According to UNICEF's State of the World's Children (2012) and FHS (2009), the nutrition situation in Syria was worse than in Jordan before the crisis in Syria, based on wasting (12%), stunting (28%) or underweight (10%) data available. There was however inadequate information to determine whether those leaving the country are worse or better than those remaining in the country. Furthermore, there was no nutrition assessment/ screening established at the point(s) of entry to provide information on the nutritional well-being of those leaving Syria.

The proposed nutrition assessment established the nutrition situation for the Syrian women and children in Jordan and provides guidance on likely response to these individuals. This information provides baselines for monitoring for future nutrition programmes, once they are established.

Initially, only one Survey was planned. However, by the time of the assessment approval by the Jordanian Government and the delay associated with Ramadan, the number of Syrian Refugees had significantly increased and Za'atri refugee camp had been created. It was therefore deemed necessary and technically appropriate to undertake two separate data set collection (for the refugees in the host communities and for the refugees in Za'atri refugee camp) with 2 independent and representative samples.

The nutrition assessment aimed to fill the information gap on the nutritional well-being of the vulnerable Syrian women and children in Jordan and to propose interventions, if there was any urgent need for response to mitigate deterioration. Specific objectives for the assessment were:

1. To estimate wasting (acute malnutrition), stunting (chronic malnutrition) and underweight of Syrian children aged 6-59 months in host communities and in Za'atri camp.
2. To estimate the acute malnutrition levels for Syrian women of child bearing age in Jordan host communities and in Za'atri camp based on MUAC measurement
3. To identify/document the underlying factors likely to influence the nutrition well-being of the Syrian population in host communities and in Za'atri camp.
4. To identify interventions and ensure that interventions are aligned with existing strategies and integrated.

The SMART (***Standardized Monitoring and Assessment of Relief and Transition***) methodology was used to collect and analyze data on child anthropometry. Additional questionnaires were designed to collect quantitative data on infant and child feeding, health (diseases and immunization), water and sanitation services and food security. A total of 56 clusters were randomly selected for the refugees in host communities and 32 clusters were selected for the refugees in Za'atri camp, using probability proportional to size (PPS). UNHCR population figures from ProGres[1] were used for cluster allocation.

Two-staged cluster sampling design was used. SMART software – Emergency Nutrition Assessment (ENA) was used to calculate the sample size, to select different clusters (localities) and households. For the host communities' survey, the sample size was 780 households (56 clusters of 14 families[2]) and UNHCR registered families lists were used as the data reference for the household/ family selection. For Za'atri camp, the sample

[1] ProGres: UNHCR registration database for refugees

[2] Household: UNHCR definition of household was used which as the family registered

size was 480 households (32 clusters of 15 families) and different clusters were randomly selected from the different blocks of tents in the camp. The list of counted families (also represented by the "occupied" tents) in each tent block selected was used to select the families in each cluster (Block).

A total of 11 survey teams (Six teams in host communities assessment and five teams in Za'atri camp) composed of three members (who speak Arabic) each were formed for the assessment. A training lasting three or four days was provided, using standard training package, followed by a one-day pre-test exercise, to assess the training quality and the teams readiness for data collection. The survey teams were supported by a team of supervisors and coordinators throughout the duration of data collection. Anthropometric data for children aged 6-59 months were entered using ENA for SMART software (Delta version, November 8th 2011) by the coordination team. All other data was entered twice by a team of clerks using an Excel template. Data analysis was done using ENA for SMART, Food Consumption Scores (FCS), Coping Strategy Indices (CSI) and SPSS software.

Key findings

- ✓ The two assessments covered more than 97% of the selected sample and around 20% of the families were female headed. The average of family size was 5.3 in host communities and 5.1, in Za'atri camp.
- ✓ The prevalence of global acute malnutrition (GAM), among children 6-59 months, in the two assessments was more than 5% but less than 10% (5.1% in the refugees in the host communities and 5.8% in Za'atri camp) and is defined as a poor of public health concern as per WHO classification. The prevalence of severe acute malnutrition (SAM) found in the two assessment was 1% for refugees in Za'atri camp and 1.1% for refugees in the host communities. The situation of children aged 6-59 months with acute malnutrition has to be monitored in both communities and children with either severe or moderate acute malnutrition should be screened and treated. The proportion of the "At Risk of Acute Malnutrition" category (WHZ_WHO scores between -1 SD and -2 SD) was analyzed. The findings of the two surveys showed that children 6-59 months in Za'atri camp are more at risk of acute malnutrition than children 6-59 months who lived in host communities (5.6% vs. 4.6%). However, the difference of 1% is statistically insignificant (X^2: 0.413, P> 0.05).
- ✓ The prevalence of stunting and underweight among children 6-59 months in the two assessments was lower than previously available data (FHS 2009) in Syria and the rates are within acceptable levels as per WHO classification.
- ✓ However, the findings of the two assessments show that the total prevalence of stunting and underweight, among Syrian refugees in Za'atri camp was higher than the prevalence of stunting and underweight in Syrian refugees living among the Jordan host communities.
- ✓ The assessments collected data on diarrhea, cough and fever which are closely linked to nutritional status. The prevalence was calculated based on mothers or caregivers' recall. It was found that the surveyed children aged 6-59 months in Za'atri camp had suffered more from the 3 surveyed illnesses, two weeks prior to the survey. This morbidity might explain the high rate of Risk of Acute Malnutrition in Za'atri camp.
- ✓ The coverage of Polio immunization is largely similar in the two assessed groups with recorded coverage of over 92% for the 1st dose of OPV, over 80% for 2nd dose of OPV and about 70% for 3rd dose of OPV. However, the coverage for measles is higher in Za'atri camp. For the supplementation of vitamin A, usually the coverage should be the same as the coverage of Measles vaccination. The results of the assessment showed that the coverage of Vitamin A supplementation is very low relatively to the coverage of Measles. This difference could be explained by the fact that the surveyors were supposed to show the vitamin A capsule to the mother or to the caregiver but they did not have vitamin A capsules. In addition, the Za'atri nutrition data collection overlapped with Polio/ Vitamin A vaccination/ supplementation campaign which took place between 26th September and early December 2012.
- ✓ Adequate food alone will not lead to improved nutritional status if practices related to child care remain poor. It has been shown that children from food secure and well off households can still be malnourished if caring practices such as health seeking behavior (illnesses), hygiene and child feeding practices are poor.

- ✓ The findings of assessments showed that 42.7% of children born in the last 24 months, among refugees in host community, are still breastfed and this proportion is 49.6% among refugee children born in the last 24 months and living in Za'atri camp. In the two communities, more than 50% of the surveyed children were breastfed up to 1 year but much less than 50% were breastfed up to two years. However, only 13.3% (in host communities) and 7.9% (in Za'atri camp) of mothers or caregivers reported that they gave 5 times or more complementary food to the children of 6-12 months age group.
- ✓ The assessment showed that there is 6.3% malnourished (MUAC < 23 cm) women aged 15-49 years and among them 0.9% severely malnourished (MUAC < 21 cm) in the refugee community in the host communities. In Za'atri camp, the assessment shows that there are 6.1% malnourished (MUAC < 23 cm) women 15-49 years of age, among them 1.1% being severely malnourished (MUAC < 21 cm).
- ✓ Access to sufficient water for the family needs was assessed. In the host communities, 81% of Syrian families have access to sufficient water and in Za'atri camp; the proportion of Syrian families with access to sufficient water was 94%. In host communities, 54% of families reported "Buying Water" as a main water problem while in Za'atri camp, 41% of families did not have any water problem. With regard to having "Soap and/or Hygienic products", among refugees in host communities, 27.5% of families reported that they did not have "Soap and/or Hygienic products" while in Za'atri camp, 65% of families reported that they did not have "Soap and/or Hygienic products".
- ✓ Among refugees in host communities, families registered with UNHCR receive "Food Vouchers" and they use them to get food. In Za'atri camp, the Syrian families receive 2 weeks distribution of dry ration food. For the 2 communities, food assistance represented an important source of their food. However, to complement their meals with some fresh food, some families (32%) needed to buy other food items.
- ✓ The food assistance was reported by 42% of the families as their main food sources in Za'atri camp in comparison with 19.2% for refugee families in host communities. However, families in host communities received 25.5% of their food from charity as gift.
- ✓ Number of meals per day: Among refugees in host communities, 91% of the families have 2 meals or more per day while among those in Za'atri camp, the proportion having 2 meals or more per day was more than 97%.
- ✓ Consumption of canned food: Among the refugees in host communities, 75.5% of the families consume canned food and more than 90% of families consume this canned food in Za'atri camp. Moreover, more than 50% of Syrian families in Jordan consume canned food 2 or 3 days per week and in Za'atri camp, 21% of families consume canned food almost every day.
- ✓ In 2010, a Syrian EFSNA showed that Food Consumption Score (FCS) was poor (4%), borderline (23%) and acceptable (72%). The FCS seems to be slightly better in Za'atri camp than in the host communities and in Syria in 2010. This situation might be interpreted as a positive impact of food distribution in Za'atri camp. However, this comparison can be taken cautiously because of the 2010 EFSNA was done during drought and it was conducted in Northern part of Syria only.
- ✓ The 2 assessments showed that 54.4% of refugee households in host communities have some food stocks and 69.6% of households in Za'atri have some food stocks. Because of every two weeks food distribution, in Za'atri camp, for every kind of food stock, the proportion of having a stock of the food item is higher than among refugees in host communities. The majority of refugees in Host communities families have food stocks that could last from four to seven days, where as the majority of the families in Za'atri camp have stocks which could last from fifteen to thirty days.
- ✓ Households adopt a wide range of coping strategies in efforts to cover their food gaps when faced with acute food decline. The survey findings showed that more families (77%) of the refugees in the host communities use at least one coping strategy to cover their food gaps than families in Za'atri camp (67%). Overall, the food security seems better in Za'atri camp. A larger proportion of the families in the host communities are using some form of coping strategies than those living in Za'atri camp. In host communities, families have a high rate of daily use of credit. However, in Za'atri camp, the findings showed that adults are restricting their consumption.

RECOMMENDATIONS AND PRIORITIES

Immediate term

1. Having a discussion with MOH and all other partners to set up mechanism for acute malnutrition management as well as capacity strengthening for the ministry of health services, for preparedness.
2. Reinforcing role and responsibility of the nutrition sub group and its respective members to organize and coordinate the nutrition sector and response.
3. Setting up a screening mechanism of children and mothers for malnutrition upon arrival in Jordan.
4. Setting up services for children and mothers that are screened and ensure adequate treatment is available for those identified with Severe Acute Malnutrition, including those with medical complications, and Moderate Acute Malnutrition.
5. Developing guidelines or protocol for acute malnutrition management and prevention as well as national plan of training.
6. Strengthening the awareness, promotion, and protection of positive Infant and young child feeding practices through NGOs activities by accelerating sensitization and awareness creation on appropriate breast-feeding and complimentary feeding practices as well as micronutrient provision.
7. Integrate nutrition into primary health care in Za'atri and NGO clinics in the Northern governorates including growth monitoring and promotion for children aged six to 59 months.
8. Improving Education and communication strategies in the health centers and in the community including integrating communication for development strategies to positively influence behavior and practices.
9. Support NGOs providing services to unregistered Syrians to integrate management of SAM and MAM into their services.
10. Scale-up of hygiene promotion activities (including adequate access to soap through either distribution or the means to purchase) and improve water quality access and monitoring the quality of water to address disease incidence and facilitate disease treatment through the health facilities.

Medium term

1. Integrating the nutrition surveillance system in the existing Health Surveillance System.
2. Putting a proper targeting of the most vulnerable refugees and host communities with a minimum response package on health and nutrition surveillance, disease treatment, appropriate health and nutrition promotion, adequate food security, water and sanitation services, shelter against harsh weather, etc.

Longer term

1. If the situation in Syria will not have improved to enable return of the refugees, conduct nutrition surveys in all camps in six months' time or after Ramadan, (depending on the delivery of adequate response in the next 6 months). Survey methodology should be simplified to capture only key indicators of anthropometry in children aged 6-59 months and mortality in the whole population as recommended by the SMART methodology. A full expanded nutrition survey should be repeated in 12 months.
2. Conduct a comprehensive nutrition assessment/ survey after one year (if adequate humanitarian support will have been provided) with a parallel food security assessment (separate questionnaire and teams) but with components of nutrition response (CMAM, micronutrient and IYCF) coverage and mortality. .

Summary of the Results

Survey area	REFUGEES IN HOST COMMUNITIES	REFUGEES INZA'ATRI CAMP	Classification of public health significance or target (where applicable
Date of Survey	October 8th – 24th 2012	November 4th – 13th 2012	
FAMILY OR HOUSEHOLD CHARACTERISTICS			
Sample coverage (Response rate)	97.1%	97.9%	
Average family size	5.3 people	5.1 people	
Woman headed households	19%	22%	
CHILDREN UNDER 5 YEARS			
Acute Malnutrition (WHO 2006 Growth Standards) – 95% Confidence Interval (CI)			
Global Acute Malnutrition (GAM)	5.1 % (3.2 - 8.0)	5.8 % (3.8 - 8.6)	Critical: if ≥ 15% Serious: between 10 - 14.9% Poor: between 5 - 9.9%
Moderate Acute Malnutrition (MAM)	4.0 % (2.3 - 7.0)	4.8 % (3.1 - 7.5)	
Severe Acute Malnutrition (SAM)	1.1 % (0.5 - 2.2)	1.0 % (0.4 - 2.5)	
At Risk Acute Malnutrition (WHZ_WHO between -1 SD and -2 SD)[1]	4.6% (3.0% - 6.3%)	5.6% (3.4% - 7.8%)	
Oedema	0.0%	0.0%	
Stunting (WHO 2006 Growth Standards) – 95% CI			
Total stunting	8.2 % (6.1 - 10.9)	15.9 % (12.6 - 20.0	Critical if ≥ 40% Serious between 30 - 39.9% Poor: between 20 - 29.9%
Severe stunting	1.4 % (0.7 - 2.8)	4.1 % (2.6 - 6.4)	
Underweight (WHO 2006 Growth Standards) – 95% CI			
Total underweight	2.0 % (1.0 - 4.2)	6.3 % (4.5 - 8.7)	Critical if ≥ 30% Serious between 20-29.9% Poor: between 10 - 19.9%

[1] As the situation of acute malnutrition can change quickly and to help the monitoring of children with acute malnutrition, at risk of acute malnutrition category (WHZ_WHO scores between -1 SD and -2 SD) was analyzed.

Survey area	REFUGEES IN HOST COMMUNITIES	REFUGEES INZA'ATRI CAMP	Classification of public health significance or target (where applicable
Date of Survey	October 8th – 24th 2012	November 4th – 13th 2012	
Severe underweight	0.0 % (0.0 - 0.0)	0.5 % (0.1 - 2.0)	
Full vaccination and Vitamin A supplementation (coverage)			
Measles vaccination	31.2%	76.9%	Target of >= 95%
Vitamin A Supplementation, within past 6 months	4.5%	32.8%	Target of >= 90%
One dose Polio Vaccination	92.5%	93.9%	
Two doses Polio Vaccination	85.4%	80.3%	
Three doses Polio Vaccination	72.2%	67.9%	
Children Morbidity			
Diarrhea in past 2 weeks	22.4%	47.7%	
Cough in past 2 weeks	35.5%	43.8%	
Fever in past 2 weeks	42.1%	51.6%	
CHILDREN 0-24 MONTHS			
Infant and Young Children Feeding Practices			
Children born in the last 24 months and were still breastfeeding	42.7%	49.6%	
Continued breastfeeding at 6-12 months	65%	80.9%	
Continued breastfeeding at 12-18 months	51.4%	54.9%	
Continued breastfeeding at 18-24 months	19.8%	9.5%	
Child doesn't receive complimentary feeding at 6-12 months	26.7%	36.8%	
Child receives, 5 times or more, complimentary feeding at 6-12 months	13.3%	7.9%	
WOMEN 15-49 YEARS			
Physiological Status			
Women aged 15-49 years who were pregnant	11%	8.5%	
Women aged 15-49 years who were Lactating	12.8%	16.9%	

Survey area	REFUGEES IN HOST COMMUNITIES	REFUGEES INZA'ATRI CAMP	Classification of public health significance or target (where applicable
Date of Survey	October 8th – 24th 2012	November 4th – 13th 2012	
Women aged 15-19 years who were lactating and pregnant	12.3%	10%	
MUAC Women			
Malnourished Women (MUAC < 23 cm)	6.3% (4.6 – 8.0 95% C.I.)	6.1% (4.0 – 8.3 95% C.I.)	
Severely Malnourished Women (MUAC < 21 cm)	0.9% 0.9% (0.2 – 1.6 95% C.I.)	1.1% (0.1 – 2.0 95% C.I.)	
WASH			
Water Access	81%	94%	
Don't have water problem	19.5%	41%	
Don't have Soap and Hygienic products	27.5%	65%	
FOOD SECURITY			
Main Food Sources			
Food Aid (Food assistance + Gift from charity)	44.7%	46.9%	
To buy food (purchasing)	32.4%	32.9%	
Number of meals per day			
Have two (2) meals or more per day	91.3%	97.2%	
Consumption of canned food			
Proportion of families consume canned food	75.5%	94.6%	
Food Consumption Score (FCS)			
Poor (FCS ≤ 21)	3.2%	1.7%	
Borderline (FCS between 21.5 and 35)	19.8%	16.4%	
Acceptable (FCS > 35)	77%	81.9%	
Food Stocks			
Proportion of families have Food stocks	54.4%	69.6%	
Coping Strategies			
Use at least one coping strategy	77%	67%	

INTRODUCTION

This report presents the outcomes of two nutrition assessments conducted in Jordan to assess the nutrition situation of Syrian refugees in host communities and of Syrian refugees in Za'atri camp. The assessments were commissioned by UN agencies (UNICEF, WFP, UNHCR, WHO and UNFPA), lead by UNICEF and WFP, in collaboration with MOH, Department of Statistics, Save of Children, IRD and InterSOS. The assessment on the Syrian refugees in host communities was conducted from October 11th to October 24th while in Za'atri camp, the assessment was conducted from November 4th to November 13th. At the time of writing this report (end of November 2012), the UNHCR data base indicated that the number of Syrian Refugees in Jordan is 137,184 (96,243 registered and 40,941 Syrians in Jordan awaiting registration).

The nutrition surveys assessed the food and nutrition situation of the Syrian refugees in Jordan. It is a nutrition assessment among Syrian refugees in the host communities" versus "refugees in Za'atri camp". This report is divided into the following sections:

- **Executive summary**: Brief summary of the methodology, main results and recommendation.
- **Background and Rationale:** In this section the background information related to Syrian Situation and Justification of Survey is presented.
- **Methodology:** The methodology for the two surveys was similar in the two assessments (among refugees in host communities and those in Za'atri camp).
- **Results:** The results are reported in combined sections.
- **The discussion:** The discussion highlights similarities and differences between the Syrian refugees in host communities Families and Syrian Refugees in Za'atri camp and implications of the results in the larger humanitarian situation and any relationships identified between various factors.
- **Recommendations** are made on the humanitarian response targeting the two assessed populations (refugees in the host communities and in Za'atri).

I. BACKGROUND AND RATIONALE

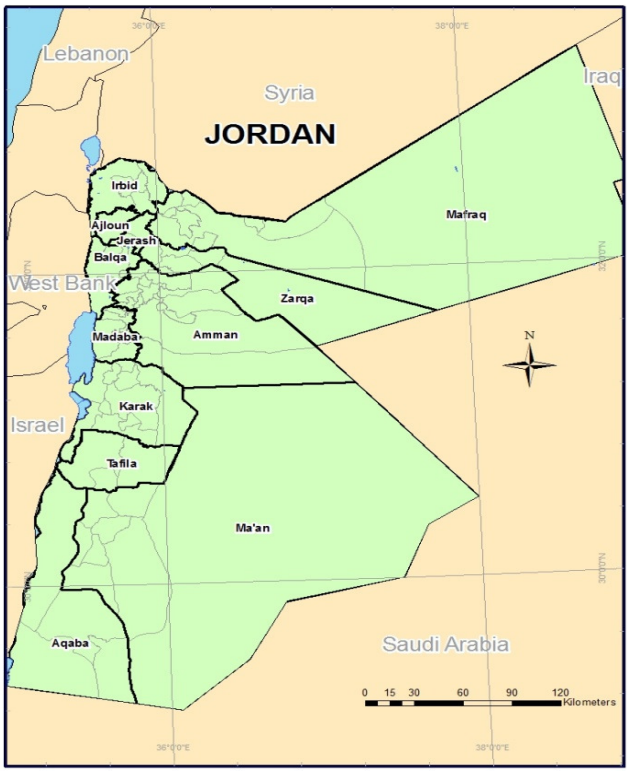
The basic indicators for assessing the severity of a crisis are the mortality, or death rate, and the nutritional status of the population. These are both estimated by conducting a survey of the affected population.

To know the magnitude of the problem it's important to know the affected population size and, if possible, the demographic characteristics of the population. A high proportion of malnourished cases in a small population is normally of less magnitude than a lower proportion of malnourished cases in a large population. The scale and type of intervention depends on the magnitude of the emergency rather than simply on the prevalence of malnutrition.

The Arab Spring, which swept across the Middle East and North Africa, struck Syria in January 2011. While the protests started off peacefully, they erupted into a popular uprising by mid-March 2011.

These unfolding events have resulted in tens of thousands of Syrians being displaced and many seeking protection in the neighboring countries of Lebanon, Turkey, Egypt, Jordan and Iraq. Meeting basic needs to sustain everyday life has become increasingly difficult. Therefore, many individuals and families have been deeply affected by the events that caused them to leave and are reluctant to return home until the situation stabilizes.

To assess the needs of displaced Syrian Refugees in Jordan, a UNICEF and WFP meeting held on Monday, 13th May 2012, proposed a joint nutrition assessment for Syrian children between the age of 6 – 59 months and lactating and pregnant women in Jordan. This joint assessment was to establish the nutrition well-being and health situation of the Syrian refugees in Jordan and if needed, to identify appropriate interventions for the wellbeing of vulnerable Syrian women and children, taking into consideration existing public health programmes and strategies in Jordan.



II. JUSTIFICATION OF THE SURVEY

Since early 2011, the number of Syrians crossing the border into Jordan has gradually been increasing. By the time the assessment was planned, over 24,000 had been registered with UNHCR (12 June 2012) while some 30,000 had been identified by local organizations as in need of assistance. (Source: UNHCR; Jordan Hashemite Charity Organization). Many more were, however, believed to be in the country and vulnerable. The majority of Syrians who had entered Jordan originated from Daraa, Homs, Damascus, Idleb, and Hama and had mostly settled in Irbid, East Amman, Ma'an and the border towns of Mafraq and Ramtha. The information then indicated that a proportion of the Syrians arriving to Jordan were from rural communities and Bedouin tribes.

According to UNICEF's State of the World's Children (2012) and FHS (2009), the nutrition situation in Syria was worse than in Jordan before the onset of the crisis in Syria, based on wasting (12%), stunting (28%) or underweight (10%) data available (ref table 1 for comparison). There was however inadequate information to determine whether those leaving the country were nutritionally worse or better than those remaining in the country.

Table 1: Nutrition status for Syria, Jordan, Lebanon and MENA Region Average, UNICEF SOWC, 2012 and FHS 2009

Nutrition status for Syria, Jordan, Lebanon and MENA Region Average, UNICEF SOWC, 2012 and FHS, 2009						
Country	Stunting (Moderate & Severe)	Wasting (Moderate & Severe)	Underweight (Moderate & Severe)	Exclusively Breast Fed (< 6 month)	Vitamin A supplementation Coverage	% Households consuming Iodized salt
Syria	28	12	10	43	33	79
Jordan	8	2	2	22	-	88
Lebanon	11	5	-	27	-	92
MENA Average	28	9	11	34		48

There is no nutrition assessment/screening established at the point(s) of entry to provide information on their nutritional well-being. The nutrition assessment aimed at establishing the nutrition situation for a targeted Syrian women and children in Jordan and providing guidance on likely response to these individuals. The information may provide baselines for monitoring of future nutrition programmes, if response is deemed necessary. Such response should be in line with and complimentary to the current nutrition strategy of the Government of Jordan and will therefore also encompass the currently existing mechanisms and systems in Jordan with associated impact on the wider Jordanian host communities. The SMART (***Standardized Monitoring and Assessment of Relief and Transition***) methodology has been chosen to assess the nutrition situation. SMART methodology has more requirements than other survey methodologies but can provide more reliable and accurate information/results easily and rapidly for decision makers.

Initially, the UN agencies planned to do one survey for all Syrian refugees in Jordan (June 2012). However, by the time, they received the approval from Jordanian Government to do the Survey and after the decision to postpone the survey after Ramadan, the number of Syrian Refugees had significantly increased and Za'atri camp was created. Based on the consultation of the stakeholders, it was decided to collect two separate sets of data (one for Syrian refugees in host communities and one for Syrian refugees in Za'atri camp) for two independent and representative samples (see annex 1).

III. OBJECTIVES

The nutrition assessment aimed to fill the information gap on the nutritional well-being of the vulnerable Syrian women and children in Jordan and to propose interventions, if there was any urgent need for response to mitigate deterioration. Specific objectives for the assessment were:

1. To estimate wasting (acute malnutrition), stunting (chronic malnutrition) and underweight of Syrian children aged 6-59 months in host communities and in Za'atri camp.
2. To estimate the acute malnutrition levels for Syrian women of child bearing age in Jordan host communities and in Za'atri camp based on MUAC measurement
3. To identify/document the underlying factors likely to influence the nutrition well-being of the Syrian population in host communities and in Za'atri camp.
4. To identify interventions and ensure alignment with existing strategies and integrated.

IV. METHODOLOGY

1. STUDY POPULATION

The study population was the vulnerable Syrian women and children in Jordan. A detailed list of the locations and the population size that formed the sampling frame/ sampling universe was used in the random selection of households and the children and the mothers, randomly selected later, were enrolled in the assessment.

2. SAMPLING AND SAMPLE SIZE DETERMINATION

A two stage cluster sampling was conducted in the two independent assessments.

The household was the survey sample unit. The standard definition of household is a group of people who live together and routinely eat from the same pot. For the two assessments, household as UNHCR used in their register for Syrian Refugees, was used, thus the family as registered by UNHCR, was the household unit used for the two assessments as sampling unit.

According to the number of indicators and based on the pre-testing of the questionnaire, it was estimated that no more than 14 households could be surveyed in one day by each team, for Syrian refugees in host communities and no more than 15 households could be surveyed for Syrian refugees in Za'atri camp. A total of 56 clusters were randomly selected for the refugees in host communities' assessment and a total of 32 clusters were randomly selected for the Za'atri camp assessment, using probability proportional to size (PPS).

2.1. Sample size determination

The two samples were calculated using ENA (Emergency Nutrition Assessment) software[1] for SMART[2] methodology (Delta version). To determine the sample size for each survey, the following parameters were used (cf. Tables 2-3).

[1] Emergency Nutrition Assessment. Le logiciel ENA Delta pour SMART peut-être téléchargé sur http://www.nutrisurvey.net/ena/ena.html

[2] SMART : ***Standardized Monitoring and Assessment of Relief and Transitions***

Table 2: Parameters used for host communities sample size determination

Syrian Refugees Nutrition Assessment, Jordan	Parameters/Indicators	Rate/Number	Justification/Sources
	Syrian Refugees Size in host communities	**25 527**	Syrian refugees UNHCR data base was used as a sample frame. The total number of individuals and families or Households came from this data base.
	Number of Syrian families or House holds	**8 798**	
	Estimated Prevalence of Global Acute Malnutrition	**12 %**	In the UNICEF SOWC 2012 and FHS 2009, the estimated prevalence of GAM is 12% for Syria. As it is very difficult to estimate the more current prevalence of GAM for the Syrian Refugees, the available prevalence of 12% was used.
	Desired Precision	**5 %**	The context of Syrian Refugees is changing constantly. Because of that, it will be difficult to have a precision level of less than 5%.
	Design Effect	**2**	Because of the same variation of the context and lack of any reference about the real Design Effect, the maximum of Design Effect of 2 was used.
	Average household size	**2.9**	In the data base of UNHCR, there were a lot of single families. When the total number of Syrian Refugees was divided by the total number of families/HH (25 527/8798), the average 2.9 household size was obtained.
	% Syrian Children under 5	**19 %**	The % of children U5 is also from the UNHCR data base
	% Non Response household	**10 %**	Because of the context of movement of Syrian Refugees, 10% as a Non Response rate was chosen.
	Children Sample Size	**353**	ENA software for SMART was used to calculate the number of Children and the number of HH as a sample size. Each team was estimated to be in a position to investigate 14 HH every day and this number became the number of HH by cluster. To obtain the number of clusters in the sample, 780 HH were divided by 14 HH to obtain 56 clusters.
	Households Sample Size	**780**	
	Number of HH by Cluster	**14**	
	Number of Cluster in the sample	**56**	

Table 3: Parameters used for Za'atri camp sample size determination

Syrian Refugees Nutrition Assessment, Jordan	Parameters/Indicators	Rate/Number	Justification/Sources
	Syrian Refugees Size in Za'atri camp	**23 480**	Syrian refugees UNHCR data base was used as a sample frame. The total number of individuals and families or Households came from this data base.
	Number of Syrian families or House holds	**4 696**	
	Estimated Prevalence of Global Acute Malnutrition	**12 %**	In the UNICEF SOWC 2012 and FHS 2009, the estimated prevalence of GAM is 12% for Syria. As it is very difficult to estimate the more current prevalence of GAM for the Syrian Refugees, the available prevalence of 12% was used.
	Desired Precision	**5 %**	The context of Syrian Refugees is changing constantly. Because of that, it will be difficult to have a precision level of less than 5%.
	Design Effect (DEFF)	**2**	Because of the same variation of the context and lack of any reference about the real Design Effect, the maximum of Design Effect of 2 was used.
	Average household size	**5**	According to the UNHCR data base, a household size was calculated by dividing the total number of Syrian Refugees by the total number of families/HH (23 480/4696), to obtain the average size of 5.
	% Syrian Children under 5	**18.5 %**	The % of children U5 is also from the UNHCR data base
	% Non Response HH	**10 %**	Because of the context of movement of Syrian Refugees, a 10% as a Non Response rate was chosen.
	Children Sample Size	**353**	ENA software for SMART was used to calculate the number of Children and the number of HH as a sample size. Each team was estimated to be in a position investigate 15 HH every day and this number became the number of HH by cluster. To obtain the number of clusters in the sample, 472 HH was divided by 15 HH to obtain 32 clusters.
	Households Sample Size	**472**	
	Number of HH by Cluster	**15**	
	Number of Cluster in the sample	**32**	

2.2. First stage of sampling

a) Host communities Survey

The first stage consisted of choosing randomly 56 clusters, usually derived from census data or projected population data or the UNHCR data base for this case. However, in this case, the census data base is not appropriate because Syrian refugees are not the primary population and are not homogenously distributed.

The UNHCR data base was used and the list of registered Syrian refugees had detailed of individuals by districts, sub-districts, cities and neighborhoods. However, the ultimate survey subjects are households' members, primarily children under five and women of child bearing age. It's noteworthy that in some localities, the total number of individuals present is too small to be considered as geographical units for the cluster sampling. In this regard, the steps taken to consider them in the sampling frame include:

- Completing the sampling frame by the information from UNHCR, WFP and a national NGO, Jordan Hashemite Charity Organization (JHCO).
- Conglomerating the locations with low populations and in close geographical proximity before choosing randomly the different clusters (localities, groups of localities, district or sub-districts).

The first stage permitted random selection of the number of clusters needed (56 clusters). There after household random selection was done (as requested by Cluster sampling methodology) to pick the 14 households/families from each cluster.

b) Za'atri camp

For Za'atri camp assessment, the data base (list of different Blocks with the number of their population), from UNHCR was used, to choose randomly the 32 Clusters.

The first stage sampling permitted random selection of clusters needed (32 clusters) while the second stage enabled random selection of 15 households/families from each cluster (as requested by Cluster sampling methodology).

2.3. Second stage of cluster sampling methodology

a) Refugee in host communities Assessment

Regarding the second stage of cluster sampling, from each geographical unit (locality, district or sub-district) chosen as a cluster, a complete list of the Syrian Refugees from UNHCR (with name of head of family and phone number) was used to choose randomly 14 households per cluster, with 6 additional families chosen as a standby in case of some families among the chosen first fourteen families, were not found by the team.

After choosing the sample of all households for the different clusters volunteers from IRD verified the household's address a day prior to the date of data collection. During the actual date of data collection, the volunteers of IRD helped the teams to find the families.

b) Nutrition Assessment in Za'atri camp

For the second stage of cluster sampling, each team built the list of families by counting the families in each randomly selected block of occupied tent. After counting the families in each block/cluster, the assessment team's leader randomly selected (using the calculated sampling interval) the 15 families surveyed.

3. QUESTIONNAIRE

The questionnaire was prepared in English and then translated and administrated in Arabic. It was pre-tested before the data collection commenced and appropriate adjustment made.

All information regarding nutrition assessment of children aged between 0 and 59 months and women of childbearing age (15 – 49 years), and food security at household level was gathered using a validated interview questionnaire. The questionnaire has 5 modules:

- Household consent;
- Household Food security;
- Feeding and immunization of children 0 to 59 months;
- Anthropometry and morbidity of children 6 to 59 months;
- Anthropometry of women of childbearing age (15 to 49 years old).

The questionnaire is included in Annex 2 and Annex 3.

4. MEASUREMENT METHODS

a) Household-level indicators

WASH: The questionnaire used was an adapted version of the one recommended in UNHCR's newly developed Standardized Nutrition Survey Guidelines for Refugee Populations.

FOOD SECURITY: The questionnaire used was similar to the one used in Comprehensive Food Security and Vulnerability Assessment (CFSVA) as recommended by WFP.

The food consumption score was calculated using a recall period of seven day for all food groups consumed at least once during this period and weighting it according the nutrient content. Households with a total score less than 21 were considered to have poor food consumption, those with score between 21.5 - 35 were considered as with borderline food consumption while those above 35 were considered to have an acceptable food consumption score. Different sources of food, the number of meals per day and coping strategy index were also analyzed.

HEALTH: The questionnaire used was validated by Jordan WHO.

b) Individual-level indicators

Sex of children: Gender was recorded as male or female.

Age in months for children 0-59 months: In view that in Syria, a lot of birth are registered few months (up to 6 months) after the real date of birth and the parent provide a later date of birth than actual, child age was estimated using the "Events Calendar" developed during the assessment. The age was recorded in months based on the local event calendar in the questionnaire. If the child's age could absolutely not be determined by using a local events calendar or by probing, the child's length/height was used for inclusion; the child had to measure between 65 cm and 110 cm.

Weight of children 6-59 months: Measurements were taken to the closest 100 grams using an electronic scale (SECA scale) with a wooden board, placed under the scale to stabilize it on the ground. Most children were weighed with clothes. Hence, the mean weight of 150 grams (for clothes) was taken into consideration during data analysis.

Height/Length of children 6-59 months: Children's height or length was taken to the closest millimeter using a wooden height board. Height was used to decide on whether a child should be measured lying down (length) or standing up (height). Children less than 87cm were measured lying down (length), while those greater than or equal to 87cm were measured standing up (height). However, in case of children taller than 87cm but having difficulty in measuring them standing, the length was measured, then 0.7cm deducted, for adjustment.

Oedema in children 6-59 months: bilateral oedema was assessed by applying gentle thumb pressure on to the tops of both feet of the child for a period of three seconds and thereafter observing for the presence or absence of an indent.

MUAC of children 6-59 months and women 15-49 years: MUAC was measured at the mid-point of the left upper arm between the elbow and the shoulder and taken to the closest millimeter using a standard tape. MUAC was recorded in centimers for children and for women.

Measles and Polio vaccination in children 6-59 months: Measles vaccination was assessed by checking for the measles and Polio vaccine on the EPI card if available or by asking the mother or the caregiver to recall if no EPI card was available.

Measles vaccination coverage: UNHCR recommends target coverage of 95% (same as Sphere Standards).

Vitamin A supplementation in last 6 months in children 6-59 months: Information on whether the child received a vitamin A capsule over the past six months was recorded from the EPI card or health card if available or by asking the mother or the caregiver to recall if no card was available. A vitamin A capsule was supposed to be shown to the mother or to the caregiver, when asked to recall, but, the capsules of Vitamin A were not available.

Vitamin A supplementation coverage: UNHCR Strategic Plan for Nutrition and Food Security (2008-2012) states that the target for vitamin A supplementation coverage for children aged 6-59 months by camp, country and region should be >90%.

Infant and young child feeding practices in children 0-24 months: Infant and young child feeding practices were assessed based on standard WHO recommendations (WHO 2007).

Diarrhoea in last 2 weeks in children 0-59 months: Mothers or caregivers were asked if their child had suffered from diarrhoea in the past two weeks and were asked about the duration (number of days) of the diarrhoea sickness. **Diarrhoea:** Presence of three or more loose or watery stools in a 24-hour period was used as the operational definition.

Cough in last 2 weeks in children 0-59 months: Mothers or caregivers were asked if their child had suffered from cough in the past two weeks.

Fever in last 2 weeks in children 0-59 months: Mothers or caregivers were asked if their child had suffered from fever in the past two weeks.

5. DIFFERENT DEFINITIONS AND CALCULATIONS

A. MALNUTRITION IN CHILDREN 6-59 MONTHS

Acute malnutrition, also known as wasting, was defined using weight-for-height index values or the presence of oedema and classified as shown in Table 4. Main results are reported after analysis using the WHO 2006 Growth Standards. Results using the NCHS 1977 Growth Reference are reported in Annex 4.

Table 4: Definitions of acute malnutrition using weight-for-height and/or oedema in children 6–59 months

Categories of acute malnutrition	Percentage of median (NCHS Growth Reference 1977 only)	Z-scores (NCHS Growth Reference 1977 and WHO Growth Standards 2006)	Bilateral Oedema
Global acute malnutrition	< 80%	< -2 z-scores	Yes/No
Moderate acute malnutrition	< 80% to ≥ 70%	< -2 z-scores and ≥ -3 z-scores	No
Severe acute malnutrition	< 70%	< -3 z-scores	Yes/No

Stunting, also known as chronic malnutrition was defined using height-for-age index values and was classified as severe or moderate based on the cut-offs shown in Table 5. Main results are reported according to the WHO Growth Standards 2006. Results using the NCHS 1977 Growth Reference are reported in Annex 4.

Table 5: Definitions of stunting using height-for-age in children 6–59 months

Categories of stunting	Z-scores (WHO Growth Standards 2006 and NCHS Growth Reference 1977)
Stunting	<-2 z-scores
Moderate stunting	<-2 z-scores and >=-3 z-scores
Severe stunting	<-3 z-scores

Underweight was defined using the weight-for-age index values and was classified as severe or moderate based on the cut-offs shown in Table 6. Main results are reported according to the WHO Growth Standards 2006. Results using the NCHS 1977 Growth Reference are reported in Annex 4.

Table 6: Definitions of underweight using weight-for-age in children 6–59 months

Categories of underweight	Z-scores (WHO Growth Standards 2006 and NCHS Growth Reference 1977)
Underweight	<-2 z-scores
Moderate underweight	<-2 z-scores and >=-3 z-scores
Severe underweight	<-3 z-scores

Mid Upper Arm Circumference (MUAC) values for children aged 6-59 months were used to define malnutrition according to the cut-offs shown in Table 7. However, the official results are those based on the weight for height indicator.

Table 7: Classification of acute malnutrition based on MUAC in children 6-59 months (WHO)

Categories of Malnutrition	MUAC Reading
At risk of malnutrition	≥ 12.5 cm and <13.5 cm
Moderate malnutrition	≥ 11.5 cm and <12.5 cm
Severe malnutrition	< 11.5 cm

B. INFANT AND YOUNG CHILD FEEDING PRACTICES IN CHILDREN 0-24 MONTHS

Children born in the last 24 months

Continued breastfeeding at 1 year: Proportion of children 12–18 months who are breastfed and children 12–18 months of age who received breast milk during the previous day.

Children still breastfed at 24 months: Proportion of children born in the last 24 months who were still breastfeeding.

Introduction of solid, semi-solid or soft foods: Proportion of infants 6–12 months of age who received solid, semi-solid or soft foods during the previous day.

Continued breastfeeding at 2 years: Proportion of children 18–24 months of age who are breastfed during the previous day.

C. MALNUTRITION IN WOMEN OF REPRODUCTIVE AGE

Mid Upper Arm circumference (MUAC) in women was classified according to cut-offs, as per the recommendation of the Sphere Project's Handbook (2011), shown in Table 8.

Table 8: Classification of undernutrition based on MUAC in women of reproductive age (15 to 49 years)

Categories of Malnutrition	MUAC Reading
Global malnutrition	<23 cm
Moderate malnutrition	≥21 cm and <23 cm
Severe malnutrition	<21 cm

D. CHILDREN ANTHROPOMETRIC DATA

UNHCR Strategic Plan for Nutrition and Food Security (2008-2012) states that the target for the prevalence of global acute malnutrition (GAM) for children 6-59 months of age by camp, country and region should be < 5% and the target for the prevalence of severe acute malnutrition (SAM) should be <1%. Table 9 shows the classification of public health significance of the anthropometric results for children under-5 years of age according to WHO.

Table 9: Classification of public health significance for children under 5 years of age (WHO, 2000)

Prevalence %	Critical	Serious	Poor	Acceptable
Low weight-for-height	≥ 15	10-14	5-9	< 5
Low height-for-age	≥ 40	30-39	20-29	< 20
Low weight-for-age	≥ 30	20-29	10-19	< 10

6. TRAINING AND COORDINATION

The design of assessments was conceptualized by two nutrition consultants (Oumar Hamza, UNICEF Consultant and Mohamed Mansour, WFP consultant), with the technical support of the Nutrition Specialist in UNICEF MENA Regional Office (James Kingori). The assessments were coordinated by UNICEF nutrition consultant (Oumar Hamza) with support from UNICEF Jordan Office (Buthayna Al-Khatib, Health Officer), WFP Jordan Office (Shannon Patty, Nutritionist), WFP Regional Bureau (Michèle Doura, Nutritionist), UNICEF Regional Office (James Kingori and Mahendra Sheth) and Health & Emergencies section of UNICEF HQ (Cecilia Sanchez Bodas, Health Specialist).

The assessments were undertaken by 11 teams (Six teams for Syrian refugees in host communities Survey and five teams for Syrian refugees in Za'atri camp). Each team was composed of three members who speak Arabic; a team leader and two measurers. The supervision of data collection was conducted by the UNICEF Nutrition Consultant in addition to two supervisors (one from MOH and one from DOS) with collaboration of the nutritionists and health officers from the agencies (UNICEF and WFP) mentioned above.

The teams were supervised on a daily basis. The team leader was the interviewer for all parts of the questionnaire while the rest of the team members took the anthropometric measurements and assisted with sampling, age determination and reading of health/vaccination cards or birth certificates. The team leaders were from MOH, UNHCR, WHO, WFP, Save of the children Jordan and IRD. The rest of team members were drawn from MOH, UNICEF, UNFPA, WFP, The Save of Children, InterSOS and IRD.

The training lasted three or four days followed by one day to finalize the standardization test (and to organize the different teams) and one day pre-test. Training was conducted to all survey team members (see annex 5): enumerators, team leaders and field supervisors.

For the assessment of the refugees in the host communities, the training took place from September 26th to October 2nd and the pre-test was on October 3rd. For Za'atri camp Survey, the training took place from October 15th-18th and the pre-test was organized on November 3rd. The training focused on: the purpose and objectives of the survey; roles and responsibilities of each team member, familiarization with the different parts of the questionnaire by reviewing the purpose for each question; interviewing skills and recording of data; interpretation of calendar of events and age determination; how to take anthropometric measurements and common errors; and a practical session on anthropometric measurements. The practical session on anthropometric measurements involved volunteer children for practice as well as a standardization test.

7. PILOT TESTING AND REVISION OF THE SURVEY TOOLS

For the pre-test, each team selected five households, administered the questionnaire and took the anthropometric measurements. Before the beginning of the assessment, tools and methods were pre-tested and revised. A half day pre-test exercise was conducted, that included all the process and data collection methods. This helped to ensure that the team leaders understood the questions and were able to follow the interview/data collection procedures as outlined in the survey protocol and during training. It also helped in having feedback about to what extent interviewees understood questions.

All team members met during the second half of the day (afternoon) to review and discuss the findings of the pre-test, logistic issues, questionnaires, difficulties based on the pre-test survey, etc. Based on this pre-test and discussions, the data collection tools and forms were reviewed and finalized.

8. DATA COLLECTION

Prior to the start of the data collection phase, a sensitization session was done targeting the community leaders gathered from the locations in the sampling frame. It included a presentation of the assessment objectives and the mission of the whole survey team, roles expected from leaders, as well as clarification about possible expectations among communities.

Data collection lasted 13 days from 11th to 24th October 2012 for Syrian refugees in host communities while for Syrian refugees in Za'atri camp; the data collection took 10 days from November 4th to November 13th 2012. Each assessment team explained the purpose of the survey and issues of confidentiality and obtained verbal consent before proceeding with the assessment in the selected households (UNHCR Families registered). The informed consent form is shown in Annex 6.

9. FIELD WORK AND QUALITY CONTROL

Due to cultural and social considerations, the women anthropometric measurements were done by female members.

Throughout the field work, rigorous quality control measures were adopted. Anthropometric equipment (scales, height boards and MUAC tapes) was calibrated and checked before distributing them to the different teams and the calibration & accuracy verification was repeated every day before starting the field work.

Field questionnaires were reviewed on site by team leaders and checked by field supervisors including data accuracy and completeness. For any case of severe acute malnutrition, a referral form was filled with the child's details and the team leader explained to and advised the parent or the caregiver to bring the child to health center for further nutrition support and guidance.

Team leaders checked the questionnaires before leaving household, identified errors and made sure data collected was correct before signing off. At the end of the day and/or before leaving the cluster, the team checked all the questionnaires, for any identifiable errors and made sure data collected was correct. In field or at the end of the day (before data anthropometric data entry), supervisors re-checked again the questionnaires. After all verification, team leaders prepared the questionnaires and brought them for the daily anthropometric data entry.

The coordinator (Nutrition consultant) with the support of some members of supervision/coordination team verified all the questionnaires filled by the team in each cluster on the same day. The anthropometric data entry using ENA software was organized and checked for any suspected data (outliers) every night through the appropriate sections of the plausibility report (an important data quality verification property of the ENA software). The nutrition consultant reviewed the anthropometric data quality report (plausibility report) and gave the feedback to the teams before the next day began, during the daily early morning meeting (planning of the day).

Plausibility reports and feed-back of the consultant determined on whether the team needs to return to the previous day's cluster to correct the error identified, before embarking on another cluster. In case of incorrect anthropometric measurements or "flagged" results the field supervisor accompanied the team back to the cluster to take fresh measurement of the child.

10. DATA ANALYSIS

All anthropometric data and other complimentary data entry for Za'atri camp assessment was done at UNICEF Office. Data entry for children anthropometric data was done, using ENA for SMART software (delta version, November 8th 2011), by the coordinator of the assessments (Consultant) supported by one surveyor from UNFPA and by one Nutrition specialist from WFP RB. Regarding complimentary data for Syrian refugees in host communities' assessment, the data entry was undertaken by a team of 8 clerks from Department of Statistics, Jordan.

All questionnaires were manually checked for completeness, consistency and range before data entry by the supervisors and coordination team. This check was also used to provide feedback to the teams to improve data collection as the survey progressed. All data files were cleaned before analysis. Analysis was performed using ENA for SMART and SPSS software. The SMART Plausibility Report was generated for each survey in order to check the quality of the anthropometric data and a summary of the key quality criteria is shown in Annex 7.

To ensure there were no data entry errors, after completion of the survey data entry, all entries were double checked one by one with the original questionnaire. For cleaning the anthropometric data, the flexible cleaning approach recommended in the UNHCR Standardized Nutrition Survey Guidelines (Version 1.2, June 2011) in accordance with SMART recommendations was used. For the weight-for-height index, a cleaning window of +/- 4 SD was used instead of the default +/- 3 SD value contained in the SMART for ENA software.

During the process of data analysis, the UNICEF Nutrition consultant and Survey coordinator was supported by a team from WFP Office, particularly for food security indicators (FCS and Copping Strategy index). This team was constituted by: Michèle Doura, WFP Nutritionist and Regional Programme Officer; Asif Niazi, Regional VAM advisor; Briony Stevens, WFP Nutritionist; Gehan Al-Hossiny, VAM officer and Shaimaa Amin, GIS officer (mapping) and Shannon Patty, Nutritionist from WFP Jordan Office.

V. RESULTS - INDIVIDUAL LEVELS

1. RESPONSE RATE

Table 10 shows the different response rates and the total number of Households (families) and children under 5 who were covered during the Surveys. For Syrian refugees in host communities, 56 clusters were sampled for all indicators while for Syrian refugees in Za'atri camp, 32 clusters were sampled.

Table 10: Target sample size and number covered during the survey

Target groups		Target Sample Size	Families/Children covered during the Survey	Response Rate (% of the target)
Syrian refugees in host communities Survey	**Number of households (Families)**	780	757	**97.1%**
	Number of Children 6-59 months	353	650	**184.1%**
Syrian refugees in Za'atri camp Survey	**Number of households (Families)**	480	470	**97.9%**
	Number of Children 6-59 months	353	414	**117.3%**

For Syrian refugees in host communities and for those in Za'atri camp, the nutrition assessment covered more than 95% of the target of numbers of households.

Regarding the number of children under 5 years of age, the average household size and consequently the number children had been under-estimated. The number of children identified after visiting the families was much higher than anticipated; hence the response rate is more than 180% for Syrian refugees in host communities' assessment.

2. DEMOGRAPHY

For Syrian refugees in host communities' families, the average household size was found to be 5.3 while for the Syrian refugees in Za'atri camp, the average household size was almost similar 5.1.

Female headed households were around 20% in the 2 samples with 19% of the sample from Syrian refugees in host communities' families and 22% for Syrian refugees in Za'atri camp being female headed. These results are lower than what UNHCR reports as percentage of households headed by women. However this may be due to women being registered as the head of family while men travel to and from Syria.

a) Period stayed in Jordan and period stayed in Za'atri camp

The figures below show that for Syrian refugees in host communities, more than 50% of families have been in Jordan for more than 6 months. However, one family for every five families in Za'atri camp (21%) has been in Za'atri camp for less than one month.

Figure 1: Period stayed in Jordan and Period – Host communities

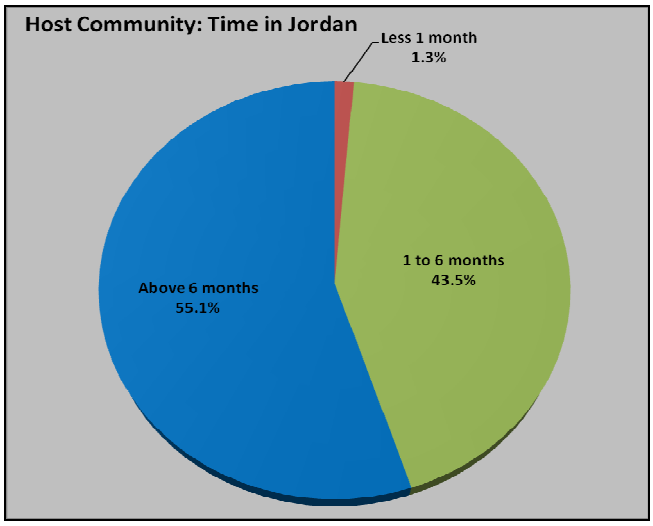
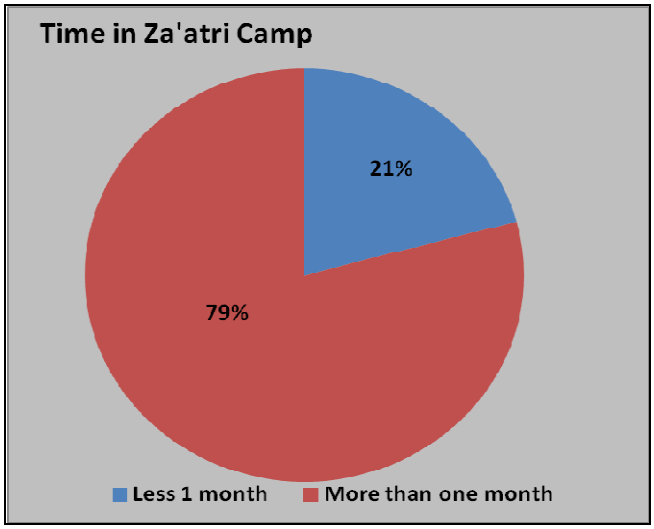


Figure 2: Period stayed in Za'atri camp



b) Sharing an accommodation

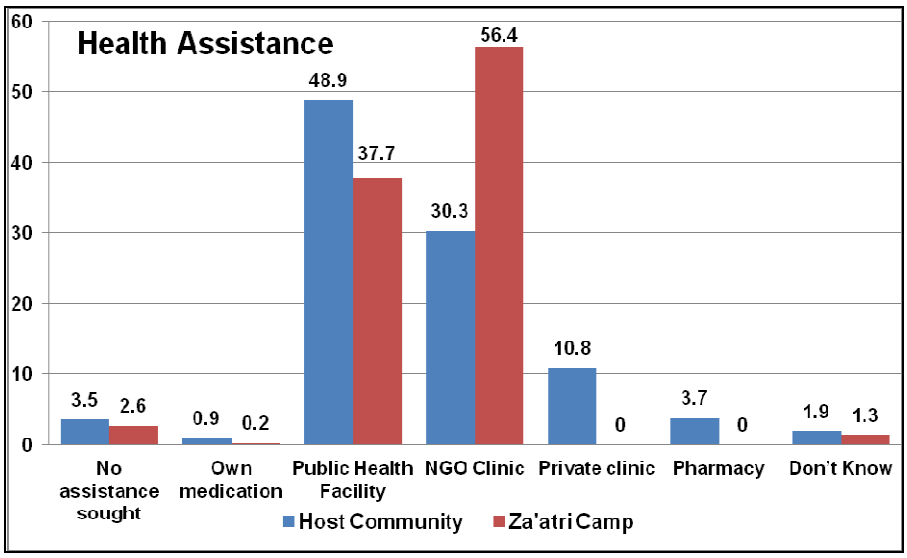
For Syrian refugees in host communities, nine percent (9.4%) of Syrian families are hosted by resident families. Forty two percent (41.7%) of Syrian families outside Za'atri camp shared accommodation with other Syrian families. Among the families sharing accommodation, 13.2% shared accommodation with one other Syrian family; 74.9% shared their accommodation with 2-3 other Syrian families and 11.9% shared accommodation with 4 or more other Syrian families.

3. HEALTH ASSISTANCE

The proportion of families which had access (or had known where to have health assistance) is very high in both settings. More than 75% (79.2%) of Syrian refugees in host communities have access to free health services (Public Health facilities – MOH or NGO Clinic) while more than 90% of families in Za'atri camp have access to the free health services.

For the Za'atri camp, at the time of the survey there were no public health facilities managed by MOH in the camp. JHAS (NGO) in partnership with UNHCR operated a clinic which was associated with the Ministry of Health by the beneficiaries.

Figure 3: Access to the free Health Services



4. CHILDREN 6-59 MONTHS

A. ANTHROPOMETRIC RESULTS (BASED ON WHO GROWTH STANDARDS 2006)

Distribution of the sample per ages and per sex

The age distribution of the assessed children is presented on tables 11-1 & 11-2 and figures 4-1 & 4-2. For both assessments (refugees in host communities and Za'atri camp), the overall sex ratio was around 1.0 (sex ratio should be between 0.8 - 1.2), which confirms that both sex were equally distributed and well represented in the sample. For both surveys, the sex ratio indicates that there was no bias in the sample in preference of either girls or boys.

Table 11-1: Distribution of age and sex of the Syrian refugees in host community sample

	Boys		Girls		Total		Ratio
AGE (mo)	no.	%	no.	%	no.	%	Boy:girl
6-11	29	47.5	32	52.5	61	9.4	**0.9**
12-23	89	55.3	72	44.7	161	24.8	**1.2**
24-35	66	45.8	78	54.2	144	22.2	**0.8**
36-47	77	53.1	68	46.9	145	22.3	**1.1**
48-59	65	46.8	74	53.2	139	21.4	**0.9**
Total	**326**	**50.2**	**324**	**49.8**	**650**	**100.0**	**1.0**

Table 11-2: Distribution of age and sex of the Syrian refugees in Za'atri camp sample

	Boys		Girls		Total		Ratio
AGE (mo)	no.	%	no.	%	no.	%	Boy:girl
6-11	19	40.4	28	59.6	47	11.4	**0.7**
12-23	49	57.0	37	43.0	86	20.8	**1.3**
24-35	49	46.2	57	53.8	106	25.6	**0.9**
36-47	51	56.0	40	44.0	91	22.0	**1.3**
48-59	45	53.6	39	46.4	84	20.3	**1.2**
Total	**213**	**51.4**	**201**	**48.6**	**414**	**100.0**	**1.1**

Figure 4-1: Distribution of age and sex of the Syrian refugees in host community sample

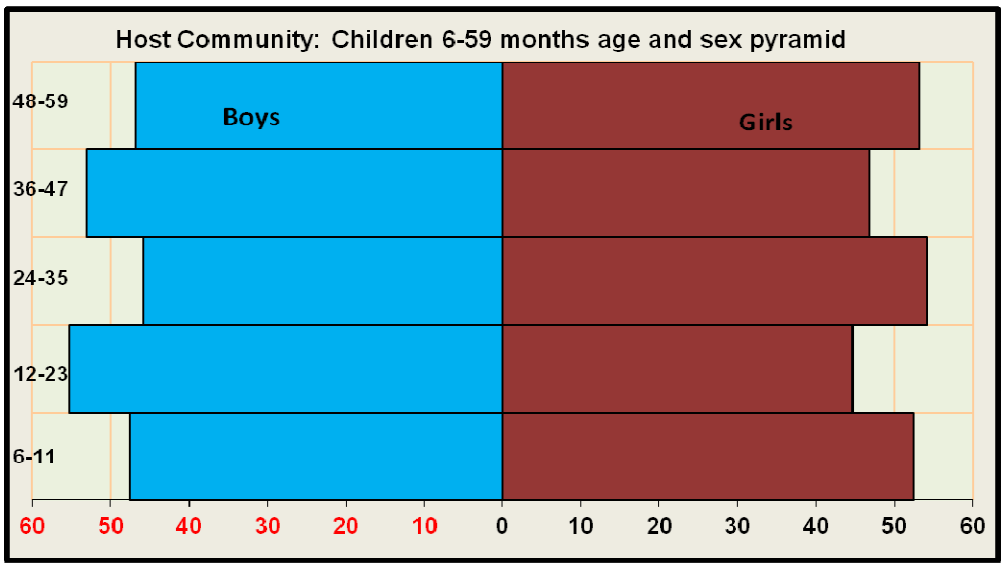
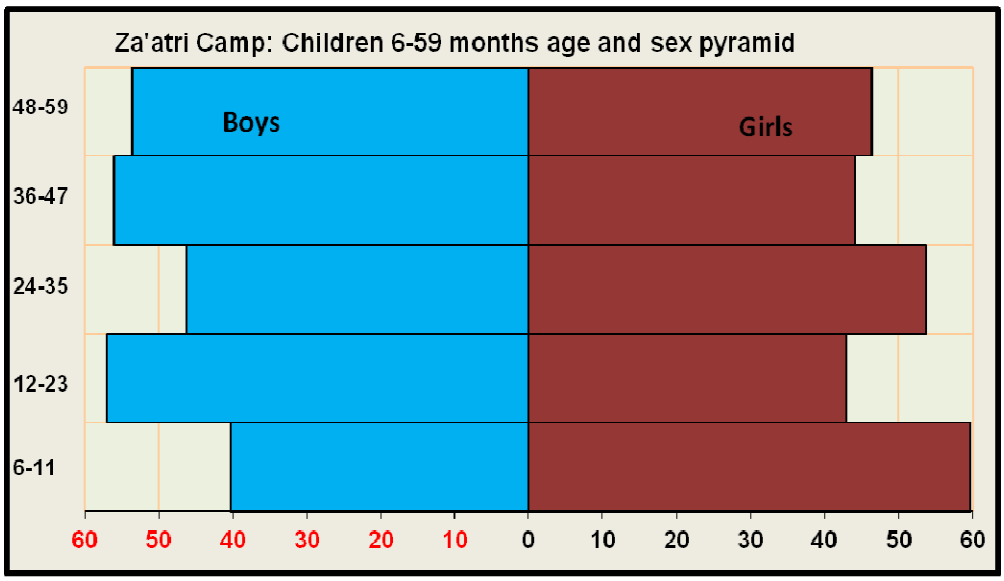


Figure 4-2: Distribution of age and sex of the Syrian refugees in Za'atri camp sample



Prevalence of Acute Malnutrition by sex

The results from tables 12-1 and 12-2 show the overall global acute malnutrition rates are 5.1% and 5.8% for the Syrian refugees in the host communities and those in Za'atri Refugees camp, respectively. The tables also show variations between boys and girls in the prevalence of acute malnutrition, in both surveys. However, the difference between boys and girls in the prevalence of acute malnutrition is not statistically significant.

Table 12-1: Prevalence of Acute Malnutrition based on weight-for-height z-scores (and/or oedema) and by sex, among Syrian refugees in the host communities in Jordan

Prevalence of	All n = 650	Boys n = 326	Girls n = 324
Global Acute Malnutrition (GAM) **(<-2 z-score and/or oedema)**	(33) 5.1 % (3.2 - 8.0 95% C.I.)	(22) 6.7 % (4.1 - 11.0 95% C.I.)	(11) 3.4 % (1.7 - 6.6 95% C.I.)
Moderate Acute Malnutrition (MAM) **(<-2 z-score and >=-3 z-score, no oedema)**	(26) 4.0 % (2.3 - 7.0 95% C.I.)	(17) 5.2 % (2.8 - 9.6 95% C.I.)	(9) 2.8 % (1.3 - 5.9 95% C.I.)
Severe Acute Malnutrition (SAM) **(<-3 z-score and/or oedema)**	(7) 1.1 % (0.5 - 2.2 95% C.I.)	(5) 1.5 % (0.6 - 3.7 95% C.I.)	(2) 0.6 % (0.1 - 2.5 95% C.I.)

The prevalence of oedema is 0.0 %

Table 12-2: Prevalence of Acute Malnutrition based on weight-for-height z-scores (and/or oedema) and by sex, among Syrian refugees in Za'atri camp in Jordan

Prevalence of	All n = 414	Boys n = 213	Girls n = 201
Global Acute Malnutrition (GAM) **(<-2 z-score and/or oedema)**	(24) 5.8 % (3.8 - 8.6 95% C.I.)	(16) 7.5 % (4.5 - 12.4 95% C.I.)	(8) 4.0 % (2.0 - 7.7 95% C.I.)
Moderate Acute Malnutrition (MAM) **(<-2 z-score and >=-3 z-score, no oedema)**	(20) 4.8 % (3.1 - 7.5 95% C.I.)	(14) 6.6 % (3.9 - 10.8 95% C.I.)	(6) 3.0 % (1.3 - 6.9 95% C.I.)
Severe Acute Malnutrition (SAM) **(<-3 z-score and/or oedema)**	(4) 1.0 % (0.4 - 2.5 95% C.I.)	(2) 0.9 % (0.2 - 3.7 95% C.I.)	(2) 1.0 % (0.2 - 3.9 95% C.I.)

The prevalence of oedema is 0.0 %

Anthropometric results based on NCHS 1977 Growth Reference are shown in Annex 4.

Prevalence of Acute Malnutrition (Wasting) by age

The results from table 13-1 and figure 5-1 showed that among Syrian refugees in host communities, the youngest (6-11 months) and the oldest children (48-59 months) tend to be the most affected by wasting. For severe wasting, the children of age group (36-47 months) are the most affected.

Table 13-1: Prevalence of acute malnutrition by age among Syrian refugees in host communities

		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.**	**%**
6-11	61	0	0.0	3	4.9	58	95.1	0	0.0
12-23	161	0	0.0	6	3.7	155	96.3	0	0.0
24-35	144	1	0.7	2	1.4	141	97.9	0	0.0
36-47	145	4	2.8	6	4.1	135	93.1	0	0.0
48-59	139	2	1.4	9	6.5	128	92.1	0	0.0
Total	**650**	**7**	**1.1**	**26**	**4.0**	**617**	**94.9**	**0**	**0.0**

Figure 5-1: Prevalence of acute malnutrition by age among Syrian Refugees in host communities

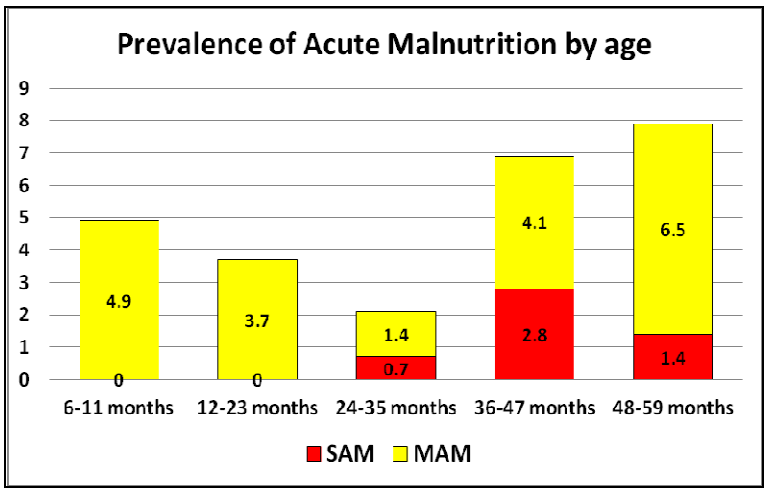


Table 13-2: Prevalence of acute malnutrition by age – Za'atri camp

		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.**	**%**
6-11	47	0	0.0	2	4.3	45	95.7	0	0.0
12-23	86	0	0.0	6	7.0	80	93.0	0	0.0
24-35	106	1	0.9	7	6.6	98	92.5	0	0.0
36-47	91	1	1.1	2	2.2	88	96.7	0	0.0
48-59	84	2	2.4	3	3.6	79	94.0	0	0.0
Total	**414**	**4**	**1.0**	**20**	**4.8**	**390**	**94.2**	**0**	**0.0**

In Za'atri camp, the situation of acute malnutrition by age groups is different. The results from table 13-2 and figure 5-2 showed that the age groups above 48 months are more affected by severe wasting.

Figure 5-2: Prevalence of acute malnutrition by age – Za'atri camp

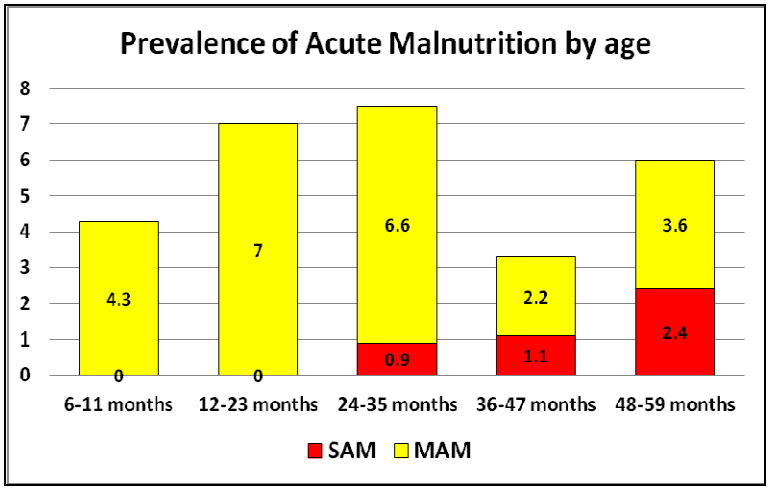


Table 14: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	SYRIAN REFUGGEES IN			
	HOST COMMUNITIES		ZA'ATRI CAMP	
	<-3 z-score	>=-3 z-score	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 7 (1.1 %)	Not severely malnourished No. 643 (98.9 %)	Marasmic No. 4 (1.0 %)	Not severely malnourished No. 410 (99.0 %)

Prevalence of Risk of Acute Malnutrition

As the situation of acute malnutrition can change quickly and to help the monitoring of children with acute malnutrition, the proportion of children "At Risk of Acute Malnutrition" category (WHZ_WHO scores between -1 SD and -2 SD) was analyzed.

The analysis show that among Syrian refugees in host communities, 4.6% (3.0% - 6.3% CI 95%) of children aged 6-59 months were at risk of acute malnutrition while among Syrian refugees in Za'atri camp in Jordan 5.6% (3.4% - 7.8% CI 95%) of children aged 6-59 months were at risk of acute malnutrition. Moreover, the findings showed that the children who had been in Za'atri camp for one month or more are at higher risk of malnutrition than the recent arrivals (7.6% vs 3.8%).

Prevalence of Chronic Malnutrition (Stunting) by sex

In the current context gathering data on the exact ages of children can be difficult as many children are not registered and parents or caregivers do not remember precise dates. As explained in the methodology section, teams made reference to the "Events Calendar" to estimate and verify age in months. Even though great lengths were taken to ensure quality age data, the data must be understood in light of its limitations. The assessment found low prevalence of chronic malnutrition in both surveys (tables 15-1 and 15-2), based on the 2006 WHO child growth standards. The prevalence of stunting found, in both surveys, was lower than previous available data (SOWC 2012 and FHS 2009).

Table 15-1: Prevalence of stunting based on height-for-age z-scores and by sex among Syrian Refugees in host communities

	All n = 650	**Boys** n = 326	**Girls** n = 324
Prevalence of stunting (<-2 z-score)	(53) 8.2 % (6.1 - 10.9 95% C.I.)	(33) 10.1 % (7.2 - 14.1 95% C.I.)	(20) 6.2 % (4.1 - 9.3 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(44) 6.8 % (4.9 - 9.3 95% C.I.)	(26) 8.0 % (5.3 - 11.8 95% C.I.)	(18) 5.6 % (3.6 - 8.5 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(9) 1.4 % (0.7 - 2.8 95% C.I.)	(7) 2.1 % (1.0 - 4.4 95% C.I.)	(2) 0.6 % (0.2 - 2.4 95% C.I.)

Table 15-2: Prevalence of stunting based on height-for-age z-scores and by sex – Za'atri camp

	All n = 414	**Boys** n = 213	**Girls** n = 201
Prevalence of stunting (<-2 z-score)	(66) 15.9 % (12.6 - 20.0 95% C.I.)	(40) 18.8 % (13.6 - 25.3 95% C.I.)	(26) 12.9 % (9.0 - 18.3 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(49) 11.8 % (8.8 - 15.7 95% C.I.)	(29) 13.6 % (9.3 - 19.5 95% C.I.)	(20) 10.0 % (6.6 - 14.7 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(17) 4.1 % (2.6 - 6.4 95% C.I.)	(11) 5.2 % (3.1 - 8.5 95% C.I.)	(6) 3.0 % (1.2 - 7.3 95% C.I.)

Tables 15-1 & 15-2 show that the total prevalence of Stunting, among Syrian refugees in Za'atri camp was almost the double of the prevalence of Stunting in Syrian refugees living in Jordan host communities (15.9% vs 8.2%).

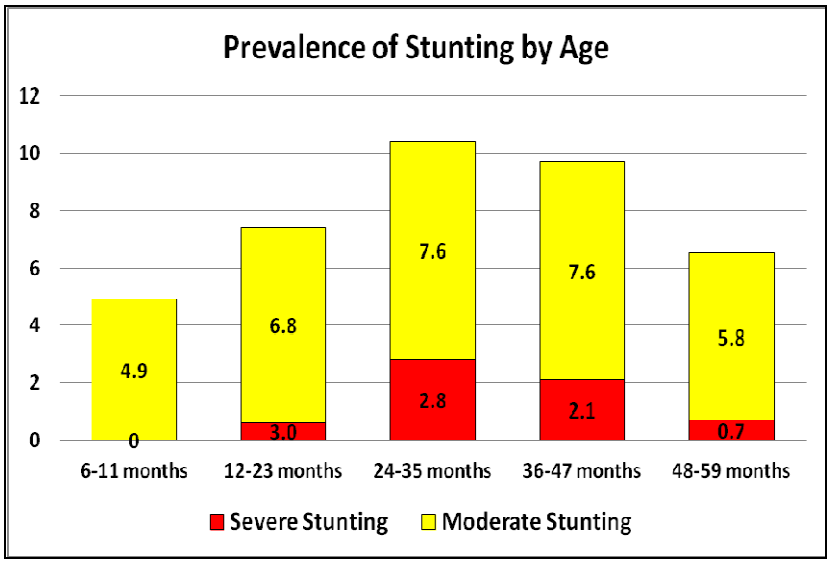
Prevalence of Chronic Malnutrition (Stunting) by age

For Syrian refugees in host communities, children from 24-35 months are more affected by chronic malnutrition

Table 16-1: Prevalence of stunting by age based on height-for-age z-scores among Syrian Refugees in host communities

		Severe stunting (<-3 z-score)		**Moderate stunting (>= -3 and <-2 z-score)**		**Normal (> = -2 z score)**	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	61	0	0.0	3	4.9	58	95.1
12-23	161	1	0.6	11	6.8	149	92.5
24-35	144	4	2.8	11	7.6	129	89.6
36-47	145	3	2.1	11	7.6	131	90.3
48-59	139	1	0.7	8	5.8	130	93.5
Total	**650**	**9**	**1.4**	**44**	**6.8**	**597**	**91.8**

Figure 6-1: Prevalence of stunting by age based on height-for-age z-scores among Syrian Refugees in host communities

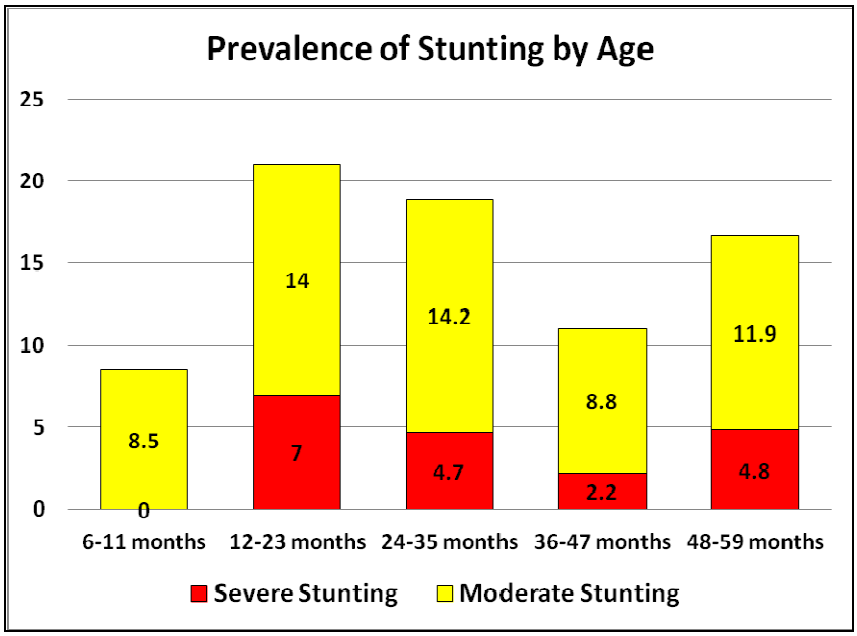


However, in Za'atri camp, the situation of chronic malnutrition is different. The prevalence is very high among children between the ages of 12 and 23 months.

Table 16-2: Prevalence of stunting by age based on height-for-age z-scores – Za'atri camp

		Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	47	0	0.0	4	8.5	43	91.5
12-23	86	6	7.0	12	14.0	68	79.1
24-35	106	5	4.7	15	14.2	86	81.1
36-47	91	2	2.2	8	8.8	81	89.0
48-59	84	4	4.8	10	11.9	70	83.3
Total	**414**	**17**	**4.1**	**49**	**11.8**	**348**	**84.1**

Figure 6-2: Prevalence of stunting by age based on height-for-age z-scores – Za'atri camp



Prevalence of Underweight by Sex

The prevalence of underweight by sex, found in the two assessments, is given in tables 17-1 & 17-2. The assessment found very low prevalence of underweight in both study groups (tables 17-1 and 17-2), based on the 2006 WHO classification.

Table 17-1: Prevalence of underweight based on weight-for-age z-scores and by sex among Syrian Refugees in host communities

	All n = 650	**Boys** n = 326	**Girls** n = 324
Prevalence of underweight (<-2 z-score)	(13) 2.0 % (1.0 - 4.2 95% C.I.)	(6) 1.8 % (0.6 - 5.6 95% C.I.)	(7) 2.2 % (1.0 - 4.4 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(13) 2.0 % (1.0 - 4.2 95% C.I.)	(6) 1.8 % (0.6 - 5.6 95% C.I.)	(7) 2.2 % (1.0 - 4.4 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)

Table 17-2: Prevalence of underweight based on weight-for-age z-scores and by sex among Syrian Refugees in Za'atri camp

	All n = 414	**Boys** n = 213	**Girls** n = 201
Prevalence of underweight (<-2 z-score)	(26) 6.3 % (4.5 - 8.7 95% C.I.)	(16) 7.5 % (4.6 - 11.9 95% C.I.)	(10) 5.0 % (2.7 - 8.9 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(24) 5.8 % (4.1 - 8.2 95% C.I.)	(15) 7.0 % (4.3 - 11.4 95% C.I.)	(9) 4.5 % (2.3 - 8.5 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(2) 0.5 % (0.1 - 2.0 95% C.I.)	(1) 0.5 % (0.1 - 3.7 95% C.I.)	(1) 0.5 % (0.1 - 3.6 95% C.I.)

The prevalence of underweight among children 6-59 months in the two assessments was lower than previous available data (FHS 2009). In the two surveys, the prevalence is under 10% and the situation is public healthy acceptable (WHO classification). Considering the suspected inaccuracies associated with dates of births estimation in the age documentation among children 6-59 months, the event calendar was used by the teams to ascertain age.

The findings of the two assessments (tables 17-1 & 17-2) show that the total prevalence of underweight, among Syrian refugees in Za'atri camp, is 3 times higher than of the prevalence of underweight in Syrian refugees living in Jordan host communities (6.3% vs 2.0%).

Quality of Children anthropometric measurements

Tables 18-1 & 18-2 give the mean z-scores, design effect, and excluded subjects for both surveys.

Table 18-1: Mean z-scores, Design Effects and excluded subjects – Syrian Refugees in host communities

Indicators	**n**	**Mean z-scores ± SD**	**Design Effect (z-score < -2)**	**z-scores not available***	**z-scores out of range**	**SD of measurements**	**% of values flagged**
Weight-for-Height	650	0.20±1.05	1.86	0	0	1.05	1.7%
Weight-for-Age	650	-0.09±0.93	1.81	0	0	0.93	0.3%
Height-for-Age	650	-0.44±1.16	1.24	0	0	1.16	1.1%

* Contains for WHZ and WAZ the children with edema.

Table 18-2: Mean z-scores, Design Effects and excluded subjects – Syrian Refugees in Za'atri camp

Indicators	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range	SD of measurements	% of values flagged
Weight-for-Height	414	0.21±1.07	1.01	0	0	1.07	1.0%
Weight-for-Age	414	-0.31±1.00	1.00	0	0	1.00	0.5%
Height-for-Age	414	-0.81±1.26	1.02	0	0	1.26	1.9%

* Contains for WHZ and WAZ the children with edema.

The other indicators of quality of children anthropometric data were also very good. The percentage of values flagged or abnormal values, for the 3 children anthropometric index, was under 5% (thus falling within the recommended under 5%) and the SD of the 3 anthropometric index was also within the acceptable range (SD should be between 0.8 - 1.2).

B. CHILD MORBIDITY

The prevalence of reported diarrhea, cough and fever during the two last weeks before data collection among Syrian refugees in host communities and Syrian refugees in Za'atri camp were as presented in the table below.

Table 19: Prevalence of reported diarrhea, cough and fever in the two weeks prior to the interview

Refugees in host communities		Refugees in Za'atri camp	
Diarrhea during the last 2 weeks	**22.4%**	Diarrhea during the last 2 weeks	**47.7%**
Experienced diarrhea 1-3 days	**68.9%**	Experienced diarrhea 1-3 days	**54.6%**
Cough during the last 2 weeks	**35.5%**	Cough during the last 2 weeks	**43.8%**
Fever during the last 2 weeks	**43.1%**	Fever during the last 2 weeks	**51.6%**

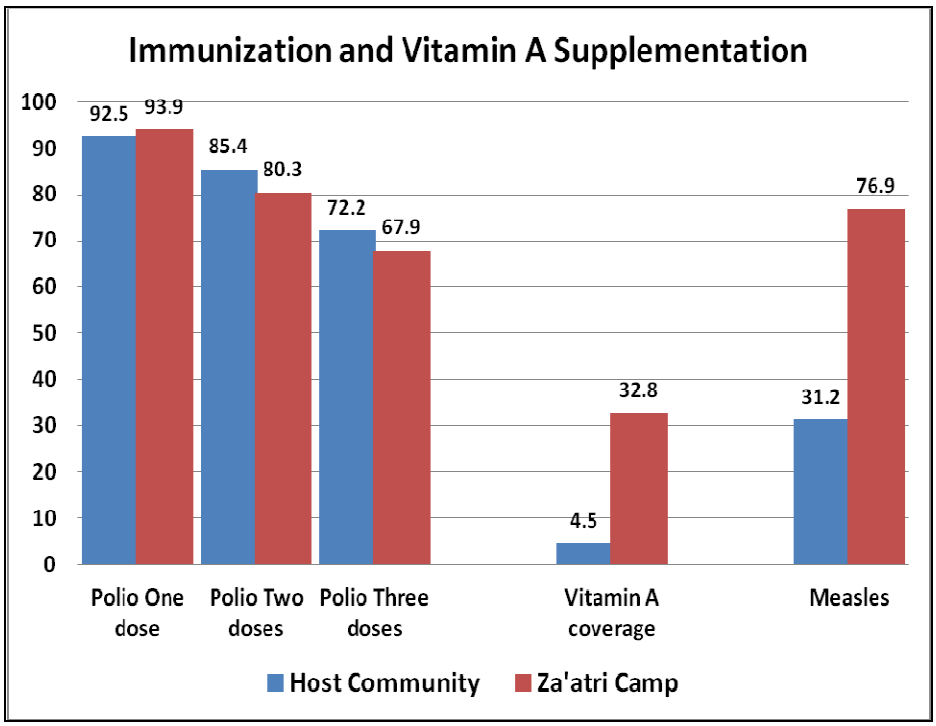
In Za'atri camp, mothers or caretakers of children under 5 years old have reported more cases of diarrhea, cough and fever during the two weeks before the interview. The linkage between morbidity and acute malnutrition is not statistically significant, maybe because of low rate (or low number) of children with acute malnutrition. The high morbidly indicates the high risk for malnutrition, should the situation persists.

C. VACCINATION AND VITAMIN A SUPPLEMENTATION

Figure 7 below shows that the coverage for Polio vaccine is relatively similar for Syrian refugees in host communities and Syrian refugees in Za'atri camp. However, the coverage of measles is higher in Za'atri camp.

Usually the coverage of vitamin A supplementation and Measles vaccination is the same. The results of the assessments however showed that the coverage of Vitamin A supplementation is very low in comparison with the coverage of Measles. This difference could be explained by the fact that the surveyors were supposed to show samples of the vitamin A capsule to the mother or to the caregiver but they did not have them. In addition, the Za'atri nutrition data collection overlapped with Polio/ Vitamin A vaccination/ supplementation campaign which took place between 26th September and early December 2012.

Figure 7: Vaccination and Vitamin A supplementation coverage



D. INFANT AND YOUNG CHILD FEEDING

Children breastfed

The results of assessment show that 42.7% of children born in the last 24 months, among refugees in host communities, were still breastfed while this proportion is 49.6% among children born in the last 24 months living in Za'atri camp.

Figure 8: Duration of Breastfeeding

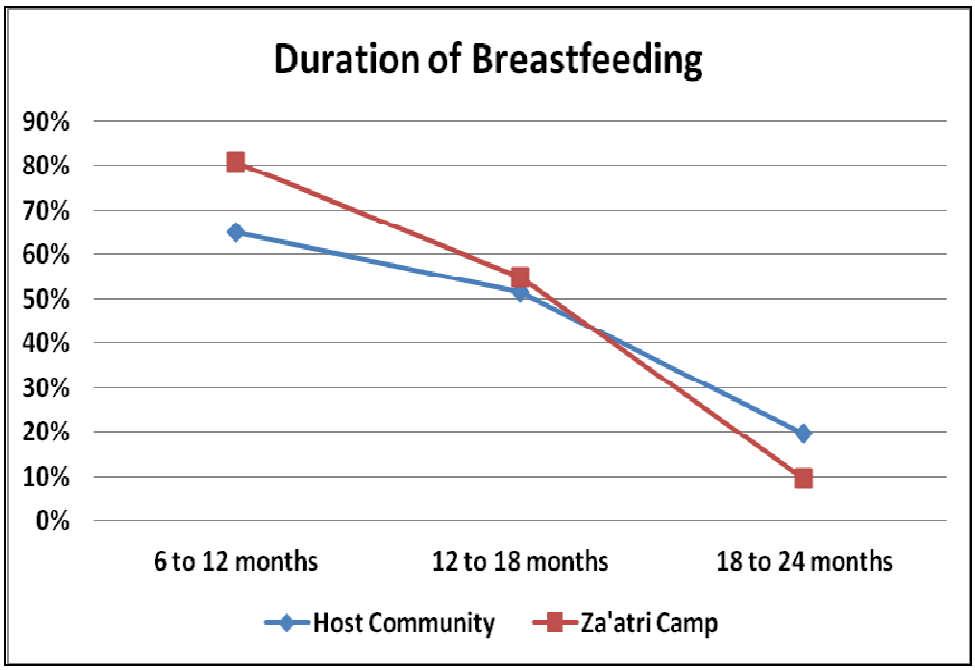


Figure 8 above shows that 80.9% of children 6-12 months are breastfed in Za'atri camp and 65.0% in host communities. 54.9% of children 12-18 months of age are breastfed in Za'atri camp and 51.4% in host communities. These proportions of children still breastfed drop to 9.5% for children 18-24 months of age, in Za'atri camp and at 19.8% among children 18-24 months of age in host communities.

Introduction of solid, semi-solid or soft foods:

The results of the assessments show that among Syrian refugees living in host communities, 26.7% and in Syrian refugees living in Za'atri camp, 36.8% of children 6-12 months of age did not receive any complimentary food.

For Syrian refugees in host communities, 38.3% of mothers or caregivers reported that they gave 1-2 times complimentary food to their children 6-12 months of age. This proportion decrease to 21.7% for children (6-12 months) received 3-4 times complimentary food and only 13.3% of children (6-12 months) received 5 times or more complimentary food during the previous day to the survey.

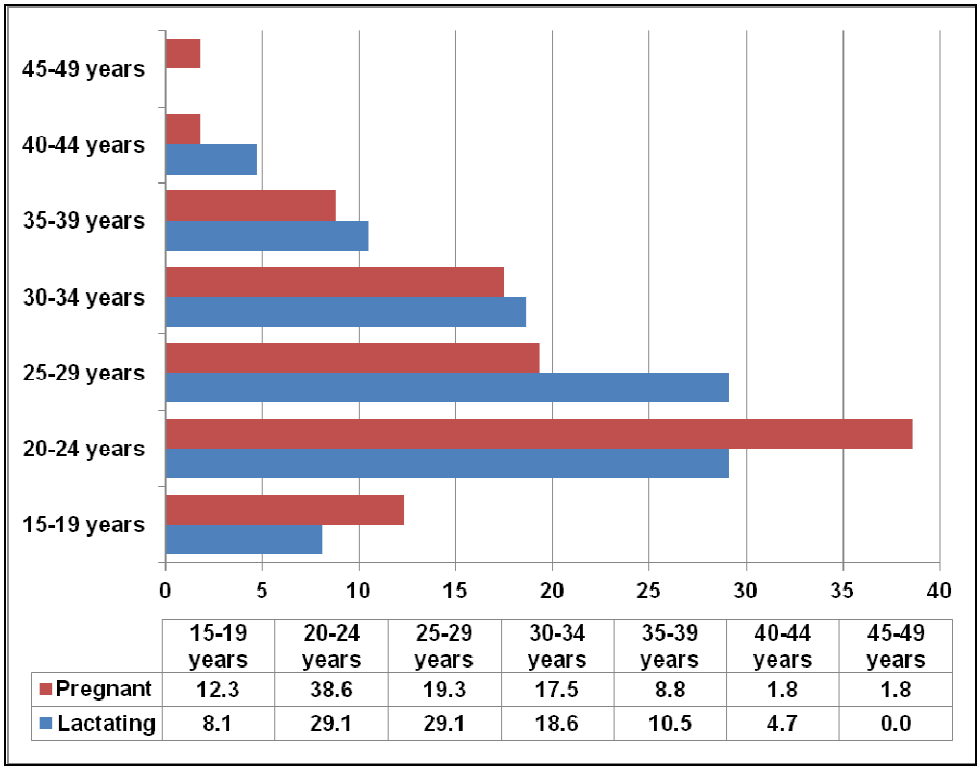
For Syrian refugees in Za'atri camp, 36.8% of children 6-12 months of age did not receive any complimentary food, 31.6% received 1-2 times, 23.7% received 3-4 times and only 7.9% received 5 times or more complimentary food during the previous day to the survey.

5. WOMEN 15-49 YEARS

A. PHYSIOLOGICAL STATUS

For Syrian refugees in host communities, the results of the assessment show that 11% of women 15-49 years old are pregnant and 12.8% are lactating. In Za'atri camp, these proportions are: 8.5% of women are pregnant and 16.9% are lactating.

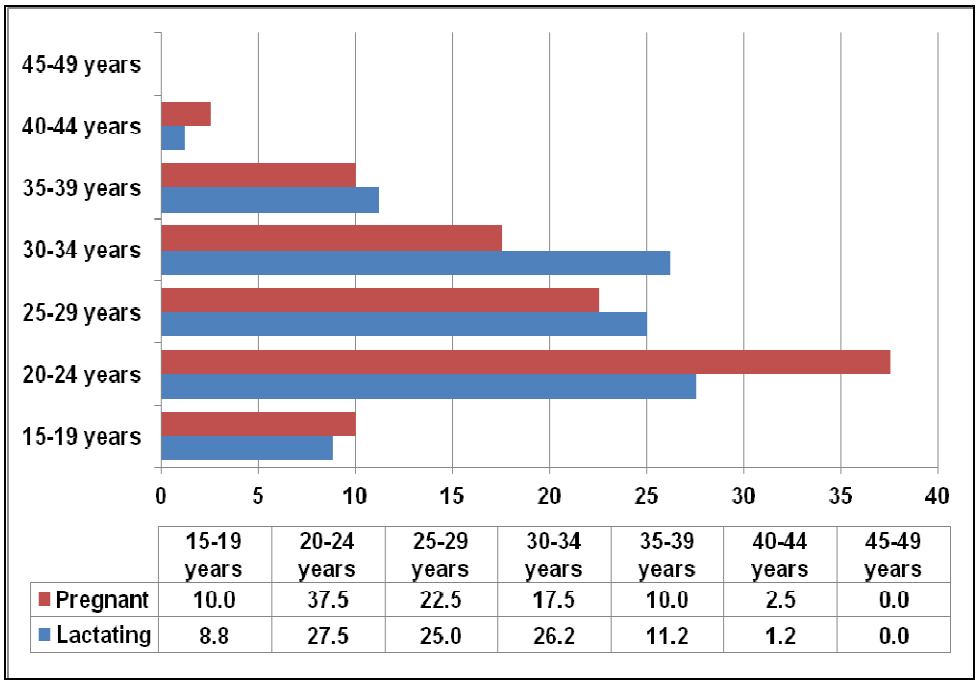
Figure 9-1: Physiological Status of Women 15-49 years – Syrian refugees in Syrian Refugees host communities



	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years
Pregnant	12.3	38.6	19.3	17.5	8.8	1.8	1.8
Lactating	8.1	29.1	29.1	18.6	10.5	4.7	0.0

The results of figures 9-1 & 9-2 show that, for Syrian refugees in host communities and Za'atri camp, more than 85% of lactating women and pregnant women are less than 35 years old.

Figure 9-2: Physiological Status of Women 15-49 years – Syrian refugees in Za'atri camp



	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years
Pregnant	10.0	37.5	22.5	17.5	10.0	2.5	0.0
Lactating	8.8	27.5	25.0	26.2	11.2	1.2	0.0

B. WOMEN MALNUTRITION

Mid Upper Arm circumference (MUAC) in women was classified according to Sphere Project's Handbook cut-offs of:

- ✓ Global malnutrition: MUAC < 23 cm
- ✓ Moderate malnutrition: MUAC ≥21 cm and <23 cm
- ✓ Severe malnutrition: MUAC < 21 cm

For Syrian refugees in host communities families, the survey results show that there are 6.3% (4.6 – 8.0 95% C.I.) malnourished (MUAC < 23 cm) women of 15-49 years of age and among 0.9% (0.2 – 1.6 95% C.I.) severely malnourished (MUAC < 21 cm). In Za'atri camp families, the survey results show that there are 6.1% (4.0 – 8.3 95% C.I.) malnourished (MUAC < 23 cm) women 15-49 years of age and among them 1.1% (0.1 – 2.0 95% C.I.) severely malnourished (MUAC < 21 cm).

Figure 10-1: Women Malnutrition by age groups – Syrian refugees in host communities

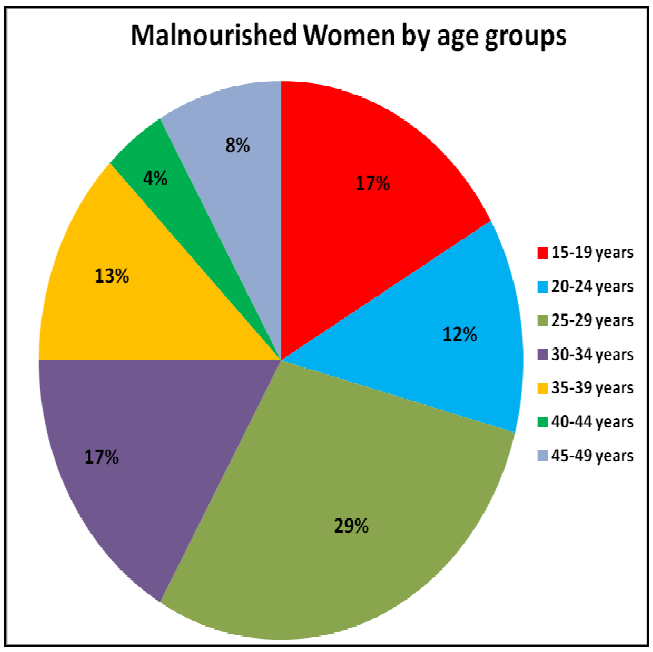
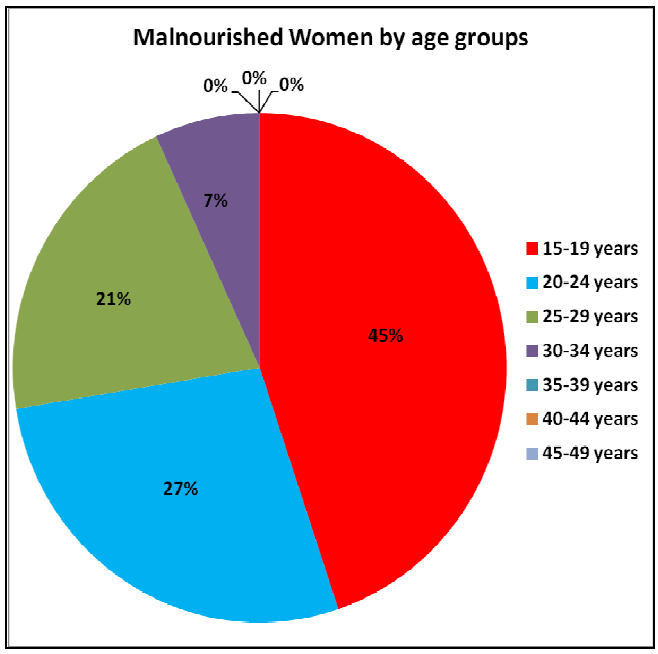


Figure 10-2: Women Malnutrition by age groups – Syrian refugees in Za'atri camp



The nutrition situation is comparable (6.3% vs 6.1%) among women 15-49 years in both assessments (host communities and Za'atri camp). However, the results from figures 10-1 & 10-2 show the young women (15-19 years old) are more affected in Za'atri camp (45% vs 17%).

VI. RESULTS - HOUSEHOLD LEVEL – WASH AND FOOD SECURITY

1. WASH

In both assessments (In host communities and in Za'atri camp), all households (families UNHCR registered) randomly selected were interviewed on water access, on presence of any main water problem and on whether they had "Soap and Hygiene products".

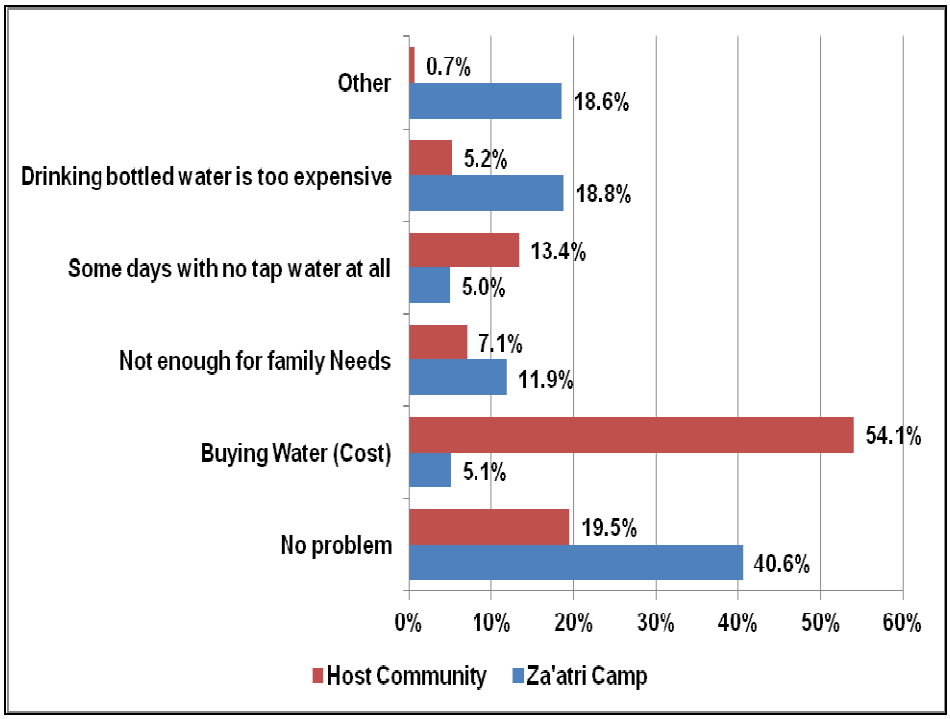
A. ACCESS TO SUFFICIENT WATER

For Syrian refugees in the host communities, 81% of Syrian families have access to sufficient water and for Syrian refugees in Za'atri camp, the proportion of Syrian families with access to sufficient water was 94%.

B. MAIN WATER PROBLEMS

Among Syrian refugees living in host communities, 54% of families reported as a main water problem "Buying Water" and in Za'atri camp, 41% of families did not have any water problem.

Figure 11: Main Water Problems



C. PRESENCE OF SOAP AND/OR HYGIENIC PRODUCTS

The findings from Syrian refugees in host communities showed 27.5% of families reported that they did not have "Soap and/or Hygienic products" and in Za'atri camp, 65% of families reported that they did not have "Soap and/or Hygienic products". This high proportion in Za'atri could be explained by the gap in the monthly distribution of soap and hygienic products that was done in October and November.

2. FOOD SECURITY

The Food Security part of the Nutrition Assessment, for Syrian refugees in host communities' survey and for Syrian refugees in Za'atri camp survey, is constituted of:

- ✓ Family food sources
- ✓ Number of meals per day
- ✓ Consumption of canned food
- ✓ Food consumption Scores (FCS)
- ✓ Food stocks
- ✓ Coping strategies

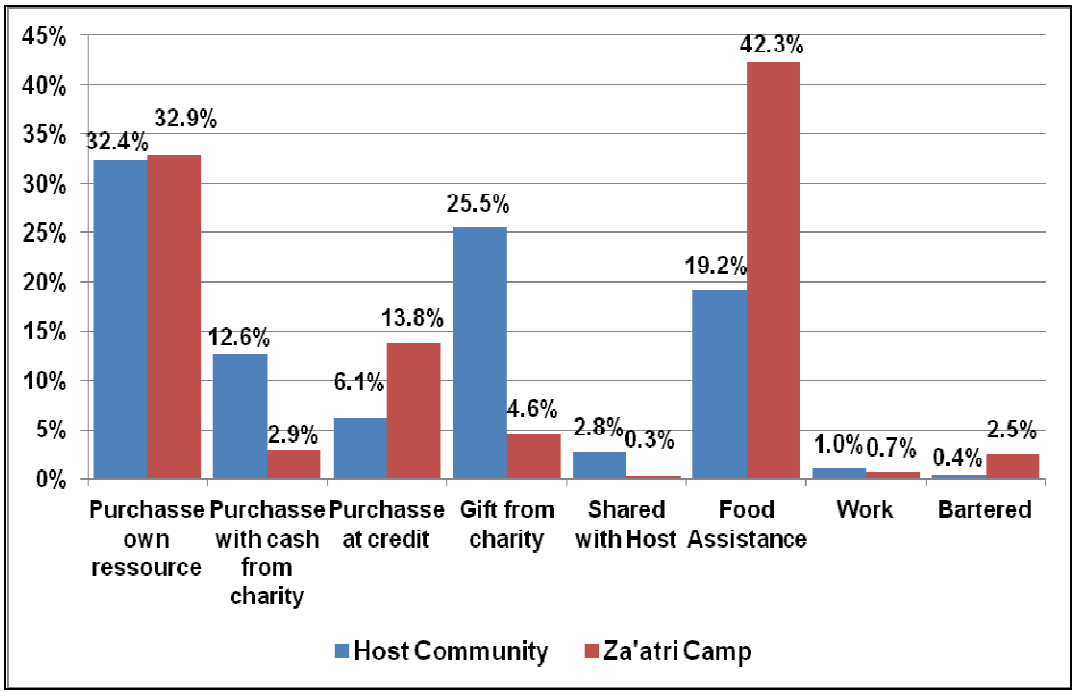
A. FOOD SOURCES

For Syrian refugees in host communities, families registered with UNHCR receive "Food Vouchers" and they use them to access food. In Za'atri camp, the Syrian families receive 2 weeks distribution of dry ration food.

For registered families, the food aid represents an important source for their food consumption. However, to complete their meals by some fresh food, the families buy some other food.

During the two assessments, the families were asked about the different food sources and the figure 12 shows the different sources of their food consumption.

Figure 12: Food Sources



For Syrian refugees in host communities and in Za'atri camp, the families buy more than 30% of their food to complete the food assistance. The food assistance constituted 42% of the food sources for Syrian refugees' families in Za'atri camp and 19.2% for Syrian refugees' families in host communities. However, Syrian refugees' families in host communities received 25.5% of their food from charity as gift.

B. NUMBER OF MEALS PER DAY

The results of 2 assessments (Figures 13-1 & 13-2) show that among the Syrian refugees living in host communities, 91% of families have 2 meals or more per day and in Syrian refugees living in Za'atri camp, the proportion of having 2 meals or more per day was more than 97%.

Figure 13-1: Number of Meals in Syrian refugees living in host communities

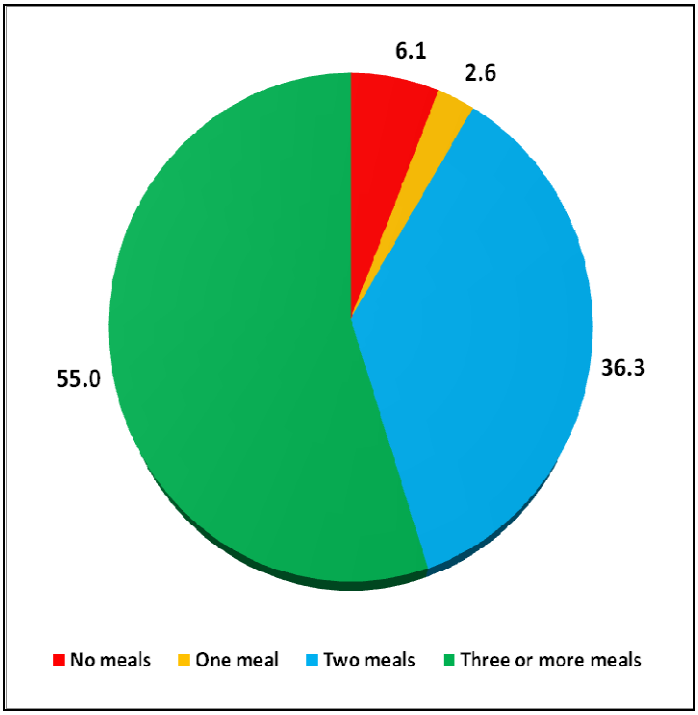
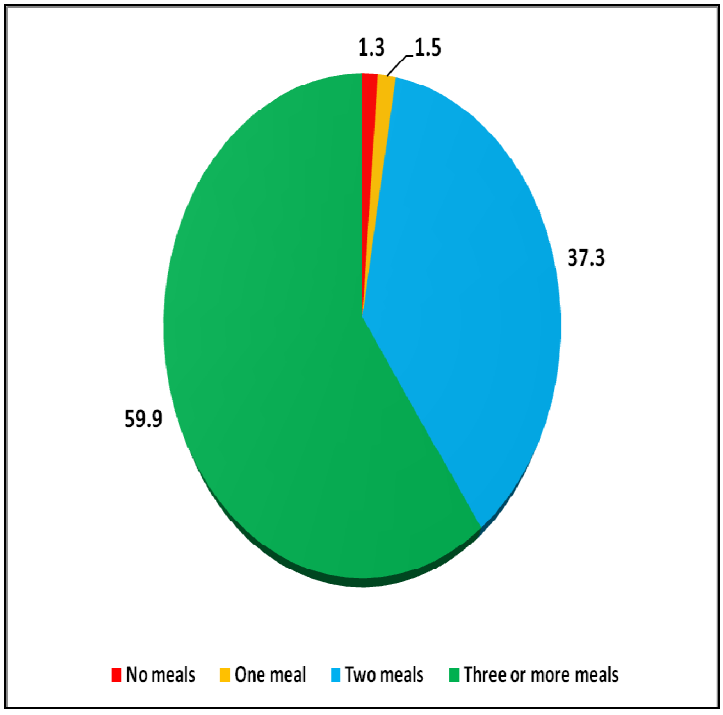


Figure 13-2: Number of Meals in Syrian refugees living in Za'atri camp



C. CONSUMPTION OF CANNED FOOD

Table 20 below shows that 75.5% of Syrian refugees families in host communities consume canned food and more than 90% of Syrian refugees' families in Za'atri camp consume this kind of food. Moreover, more than 50% of Syrian families in Jordan consume canned food 2 or 3 days per week and in Za'atri camp, 21% of families consume canned food almost every day.

Table 20: Canned Food Consumption

	Syrian refugees in Host communities	Syrian refugees in Za'atri camp
Canned Food Consumption	**75.5%**	**94.6%**
One day a week	19%	11.4%
2-3 days/week	58.2%	55.6%
4-5 days/week	10.7%	12.4%
6-7 days/week	12.2%	20.7%

D. FOOD CONSUMPTION SCORE

The Food Consumption Score (FCS) is a data collection method applied by WFP in rapid assessments to determine food diversity at household level. The process records the food groups consumed over a 7 day recall period. A standard weight based on the nutrition value of each food group has been derived (Table 21). Applied at the household level, the FCS is indicative of the household's dietary diversity.

Table 21: Food Consumption Score

Food Group	Food Items	Weight
Cereals and Tubers	Wheat, maize, pasta, rice	2
Pulses	Beans, peas, nuts	3
Vegetables	Vegetables and leaves	1
Fruits	Fruits and fruit products	1
Meat and Fish	Beef, goat, sheep, pig, poultry, eggs, fish	4
Milk	Dairy and dairy products	4
Sugar	Sugar, honey	0.5
Oil	Oil, butter	0.5

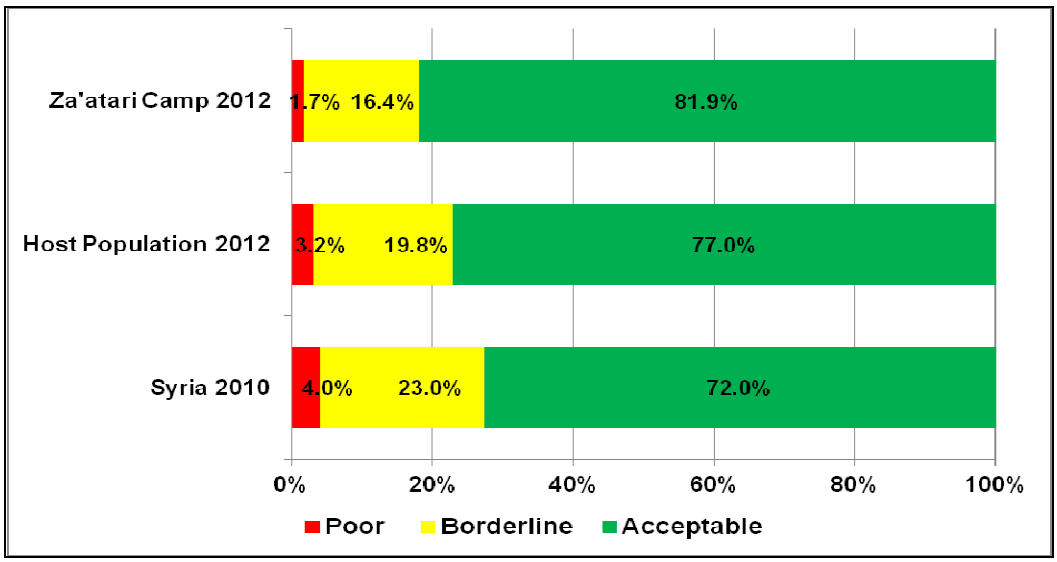
$FCS = a_{cereal}x_{cereal} + a_{pulse}x_{pulse} + a_{veg}x_{veg} + a_{fruit}x_{fruit} + a_{animal}x_{animal} + a_{milk}x_{milk} + a_{sugar}x_{sugar} + a_{oil}x_{oil}$
a_i = weight of food group
x_i = number of days per week

Household food consumption and food sources provide important measures of food security. In this case household heads and interviewee were asked to recall the kinds and frequency of food that were consumed during the previous seven (7) days. This entailed remembering how many days they consumed each of the different food groups and what the main sources of these foods were. Food Consumption Score (FCS) was calculated for each household using this. In the FCS calculation food groups are weighted according to their nutritional density. Based on empirical evidence in different regions, WFP has defined cut-off points for the calculated food consumption score that allow for differentiation of households into “poor”, “borderline” and “acceptable” food consumption categories.

For Syrian Households with food consumption score less than 21 are regarded to have “poor” food consumption, and this reflects the fact that they do not eat a balanced diet on a daily basis. Households with a food consumption score between 21.5 and 35 are considered to have “borderline” food consumption. Households with a food consumption score greater than 35 are considered to have “acceptable” food consumption.

In 2010, a Syrian EFSNA showed that FCS was poor (4%), borderline (23%) and acceptable (72%). To compare the findings of the 2 surveys (in host communities and in Za'atri camp), the FCS are better in Za'atri camp than in the host communities and then the Situation in Syria in 2010. This best situation could be considered as a positive impact of food distribution in Za'atri camp. However, this comparison can be taken cautiously because of the 2010 EFSNA was done during drought and it was conducted in Northern part of Syria only.

Figure 14: Food Consumption Score



E. FOOD STOCKS

The findings of the two assessment show that 54.4% of Syrian refugees' households in host communities have some food stocks and the proportion of Syrian refugees' households having food stocks is 69.6% in Za'atri.

The findings in figure 15 below show that, because of every two weeks Food distribution, in Za'atri camp, for every kind of food stock, the proportion of having a stock of the food item is higher than in host communities.

Figure 15: Proportion of Food Stocks

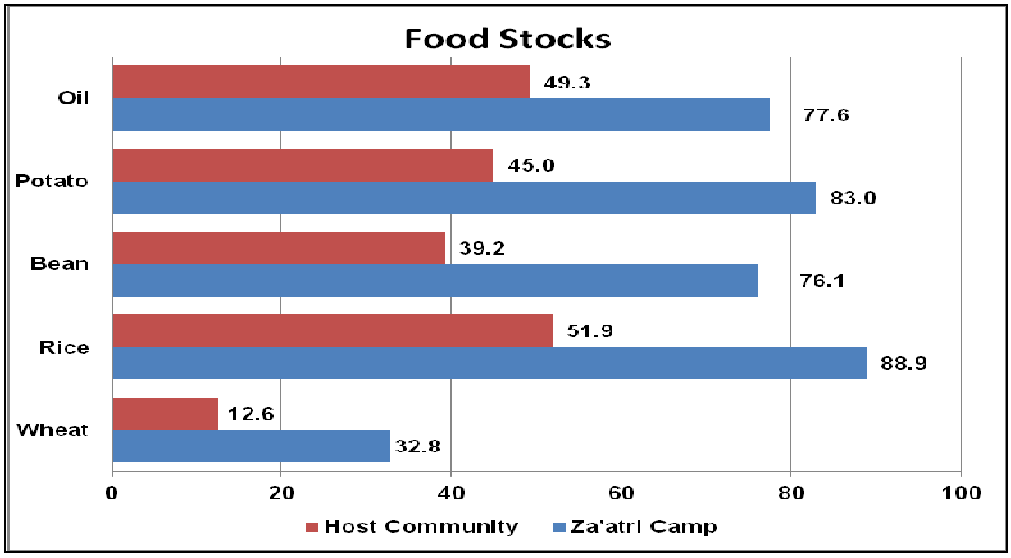
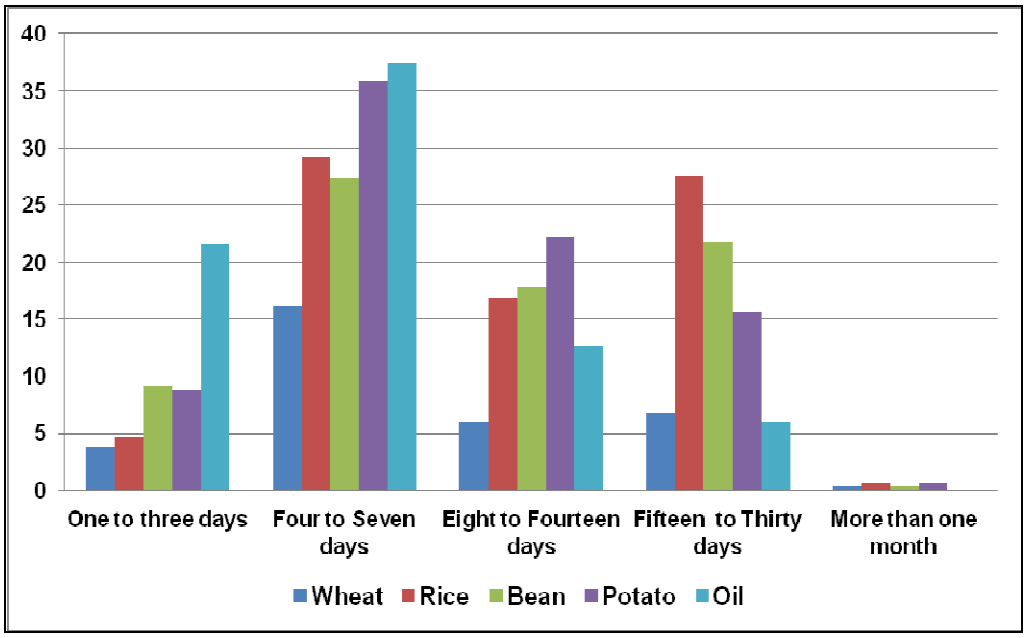


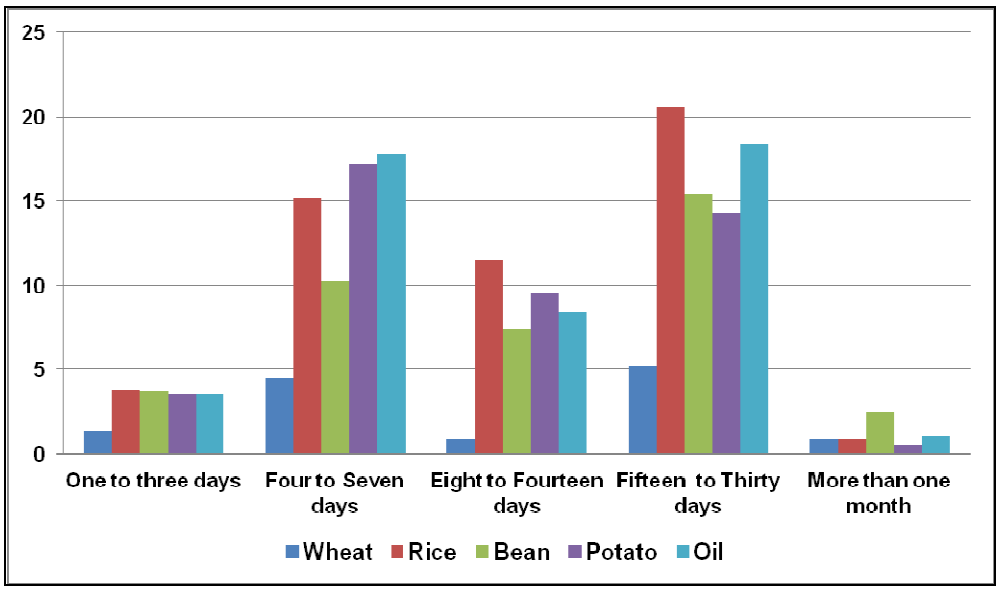
Figure 16-1: Duration of Food Stocks – Syrian refugees in host communities



The majority of the Syrian refugees' families in host communities had food stocks that which will last from four to seven days, where as the majority of the Syrian refugees' families in Za'atri camp have stocks which last from fifteen to thirty days. This would obviously depend on when the food assistance was provided to the Syrian refugees' families in the camp as the distributions are for a 15 day period.

The data was collected just after Eid el-Adha, which may have skewed the results.

Figure 16-2: Duration of Food Stocks – Syrian refugees in Za'atri camp



F. COPING STRATEGIES

The households adopt a wide range of coping strategies in efforts to cover their food gaps when faced with acute food decline.

Figure 17 shows that more Syrian refugees' families (77%), in host communities, use at least one coping strategy to cover their food gaps than families in Za'atri camp (67%). The situation of Food Security seems better in Za'atri camp. A larger portion of the Syrian refugees' families in the host communities are using coping strategies than those living in Za'atri camp.

Figure 17: Coping Strategies – Use at least one coping strategy

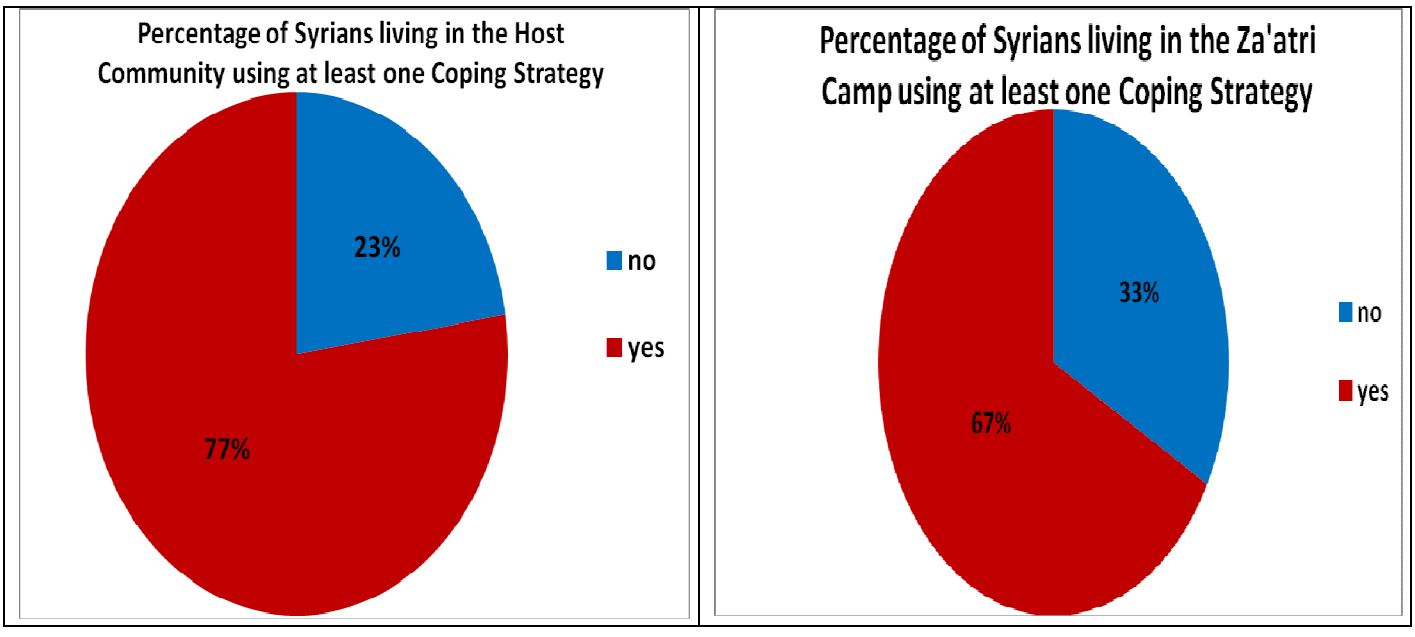


Figure 18-1: Coping Strategies – Proportion of using different coping strategies – Syrian refugees in host communities

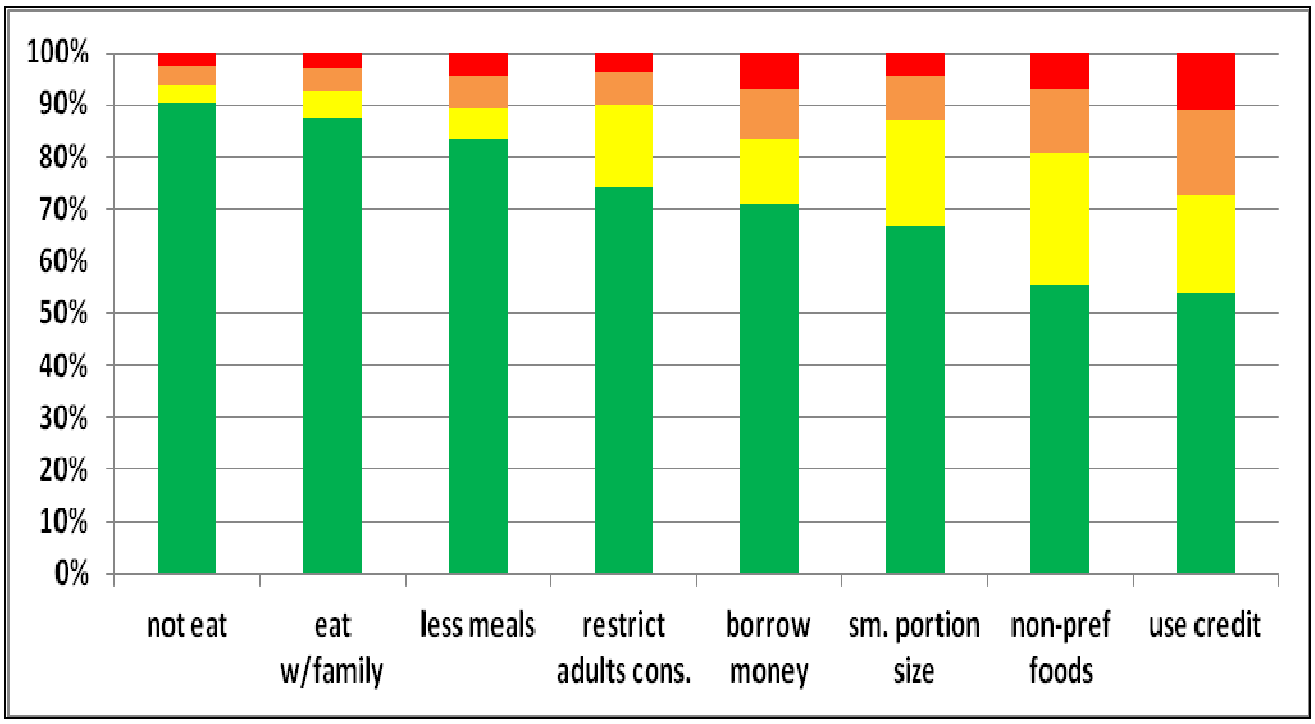
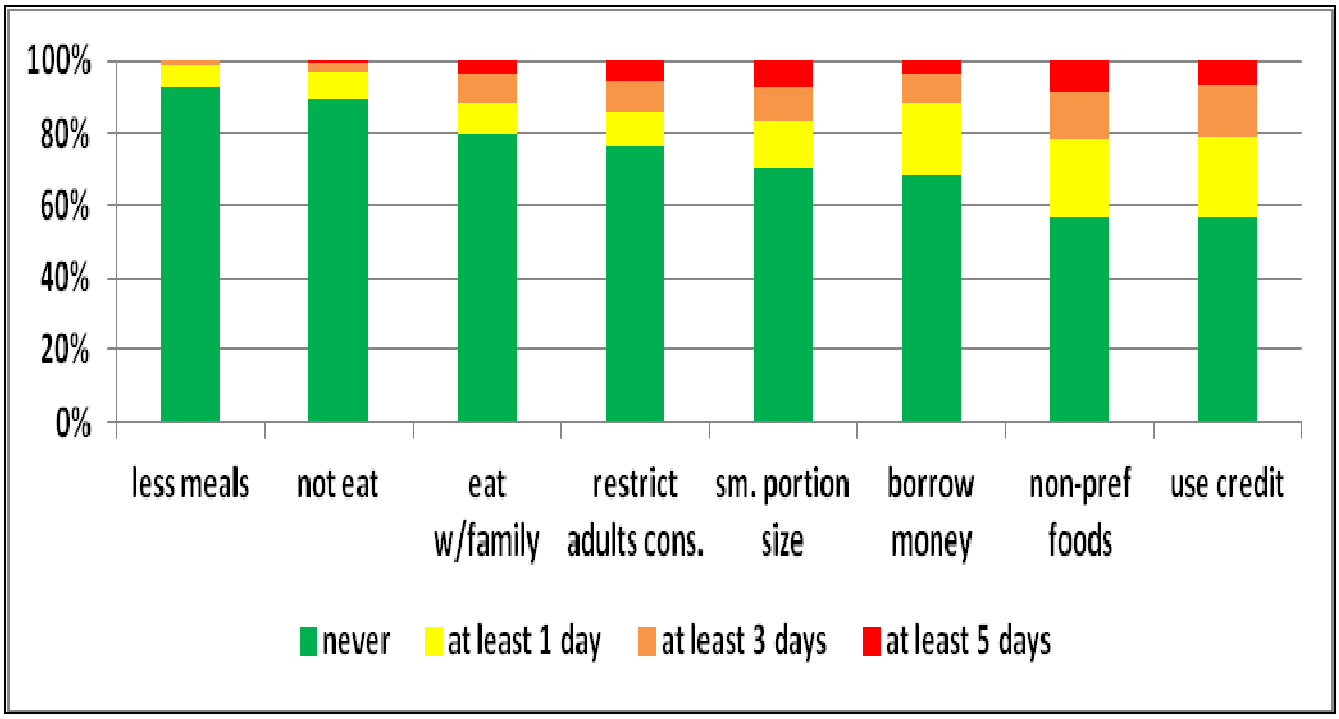


Figure 18-2: Coping Strategies – Proportion of using different coping strategies – Syrian refugees in Za'atri camp



In host communities, Syrian refugees' families have a high rate of daily use of credit. However, in Za'atri camp, the findings show that adults are restricting their consumption for 5 or more days a week.

LIMITATIONS

- ✓ **Poor quality of age data for children U5 years**: Considering the inaccuracies in birth registration (date of birth has been changed), there were challenges in age documentation among children 6-59 months. Due to this limitation and although an event calendar was used by the teams to ascertain age, stunting and underweight results are to be interpreted with caution because z-scores for height-for-age (and weight for age) require accurate ages to be within two weeks (CDC/WFP: A manual: Measuring and Interpreting Mortality and Malnutrition, 2005).

- ✓ **Sample had not covered the unregistered Syrian families:** The analysis only included those who are part of food aid programs. Households that were registered or with incorrect information were not represented in this survey.

- ✓ **The questionnaire was heavy** to administrate due to the needs of different UN agencies

- ✓ **Children morbidity data could be more detailed and more precise:** Respondents were not asked to define nor have a standardized definition of 'diarrhea' or 'cough'. However the definition use of 3-4 loose stools per day was consistent with the Jordan MoH operational definition for diarrhea.

- ✓ **Coverage of Vitamin A supplementation:** Enumerators did not have Vitamin A capsules to use as props/sample when asking mothers about whether or not their child received Vitamin A supplementation.

DISCUSSION

For Syrian refugees in host communities and in Za'atri camp, nutrition assessment covered more than 95% of the target of numbers of Syrian refugees' households. For the two assessments (host communities and Za'atri camp), the overall sex ratio was around 1.0 (sex ratio should be between 0.8 - 1.2), which confirms that both sex were equally distributed and well represented and that there was no bias in terms of sampling girls or boys.

1. NUTRITIONAL STATUS OF YOUNG CHILDREN

The close supervision and the daily data entry of anthropometric measurements combined with the daily feed-back to assessment teams on the data quality enabled achievement of valid anthropometric data for children under 5 years old (tables 18-1 & 18-2).

Table 22: Prevalence of malnutrition compared to UNICEF SOWC, 2012 and FHS 2009

SURVEY	Wasting (GAM rate)	At Risk of Wasting	Total Underweight rate	Total Stunting rate
Syrian refugees in host communities – October 2012	5.1 % (3.2 - 8.0)	4.6% (3.0 - 6.3)	2.0 % (1.0 - 4.2)	8.2 % (6.1 - 10.9)
Syrian refugees in Za'atri camp – November 2012	5.8 % (3.8 - 8.6)	5.6% (3.4 - 7.8)	6.3 % (4.5 - 8.7)	15.9 % (12.6 - 20.0
SOWC (2012) and MICS 2006	12%	------	10%	28%

The prevalence of global acute malnutrition (GAM), among children 6-59 months, in the two assessments was more than 5% but less than 10% (5.1% for the Syrian refugees in the host communities and 5.8% in Za'atri camp) and is defined as a poor public health situation as per WHO classification. The prevalence of severe acute malnutrition (SAM) found in two assessments was 1% for refugees in Za'atri camp and 1.1% for refugees in the host communities. The situation of children 6-59 months with GAM has to be monitored in both communities and children with GAM (MAM and SAM) should be screened and treated.

The proportion of children in the "At Risk of Acute Malnutrition" category (WHZ_WHO scores between -1 SD and -2 SD) was analyzed and the findings of the two assessments showed that children 6-59 months in Za'atri camp are more at risk of acute malnutrition than children 6-59 months who lived in host communities (5.6% vs 4.6%). Moreover, the findings showed, the "children who have been in Za'atri camp for one month or more are at higher risk of malnutrition than the recent arrivals (7.6% vs 3.8%).

Table 22 shows the malnutrition rates found in the 2 assessments compared to the Syrian rates from the SOWC 2012 and FHS 2009 (table 1). All malnutrition rates found from the 2 assessments are lower than previous rates for Syria. Due to lack of updated sub national prevalence levels of malnutrition in Syria and in view that data on the actual place of origin for the refugees was not collected – due to the associated security related sensivities – conclusion on whether the refugees' nutrition situation has improved or not cannot be made. Further, characteristics of the refugees crossing the border is yet to be understood, i.e, are they the most vulnerable group, are they the group that had means to escape, what kind of social services were they accessing back in their country before in order to gauge their resilience, etc.

However, for the comparability of the prevalence of stunting and underweight among Syrian refugees' children 6-59 months in the two surveys with the Syrian rates from SOWC (2012) and FHs (2009), the difference could be explained by the estimation of age and the previous data are from the national Survey like MICS. Considering the inaccuracies in registration (date of birth has been changed), there were challenges in age documentation among children 6-59 months. Due to this limitation and although an event calendar was used by the teams to ascertain age, stunting and underweight results are to be

interpreted with caution because z-scores for height-for-age (and weight for age) require accurate ages to within two weeks (CDC/WFP: A manual: Measuring and Interpreting Mortality and Malnutrition, 2005).

Moreover, the findings of the two assessments show that the total prevalence of stunting and underweight, among Syrian refugees in Za'atri camp were higher than the prevalence of stunting and underweight in Syrian refugees living in Jordan host communities. The difference between the two stunting prevalence is statistically significant (X^2: 12.572, P< 0.001) like the difference between the two underweight prevalence (X^2: 10.682, P< 0.05).

By gender, the prevalence of wasting, from the two assessments (host communities and Za'atri camp), the findings (tables 12-1 & 12-2) showed that the prevalence of acute malnutrition is higher among Syrian refugees boys. However, in both surveys, the difference between boys and girls in the prevalence of acute malnutrition is not statistically significant (host communities Survey: X^2 = 2.039, P> 0.05 and Za'atri survey: X^2 = 2.338, P> 0.05).

By group of age, figure 5-1 showed that, among Syrian refugees in host communities, the youngest (6-11 months) and the oldest children (48-59 months) of age groups tend to be the most affected by wasting. For severe wasting, the children of age group (36-47 months) are the most affected.

Among the Syrian refugees' children in Za'atri camp, the situation of Acute Malnutrition by age groups is different. The results from figure 5-2 showed that the age groups above 48 months are more affected by severe wasting.

2. CHILD MORBIDITY

The relationship between disease and nutrition is well documented. Repeated episodes of infection or persistent subclinical infection can cause or aggravate the child malnutrition. Diarrhea is associated with insufficient water quality and quantity, and poor hygiene practices. And in general, infections compromise the nutritional status of children because of higher nutrient requirements and appetite suppression and malnourished children are prone to infections because of a compromised immune system.

The two Syrian refugees' assessments (host communities and Za'atri camp) collected data on diarrhea, cough and fever. The findings in table 23 shows that the Syrian refugees' children aged 6-59 months in Za'atri camp had experienced more episodes of the three illnesses in the two weeks prior to the difference and the differences are statistically significant.

Table 23: Prevalence of reported diarrhea, cough and fever in the two weeks prior to the interview

	Refugees in host communities	Refugees in Za'atri camp	Statistically Significant level (difference)
Diarrhea during the last 2 weeks	22.4%	47.7%	X^2 58.048, P < 0.0001
Cough during the last 2 weeks	35.5%	43.8%	X^2 5.682, P < 0.05
Fever during the last 2 weeks	43.1%	51.6%	X^2 5.573, P < 0.05

The linkage between this morbidity and acute malnutrition is not statistically significant, possibly due to low rates of children with acute malnutrition. However, this morbidity could be associated with the high rate of Risk of Acute Malnutrition in Za'atri Camp.

3. VACCINATION AND VITAMIN A SUPPLEMENTATION

The coverage number of Polio doses is similar in the two assessments. However, the coverage of measles vaccination is higher in Za'atri camp. For the supplementation of vitamin A, usually the coverage is the same than the coverage of Measles vaccination. The results of the assessments showed that the coverage of Vitamin A supplementation is very low compared with the coverage of measles vaccination. This difference could be explained by the fact that the surveyors were supposed to show the vitamin A

capsule to the mother or to the caregiver but they did not. In addition, the Za'atri nutrition data collection overlapped with Polio/ Vitamin A vaccination/ supplementation campaign which took place between 26th September and early December 2012.

Vitamin A enhances immune system hence its essential in the disease outbreak prevention. The above high disease prevalence necessitates urgent improment in vitamin A supplementation coverage.

4. IYCF INDICATORS

Adequate food alone will not result in improved nutritional status if practices related to child care remain poor. It has been shown that children from food secure and well off households can still be malnourished if caring practices such as hygiene and child feeding practices are poor.

The findings of assessments showed that 42.7% of children born in the last 24 months, among refugees in host communities are still breastfed at the time of the assessment and this proportion is 49.6% among refugee children born in the last 24 months and live in Za'atri camp.

In the two communities, more than 50% of the assessed children were being breastfed up to 1 year however much less than 50% were being breastfed up to two years. However, only 13.3% (in host communities) and 7.9% (in Za'atri camp) of mothers or caregivers reported that they gave 5 times or more complimentary food to the children of 6-12 months age group.

5. NUTRITIONAL STATUS OF WOMEN 15-49 YEARS

Mid Upper Arm circumference (MUAC) in women was classified according to different cut-offs. Global malnutrition: MUAC < 23 cm; Moderate malnutrition: MUAC ≥21 cm and <23 cm and Severe malnutrition: MUAC < 21 cm as per the recommendation of the Sphere Project's Handbook (2011).

The prevalence of moderate and severe malnutrition among women 15-49 years based on MUAC was assessed. In host communities families, the assessment showed that there are 6.3% malnourished (MUAC < 23 cm) women 15-49 years and among them 0.9% severely malnourished (MUAC < 21 cm). In Za'atri camp families, the survey results show that there are 6.1% malnourished (MUAC < 23 cm) women 15-49 years of age and among them 1.1% severely malnourished (MUAC < 21 cm).

Globally, the nutrition situation is comparable (6.3% vs 6.1%) between women 15-49 years old among Syrian refugees' women 15-49 years in both assessments (host communities and Za'atri camp). However, the results from figure 10-2 show the young women (15-19 years old) are more affected in Za'atri camp.

These prevalence figures can be used as a basic situation to provide a food supplementation programme to pregnant (from second trimester) and lactating women (up to 6 months post delivery) on a bi-monthly basis in addition to addressing the broader maternal nutrition and health issues including maternal care, access to adequate micronutrient supplementation, adequate household security, etc.

6. WASH INDICATORS

Poor water, sanitation and hygiene have serious consequences for health and nutritional status, especially among the most vulnerable population groups. Improvements in hygiene and particularly hand washing with soap can have a significant impact on reducing diarrhea prevalence.

During the 2 surveys, only the access to sufficient water for the family needs was assessed. In the host communities, 81% of Syrian families have access to sufficient water and in Za'atri camp, the proportion of Syrian families with access to sufficient water was 94%.

About the "Water problems", in host communities, 54% of families reported as a main water problem "Buying Water" and in Za'atri camp, 41% of families did not have any water problem.

Concerning to have "Soap and/or Hygienic products", in host communities, 27.5% of families reported that they did not have "Soap and/or Hygienic products" and in Za'atri camp, 65% of families reported that they

did not have “Soap and/or Hygienic products”. This high proportion in Za’atri camp could be explained by the monthly distribution of Soap and Hygienic products.

7. FOOD SECURITY INDICATORS

A. Food sources

In host communities, families registered with UNHCR receive “Food Vouchers” and they use them to have food. In Za'atri camp, the Syrian families receive 2 weeks distribution of dry ration food. For the 2 communities, food aid represented an important source of their food consumption. However, to complete their meals by some fresh food, the families needed to buy other items (32%).

The food assistance[1] constituted 42% of the food sources of families in Za'atri camp and 19.2% for families in host communities. However, families in host communities received 25.5% of their food from charity as gift.

B. Number of meals per day

In host communities, 91% of Syrian refugees’ families have 2 meals or more per day and in Za'atri camp, the proportion of having 2 meals or more per day was more than 97% (table 24).

Table 24: Number of meals per day

	Syrian refugees in Host communities	Syrian refugees in Za’atri camp
No meals	6.1%	1.3%
One meal/day	2.6%	1.5%
Two meals/day	36.3%	37.3%
Three meals or more/day	55.0%	59.9%

C. Consumption of canned food

In host communities, 75.5% of families consume canned food and more than 90% of families consume this kind of food, in Za’atri camp. Moreover, more than 50% of Syrian families in Jordan consume canned food 2 or 3 days per week and in Za’atri camp, 21% of families consume canned food almost every day.

Table 25: Canned Food Consumption

	Syrian refugees in host communities	Syrian refugees in Za’atri camp
Canned Food Consumption	**75.5%**	**94.6%**
One day a week	19%	11.4%
2-3 days/week	58.2%	55.6%
4-5 days/week	10.7%	12.4%
6-7 days/week	12.2%	20.7%

D. Food Consumption score

Household food consumption and food sources provide important measures of food security. Food Consumption Score (FCS) was calculated for each household using this. In the FCS calculation food groups are weighted according to their nutritional density. Based on empirical evidence in different regions, WFP has defined cut-off points for the calculated food consumption score that allow for differentiation of households into “poor”, “borderline” and “acceptable” food consumption categories. For

[1] Considering that the camp is covered with 2 400 kcal food distribution, these results would require further investigation.

Syrian Households with food consumption score less than 21 are regarded to have “poor” food consumption, and this reflects the fact that they do not eat a balanced diet on a daily basis. Households with a food consumption score between 21 and 35 are considered to have “borderline” food consumption. Households with a food consumption score greater than 35 are considered to have “acceptable” food consumption.

In 2010, a Syrian EFSNA showed that FCS was poor (4%), borderline (23%) and acceptable (72%). To compare the findings of the 2 surveys (in host communities and in Za'atri camp), the FCS are better in Za'atri camp than host communities and then Situation in Syria in 2010. This best situation could be considered as a positive impact of food distribution in Za'atri camp. However, this comparison can be taken cautiously because of the 2010 EFSNA was done during drought and it was conducted in Northern part of Syria only.

Findings from table 26 show that among Syrian refugees in host communities, 23% (Poor and Borderline) of families were in none Food Secure situation and among Syrian refugees in Za'atri camp, the proportion of families in none Food Secure situation is 5% less (18%). The difference is none statistically significant (X^2 3.415, P > 0.05).

Table 26: Food Consumption Score

Food Consumption Score	Syrian refugees in host communities	Syrian refugees in Za’atri camp	Syria in 2010
Poor food consumption ((≤ 21) %	3.2	1.7	4
Borderline food consumption (21.5- 35) %	19.8	16.4	23
Acceptable food consumption (> 35) %	77.0	81.9	72

E. Food stocks

The two assessments showed that 54.4% of households in host communities have some food stocks and 69.6% of households in Za’atri have some food stocks. Because of every two weeks Food distribution, in Za’atri camp, for every kind of food stock, the proportion of having a stock of the food item is higher than in host communities.

The majority of host communities’ families has food stocks which will last from four to seven days, where as the majority of the Families in Za'atri camp have stocks which last from fifteen to thirty days.

F. Coping strategies

The households adopt a wide range of coping strategies in efforts to cover their food gaps when faced with acute food decline. The assessment findings showed that more families (77%), in host communities use at least one coping strategy to cover their food gaps than families in Za'atri camp (67%). The situation on food security seems better in Za'atri camp. A larger portion of the families in the host communities are using coping strategies than those living in Za’atri camp.

In host communities, families have a high rate of daily use of credit. However, in Za’atri camp, the findings showed that adults are restricting their consumption for 5 or more days a week.

CONCLUSION

The nutrition situation of Syrian families in Jordan (In host communities and in Za'atri camp) is considered POOR with the prevalence of GAM (respectively 5.1 % and 5.8%) falling between 5 and 9.9% among children while among women aged 15-49 years the malnutrition rate is 6%. However, because of some aggravating factors (winter, risk for food insecurity, increasing of numbers and the new arrivals that could be in worse conditions), nutrition situation can change quickly and is potentially likely to deteriorate. Concerted integrated efforts, in collaboration with MOH, will be required to bring the GAM levels to the WHO acceptable level of <5% because of the multifactorial nature of malnutrition.

Immediate measures must be taken to set up the management of acute malnutrition, particularly in Za'atri camp because of high level of risk of malnutrition and among new arrivals or families are waiting for UNHCR registrations, and address the aggravating factors triggering the above risk levels of malnutrition. This should include screening and treatment of acute malnutrition in various age-groups, supplementary feeding programme for pregnant and lactating women, and addressing the inappropriate infant and young children feeding practices and micronutrient deficiencies.

RECOMMENDATIONS AND PRIORITIES

Immediate term

1. Having a discussion with MOH and all other partners to set up mechanism for acute malnutrition management as well as capacity strengthening for the ministry of health services, for preparedness.
2. Reinforcing role and responsibility of the nutrition sub group and its respective members to organize and coordinate the nutrition sector and response.
3. Setting up a screening mechanism of children and mothers for malnutrition upon arrival in Jordan.
4. Setting up services for children and mothers that are screened and ensure adequate treatment is available for those identified with Severe Acute Malnutrition, including those with medical complications, and Moderate Acute Malnutrition.
5. Developing guidelines or protocol for acute malnutrition management and prevention as well as national plan of training.
6. Strengthening the awareness, promotion, and protection of positive Infant and young child feeding practices through NGOs activities by accelerating sensitization and awareness creation on appropriate breast-feeding and complimentary feeding practices as well as micronutrient provision.
7. Integrate nutrition into primary health care in Za'atri and NGO clinics in the Northern governorates including growth monitoring and promotion for children aged six to 59 months.
8. Improving Education and communication strategies in the health centers and in the community including integrating communication for development strategies to positively influence behavior and practices.
9. Support NGOs providing services to unregistered Syrians to integrate management of SAM and MAM into their services.
10. Scale-up of hygiene promotion activities (including adequate access to soap through either distribution or the means to purchase) and improve water quality access and monitoring the quality of water to address disease incidence and facilitate disease treatment through the health facilities.

Medium term

1. Integrating the nutrition surveillance system in the existing Health Surveillance System.
2. Putting a proper targeting of the most vulnerable refugees and host communities with a minimum response package on health and nutrition surveillance, disease treatment, appropriate health and nutrition promotion, adequate food security, water and sanitation services, shelter against harsh weather, etc.

Longer term

1. If the situation in Syria will not have improved to enable return of the refugees, conduct nutrition surveys in all camps in six months' time or after Ramadan, (depending on the delivery of adequate response in the next 6 months). Survey methodology should be simplified to capture only key indicators of anthropometry in children aged 6-59 months and mortality in the whole population as recommended by the SMART methodology. A full expanded nutrition survey should be repeated in 12 months.
2. Conduct a comprehensive nutrition assessment/ survey after one year (if adequate humanitarian support will have been provided) with a parallel food security assessment (separate questionnaire and teams) but with components of nutrition response (CMAM, micronutrient and IYCF) coverage and mortality.

ANNEX

Annex 1-1: Sample for Syrian refugees in host communities

Annex 1-2: Sample for Syrian refugees in Za'atri camp

Annex 2-1: Arabic Questionnaire for Syrian refugees in host communities

Annex 2-2: Arabic Questionnaire for Syrian refugees in Za'atri camp

Annex 3: Questionnaire in english, for Syrian refugees in jordan, before Arabic translation and last revision

Annex 4-1: Results using the NCHS 1977 Growth Reference for Syrian refugees in host communities

Annex 4-2: Results using the NCHS 1977 Growth Reference for Syrian refugees in Za'atri camp

Annex 5-1: Survey teams' members for Syrian refugees in host communities

Annex 5-2: Survey teams' members for Syrian refugees in Za'atri camp

Annex 6-1: Consent form for Syrian refugees in host communities

Annex 6-2: Consent form for Syrian refugees in Za'atri camp

Annex 7-1: SMART Plausibility Report for Syrian refugees in host communities

Annex 7-2: SMART Plausibility Report for Syrian refugees in Za'atri camp

ANNEX 1-1: SAMPLE FOR SYRIAN REFUGEES IN HOST COMMUNITIES

SYRIAN REFUGEES NUTRITION ASSESSMENT IN JORDAN – HOST COMMUNITIES

FIRST STAGE SAMPLING

Ar_Name_gov	En_Name_sub	no individuals	Clusters
amman	Qasabet Amman District	4698	1, 2,3,4,5; RC1 and RC2
amman	qweismeh	1907	6,7,8
amman	Marka District	2883	9, 10, 11 and 12
amman	Wadi As_Sir District	586	13
aqaba	Qasabet Al_Aqaba District	216	14
balqa	Al_Jameh District	1811	15,16 and 17
irbid	Qasabet Irbid District	7147	18,19,20,21,22,23,24,25,26,27 and 28
irbid	Bani Obaid District	799	29
irbid	Ar_ramtha District	4738	30,31,32,33,34,35 and 36
jerash	Qasabet Jerash District	685	37
jerash, mafraq and zarqa	Berma Sub_ District, Al_Mastabeh Sub_ District, Balama Sub_ District and Bereen Sub_ District	148	38
karak	Qasabet Al_karak District	282	39
maan	Ma'an District	1104	40 and 41
madaba	Qasabet Madaba District	443	42
mafraq	Husah Sub_ District	298	43
mafraq	Al_Badiah Ash-Shamaliyya Al_Gharbeh District	746	44
mafraq	Qasabet Al-Mafraq District	5838	45,46,47,48,49,50,51; RC3 and RC4
mafraq	Al_Khalediah Sub_ District	336	52
zarqa	Qasabet Az_Zarqa District	2285	53,54,55 and RC5
zarqa	Al_Rusayfa District	573	56

ANNEX 1-2: SAMPLE FOR SYRIAN REFUGEES IN ZA'ATRI CAMP

SYRIAN REFUGEES NUTRITION ASSESSMENT IN JORDAN – ZA'ATRI CAMP

FIRST STAGE SAMPLING

Za'atri_Name_Block	no individuals	Clusters
BLOCK1C1	368	1
BLOCK1C2	539	2 and 3
BLOCK1C3	533	4 and RC1
BLOCK1C4	437	5
BLOCK1C5	359	6
BLOCK2C2	244	7
BLOCK2C3	438	8
BLOCK2C4	312	9
BLOCK2C5	534	10 and RC2
BLOCK3C3	276	11
BLOCK3C4	284	12
BLOCK3C5	300	13
BLOCK4C2	376	14 and RC3
BLOCK4C4	841	15, 16 and 17
BLOCK4C5	270	18
BLOCK5C3	238	19
BLOCK5C5	203	20
BLOCK6C1	266	21
BLOCK6C2	242	22
BLOCK6C4	173	23
BLOCK8C1	178	24
BLOCK8C2	288	25
BLOCK8C4	263	26
BLOCK8C5	645	27 and 28
BLOCK10C1	542	29 and 30
BLOCK3C1	246	RC4
BLOCK10C2	219	31
BLOCK8C3	248	32

ANNEX 2-1: ARABIC QUESTIONNAIRE FOR SYRIAN REFUGEES IN HOST COMMUNITIES

(1)

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

نموذج الموافقة على الدراسة

الحصول على عنوان المنزل:

- **احصل على عنوان الأسرة**
- **اشرح الهدف من الاستبيان**
- **قيّم كل العائلة(كل العائلة = الأسرة)**

ملاحظات مهمة:

- **يتم قراءة هذا البيان لرب الأسرة ، او للأم، و في حال غياب كلا الوالدين يتم اختيار فرد بالغ من الأسرة قبل البدء بالمقابلة.**
- **عرّف الأسرة بانها مجموعة من الناس الذين يعيشون في نفس السكن.**
- **عرّف رب الأسرة بانه الفرد القائم بشؤون الأسرة و يدير شؤونها و هو صاحب القرار الاخير.**

مرحبا، نحن_____ و نقوم بدراسة بالتعاون بين وزارة الصحة، ومؤسسات الأنسانية في الأردن، لذا نود أن ندعو أسرتكم للمشاركة في استبيان دراسة الوضع الغذائي و الصحي للسوريين القادمين حديثا من سوريا.

- **اشتراكك في هذا التقييم هو خيار خاص بك. بامكانك ان تختار المشاركة أو عدم المشاركة. اذا اتخذت قرار بالمشاركة، فبامكانك التوقف في أي لحظة لأي سبب كان. اذا قررت التوقف فذلك لن يتسبب باي تغير في التعامل مع اسرتك أو بما تتلقاه من مساعدات.**
- **تم إختيار أسرتك عشوائيا من بين 750 عائلة سورية، لتكون من العائلات الممثلة للوضع الغذائي للعائلات السورية في الأردن**
- **اذا اتخذت قرارا بالمشاركة، سأقوم بسؤالك عن أمور تتعلق بأسرتك و سنقوم بقياس محيط الذراع ، الوزن و الطول للأطفال الاكبر من 6 شهور و الاصغر من 5 سنوات. اضافة الى ذلك فاننا نقوم بقياس محيط الذراع للنساء و الفتيات الأكبر من 15 عام و الاصغر من 49 عام.**
- **قبل أن نبدأ بأي من الأسئلة أو أخذ أي قياسات، سنطلب منك أن تعلن عن رضاك بالمشاركة. أي معلومة ستوفرها لنا ستحظى بالسرية التامة.**
- **بامكانك أن تسألني عن اي استفسار يخص هذا الاستبيان قبل أن تتخذ قرارا بالمشاركة أو عدمها.**

شكرا

تم اعلان الموافقة؟ 0- لا 1- نعم |___|

اسم رب الأسرة _____

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

المعلومات العامة للعائلة السورية (لجميع أفراد الأسرة)

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود
2012 /|___|___|/|___|___|	|___|___|
رقم الفريق	رقم الأسرة
|___|	|___|___|
اسم العنقود	المحافظة

Q1-7 خصائص الأسرة			
Q1.	رب الأسرة : M= ذكر F= انثى		|___|
Q2a.	كم عددكم (اللاجئين السوريين) في نفس الأسرة		_____
Q2b.	عدد الأولاد (ذكور و اناث) دون18 سن _____	عدد الأطفال دون سن الخامسة(0-59 شهر) حاليا:_____	
Q3a.	مدة اقامة الأسرة(اللاجئة) في الأردن ؟	1= شهر أو أقل 2= من 1 إلى 6 شهور 3= 6 شهور او أكثر	|___|
Q3b.	هل تسكن عند أسرة مقيمة	0=لا 1= نعم	|___|
Q3c.	كانت الاجابة ب "لا" عن السؤال 3ب ، هل أنت مقيم مع أسرة سورية اخرى لاجئة	0=لا 1= نعم	|___|
Q3d.	كانت الاجابة ب "نعم" عن السؤال 3 ب ،ج ،كم عدد الأسر المقيمة في نفس المسكن (بما فيه أسرتك)		_____
Q4.	المساعدة الصحية		
Q4a.	أ : عندما تحتاج خدمات طبية، من هي الجهة التي ترجع اليها ؟ (إختارالرقم المناسب الاجابة)	1= لا ابحث عن مساعدة 2= تداوي ذاتي 3= مرفق صحي عام 4= عيادة مؤسسة غير ربحية	5= عيادة خاصة 6= صيدلية 9= لاأعرف |___|
Q4b.	اذا كانت الاجابة ب "لا ابحث عن مساعدة" في الفرع أ، فلماذا؟	1= ارتفاع الكلفة 2= دواعي امنية	3=عدم الرغبة في الاجابة 4= أخرى، حدد_____ |___|
Q5 – 7: المياه و خدمات الصرف الصحي و النظافة العامة			
Q5.	هل لدى الأسرة امكانية الوصول الى كميات المياه اللازمة لأغراض الشرب و الطهي و الغسيل و دورات المياه؟ لا=0 نعم=1		|___|
Q6.	ما هي المشكلة/ المشاكل الرئيسية المتعلقة بالمياه و التي تواجه الأسرة ؟ (اجابة واحدة أو عدة اجابات)	1=لا يوجد 2=نشترى 3=عدم كفاية المياة لأغراض النظافة الشخصية للأطفال 4=بعض الأيام تمر دون توفر مياه الحنفية نهائيا	5= المياه المعبئة باهظة الثمن لذا فالأطفال يضطرون لشرب مياه الحنفية 6=أخرى_____ |___|___|___|___|___|
Q7.	هل تمتلك الأسرة امكانية الوصول الى مواد التنظيف و الصابون؟	لا=0 نعم=1	|___|

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

الأمن الغذائى للعائلة (الأسئلة لجميع العائلة)

(يتم توجيه هذه الأسئلة الى المسؤول الرئيسي عن اعداد الوجبات)

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود (في الاستبيان فقط)	رقم الفريق
2012 /|___|___|/|___|___|	|___|___|	|___|
اسم العنقود	المحافظة	

Q8 - 9:مصادر غذاء الأسرة و عدد الوجبات

Q8.	**ماهو مصدر الغذاء الرئيسي منذ لجوء الأسرة الى المنطقة؟ (اجابة واحدة أو عدة اجابات)**		|___|___|
	1=التسوق من مصادر الدخل الخاص **2= التسوق بالاستعانة بمساعدات مالية من الجهات الخيرية** **3= الشراء بالدين / الاقتراض** **4= هدية من الجهات الخيرية** **5=بالاشتراك مع المضيفين**	**6= المساعدات الغذائية الانسانية** **7=غذاء مقابل عمل** **8=مقايضة (مقابل بضائع أخرى)** **99= لم يتم تناول الطعام خلال الأيام السبعة الماضية**	|___|___| |___|___| |___|___| |___|___|
Q9.	**ما هو عدد الوجبات المستهلكة حاليا / اليوم؟**		_____

Q10 - 11 : وسائل التكيف

Q10a.	**في الأيام السبعة الماضية ، هل مررت بظروف لم تتوفر فيها كميات الغذاء اللازمة او المال الكافي لشراء الغذاء لعائلتك**	**لا=0 نعم=1** *اذا كانت الاجابة لا فلا تقم بإجابة السؤال* **10b**	|___|

Q10b. **في الأيام التي لم تتوفر فيها كميات الغذاء اللازمة او المال الكافي لشراء الغذاء، فكم مرة في الأسبوع قمتم بـ:**

	عدد الأيام في الأسبوع
الاعتماد على اصناف غذائية غير محببة و أقل سعرا؟	|___|
استعارة الغذاء أو الاعتماد على مساعدات من الاصدقاء أو الاقارب ؟	|___|
تقليل الكميات المستهلكة عند تناول الوجبات؟	|___|
تحديد الكميات المستهلكة من قبل الأفراد الأكبر سنا لتوفير الحصص للأطفال ؟	|___|
مرور أيام كاملة دون تناول الطعام	|___|
الاقتراض لشراء الغذاء؟	|___|
اضطرار افراد الأسرة /(أحد أو أكثر) بتناول الغذاء لدى الأقارب او الجيران	|___|
مرور يوم كامل دون تناول الطعام	|___|

الأمن الغذائي للعائلة (الأسئلة لجميع العائلة)

Q11.	هل مررتم بظروف اضطررتم الى اللجوء فيها الى الامور التالي ذكرها؟ 1= ، لا=0	|___|
	بيع المقتنيات / الممتلكات (المجوهرات، الهواتف النقالة ، الأثاث الخ ...)	|___|
	عمالة الأطفال (في المرحلة المدرسية)	|___|
	تخفيض النفقات الصحية	|___|
	اضطرار أحد أفراد الأسرة المغادرة بحثا عن فرص عمل/ دخل	|___|

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

الجدول الغذائي الأسبوعي (الجدول لجميع العائلة)

Q12 – 15 : استهلاك الأسرة للغذاء

Q12. **خذ الوجبات المستهلكة في المنزل أو في مطبخ عام بعين الاعتبار و ليس في المطاعم الخاصة أو المباعة على جوانب الطريق، لا تاخذ الكميات الصغيرة جدا بعين الاعتبار (اقل من ملعقة شاي واحدة)**

	لمدة كم يوم خلال السبعة ايام الماضية اسهاكت اسرتك المواد التالية		**ما هو أهم مصدر غذاء ؟**	
الخبز	0= لم يتم تناول اي شيء 1= 1 يوم 2= 2 يوم 3=3 يوم 4= 4 يوم 5=5 يوم 6= 6 يوم 7=7 يوم	|___|	1= انتاج ذاتي/ من الحديقة 2= شراء من المحلات التجارية و تجار المفرق 3= الشراء بالدين / الاقتراض 4= غذاء مقابل عمل 5= مقايضة (مقابل بضائع أخرى) 6= هدية من الأقارب أو الجيران أو بالتسول 7= المساعدات الغذائية الانسانية 9= لم يتم تناول الطعام منذ الأيام السبعة الماضية	|___|
القمح(طحين أو حب)، الارز، الذرة ، المعكرونة		|___|		|___|
البسكوت، البسكوت عالي الطاقة		|___|		|___|
البطاطا		|___|		|___|
فاصولياء، حمص،عدس، البازيلاء		|___|		|___|
الخضراوات		|___|		|___|
الفواكه		|___|		|___|
اللحوم(الحمراء، الدواجن)		|___|		|___|
البيض		|___|		|___|
التونة و السردين		|___|		|___|
منتجات الألبان (الزبادي، والجبن، والحليب المجفف الحليب)		|___|		|___|
زيت نباتي ، زبدة، سمن		|___|		|___|
سكر، عسل ، مربى، حلويات		|___|		|___|

Q13.	هل تتناول طعام المعلبات؟ |___| نعم =1 = 0 لا	اذا كانت الاجابة بنعم فما نوع المعلبات |___|_____ كم مرة في الاسبوع	
Q14.	هل لديك اي مخزون غذائي؟	لا=0 نعم=1	**15** اذا كانت الاجابة بلا فلا تقم باجابة السؤال

Q15. **ما مقدار المدة التي تتوقع ان يغطيها المخزون؟ اكتب عدد الايام (0 اذا كان المخزون غير متوفر)**

القمح(طحين أو حب)	|___|___|	الأيام
ارز	|___|___|	الأيام
فاصولياء، حمص،عدس، البازيلاء	|___|___|	الأيام
زيت نباتي ، زبدة، سمن	|___|___|	الأيام
سكر	|___|___|	الأيام

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

الوضع الغذائي و المناعي لدى الأطفال في الأسرة

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود (في الاستبيان فقط)	رقم الفريق
2012 /|___|___|/|___|___|	|___|___|	|___|
اسم العنقود	المحافظة	

Q16 - 29: الوضع الغذائي و المناعي لدى الأطفال من عمر 0-59 شهر في الأسرة

رقم التسلسل	الاسم الأول (اختياري)	رقم الأسرة	Q16 الجنس ذكر=M أنثى=F	Q17 تاريخ الميلاد (ان وجد) يوم /شهر/ سنة	Q18 العمر بالأشهر	Q19 هل تقومين بارضاع طفلك طبيعيا؟ (يرجى ذكر اسم الطفل/ الأطفال) لا=0 نعم=1	Q20 بالاضافة الى حليب الرضاعة هل تعطين طفلك غذاء آخر 0= لاشيء **1**= حليب بودرة **2**=شاي **3**=طعام اطفال **4**= غذاء خاص **5**= غذاء الأسرة محورا للطفل **6**= يتناول الطعام مع الأسرة (اجابة واحدة أو عدة اجابات)	Q21 خلال ال24 ساعة الماضية ، كم مرة قمت بتغذية طفلك (بغذاء غير الرضاعة الطبيعية) 0= صفر مرة 1= مرة واحدة 2= مرتين 3= ثلاث مرات 4= أربع مرات 5 = خمس مرات أو أكثر	Q22 هل تم توقير الطفل فيتامين أ خلال الستة أشهر الماضية ؟ لا=0 نعم=1 لاأعرف =9	Q23 هل تم تطعيم الطفل ضد مرض الحصبى في الأشهر الستة الأخيرة؟ لا=0 نعم=1 لاأعرف= 9	Q24 عدد الجرعات التي حصل عليها الطفل ضد شلل الأطفال؟ 0= لا 1= مرة واحدة 2= مرتين 3= ثلاث مرات أو أكثر 9= لا أعرف	Q25 هل تتوفر **لديك** بطاقة تطعيم الطفل؟ (لتوثيق المطاع يم)؟	Q26 الاسهال المعوي في الاسبوع ين الماضيين لا=0 نعم=1	Q27 اذا كانت الاجابة بنعم للسؤال كم **26** عدد الايام التي استمرت بها الحالة؟	Q28 هل اصيب بالالتها ب الرئوي (السعال) في الاسبوع ين الماضيين لا=0 نعم=1	Q29 هل اصيب بالحمى في الاسبوع ين الماضي ين لا=0 نعم=1
1.			M F				|__|__|__|__|										
2.			M F				|__|__|__|__|										
3.			M F				|__|__|__|__|										
4.			M F				|__|__|__|__|										
5.			M F				|__|__|__|__|										
6.			M F				|__|__|__|__|										
7.			M F				|__|__|__|__|										
8.			M F				|__|__|__|__|										

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

القياسات البدنية و الأمراض التغذوية لدى الأطفال (6 الى 59 شهراً)

(يتم توجيه الأسئلة الى جميع القائمين على رعاية الأطفال الذين يعيشون معهم في الفترة العمرية 6-59 شهر)

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود (في الاستبيان فقط)	رقم الفريق
2012 /|___|___|/|___|___|	|___|___|	|___|

اسم العنقود	المحافظة

Q30 - Q39 :القياسات البدنية و الاعتلال **عند الأطفالمن 6-59 شهر**

رقم التسلسل	**الاسم الأول** *(اختياري)*	**رقم الأسرة**	Q30 الجنس ذكر=**M** أنثى=**F**	Q31 تاريخ الميلاد (ان وجد) يوم/شهر/ سنة	Q32 العمر بالأشهر	Q33 الوزن (كغم) ± 0.1 kg	Q34 الطول (سم) ± 0.1 cm	Q35 تورم الساق لا = *N* نعم = *Y*	Q36 محيط المنتصف العلوي للذراع (سم) **± 0.1 cm**	Q37 **Z-Score** وزن/طول 0=أخضر 1=أصفر 2=\احمر	Q38 تم الإحالة الى مستوصف؟ 0= لا 1=وزن/طول1 2=وزن/طول2 3=تورم	Q39 هل تم قياس الوزن باقل كمية من الملابس لا=0 نعم=1
1.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**
2.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**
3.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**
4.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**
5.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**
6.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**
7.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**
8.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**
9.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**
10.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**
11.			**M F**					**N Y**		**0 1 2**	**0 1 2 3**	**0 1**

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

القياسات البدنية للنساء في سن الانجاب (15- 49 سنة) في الأسرة

(يتم توجيه الأسئلة الى جميع السيدات الواقعة أعمارهم ما بين 15 و 49 سنة في الأسرة المختارة)

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود (في الاستبيان فقط)	رقم الفريق
2012 /|___|___|/|___|___|	|___|___|	|___|

اسم العنقود	المحافظة

Q40 - 44 :القياسات البدنية (MUAC) للنساء في سن الانجاب (15- 49 سنة) في الأسرة

رقم التسلسل	الاسم *(اختياري)*	رقم الأسرة	Q40 العمر (بالسنوات)	Q41 الحالة الفسيولوجية 1= حامل 2=مرضع (طفل اقل من 6 شهور) 3= لا شيء مما ذكر 9=لا أعلم	Q42 عدد جرعات التتينوس التي تم اخذها 0= صفر مرة 1= مرة واحدة 2= مرتين 3= ثلاث مرات 9=لا أعلم	Q43 هل تتناولين حاليا حبات الحديد و الفولات 0=لا 1=نعم 9=لا أعلم	Q44 (MUAC) محيط المنتصف العلوي للذراع (سم)
1.				1 2 3 9	0 1 2 3 9	0 1 9	
2.				1 2 3 9	0 1 2 3 9	0 1 9	
3.				1 2 3 9	0 1 2 3 9	0 1 9	
4.				1 2 3 9	0 1 2 3 9	0 1 9	
5.				1 2 3 9	0 1 2 3 9	0 1 9	
6.				1 2 3 9	0 1 2 3 9	0 1 9	
7.				1 2 3 9	0 1 2 3 9	0 1 9	

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

ANNEX 2-2: ARABIC QUESTIONNAIRE FOR SYRIAN REFUGEES IN ZA'ATRI CAMP

(1)

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

نموذج الموافقة على الدراسة

الحصول على عنوان المنزل:

- **احصل على خيمة الأسرة**
- **اشرح الهدف من الاستبيان**
- **قيّم كل العائلة(كل العائلة = الأسرة)**

ملاحظات مهمة:

- **يتم قراءة هذا البيان لرب الأسرة ، او للأم، و في حال غياب كلا الوالدين يتم اختيار فرد بالغ من الأسرة قبل البدء بالمقابلة.**
- **عرّف الأسرة بانها مجموعة من الناس الذين يعيشون في نفس السكن.**
- **عرّف رب الأسرة بانه الفرد القائم بشؤون الأسرة و يدير شؤونها و هو صاحب القرار الاخير.**

مرحبا، نحن_____ و نقوم بدراسة بالتعاون بين وزارة الصحة، ومؤسسات الأنسانية في الأردن، لذا نود أن ندعو أسرتكم للمشاركة في استبيان دراسة الوضع الغذائي و الصحي للسوريين القادمين حديثا من سوريا.

- **اشتراكك في هذا التقييم هو خيار خاص بك. بامكانك ان تختار المشاركة أو عدم المشاركة. اذا اتخذت قرار بالمشاركة، فبامكانك التوقف في أي لحظة لأي سبب كان. اذا قررت التوقف فذلك لن يتسبب باي تغير في التعامل مع اسرتك أو بما تتلقاه من مساعدات.**
- **تم إختيار أسرتك عشوائيا من بين 400 عائلة سورية، لتكون من العائلات الممثلة للوضع الغذائي للعائلات السورية في مخيم الزعتري**
- **اذا اتخذت قرارا بالمشاركة، سأقوم بسؤالك عن أمور تتعلق بأسرتك و سنقوم بقياس محيط الذراع ، الوزن و الطول للأطفال الاكبر من 6 شهور و الاصغر من 5 سنوات. اضافة الى ذلك فاننا نقوم بقياس محيط الذراع للنساء و الفتيات الأكبر من 15 عام و الاصغر من 49 عام.**
- **و سأقوم أيضا بسؤالك عن معلومات عن حملة التطعيم للأطفال الاصغر من 15 سنوات.**
- **قبل أن نبدأ بأي من الأسئلة أو أخذ أي قياسات، سنطلب منك أن تعلن عن رضاك بالمشاركة. أي معلومة ستوفرها لنا ستحظى بالسرية التامة.**
- **بامكانك أن تسألني عن اي استفسار يخص هذا الاستبيان قبل أن تتخذ قرارا بالمشاركة أو عدمها.**

شكرا

تم اعلان الموافقة؟ 0- لا 1- نعم |___|

اسم رب الأسرة _____

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

المعلومات العامة للعائلة السورية (لجميع أفراد الأسرة)

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود
2012 /|___|___|/|___|___|	|___|___|
رقم الفريق	رقم الأسرة
|___|	|___|___|
رقم القســـــم	رقم الخيمـــة

Q1-7 خصائص الأسرة			
Q1.	رب الأسرة : M= ذكر F= انثى		|___|
Q2a.	كم عددكم (اللاجئين السوريين) في نفس الأسرة		_____
Q2b.	عدد الأولاد (ذكور و اناث) دون18 سن _____	عدد الأطفال دون سن الخامسة(0-59 شهر) حاليا:_____	
Q3a.	مدة اقامة الأسرة(اللاجئة) في الأردن ؟	1= شهر أو أقل 2= من 1 إلى 6 شهور 3= 6 شهور او أكثر	|___|
Q3b.	مدة اقامة الأسرة(اللاجئة) في المخيم ؟	1= شهر أو أقل 2= من 1 إلى 6 شهور 3= 6 شهور او أكثر	|___|
Q4.	المساعدة الصحية		
Q4a.	أ : عندما تحتاج خدمات طبية، من هي الجهة التي ترجع اليها ؟ (إختارالرقم المناسب الاجابة)	1= لا ابحث عن مساعدة 2= تداوي ذاتي 3= مرفق صحي عام 4= عيادة مؤسسة غير ربحية	5= عيادة خاصة 6= صيدلية 9= لاأعرف |___|
Q4b.	اذا كانت الاجابة ب "لا ابحث عن مساعدة" في الفرع أ، فلماذا؟	1= ارتفاع الكلفة 2= دواعي امنية	3=عدم الرغبة في الاجابة 4= أخرى، حدد_____ |___|
Q5 – 7: المياه و خدمات الصرف الصحي و النظافة العامة			
Q5.	هل لدى الأسرة امكانية الوصول الى كميات المياه اللازمة لأغراض الشرب و الطهي و الغسيل و دورات المياه؟ لا=0 نعم=1		|___|
Q6.	ما هي المشكلة/ المشاكل الرئيسية المتعلقة بالمياه و التي تواجه الأسرة ؟ (اجابة واحدة أو عدة اجابات)	1=لا يوجد 2=نشترى 3=عدم كفاية المياة لأغراض النظافة الشخصية للأطفال 4=بعض الأيام تمر دون توفر مياه الحنفية نهائيا	5= المياه المعبئة باهظة الثمن لذا فالأطفال يضطرون لشرب مياه الحنفية 6=أخرى_____ |___|___|___|___|
Q7.	هل تمتلك الأسرة امكانية الوصول الى مواد التنظيف و الصابون؟	لا=0 نعم=1	|___|

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

الأمن الغذائى للعائلة (الأسئلة لجميع العائلة)

(يتم توجيه هذه الأسئلة الى المسؤول الرئيسي عن اعداد الوجبات)

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود
2012 /|___|___|/|___|___|	|___|___|
رقم الفريق	رقم الأسرة
|___|	|___|___|
رقم القســـــم	رقم الخيمـــة

Q8 - 9:مصادر غذاء الأسرة و عدد الوجبات

Q8.	**ماهو مصدر الغذاء الرئيسي منذ لجوء الأسرة الى المنطقة؟ (اجابة واحدة أو عدة اجابات)**		
	1=التسوق من مصادر الدخل الخاص **2= التسوق بالاستعانة بمساعدات مالية من الجهات الخيرية** **3= الشراء بالدين / الاقتراض** **4= هدية من الجهات الخيرية** **5=بالاشتراك مع المضيفين**	**6= المساعدات الغذائية الانسانية** **7=غذاء مقابل عمل** **8=مقايضة (مقابل بضائع أخرى)** **99= لم يتم تناول الطعام خلال الأيام السبعة الماضية**	|___|___| |___|___| |___|___| |___|___|
Q9.	**ما هو عدد الوجبات المستهلكة حاليا / اليوم؟**		_____

Q10 - 11 : وسائل التكيف

Q10a.	**في الأيام السبعة الماضية ، هل مررت بظروف لم تتوفر فيها كميات الغذاء اللازمة او المال الكافي لشراء الغذاء لعائلتك**	**لا=0 نعم=1** *اذا كانت الاجابة لا فلا تقم بإجابة السؤال* **10b**	|___|

Q10b. **في الأيام التي لم تتوفر فيها كميات الغذاء اللازمة او المال الكافي لشراء الغذاء، فكم مرة في الأسبوع قمتم بـ:**

	عدد الأيام في الأسبوع
الاعتماد على اصناف غذائية غير محببة و أقل سعرا؟	|___|
استعارة الغذاء أو الاعتماد على مساعدات من الاصدقاء أو الاقارب ؟	|___|
تقليل الكميات المستهلكة عند تناول الوجبات؟	|___|
تحديد الكميات المستهلكة من قبل الأفراد الأكبر سنا لتوفير الحصص للأطفال ؟	|___|
مرور أيام كاملة دون تناول الطعام	|___|
الاقتراض لشراء الغذاء؟	|___|
اضطرار افراد الأسرة /(أحد أو أكثر) بتناول الغذاء لدى الأقارب او الجيران	|___|
مرور يوم كامل دون تناول الطعام	|___|

الأمن الغذائي للعائلة (الأسئلة لجميع العائلة)

Q11.	هل مررتم بظروف اضطررتم الى اللجوء فيها الى الامور التالي ذكرها؟ =1 ، لا=0	|___|
	بيع المقتنيات / الممتلكات (المجوهرات، الهواتف النقالة ، الأثاث الخ ...)	|___|
	عمالة الأطفال (في المرحلة المدرسية)	|___|
	تخفيض النفقات الصحية	|___|
	اضطرار أحد أفراد الأسرة المغادرة بحثا عن فرص عمل/ دخل	|___|

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

الجدول الغذائي الأسبوعي (الجدول لجميع العائلة)

Q12 – 15 : استهلاك الأسرة للغذاء

Q12. **خذ الوجبات المستهلكة في المنزل أو في مطبخ عام بعين الاعتبار و ليس في المطاعم الخاصة أو المباعة على جوانب الطريق، لا تاخذ الكميات الصغيرة جدا بعين الاعتبار (اقل من ملعقة شاي واحدة)**

	لمدة كم يوم خلال السبعة ايام الماضية اسهاكت اسرتك المواد التالية		**ما هو أهم مصدر غذاء ؟**	
الخبز	0= لم يتم تناول اي شيء 1= 1 يوم 2= 2 يوم 3=3 يوم 4= 4 يوم 5=5 يوم 6= 6 يوم 7=7 يوم	|___|	1= انتاج ذاتي/ من الحديقة 2= شراء من المحلات التجارية و تجار المفرق 3= الشراء بالدين / الاقتراض 4= غذاء مقابل عمل 5= مقايضة (مقابل بضائع أخرى) 6= هدية من الأقارب أو الجيران أو بالتسول 7= المساعدات الغذائية الانسانية 9= لم يتم تناول الطعام منذ الأيام السبعة الماضية	|___|
القمح(طحين أو حب)، الارز، الذرة ، المعكرونة		|___|		|___|
البسكوت، البسكوت عالي الطاقة		|___|		|___|
البطاطا		|___|		|___|
فاصولياء، حمص،عدس، البازيلاء		|___|		|___|
الخضراوات		|___|		|___|
الفواكه		|___|		|___|
اللحوم(الحمراء، الدواجن)		|___|		|___|
البيض		|___|		|___|
التونة و السردين		|___|		|___|
منتجات الألبان (الزبادي، والجبن، والحليب المجفف الحليب)		|___|		|___|
زيت نباتي ، زبدة، سمن		|___|		|___|
سكر، عسل ، مربى، حلويات		|___|		|___|

Q13.	هل تتناول طعام المعلبات؟ |___| نعم =1 = 0 لا	اذا كانت الاجابة بنعم فما نوع المعلبات |___|_____ كم مرة في الاسبوع
Q14.	هل لديك اي مخزون غذائي؟	لا=0 نعم=1 **15** اذا كانت الاجابة بلا فلا تقم باجابة السؤال

Q15. **ما مقدار المدة التي تتوقع ان يغطيها المخزون؟ اكتب عدد الايام (0 اذا كان المخزون غير متوفر)**

القمح(طحين أو حب)	|___|___|	الأيام
ارز	|___|___|	الأيام
فاصولياء، حمص،عدس، البازيلاء	|___|___|	الأيام
زيت نباتي ، زبدة، سمن	|___|___|	الأيام
سكر	|___|___|	الأيام

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

الوضع الغذائي و المناعي لدى الأطفال في الأسرة

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود
2012 /|___|___|/|___|___|	|___|___|
رقم الفريق	رقم الأسرة
|___|	|___|___|
رقم القســـــم	رقم الخيمـــــة

Q16 - 29: الوضع الغذائي و المناعي لدى الأطفال من عمر 0-59 شهر في الأسرة

رقم التسلسل	الاسم الأول (اختياري)	رقم الأسرة	Q16 الجنس ذكر=M أنثى=F	Q17 تاريخ الميلاد (ان وجد) يوم /شهر/ سنة	Q18 العمر بالأشهر	Q19 هل تقومين بارضاع طفلك طبيعيا؟ (يرجى ذكر اسم الطفل/ الأطفال) لا=0 نعم=1	Q20 بالاضافة الى حليب الرضاعة هل تعطين طفلك غذاء آخر 0= لاشيء **1=** حليب بودرة **2=**شاي **3=**طعام اطفال **4=** غذاء خاص **5=** غذاء الأسرة محورا للطفل **6=** يتناول الطعام مع الأسرة (اجابة واحدة أو عدة اجابات)	Q21 خلال ال24 ساعة الماضية ، كم مرة قمت بتغذية طفلك (بغذاء غير الرضاعة الطبيعية) 0= صفر مرة 1= مرة واحدة 2= مرتين 3= ثلاث مرات 4= أربع مرات 5 = خمس مرات أو أكثر	Q22 هل تم توفير الطفل فيتامين أ خلال الستة أشهر الماضية ؟ لا=0 نعم=1 لاأعرف =9	Q23 هل تم تطعيم الطفل ضد مرض الحصبى في الأشهر الستة الأخيرة؟ لا=0 نعم=1 لاأعرف= 9	Q24 عدد الجرعات التي حصل عليها الطفل ضد شلل الأطفال؟ 0= لا 1= مرة واحدة 2= مرتين 3= ثلاث مرات أو أكثر 9= لا أعرف	Q25 هل تتوفر **لديك** بطاقة تطعيم الطفل؟ (لتوثيق المطاع يم)؟	Q26 الاسهال المعوي في الاسبوع ين الماضيين لا=0 نعم=1	Q27 اذا كانت الاجابة بنعم للسؤال كم **26** عدد الايام التي استمرت بها الحالة؟	Q28 هل اصيب بالالتها ب الرئوي (السعال) في الاسبوع ين الماضيين لا=0 نعم=1	Q29 هل اصيب بالحمى في الاسبوع ين الماضيين لا=0 نعم=1
1.			M F				|__|__|__|									
2.			M F				|__|__|__|									
3.			M F				|__|__|__|									
4.			M F				|__|__|__|									
5.			M F				|__|__|__|									
6.			M F				|__|__|__|									
7.			M F				|__|__|__|									

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

القياسات البدنية و الأمراض التغذوية لدى الأطفال (6 الى 59 شهراً)

(يتم توجيه الأسئلة الى جميع القائمين على رعاية الأطفال الذين يعيشون معهم في الفترة العمرية 6-59 شهر)

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود
2012 /|___|___|/|___|___|	|___|___|
رقم الفريق	رقم الأسرة
|___|	|___|___|
رقم القســـــم	رقم الخيمـــــة

Q30 - 39 :القياسات البدنية و الاعتلال **عند الأطفالمن 6-59 شهر**

رقم التسلسل	الاسم الأول *(اختياري)*	رقم الأسرة	Q30 الجنس ذكر=M أنثى=F	Q31 تاريخ الميلاد (ان وجد) يوم/شهر/ سنة	Q32 العمر بالأشهر	Q33 الوزن (كغم) ± 0.1 kg	Q34 الطول (سم) ± 0.1 cm	Q35 تورم الساق N = لا Y = نعم	Q36 محيط المنتصف العلوي للذراع (سم) **± 0.1 cm**	Q37 **Z-Score** وزن/طول 0=أخضر 1=أصفر 2=\احمر	Q38 تم الإحالة الى مستوصف؟ 0= لا 1=وزن/طول1 2=وزن/طول2 3=تورم	Q39 هل تم قياس الوزن باقل كمية من الملابس لا=0 نعم=1
1.			M F					N Y		0 1 2	0 1 2 3	0 1
2.			M F					N Y		0 1 2	0 1 2 3	0 1
3.			M F					N Y		0 1 2	0 1 2 3	0 1
4.			M F					N Y		0 1 2	0 1 2 3	0 1
5.			M F					N Y		0 1 2	0 1 2 3	0 1
6.			M F					N Y		0 1 2	0 1 2 3	0 1
7.			M F					N Y		0 1 2	0 1 2 3	0 1
8.			M F					N Y		0 1 2	0 1 2 3	0 1
9.			M F					N Y		0 1 2	0 1 2 3	0 1
10.			M F					N Y		0 1 2	0 1 2 3	0 1

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

القياسات البدنية للنساء في سن الانجاب (15- 49 سنة) في الأسرة

(يتم توجيه الأسئلة الى جميع السيدات الواقعة أعمارهم ما بين 15 و 49 سنة في الأسرة المختارة)

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود
2012 /|___|___|/|___|___|	|___|___|
رقم الفريق	رقم الأسرة
|___|	|___|___|
رقم القســـــم	رقم الخيمـــــة

Q40 - 44 :القياسات البدنية (MUAC) للنساء في سن الانجاب (15- 49 سنة) في الأسرة

رقم التسلسل	الاسم *(اختياري)*	رقم الأسرة	تم اعلان الموافقة لا=0 نعم=1	Q40 العمر (بالسنوات)	Q41 الحالة الفسيولوجية 1= حامل 2=مرضع (طفل اقل من 6 شهور) 3= لا شيء مما ذكر 9=لا أعلم	Q42 عـــدد جرعـــات التتينـوس التـي تـم اخذها 0= صفر مرة 1= مرة واحدة 2= مرتين 3= ثلاث مرات 9=لا أعلم	Q43 هل تتناولين حاليا حبات الحديد و الفولات 0=لا 1=نعم 9=لا أعلم	Q44 (**MUAC**) محيط المنتصف العلوي للذراع (سم)
1.			**0 1**		**1 2 3 9**	**0 1 2 3 9**	**0 1 9**	
2.			**0 1**		**1 2 3 9**	**0 1 2 3 9**	**0 1 9**	
3.			**0 1**		**1 2 3 9**	**0 1 2 3 9**	**0 1 9**	
4.			**0 1**		**1 2 3 9**	**0 1 2 3 9**	**0 1 9**	
5.			**0 1**		**1 2 3 9**	**0 1 2 3 9**	**0 1 9**	
6.			**0 1**		**1 2 3 9**	**0 1 2 3 9**	**0 1 9**	
7.			**0 1**		**1 2 3 9**	**0 1 2 3 9**	**0 1 9**	

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

المعلومات عن حملة التطعيم للأطفال الاصغر من 15سنة في الأسرة

تاريخ المقابلة (اليوم/ الشهر/السنة)	رقم العنقود
2012 /|___|___|/|___|___|	|___|___|
رقم الفريق	رقم الأسرة
|___|	|___|___|
رقم القســـــم	رقم الخيمـــة

اسم من يقوم بالدراسة					
رقم القســـــم		رقم الخيمـــة		الاسم الأول لرب الأسـرة	
متى وصلـت إلى مخيـم الزعتـري؟	قبل 2012/9/10	قبلأسعلة	2012/9/10 أو بعد ذلك	انتقل للخيمة التاليـــة	
اســأل الأم / مقدم الرعـــاية	هل تلقيت أي معلومات عن حملة التطعيم التي أجريت في المخيم؟ - ضع علامة وفق الجــواب.		نعم	لا	
إذا كانت الإجابة نعم ، يرجى الإشارة إلى المصدر الرئيسي للمعلومات					

عدد الإطفال < 5		عدد الإطفال < 15	
الاسـم والعمـر (بالشهور) للأطفال الأقل من خمس سنيـن		الاسـم والعمـر(بالسنوات) للأطفال	

الاسـم الأول	الجنـس (M/F)	العمر بالأشهر	تطعيم ضد شلل الأطفال		الاسـم الأول	الجنـس	العمر بالسنوات	< 6 شهراً		6 شهر الى 15 سنة	
			نعـم	لا				تطعيم ضد شلل الأطفال		تطعيم ضد الحصبه	
								نعـم	لا	نعم	لا

لمن يقوم بالدراسـة – أدرج **فقـــط** أسماء الأطفال الذين حصلوا على التطعيـم من الجدول أعـــلاه

الاسـم الأول	آثار جانبية للتطعيم		حـددهـا	كم من الوقت بعد التطعيـم	كم استمـرت	هل أبلغت العيـادة		ما هو الإجراء الذي تم اتخـــاذه
	نعم	لا				نعم	لا	

ANNEX 3: QUESTIONNAIRE IN ENGLISH, FOR SYRIAN REFUGEES IN JORDAN, BEFORE ARABIC TRANSLATION AND LAST REVISION

QNo:

NUTRITION ASSESSMENT FAMILY QUESTIONNAIRE SYRIAN REFUGEE IN JORDAN – September 2012

Finding the family Address and choosing randomly the Family:

- **Find the address of family**
- **Explain the objective of survey**
- **Survey all the people in the same address, as one Family.**

Greeting and reading of rights:

THIS STATEMENT IS TO BE READ TO THE HEAD OF THE FAMILY OR TO THE MOTHER OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSE BEFORE THE INTERVIEW. ALL PEOPLE LIVING IN THE SAME ADDRESS ARE CONSIDERED AS ONE FAMILY.

Hello, my name is _____ and I work with Humanitarian Organization in Jordan. We would like to invite your Family to participate in a survey that is looking at the nutrition and health status of people who came recently from Syria.

- Humanitarian Organisations are sponsoring this nutrition survey.
- Taking part in this survey is totally your choice. You can decide to participate or not to participate. If you participate, you can stop taking part in this survey at any time for any reason. If you stop being in this survey, it will not have any negative effects on how you or your Family is treated or what aid you receive.
- If you agree to participate, I will ask you some questions about your family and we will then measure the arm circumference, the weight and height of children who are older than 6 months and younger than 5 years. In addition to these assessments, we will also measure the arm circumference of women and girls who are older than 15 years and younger than 49 years.
- Before we start to ask you any question or take any measurement, we will ask you to state your consent. Any information that you will provide will be kept strictly confidential.
- You can ask me any question that you have about this survey before you decide to participate or not.

Thank you.

Consent Given 0-No 1-Yes |___|

Person who gave consent:_____

Checked by Supervisor (Sign) _____

QNo:	

NUTRITION ASSESSMENT FAMILY QUESTIONNAIRE
SYRIAN REFUGEE IN JORDAN – September 2012

CHARACTERISTICS OF FAMILY (1 QUESTIONNAIRE BY FAMILY)

Date of interview (dd/mm/yy)	Cluster Number
|___|___|/|___|___|/|___|___|	|___|___|
Team Number	**HH Number**
|___|	|___|___|
Cluster Name	**Governorate**

No	QUESTION	ANSWER CODES		
Q1-7 Characteristics of Family				
Q1.	**Head of Family (M** = Male; **F** = Female)		|___|	
Q2a.	**Total number of persons in the family (Only Syrian Refugees)**_____			
Q2b.	**Total number of children under 18 years old :** _____	**Number of children less than 5 years (0-59 months) today:** _____		
Q3a.	**How long has this (refugee) family lived in this locality?**	**1** = ≤ 1 Month **2** = 1 - 6 Months **3** = ≥ 6 Months	|___|	
Q3b.	**Are you hosted by a resident family?**	**0** = No **1** = Yes	|___|	
Q3c.	**If No (in 3b above), are you sharing with another Refugee family from Syria?**	**0** = No **1** = Yes	|___|	
Q3d.	**If yes (in 3b or 3c above), how many families are living here?**	_____		
Q4.	**Health assistance**			
Q4a.	Where do you seek health assistance when sick currently? (Ask the question and choose one number corresponding to answer)	**1** = No assistance sought **2** = Own medication **3** = Public Health Facility **4** = NGO Clinic	**5** = Private clinic **6** = Pharmacy **9** = Don't Know	|___|

No	QUESTION	ANSWER CODES		
Q4b.	If 'No assistance' in Q8a, why?	**1** = Too expensive **2** = Security concerns	**3** = Refuse to answer **4** = Other, specify _____	|___|
Q5 – 7: WATER SANITATION AND HYGIENE QUESTIONS				
Q5.	Does the family have access to sufficient water for drinking, cooking, washing and toilet purposes? 0 = No 1 = Yes			|___|
Q6.	What is the main water problem for your family? (select one or several answers)	**1** = No problem 2 = Buying Water (cost) **3** = Not enough water for adequate personal hygiene of children **4** = Some days with no tap water at all	**5** = Drinking bottled water is too expensive so children drink tap water **6** = other _____	|___||___||___||___|
Q7.	Does the family have access to soap and hygiene items? 0 = No 1 = Yes			|___|

Checked by Supervisor (Sign) _____

QNo:

NUTRITION ASSESSMENT FAMILY QUESTIONNAIRE
SYRIAN REFUGEE IN JORDAN – September 2012

FEEDING, IMMUNIZATION STATUS AND MORBIDITY OF CHILDREN AGED 0 – 59 MONTHS IN THE FAMILY (1 QUESTIONNAIRE BY FAMILY)

Date of interview (dd/mm/yy)	Team Number	Cluster Number
|___|___|/|___|___|/|___|___|	|___|	|___|___|
Cluster Name		**Governorate**

Q8 - 21: Feeding and immunization status of children aged 0 – 59 months in the household

Id.	First Name *(optional)*	HH No.	Consent Given 1 = Yes 2 = No	**Q8** - Child Sex (**1 = M 2 = F**)	**Q9** Date of Birth (if available) dd/mm/yy	**Q10** Child Age (months) ***(If DOB is available skip months)***	**Q11** Are you breast-feeding (mention by name)? *0 = No* *1 = Yes*	**Q12** In addition to your breast milk, what are you giving to your child (by name)? *0= Nothing* *1= Formula milk* *2= Water* *3=Tea* *4=Baby food* *5=Special Food* *6=Modified Family Food* *7=Eat with the family* ***(Write different answers)***	**Q13** How many times did you feed the child in the last 24 hours *(besides breast milk)*? *0 = Zero time* *1 = 1 time* *2 =2 times* *3 = 3 times* *4 =-4 times* *5 = 5 or more times*	**Q14** Has child been provided with Vitamin A in the last 6 months? *(show sample)* *0 = No* *1 = Yes* *9 = Don't know*	**Q15** Has child been immunized against measles in the last 6 months? *0 = No* *1 = Yes* *9 = Don't know*	**Q16** Number of doses of polio vaccine given to the child orally? *0=none* *1=one* *2=two* *3=three or more* *9=Don't know*	**Q17** Does child have immunization card? (to confirm immunization status) *0 = No* *1 = Yes*	**Q18** Diarrhea in last two weeks *0= No* *1=yes*	**Q19** If yes in Q17 for how many days did the child have diarrhea?	**Q20** Has the child had cough in the last two weeks *0= No* *1=yes*	**Q21** Fever in the last two weeks *0= No* *1=yes*
1.			**1 2**					|___|___|___|___|									
2.			**1 2**					|___|___|___|___|									
3.			**1 2**					|___|___|___|___|									
4.			**1 2**					|___|___|___|___|									

IF NO VALID AGE DOCUMENTATION IS AVAILABLE: DO NOT FILL IN **Q9** AND ESTIMATE AGE USING THE EVENTS CALENDAR **(Q10).**

Q8 - 21: Feeding and immunization status of children aged 0 – 59 months in the household

Id.	First Name *(optional)*	HH No.	Consent Given 1 = Yes 2 = No	**Q8** - Child Sex (**1 = M 2 = F**)	**Q9** Date of Birth (if available) dd/mm/yy	**Q10** Child Age (months) *(**If DOB is available skip months**)*	**Q11** Are you breast-feeding (mention by name)? *0 = No* *1 = Yes*	**Q12** In addition to your breast milk, what are you giving to your child (by name)? *0= Nothing* *1= Formula milk* *2= Water* *3=Tea* *4=Baby food* *5=Special Food* *6=Modified Family Food* *7=Eat with the family* ***(Write different answers)***	**Q13** How many times did you feed the child in the last 24 hours *(besides breast milk)*? *0 = Zero time* *1 = 1 time* *2 =2 times* *3 = 3 times* *4 =-4 times* *5 = 5 or more times*	**Q14** Has child been provided with Vitamin A in the last 6 months? *(show sample)* *0 = No* *1 = Yes* *9 = Don't know*	**Q15** Has child been immunized against measles in the last 6 months? *0 = No* *1 = Yes* *9 = Don't know*	**Q16** Number of doses of polio vaccine given to the child orally? *0=none* *1=one* *2=two* *3=three or more* *9=Don't know*	**Q17** Does child have immunization card? (to confirm immunization status) *0 = No* *1 = Yes*	**Q18** Diarrhea in last two weeks *0= No* *1=yes*	**Q19** If yes in Q17 for how many days did the child have diarrhea?	**Q20** Has the child had cough in the last two weeks *0= No* *1=yes*	**Q21** Fever in the last two weeks *0= No* *1=yes*
5.			**1 2**					|___|___|___|___|									
6.			**1 2**					|___|___|___|___|									
7.			**1 2**					|___|___|___|___|									
8.			**1 2**					|___|___|___|___|									
9.			**1 2**					|___|___|___|___|									
10.			**1 2**					|___|___|___|___|									
11.			**1 2**					|___|___|___|___|									
12.			**1 2**					|___|___|___|___|									
13.			**1 2**					|___|___|___|___|									
14.			**1 2**					|___|___|___|___|									

IF NO VALID AGE DOCUMENTATION IS AVAILABLE: DO NOT FILL IN **Q9** AND ESTIMATE AGE USING THE EVENTS CALENDAR **(Q10).**

Checked by Supervisor (Sign) _____

QNo:

NUTRITION ASSESSMENT FAMILY QUESTIONNAIRE
SYRIAN REFUGEE IN JORDAN – September 2012

ANTHROPOMETRY OF CHILDREN AGED 0 – 59 MONTHS IN THE FAMILY
(1 QUESTIONNAIRE BY FAMILY)

*(*THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO ALL CARETAKERS OF A CHILD THAT LIVES WITH THEM AND IS BETWEEN 0 AND 59 MONTHS OF AGE*)*

Date of interview (dd/mm/yy)	Team Number	Cluster Number
|___|___|/|___|___|/|___|___|	|___|	|___|___|
Cluster Name		**Governorate**

Q22 - 31: Anthropometric of Children aged 0 – 59 months in the family

(to measure only children aged 6 – 59 months)

Id.	First Name *(optional)*	HH No.	Consent Given 1= Yes 2 = No	Q22 Sex (M/F)	Q23 Date of Birth (if available) dd/mm/yy	Q24 Age (in completed months)	Q25 Weight (kg) ± 0.1 kg	Q26 Height (cm) ± 0.1 cm	Q27 Bilateral Leg Oedema *N = No* *Y = yes*	Q28 MUAC (cm) ± 0.1 cm	Q29 Weight taken with minimum clothes *0= No 1=yes*	Q30 W/H Z-scores *Green = 0* *Yellow = 1* *Red = 2*	Q31 Referral to Health Center *0 = None* *1= (W/H=yellow)* *2= (W/H=Red)* *3= Oedema*
					DOB reported from Q9 or Age reported from Q10								
1.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
2.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
3.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
4.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
5.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3

Q22 - 31: Anthropometric of Children aged 0 – 59 months in the family
(to measure only children aged 6 – 59 months)

Id.	First Name *(optional)*	HH No.	Q22 Consent Given 1= Yes 2 = No	Q22 Sex (M/F)	Q23 Date of Birth (if available) dd/mm/yy	Q24 Age (in completed months)	Q25 Weight (kg) ± 0.1 kg	Q26 Height (cm) ± 0.1 cm	Q27 Bilateral Leg Oedema *N = No Y = yes*	Q28 MUAC (cm) ± 0.1 cm	Q29 Weight taken with minimum clothes *0= No 1=yes*	Q30 W/H Z-scores *Green = 0 Yellow = 1 Red = 2*	Q31 Referral to Health Center *0 = None 1= (W/H=yellow) 2= (W/H=Red) 3= Oedema*
					DOB reported from Q9 or Age reported from Q10								
6.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
7.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
8.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
9.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
10.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
11.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
12.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
13.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
14.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
15.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
16.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
17.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
18.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
19.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3
20.			1 2	M F					N Y		0 1	0 1 2	0 1 2 3

Checked by Supervisor (Sign) _____

QNo:

NUTRITION ASSESSMENT FAMILY QUESTIONNAIRE
SYRIAN REFUGEE IN JORDAN – September 2012

ANTHROPOMETRY (MUAC) FOR ALL ADULT WOMEN OF CHILDBEARING AGE (15-49 YEARS) PRESENT AT THE FAMILY (1 QUESTIONNAIRE BY FAMILY)

(THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO ALL WOMEN AGED BETWEEN 15 AND 49 YEARS IN THE SELECTED FAMILY)

Date of interview (dd/mm/yy)	Team Number	Cluster Number
|___|___|/|___|___|/|___|___|	|___|	|___|___|
	Cluster Name	**Governorate**

Q32 - 36: Anthropometry (MUAC) for all adult women of childbearing age (15-49 years) present at the family

ID	Woman Name *(optional)*	HH No.	Consent Given 1 = Yes 2 = No	Q32 Age (in completed years)	Q33 Physiological status 1 = Pregnant 2 = Lactating 3 = None of the above 9 = Don't Know	Q34 Number of Tetanus vaccine received *0 = None* *1 = One* *2 = Two* *3 =Three* 9 = Don't Know	Q35 Are you currently receiving iron-folate pills *0 = No* *1 = yes* *9 = Don't know*	Q36 MUAC (cm) ± 0.1 cm
1.			1 2		1 2 3 9	0 1 2 3 9	0 1 9	
2.			1 2		1 2 3 9	0 1 2 3 9	0 1 9	
3.			1 2		1 2 3 9	0 1 2 3 9	0 1 9	
4.			1 2		1 2 3 9	0 1 2 3 9	0 1 9	
5.			1 2		1 2 3 9	0 1 2 3 9	0 1 9	

Checked by Supervisor (Sign) _____

QNo:	

NUTRITION ASSESSMENT FAMILY QUESTIONNAIRE
SYRIAN REFUGEE IN JORDAN – September 2012

FOOD SECURITY - QUESTIONS ARE ABOUT FAMILY DAILY CHOICES AND EATING HABITS (1 QUESTIONNAIRE BY FAMILY)

*(*THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO THE MAIN CARETAKER WHO IS RESPONSIBLE FOR COOKING THE MEALS)

Date of interview (dd/mm/yy)	Cluster Number
|___|___|/|___|___|/|___|___|	|___|___|
Team Number	**HH Number**
|___|	|___|___|
Cluster Name	**Governorate**

No	QUESTION	ANSWER CODES	
Q37 - 38: FAMILY FOOD SOURCES AND NUMBER OF MEALS			
Q37.	**What was the main source of food, from the time the family arrived here as a refugee? (select one or several answers)**		
	1 = Purchase from personal resource **2** = Purchase with cash given by charity **3** = Purchase at credit, borrowed **4** = Received as gift from charity **5** = Shared with hosts	**6** = Humanitarian food aid **7** = Received against work (in-kind payment) **8** = Bartered against other goods **99** = Not eaten during the 7 past days	|___|___||___|___||___|___|
Q38.	**How many meals do you eat each day currently?**	_____	
Q39 - 40: COPING STRATEGIES			
Q39a.	In the past 7 days, have you had enough food or money to buy food for your Family?	**0** = NO 1 = YES	|___| **If answer is No, don't ask the Q38b.**

Q39b.	During the days that you did not have enough food or money to buy food, what did you do? (read all the answer one by one) For each answer, ask the number of days	
		Number of the days per week
	Rely on less preferred and less expensive foods?	|___|
	Borrow food, or rely on help from a friend or relative?	|___|

No	QUESTION	ANSWER CODES
	Limit portion size at meal times?	|___|
	Restrict consumption by adults in order for small children to eat?	|___|
	Reduce number of meals eaten in a day?	|___|
	Spend whole day without eat?	|___|
	Purchase food at credit?	|___|
	Have family members eat at relatives or neighbours?	|___|
	Send family members elsewhere to eat?	|___|
	Spend whole day without eating?	|___|
Q40.	**Have there been times when your family had to do the following in order to get money or food, from the time of displacement?** **0 = No** **1= Yes**	
	Sell family assets (jewellery, phone, furniture etc.)?	|___|
	Have school age children involved in income generation?	|___|
	Decrease health expenditures?	|___|
	Have family member leave in search of work/income?	|___|

No	QUESTION	ANSWER CODES

Q41 - 44: FAMILY FOOD CONSUMPTION

Q41. **Consider only meals consumed at home or in public kitchen but not in private restaurants or street food**

Do NOT count food consumed in very small amount (less than a teaspoon per person

	How many days for the last 7 days did your family consume these food items?		**What was the main source of these food?**	
Bread	**0** = Not eaten **1 =** 1 day **2** = 2 days **3** = 3 days **4** = 4 days **5** = 5 days **6** = 6 days **7** = 7 days	|___|	**1** = Own production/garden **2** = Purchase in shops, markets, petty traders **3** = Purchase at credit, borrowed **4** = Received against work (in-kind payment) **5** = Bartered against other goods **6** = Received as gift from family or neighbours, begged **7** = Humanitarian food aid **9** = Not eaten during the 7 past days	|___|
Wheat (grain, flour), rice, maize, pasta		|___|		|___|
Biscuits, High Energy Biscuits		|___|		|___|
Potatoes, sweet potatoes		|___|		|___|
Beans, chickpeas, lentils, peas		|___|		|___|
Vegetables		|___|		|___|
Fruits		|___|		|___|
Nuts, walnuts, hazelnuts		|___|		|___|
Meat (red, poultry)		|___|		|___|
Eggs		|___|		|___|
Fish		|___|		|___|
Dairy products (yogurt, cheese, milk, milk powder)		|___|		|___|
Vegetable oil, butter, grease		|___|		|___|
Sugar, honey, jam, sweets		|___|		|___|

Q42.	**Do you eat canned foods?** **(0 = No 1 = Yes)** |___|	**If Yes, what type of canned foods** _____ **How many days in a week** |___|	
Q43.	**Do you have some stocks of food?**	**0 = No 1 = Yes** |___|	**If No stocks, don't ask the Q44**

Q44.	**How long will your stocks last for the family consumption**? Write number of days (0 if no stock)		
	Wheat (grain, flour)	|___|___|	Days
	Rice	|___|___|	Days
	Beans, peas, chickpeas, lentils	|___|___|	Days
	Potatoes, sweet potatoes	|___|___|	Days
	Oil, butter, grease	|___|___|	Days
	Sugar	|___|___|	Days

Checked by Supervisor (Sign) _____

ANNEX 4-1: RESULTS USING THE NCHS 1977 GROWTH REFERENCE FOR SYRIAN REFUGEES IN HOST COMMUNITIES

Result Tables for NCHS growth reference 1977

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

	All n = 650	**Boys** n = 326	**Girls** n = 324
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(20) 3.1 % (1.9 - 5.0 95% C.I.)	(16) 4.9 % (2.9 - 8.3 95% C.I.)	(4) 1.2 % (0.5 - 3.3 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(19) 2.9 % (1.8 - 4.8 95% C.I.)	(15) 4.6 % (2.6 - 8.0 95% C.I.)	(4) 1.2 % (0.5 - 3.3 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(1) 0.2 % (0.0 - 1.1 95% C.I.)	(1) 0.3 % (0.0 - 2.2 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)

The prevalence of oedema is 0.0 %

Table : Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

		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.**	**%**
6-11	61	0	0.0	2	3.3	59	96.7	0	0.0
12-23	161	0	0.0	6	3.7	155	96.3	0	0.0
24-35	144	0	0.0	2	1.4	142	98.6	0	0.0
36-47	145	1	0.7	5	3.4	139	95.9	0	0.0
48-59	139	0	0.0	4	2.9	135	97.1	0	0.0
Total	650	1	0.2	19	2.9	630	96.9	0	0.0

Table : Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	**>=-3 z-score**
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 1 (0.2 %)	Not severely malnourished No. 649 (99.8 %)

Table: Prevalence of acute malnutrition based on the percentage of the median and/or oedema

	n = 650
Prevalence of global acute malnutrition (<80% and/or oedema)	(10) 1.5 % (0.8 - 3.0 95% C.I.)
Prevalence of moderate acute malnutrition (<80% and >= 70%, no oedema)	(10) 1.5 % (0.8 - 3.0 95% C.I.)
Prevalence of severe acute malnutrition (<70% and/or oedema)	(0) 0.0 % (0.0 - 0.0 95% C.I.)

Table: Prevalence of malnutrition by age, based on weight-for-height percentage of the median and oedema

		Severe wasting (<70% median)		Moderate wasting (>=70% and <80% median)		Normal (> =80% median)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	61	0	0.0	0	0.0	61	100.0	0	0.0
12-23	161	0	0.0	2	1.2	159	98.8	0	0.0
24-35	144	0	0.0	1	0.7	143	99.3	0	0.0
36-47	145	0	0.0	5	3.4	140	96.6	0	0.0
48-59	139	0	0.0	2	1.4	137	98.6	0	0.0
Total	650	0	0.0	10	1.5	640	98.5	0	0.0

Table: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 650	**Boys** n = 326	**Girls** n = 324
Prevalence of underweight (<-2 z-score)	(24) 3.7 % (2.3 - 5.9 95% C.I.)	(12) 3.7 % (1.8 - 7.3 95% C.I.)	(12) 3.7 % (2.1 - 6.5 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(24) 3.7 % (2.3 - 5.9 95% C.I.)	(12) 3.7 % (1.8 - 7.3 95% C.I.)	(12) 3.7 % (2.1 - 6.5 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)

Table: Prevalence of underweight by age, based on weight-for-age z-scores

		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.**	**%**
6-11	61	0	0.0	2	3.3	59	96.7	0	0.0
12-23	161	0	0.0	7	4.3	154	95.7	0	0.0
24-35	144	0	0.0	1	0.7	143	99.3	0	0.0
36-47	145	0	0.0	7	4.8	138	95.2	0	0.0
48-59	139	0	0.0	7	5.0	132	95.0	0	0.0
Total	650	0	0.0	24	3.7	626	96.3	0	0.0

Table: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 650	**Boys** n = 326	**Girls** n = 324
Prevalence of stunting (<-2 z-score)	(38) 5.8 % (4.1 - 8.4 95% C.I.)	(21) 6.4 % (4.0 - 10.1 95% C.I.)	(17) 5.2 % (3.2 - 8.4 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(36) 5.5 % (3.9 - 7.9 95% C.I.)	(20) 6.1 % (3.8 - 9.7 95% C.I.)	(16) 4.9 % (3.1 - 7.9 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(2) 0.3 % (0.1 - 1.2 95% C.I.)	(1) 0.3 % (0.0 - 2.2 95% C.I.)	(1) 0.3 % (0.0 - 2.2 95% C.I.)

Table: Prevalence of stunting by age based on height-for-age z-scores

		Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	61	0	0.0	1	1.6	60	98.4
12-23	161	1	0.6	10	6.2	150	93.2
24-35	144	0	0.0	8	5.6	136	94.4
36-47	145	1	0.7	8	5.5	136	93.8
48-59	139	0	0.0	9	6.5	130	93.5
Total	650	2	0.3	36	5.5	612	94.2

Table: 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	650	-0.07±0.98	1.22	0	0
Weight-for-Age	650	-0.30±1.01	1.36	0	0
Height-for-Age	650	-0.29±1.13	1.31	0	0

* contains for WHZ and WAZ the children with edema.

ANNEX 4-2: RESULTS USING THE NCHS 1977 GROWTH REFERENCE FOR SYRIAN REFUGEES IN ZA'ATRI CAMP

Result Tables for NCHS growth reference 1977

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

	All n = 414	**Boys** n = 213	**Girls** n = 201
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(22) 5.3 % (3.6 - 7.8 95% C.I.)	(13) 6.1 % (3.4 - 10.8 95% C.I.)	(9) 4.5 % (2.4 - 8.1 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(21) 5.1 % (3.4 - 7.4 95% C.I.)	(13) 6.1 % (3.4 - 10.8 95% C.I.)	(8) 4.0 % (2.0 - 7.8 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(1) 0.2 % (0.0 - 1.8 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(1) 0.5 % (0.1 - 3.6 95% C.I.)

The prevalence of oedema is 0.0 %

Table: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

		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.**	**%**
6-11	47	0	0.0	0	0.0	47	100.0	0	0.0
12-23	86	0	0.0	7	8.1	79	91.9	0	0.0
24-35	106	0	0.0	8	7.5	98	92.5	0	0.0
36-47	91	1	1.1	1	1.1	89	97.8	0	0.0
48-59	84	0	0.0	5	6.0	79	94.0	0	0.0
Total	414	1	0.2	21	5.1	392	94.7	0	0.0

Table: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	**>=-3 z-score**
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 1 (0.2 %)	Not severely malnourished No. 413 (99.8 %)

Table: Prevalence of acute malnutrition based on the percentage of the median and/or oedema

	n = 414
Prevalence of global acute malnutrition (<80% and/or oedema)	(6) 1.4 % (0.7 - 3.1 95% C.I.)
Prevalence of moderate acute malnutrition (<80% and >= 70%, no oedema)	(5) 1.2 % (0.5 - 2.8 95% C.I.)
Prevalence of severe acute malnutrition (<70% and/or oedema)	(1) 0.2 % (0.0 - 1.8 95% C.I.)

Table: Prevalence of malnutrition by age, based on weight-for-height percentage of the median and oedema

		Severe wasting (<70% median)		Moderate wasting (>=70% and <80% median)		Normal (> =80% median)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	47	0	0.0	0	0.0	47	100.0	0	0.0
12-23	86	0	0.0	0	0.0	86	100.0	0	0.0
24-35	106	0	0.0	2	1.9	104	98.1	0	0.0
36-47	91	1	1.1	0	0.0	90	98.9	0	0.0
48-59	84	0	0.0	3	3.6	81	96.4	0	0.0
Total	414	1	0.2	5	1.2	408	98.6	0	0.0

Table: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 414	**Boys** n = 213	**Girls** n = 201
Prevalence of underweight (<-2 z-score)	(40) 9.7 % (6.6 - 14.0 95% C.I.)	(22) 10.3 % (6.6 - 15.9 95% C.I.)	(18) 9.0 % (5.7 - 13.7 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(36) 8.7 % (5.7 - 13.0 95% C.I.)	(20) 9.4 % (5.9 - 14.7 95% C.I.)	(16) 8.0 % (4.8 - 13.0 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(4) 1.0 % (0.4 - 2.5 95% C.I.)	(2) 0.9 % (0.2 - 4.0 95% C.I.)	(2) 1.0 % (0.2 - 4.0 95% C.I.)

Table: Prevalence of underweight by age, based on weight-for-age z-scores

		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.**	**%**
6-11	47	0	0.0	3	6.4	44	93.6	0	0.0
12-23	86	1	1.2	10	11.6	75	87.2	0	0.0
24-35	106	2	1.9	12	11.3	92	86.8	0	0.0
36-47	91	1	1.1	2	2.2	88	96.7	0	0.0
48-59	84	0	0.0	9	10.7	75	89.3	0	0.0
Total	414	4	1.0	36	8.7	374	90.3	0	0.0

Table: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 414	**Boys** n = 213	**Girls** n = 201
Prevalence of stunting (<-2 z-score)	(50) 12.1 % (8.8 - 16.4 95% C.I.)	(31) 14.6 % (9.7 - 21.3 95% C.I.)	(19) 9.5 % (5.9 - 14.7 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(39) 9.4 % (6.3 - 13.8 95% C.I.)	(25) 11.7 % (7.2 - 18.7 95% C.I.)	(14) 7.0 % (4.2 - 11.3 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(11) 2.7 % (1.5 - 4.7 95% C.I.)	(6) 2.8 % (1.3 - 6.1 95% C.I.)	(5) 2.5 % (1.0 - 5.8 95% C.I.)

Table: Prevalence of stunting by age based on height-for-age z-scores

		Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	47	0	0.0	3	6.4	44	93.6
12-23	86	4	4.7	11	12.8	71	82.6
24-35	106	1	0.9	11	10.4	94	88.7
36-47	91	2	2.2	4	4.4	85	93.4
48-59	84	4	4.8	10	11.9	70	83.3
Total	414	11	2.7	39	9.4	364	87.9

Table: 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	414	-0.08±0.97	1.00	0	0
Weight-for-Age	414	-0.53±1.04	1.52	0	0
Height-for-Age	414	-0.64±1.24	1.34	0	0

* contains for WHZ and WAZ the children with edema.

ANNEX 5-1: SURVEY TEAMS' MEMBERS FOR SYRIAN REFUGEES IN HOST COMMUNITIES

Inter-agency Syrian refugees nutrition assessment
Field team list - JORDAN

NAME AND SURNAME	PHONE NUMBER	E-MAIL ADDRESS	POSITION	TEAM
Oumar Hamza (UNICEF)	0795897323	obh2407@hotmail.com	Coordinator	
Shannon Patty and Michele Doura (WFP)			Coordinator	
Abdelnasser Obiidat	0797530128	nasiro@dos.gov.jo	Supervisor	
Sereen Mismar	0795591812	Serene-mismar@hotmail.com	Supervisor	
Maisa Abusadah	0788338307	Maisaa54@hotmail.com	Team leader	1
Lama Majali	0796665023	Lama_majal@hotmail.com	Measurer	
Riyam Maraqa	799954556	rmaraqa@unicef.org	Assistant	
Dina Jardaneh	0799330229	jaedanehd@jor.emro.who.int	Team leader	2
Samah Al-Quran	0799600033	squran@savethe children.org.jo	Measurer	
Ruba Al-Kateeb	0788684248	Ruba_Alkateb@hotmail.com	Assistant	
Eshraaq Al-Zawahreh	0795489405	alzawahr@unhcr.org	Team leader	3
Doaa Awad	0788684248		Measurer	
Laila Quntar	0777603909	Laila.quntar@hotmail.com	Assistant	
Abrar Al Areed	0796020178	aalareed@savethe children.org.jo	Team leader	4
Mohamed Alkhateeb	0799535259	Mohammaadkhateeb1987@ gmail.com	Measurer	
Isabelle Manneh	0797773995	manneh@unfpa.org	Assistant	
Maisa Elian	0788482174	maisaelian@ymail.com	Team leader	5
Otor Alzoubi	0795559522	Otor.alzoubi@wfp.org	Measurer	
Fares Mawajdeh	079552753	fmamajdeh@unicef.org	Assistant	
Loay Salim	0786418942		Team leader	6
Basma Al Hanbali	0775744005	balhanbali@savethechildren. org.jo	Measurer	
Reem Al-Qidera	0795282938	Remain117@yahoo.com	Assistant	

ANNEX 5-2: SURVEY TEAMS' MEMBERS FOR SYRIAN REFUGEES IN ZA'ATRI CAMP

Inter-agency Syrian refugees nutrition assessment – Za'tari Camp
Field team list

NAME AND SURNAME	PHONE NUMBER	E-MAIL ADDRESS	POSITION	TEAM
Oumar Hamza	0795897323	obh2407@hotmail.com	Coordinator (UNICEF)	
Buthayna Alkhatib	0799060498	balkhatib@unicef.org	Coordinator (UNICEF)	
Michele Doura	0799828737	michele.doura@wfp.org	Coordinator (WFP)	
Shannon Patty	0798890765	shannon.patty@wfp.org	Coordinator (WFP)	
Abdelnasser Obiidat	0797530128	nasiro@dos.gov.jo	Supervisor (DOS)	
Sereen Mismar	0795591812	Serene.mismar@hotmail.com	Supervisor (MOH)	
Enas Alshaki	0797608482	Enas.aldhaki@wfp.org	Team leader (WFP)	1
Hanaa Athamneh	0786550703		Measurer (InterSOS)	
Qasim Al tebeney	0777946211	qasim198823@yahoo.com	Assistant (IRD)	
Dina Jardaneh	0799330229	jardanehd@jor.emro.who.int	Team leader (WHO)	2
Ruba Al-Kateeb	0788684248	ruba_Alkateb@hotmail.com	Assistant (SAVE)	
Ameera Faraj	0797229892	faraj@unhcr.org	Team leader (UNHCR)	3
Mohammadd Alkhateeb	0799535259	mohammadkhateeb1987@gmail.com	Measurer (SAVE)	
Fatemeh Mohammad	0772194690		Assistant (IRD)	
Loay Salim Ibrahim	0786418942	Loay_ibrahim@yahoo.com	Team leader (MOH)	4
Maram Al-Thamna	0777065838	maramaltahamna@yahoo.com	Measurer (InterSOS)	
Thorieh Hussein	0785137697		Assistant (IRD)	
Bayan Fraaj BedAl-Aziz	0796671399	karamellabeno@yahoo.com	Team leader (IRD)	5
Doaa Awad	0799429656	doaaawad@yahoo.com	Measurer (MOH)	
Kadejeh Mohammad	0788521700		Assistant (IRD)	

ANNEX 6-1: CONSENT FORM FOR SYRIAN REFUGEES IN HOST COMMUNITIES

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

نموذج الموافقة على الدراسة

الحصول على عنوان المنزل:

- **احصل على عنوان الأسرة**
- **اشرح الهدف من الاستبيان**
- **قيّم كل العائلة(كل العائلة = الأسرة)**

ملاحظات مهمة:

- **يتم قراءة هذا البيان لرب الأسرة ، او للأم، و في حال غياب كلا الوالدين يتم اختيار فرد بالغ من الأسرة قبل البدء بالمقابلة.**
- **عرّف الأسرة بانها مجموعة من الناس الذين يعيشون في نفس السكن.**
- **عرّف رب الأسرة بانه الفرد القائم بشؤون الأسرة و يدير شؤونها و هو صاحب القرار الاخير.**

مرحبا، نحن_____ و نقوم بدراسة بالتعاون بين وزارة الصحة، ومؤسسات الأنسانية في الأردن، لذا نود أن ندعو أسرتكم للمشاركة في استبيان دراسة الوضع الغذائي و الصحي للسوريين القادمين حديثا من سوريا.

- **اشتراكك في هذا التقييم هو خيار خاص بك. بامكانك ان تختار المشاركة أو عدم المشاركة. اذا اتخذت قرار بالمشاركة، فبامكانك التوقف في أي لحظة لأي سبب كان. اذا قررت التوقف فذلك لن يتسبب باي تغير في التعامل مع اسرتك أو بما تتلقاه من مساعدات.**
- **تم إختيار أسرتك عشوائيا من بين 750 عائلة سورية، لتكون من العائلات الممثلة للوضع الغذائي للعائلات السورية في الأردن**
- **اذا اتخذت قرارا بالمشاركة، سأقوم بسؤالك عن أمور تتعلق بأسرتك و سنقوم بقياس محيط الذراع ، الوزن و الطول للأطفال الاكبر من 6 شهور و الاصغر من 5 سنوات. اضافة الى ذلك فاننا نقوم بقياس محيط الذراع للنساء و الفتيات الأكبر من 15 عام و الاصغر من 49 عام.**
- **قبل أن نبدأ بأي من الأسئلة أو أخذ أي قياسات، سنطلب منك أن تعلن عن رضاك بالمشاركة. أي معلومة ستوفرها لنا ستحظى بالسرية التامة.**
- **بامكانك أن تسألني عن اي استفسار يخص هذا الاستبيان قبل أن تتخذ قرارا بالمشاركة أو عدمها.**

شكرا

تم اعلان الموافقة؟ 0- لا 1- نعم |___|

اسم رب الأسرة _____

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

ANNEX 6-2: CONSENT FORM FOR SYRIAN REFUGEES IN ZA'ATRI CAMP

إستبيان لتقييم الوضع الغذائي للعائلات السورية في الأردن

أيلول إلى تشرين الأول 2012

نموذج الموافقة على الدراسة

الحصول على عنوان المنزل:

- **احصل على خيمة الأسرة**
- **اشرح الهدف من الاستبيان**
- **قيّم كل العائلة(كل العائلة = الأسرة)**

ملاحظات مهمة:

- **يتم قراءة هذا البيان لرب الأسرة ، او للأم، و في حال غياب كلا الوالدين يتم اختيار فرد بالغ من الأسرة قبل البدء بالمقابلة.**
- **عرّف الأسرة بانها مجموعة من الناس الذين يعيشون في نفس السكن.**
- **عرّف رب الأسرة بانه الفرد القائم بشؤون الأسرة و يدير شؤونها و هو صاحب القرار الاخير.**

مرحبا، نحن_____ و نقوم بدراسة بالتعاون بين وزارة الصحة، ومؤسسات الأنسانية في الأردن، لذا نود أن ندعو أسرتكم للمشاركة في استبيان دراسة الوضع الغذائي و الصحي للسوريين القادمين حديثا من سوريا.

- **اشتراكك في هذا التقييم هو خيار خاص بك. بامكانك ان تختار المشاركة أو عدم المشاركة. اذا اتخذت قرار بالمشاركة، فبامكانك التوقف في أي لحظة لأي سبب كان. اذا قررت التوقف فذلك لن يتسبب باي تغير في التعامل مع اسرتك أو بما تتلقاه من مساعدات.**
- **تم إختيار أسرتك عشوائيا من بين 400 عائلة سورية، لتكون من العائلات الممثلة للوضع الغذائي للعائلات السورية في مخيم الزعتري**
- **اذا اتخذت قرارا بالمشاركة، سأقوم بسؤالك عن أمور تتعلق بأسرتك و سنقوم بقياس محيط الذراع ، الوزن و الطول للأطفال الاكبر من 6 شهور و الاصغر من 5 سنوات. اضافة الى ذلك فاننا نقوم بقياس محيط الذراع للنساء و الفتيات الأكبر من 15 عام و الاصغر من 49 عام.**
- **و سأقوم أيضا بسؤالك عن معلومات عن حملة التطعيم للأطفال الاصغر من 15 سنوات.**
- **قبل أن نبدأ بأي من الأسئلة أو أخذ أي قياسات، سنطلب منك أن تعلن عن رضاك بالمشاركة. أي معلومة ستوفرها لنا ستحظى بالسرية التامة.**
- **بامكانك أن تسألني عن اي استفسار يخص هذا الاستبيان قبل أن تتخذ قرارا بالمشاركة أو عدمها.**

شكرا

تم اعلان الموافقة؟ 0- لا 1- نعم |___|

اسم رب الأسرة _____

محقق من قبل قائد الفريق/المشرف(التوقيع)_____

ANNEX 7-1: SMART PLAUSIBILITY REPORT FOR SYRIAN REFUGEES IN HOST COMMUNITY

Plausibility check for: JDN_201209_UNInterAgency_NutAssessment_SyrRefuge-es- host communities -30 December 2012.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**
Missing/Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-10	>10	
(% of in-range subjects)			0	5	10	20	**0** (1.7 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<0.000	
(Significant chi square)			0	2	4	10	**0** (p=0.937)
Overall Age distrib	Incl	p	>0.1	>0.05	>0.001	<0.000	
(Significant chi square)			0	2	4	10	**0** (p=0.385)
Dig pref score - weight	Incl	#	0-5	5-10	10-20	> 20	
			0	2	4	10	**0** (4)
Dig pref score - height	Incl	#	0-5	5-10	10-20	> 20	
			0	2	4	10	**0** (5)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>1.20	
			0	2	6	20	**0** (0.96)
Skewness WHZ	Excl	#	<±1.0	<±2.0	<±3.0	>±3.0	
			0	1	3	5	**0** (-0.21)
Kurtosis WHZ	Excl	#	<±1.0	<±2.0	<±3.0	>±3.0	
			0	1	3	5	**0** (0.47)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<0.000	
			0	1	3	5	**5** (p=0.000)
Timing	Excl	Not determined yet					
			0	1	3	5	
OVERALL SCORE WHZ =			0-5	5-10	10-15	>15	**5** %

At the moment the overall score of this survey is 5 %, this is excellent.

There were no duplicate entries detected.

Percentage of children with no exact birthday: 100 %

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=9/ID=1: HAZ (2.683), Age may be incorrect
Line=41/ID=36: **WHZ (3.284)**, Weight may be incorrect
Line=54/ID=59: HAZ (3.316), Age may be incorrect
Line=69/ID=61: **WHZ (-2.939)**, Weight may be incorrect
Line=131/ID=46: WAZ (3.090), Weight may be incorrect
Line=171/ID=308: HAZ (-3.520), Age may be incorrect
Line=209/ID=189: HAZ (2.694), Age may be incorrect
Line=233/ID=202: **WHZ (-3.295)**, Weight may be incorrect
Line=267/ID=251: **WHZ (3.268)**, WAZ (3.747), Weight may be incorrect
Line=287/ID=632: **WHZ (-3.155)**, Height may be incorrect
Line=293/ID=634: **WHZ (-3.160)**, Weight may be incorrect
Line=302/ID=559: **WHZ (-3.491)**, Height may be incorrect
Line=389/ID=580: HAZ (3.170), Height may be incorrect
Line=391/ID=396: HAZ (-4.434), Age may be incorrect
Line=457/ID=167: HAZ (2.684), Age may be incorrect
Line=480/ID=443: **WHZ (-3.232)**, Weight may be incorrect
Line=559/ID=473: **WHZ (3.252)**, Weight may be incorrect
Line=568/ID=476: **WHZ (-3.012)**, Weight may be incorrect
Line=573/ID=649: **WHZ (-3.376)**, Height may be incorrect

Percentage of values flagged with SMART flags:WHZ: 1.7 %, HAZ: 1.1 %, WAZ: 0.3 %

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 : #########
Month 59 : ###############

Age ratio of 6-29 months to 30-59 months: 0.87 (The value should be around 1.0).

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

```
Age cat.     mo.        boys              girls             total     ratio boys/girls
```

6 to 11	6	29/38.2 (0.8)	32/37.9 (0.8)	61/76.1 (0.8)	0.91
12 to 23	12	89/74.4 (1.2)	72/74.0 (1.0)	161/148.4 (1.1)	1.24
24 to 35	12	66/72.1 (0.9)	78/71.7 (1.1)	144/143.9 (1.0)	0.85
36 to 47	12	77/71.0 (1.1)	68/70.6 (1.0)	145/141.6 (1.0)	1.13
48 to 59	12	65/70.2 (0.9)	74/69.8 (1.1)	139/140.0 (1.0)	0.88
6 to 59	54	326/325.0 (1.0)	324/325.0 (1.0)		1.01

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.937 (boys and girls equally represented)
Overall age distribution: p-value = 0.385 (as expected)
Overall age distribution for boys: p-value = 0.166 (as expected)
Overall age distribution for girls: p-value = 0.758 (as expected)
Overall sex/age distribution: p-value = 0.079 (as expected)

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: **4** (0-5 excellent, 6-10 good, 11-20 acceptable and > 20 problematic)

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: **5** (0-5 excellent, 6-10 good, 11-20 acceptable and > 20 problematic)

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: **36** (0-5 excellent, 6-10 good, 11-20 acceptable and > 20 problematic)

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

.	no exclusion	exclusion from reference mean	exclusion from observed mean

.		(WHO flags)	(SMART flags)
WHZ			
Standard Deviation SD:	1.05	1.05	0.96
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	5.1%	5.1%	
calculated with current SD:	1.8%	1.8%	
calculated with a SD of 1:	1.4%	1.4%	
HAZ			
Standard Deviation SD:	1.16	1.16	1.11
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	8.2%	8.2%	7.9%
calculated with current SD:	9.0%	9.0%	8.2%
calculated with a SD of 1:	6.0%	6.0%	6.1%
WAZ			
Standard Deviation SD:	0.93	0.93	0.91
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:			
calculated with current SD:			
calculated with a SD of 1:			

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

WHZ	p= 0.000	p= 0.000	p= 0.000
HAZ	p= 0.049	p= 0.049	p= 0.058
WAZ	p= 0.002	p= 0.002	p= 0.021

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

Skewness			
WHZ	-0.40	-0.40	-0.21
HAZ	0.19	0.19	0.15
WAZ	0.32	0.32	0.20

If the value is:
-below minus 2 there is a relative excess of wasted/stunted/underweight subjects in the sample
-between minus 2 and minus 1, there may be a relative excess of wasted/stunted/underweight subjects in the sample.
-between minus 1 and plus 1, the distribution can be considered as symmetrical.
-between 1 and 2, there may be an excess of obese/tall/overweight subjects in the sample.
-above 2, there is an excess of obese/tall/overweight subjects in the sample

Kurtosis			
WHZ	1.15	1.15	0.47
HAZ	0.29	0.29	-0.06
WAZ	0.46	0.46	0.06

(Kurtosis characterizes the relative peakedness or flatness compared with the normal distribution, positive kurtosis indicates a relatively peaked distribution, negative kurtosis indicates a relatively flat distribution)
If the value is:
-above 2 it indicates a problem. There might have been a problem with data collection or sampling.
-between 1 and 2, the data may be affected with a problem.
-less than an absolute value of 1 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=1.87 (p=0.000)
GAM: ID=1.87 (p=0.000)
HAZ < -2: ID=1.29 (p=0.073)
HAZ < -3: ID=0.89 (p=0.702)
WAZ < -2: ID=1.72 (p=0.001)

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: 0.97 (n=56, f=1)  #######
02: 0.83 (n=56, f=0)  #
03: 0.95 (n=56, f=1)  ######
04: 1.02 (n=55, f=2)  #########
05: 1.24 (n=55, f=3)  ##################
06: 0.97 (n=54, f=0)  #######
07: 1.13 (n=52, f=1)  ###############
08: 1.13 (n=49, f=0)  ###############
09: 1.01 (n=44, f=0)  #########
10: 1.05 (n=40, f=1)  ##########
11: 1.33 (n=33, f=1)  ######################
12: 0.96 (n=28, f=0)  #######
13: 1.14 (n=21, f=0)  OOOOOOOOOOOOO
14: 1.08 (n=15, f=0)  OOOOOOOOOOO
15: 0.86 (n=10, f=0)  ~~
16: 1.31 (n=08, f=1)  ~~~~~~~~~~~~~~~~~~~~
17: 0.78 (n=08, f=0)
18: 0.88 (n=04, f=0)  ~~~
19: 0.89 (n=04, f=0)  ~~~~
20: 1.31 (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)

Analysis by Team

Team	**1**	**2**	**3**	**4**	**5**	**6**	
n =	78	153	134	101	85	99	
Percentage of values flagged with SMART flags:							
WHZ:	1.3	1.3	1.5	1.0	2.4	3.0	
HAZ:	0.0	0.7	0.7	1.0	2.4	2.0	
WAZ:	0.0	0.0	0.0	2.0	0.0	0.0	
Age ratio of 6-29 months to 30-59 months:							
	0.77	0.84	0.91	0.87	1.07	0.80	
Sex ratio (male/female):							
	1.05	0.89	1.09	1.24	0.89	0.94	
Digit preference Weight (%):							
.0 :	9	7	10	7	11	7	
.1 :	13	8	11	14	13	10	
.2 :	10	8	15	7	11	10	
.3 :	9	8	11	11	12	15	
.4 :	10	10	8	3	11	7	
.5 :	8	11	9	13	12	12	
.6 :	10	11	9	12	12	6	
.7 :	13	13	7	17	8	12	
.8 :	9	12	8	9	4	9	
.9 :	9	11	12	8	8	11	
DPS:	5	6	7	13	9	9	Digit preference score (0-5 excellent, 5-10 good, 10-20 acceptable and > 20 problematic)
Digit preference Height (%):							
.0 :	6	8	10	5	19	12	
.1 :	9	8	10	13	14	8	
.2 :	9	20	13	11	9	8	
.3 :	6	11	10	25	6	8	
.4 :	15	8	18	8	8	9	
.5 :	4	7	8	4	8	11	
.6 :	15	14	10	7	6	17	
.7 :	10	11	7	11	8	7	
.8 :	9	7	11	7	11	7	
.9 :	15	5	4	10	11	12	
DPS:	13	14	12	19	12	10	Digit preference score (0-5 excellent, 5-10 good, 10-20 acceptable and > 20 problematic)
Digit preference MUAC (%):							
.0 :	1	0	1	0	0	0	
.1 :	0	0	0	1	1	0	

.2 :	1	1	0	1	0	1	
.3 :	1	5	5	4	2	9	
.4 :	9	16	15	12	2	19	
.5 :	28	35	30	30	29	29	
.6 :	24	30	32	33	24	24	
.7 :	21	9	11	14	30	14	
.8 :	13	5	3	5	12	3	
.9 :	1	0	3	1	0	0	
DPS:	34	41	38	38	40	35	Digit preference score (0-5 excellent, 5-10 good, 10-20 acceptable and > 20 problematic)
Standard deviation of WHZ:							
SD	1.17	0.90	1.06	0.98	1.05	1.20	
Prevalence (< -2) observed:							
%	7.7		4.5		4.7	8.1	
Prevalence (< -2) calculated with current SD:							
%	2.5		1.8		1.6	4.5	
Prevalence (< -2) calculated with a SD of 1:							
%	1.1		1.3		1.2	2.1	
Standard deviation of HAZ:							
SD	1.11	1.05	1.10	1.35	1.16	1.24	
observed:							
%	6.4	6.5	6.7	11.9	4.7	13.1	
calculated with current SD:							
%	5.9	8.6	7.4	11.6	7.5	12.5	
calculated with a SD of 1:							
%	4.2	7.7	5.6	5.3	4.7	7.7	

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 11	6	2/4.7 (0.4)	1/4.4 (0.2)	3/9.1 (0.3)	2.00
12 to 23	12	8/9.1 (0.9)	12/8.7 (1.4)	20/17.8 (1.1)	0.67
24 to 35	12	10/8.9 (1.1)	11/8.4 (1.3)	21/17.3 (1.2)	0.91
36 to 47	12	9/8.7 (1.0)	8/8.3 (1.0)	17/17.0 (1.0)	1.13
48 to 59	12	11/8.6 (1.3)	6/8.2 (0.7)	17/16.8 (1.0)	1.83
6 to 59	54	40/39.0 (1.0)	38/39.0 (1.0)		1.05

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.821 (boys and girls equally represented)
Overall age distribution: p-value = 0.267 (as expected)
Overall age distribution for boys: p-value = 0.646 (as expected)
Overall age distribution for girls: p-value = 0.254 (as expected)
Overall sex/age distribution: p-value = 0.099 (as expected)

Team 2:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 11	6	9/8.4 (1.1)	7/9.5 (0.7)	16/17.9 (0.9)	1.29
12 to 23	12	18/16.4 (1.1)	16/18.5 (0.9)	34/34.9 (1.0)	1.13
24 to 35	12	12/15.9 (0.8)	24/17.9 (1.3)	36/33.9 (1.1)	0.50
36 to 47	12	22/15.7 (1.4)	12/17.6 (0.7)	34/33.3 (1.0)	1.83
48 to 59	12	11/15.5 (0.7)	22/17.5 (1.3)	33/33.0 (1.0)	0.50
6 to 59	54	72/76.5 (0.9)	81/76.5 (1.1)		0.89

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.467 (boys and girls equally represented)
Overall age distribution: p-value = 0.984 (as expected)
Overall age distribution for boys: p-value = 0.286 (as expected)
Overall age distribution for girls: p-value = 0.197 (as expected)

Overall sex/age distribution: p-value = 0.020 (significant difference)

Team 3:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 11	6	4/8.2 (0.5)	7/7.5 (0.9)	11/15.7 (0.7)	0.57
12 to 23	12	24/16.0 (1.5)	14/14.6 (1.0)	38/30.6 (1.2)	1.71
24 to 35	12	12/15.5 (0.8)	13/14.2 (0.9)	25/29.7 (0.8)	0.92
36 to 47	12	15/15.2 (1.0)	12/13.9 (0.9)	27/29.2 (0.9)	1.25
48 to 59	12	15/15.1 (1.0)	18/13.8 (1.3)	33/28.9 (1.1)	0.83
6 to 59	54	70/67.0 (1.0)	64/67.0 (1.0)		1.09

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.604 (boys and girls equally represented)
Overall age distribution: p-value = 0.322 (as expected)
Overall age distribution for boys: p-value = 0.138 (as expected)
Overall age distribution for girls: p-value = 0.789 (as expected)
Overall sex/age distribution: p-value = 0.057 (as expected)

Team 4:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 11	6	5/6.6 (0.8)	5/5.3 (0.9)	10/11.8 (0.8)	1.00
12 to 23	12	16/12.8 (1.3)	9/10.3 (0.9)	25/23.1 (1.1)	1.78
24 to 35	12	11/12.4 (0.9)	10/10.0 (1.0)	21/22.4 (0.9)	1.10
36 to 47	12	7/12.2 (0.6)	10/9.8 (1.0)	17/22.0 (0.8)	0.70
48 to 59	12	17/12.1 (1.4)	11/9.7 (1.1)	28/21.8 (1.3)	1.55
6 to 59	54	56/50.5 (1.1)	45/50.5 (0.9)		1.24

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.274 (boys and girls equally represented)
Overall age distribution: p-value = 0.485 (as expected)
Overall age distribution for boys: p-value = 0.234 (as expected)
Overall age distribution for girls: p-value = 0.986 (as expected)
Overall sex/age distribution: p-value = 0.104 (as expected)

Team 5:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 11	6	5/4.7 (1.1)	5/5.3 (0.9)	10/10.0 (1.0)	1.00
12 to 23	12	12/9.1 (1.3)	12/10.3 (1.2)	24/19.4 (1.2)	1.00
24 to 35	12	9/8.9 (1.0)	8/10.0 (0.8)	17/18.8 (0.9)	1.13
36 to 47	12	8/8.7 (0.9)	18/9.8 (1.8)	26/18.5 (1.4)	0.44
48 to 59	12	6/8.6 (0.7)	2/9.7 (0.2)	8/18.3 (0.4)	3.00
6 to 59	54	40/42.5 (0.9)	45/42.5 (1.1)		0.89

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.588 (boys and girls equally represented)
Overall age distribution: p-value = 0.039 (significant difference)
Overall age distribution for boys: p-value = 0.777 (as expected)
Overall age distribution for girls: p-value = 0.008 (significant difference)
Overall sex/age distribution: p-value = 0.002 (significant difference)

Team 6:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 11	6	4/5.6 (0.7)	7/6.0 (1.2)	11/11.6 (0.9)	0.57
12 to 23	12	11/11.0 (1.0)	9/11.6 (0.8)	20/22.6 (0.9)	1.22
24 to 35	12	12/10.6 (1.1)	12/11.3 (1.1)	24/21.9 (1.1)	1.00
36 to 47	12	16/10.5 (1.5)	8/11.1 (0.7)	24/21.6 (1.1)	2.00

```
48 to 59     12       5/10.3 (0.5)      15/11.0 (1.4)      20/21.3 (0.9)    0.33
--------------------------------------------------------------------------------
6  to 59     54      48/49.5 (1.0)      51/49.5 (1.0)                       0.94
```

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.763 (boys and girls equally represented)
Overall age distribution: p-value = 0.926 (as expected)
Overall age distribution for boys: p-value = 0.175 (as expected)
Overall age distribution for girls: p-value = 0.532 (as expected)
Overall sex/age distribution: p-value = 0.050 (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: 0.94 (n=13, f=0)  ######
02: 0.79 (n=12, f=0)
03: 1.23 (n=10, f=0)  ##################
04: 1.83 (n=08, f=0)  ##########################################
05: 0.99 (n=05, f=0)  ########
06: 0.40 (n=05, f=0)
07: 0.89 (n=06, f=0)  ####
08: 1.07 (n=05, f=0)  ############
09: 0.99 (n=04, f=0)  OOOOOOOO
10: 1.49 (n=05, f=0)  ##############################
11: 1.45 (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: 1.07 (n=24, f=1)  ############
02: 0.99 (n=18, f=0)  ########
03: 1.11 (n=15, f=1)  ##############
04: 0.74 (n=11, f=0)
05: 0.52 (n=09, f=0)
06: 1.28 (n=08, f=0)  ####################
07: 0.97 (n=10, f=0)  #######
08: 0.71 (n=10, f=0)
09: 0.55 (n=10, f=0)
10: 0.64 (n=10, f=0)
11: 0.42 (n=05, f=0)
12: 0.74 (n=05, f=0)
13: 1.10 (n=04, f=0)  OOOOOOOOOOOOO
14: 0.97 (n=03, f=0)  ~~~~~~~
15: 0.36 (n=03, f=0)
16: 1.16 (n=03, f=0)  ~~~~~~~~~~~~~~~
17: 0.88 (n=03, 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: 1.03 (n=25, f=0)  ##########
02: 1.10 (n=18, f=0)  ##############
03: 0.98 (n=16, f=0)  #######
04: 0.64 (n=13, f=0)
05: 1.10 (n=10, f=0)  #############
06: 1.46 (n=11, f=1)  ############################
07: 0.89 (n=08, f=0)  ####
08: 1.28 (n=05, f=0)  OOOOOOOOOOOOOOOOOOO
09: 1.30 (n=05, f=0)  OOOOOOOOOOOOOOOOOOOO
10: 1.16 (n=05, f=0)  OOOOOOOOOOOOOOO
11: 1.13 (n=04, f=0)  OOOOOOOOOOOOOO
```

```
12: 0.66 (n=04, f=0)
13: 0.67 (n=03, 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: 4

```
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: 1.23 (n=18, f=0)  ##################
02: 0.90 (n=17, f=0)  ####
03: 0.72 (n=13, f=0)
04: 1.21 (n=09, f=0)  #################
05: 0.70 (n=09, f=0)
06: 0.51 (n=07, f=0)
07: 1.27 (n=07, f=0)  ####################
08: 1.08 (n=07, f=0)  ############
09: 0.54 (n=05, f=0)
10: 0.66 (n=03, f=0)
11: 2.01 (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: 5

```
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: 1.20 (n=17, f=1)  #################
02: 1.12 (n=12, f=0)  #############
03: 0.81 (n=10, f=0)  #
04: 0.68 (n=09, f=0)
05: 0.60 (n=08, f=0)
06: 0.98 (n=08, f=0)  ########
07: 1.41 (n=06, f=1)  ##########################
08: 0.65 (n=05, f=0)
09: 1.57 (n=03, f=0)  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
10: 1.08 (n=04, f=0)  OOOOOOOOOOOO
11: 0.09 (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: 6

```
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: 1.18 (n=16, f=0)  ################
02: 0.89 (n=13, f=0)  ####
03: 1.09 (n=11, f=0)  ############
04: 1.63 (n=09, f=1)  ###################################
05: 1.32 (n=10, f=1)  ######################
06: 0.91 (n=09, f=0)  #####
07: 1.19 (n=07, f=0)  ################
08: 1.00 (n=07, f=0)  ########
09: 1.25 (n=05, f=0)  OOOOOOOOOOOOOOOOOOO
10: 1.41 (n=04, f=0)  OOOOOOOOOOOOOOOOOOOOOOOOOO
11: 1.40 (n=04, f=0)  OOOOOOOOOOOOOOOOOOOOOOOOO
12: 0.89 (n=02, f=0)  ~~~~
13: 0.84 (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)

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

ANNEX 7-2: SMART PLAUSIBILITY REPORT FOR SYRIAN REFUGEES IN ZA'ATRI CAMP

Plausibility check for: JDN_201209_UNInterAgency_NutAssessment_SyrRefuge-es-Za'atari Camp-30December 2012-FV.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**
Missing/Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-10	>10	
(% of in-range subjects)			0	5	10	20	**0** (1.0 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<0.000	
(Significant chi square)			0	2	4	10	**0** (p=0.555)
Overall Age distrib	Incl	p	>0.1	>0.05	>0.001	<0.000	
(Significant chi square)			0	2	4	10	**0** (p=0.496)
Dig pref score - weight	Incl	#	0-5	5-10	10-20	> 20	
			0	2	4	10	**0** (3)
Dig pref score - height	Incl	#	0-5	5-10	10-20	> 20	
			0	2	4	10	**0** (5)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>1.20	
			0	2	6	20	**0** (1.01)
Skewness WHZ	Excl	#	<±1.0	<±2.0	<±3.0	>±3.0	
			0	1	3	5	**0** (-0.36)
Kurtosis WHZ	Excl	#	<±1.0	<±2.0	<±3.0	>±3.0	
			0	1	3	5	**0** (0.41)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<0.000	
			0	1	3	5	**0** (p=0.456)
Timing	Excl	Not determined yet					
			0	1	3	5	
OVERALL SCORE WHZ =			0-5	5-10	10-15	>15	**0** %

At the moment the overall score of this survey is 0 %, this is excellent.

There were no duplicate entries detected.

Percentage of children with no exact birthday: 100 %

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=18/ID=329: HAZ (2.395), Age may be incorrect
Line=25/ID=299: **WHZ (-3.025)**, Weight may be incorrect
Line=47/ID=311: **WHZ (-3.342)**, Weight may be incorrect
Line=99/ID=46: **WHZ (-3.117)**, Weight may be incorrect
Line=115/ID=86: **WHZ (-4.836)**, WAZ (-3.437), Weight may be incorrect
Line=161/ID=174: HAZ (-3.978), WAZ (-3.545), Age may be incorrect
Line=167/ID=106: HAZ (2.379), Age may be incorrect
Line=171/ID=126: HAZ (2.327), Age may be incorrect
Line=205/ID=194: HAZ (3.175), Age may be incorrect
Line=271/ID=279: HAZ (2.322), Age may be incorrect
Line=370/ID=63: HAZ (2.261), Height may be incorrect
Line=400/ID=407: HAZ (3.285), Height may be incorrect

Percentage of values flagged with SMART flags:WHZ: 1.0 %, HAZ: 1.9 %, WAZ: 0.5 %
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 : ########
Month 59 : ##########

Age ratio of 6-29 months to 30-59 months: 0.85 (The value should be around 1.0).

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

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 11	6	19/24.9 (0.8)	28/23.5 (1.2)	47/48.5 (1.0)	0.68
12 to 23	12	49/48.6 (1.0)	37/45.9 (0.8)	86/94.5 (0.9)	1.32
24 to 35	12	49/47.1 (1.0)	57/44.5 (1.3)	106/91.6 (1.2)	0.86
36 to 47	12	51/46.4 (1.1)	40/43.8 (0.9)	91/90.2 (1.0)	1.27
48 to 59	12	45/45.9 (1.0)	39/43.3 (0.9)	84/89.2 (0.9)	1.15
6 to 59	54	213/207.0 (1.0)	201/207.0 (1.0)		1.06

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.555 (boys and girls equally represented)
Overall age distribution: p-value = 0.496 (as expected)
Overall age distribution for boys: p-value = 0.742 (as expected)

Overall age distribution for girls: p-value = 0.144 (as expected)
Overall sex/age distribution: p-value = 0.061 (as expected)

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: **3** (0-5 excellent, 6-10 good, 11-20 acceptable and > 20 problematic)

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: **5** (0-5 excellent, 6-10 good, 11-20 acceptable and > 20 problematic)

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: **34** (0-5 excellent, 6-10 good, 11-20 acceptable and > 20 problematic)

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:	1.07	1.07	1.01
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	5.8%	5.8%	4.9%
calculated with current SD:	2.0%	2.0%	1.3%
calculated with a SD of 1:	1.4%	1.4%	1.2%
HAZ			
Standard Deviation SD:	1.26	1.26	1.18
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	15.9%	15.9%	16.0%
calculated with current SD:	17.4%	17.4%	16.8%

calculated with a SD of 1: 11.7% 11.7% 12.8%

WAZ
Standard Deviation SD: 1.00 1.00 0.98
(The SD should be between 0.8 and 1.2)
Prevalence (< -2)
observed: 6.3% 6.3%
calculated with current SD: 4.5% 4.5%
calculated with a SD of 1: 4.5% 4.5%

Results for Shapiro-Wilk test for normally (Gaussian) distributed data:
WHZ p= 0.000 p= 0.000 p= 0.000
HAZ p= 0.169 p= 0.169 p= 0.182
WAZ p= 0.012 p= 0.012 p= 0.026
(If p < 0.05 then the data are not normally distributed. If p > 0.05 you can consider the data normally distributed)

Skewness
WHZ -0.68 -0.68 -0.36
HAZ 0.17 0.17 -0.04
WAZ -0.26 -0.26 -0.16
If the value is:
-below minus 2 there is a relative excess of wasted/stunted/underweight subjects in the sample
-between minus 2 and minus 1, there may be a relative excess of wasted/stunted/underweight subjects in the sample.
-between minus 1 and plus 1, the distribution can be considered as symmetrical.
-between 1 and 2, there may be an excess of obese/tall/overweight subjects in the sample.
-above 2, there is an excess of obese/tall/overweight subjects in the sample

Kurtosis
WHZ 1.52 1.52 0.41
HAZ 0.13 0.13 -0.28
WAZ 0.19 0.19 -0.03
(Kurtosis characterizes the relative peakedness or flatness compared with the normal distribution, positive kurtosis indicates a relatively peaked distribution, negative kurtosis indicates a relatively flat distribution)
If the value is:
-above 2 it indicates a problem. There might have been a problem with data collection or sampling.
-between 1 and 2, the data may be affected with a problem.
-less than an absolute value of 1 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=1.01 (p=0.456)
GAM: ID=1.01 (p=0.456)
HAZ < -2: ID=1.16 (p=0.249)
HAZ < -3: ID=0.90 (p=0.621)
WAZ < -2: ID=0.77 (p=0.811)

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: 1.09 (n=32, f=0) ############
02: 1.18 (n=32, f=1) ################
03: 0.79 (n=32, f=0)
04: 1.27 (n=32, f=1) ####################
05: 0.96 (n=32, f=0) #######
06: 1.03 (n=32, f=0) ##########
07: 0.89 (n=32, f=0) ####
08: 1.02 (n=32, f=0) #########
09: 1.53 (n=27, f=2) ##############################
10: 0.94 (n=27, f=0) ######
11: 1.01 (n=26, f=0) #########

12: 1.12 (n=21, f=0) ############
13: 1.11 (n=17, f=0) ############
14: 0.95 (n=13, f=0) OOOOOO
15: 1.14 (n=09, f=0) OOOOOOOOOOOOO
16: 0.46 (n=07, f=0)
17: 1.12 (n=06, f=0) ~~~~~~~~~~~~
18: 1.10 (n=03, 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**	**4**	**5**	
n =	61	109	90	102	52	
Percentage of values flagged with SMART flags:						
WHZ:	0.0	0.9	1.1	2.0	0.0	
HAZ:	4.9	0.9	2.2	2.0	0.0	
WAZ:	0.0	0.0	1.1	1.0	0.0	
Age ratio of 6-29 months to 30-59 months:						
	0.74	0.91	0.84	0.85	0.86	
Sex ratio (male/female):						
	1.35	1.14	1.05	0.82	1.17	
Digit preference Weight (%):						
.0 :	7	14	9	9	6	
.1 :	11	7	11	9	15	
.2 :	15	11	6	10	13	
.3 :	3	12	11	15	12	
.4 :	10	8	9	9	6	
.5 :	11	7	16	10	10	
.6 :	20	9	7	7	8	
.7 :	7	8	9	16	13	
.8 :	10	13	9	7	4	
.9 :	7	10	14	10	13	
DPS:	15	7	10	9	13	Digit preference score (0-5 excellent, 5-10 good, 10-20 acceptable and > 20 problematic)
Digit preference Height (%):						
.0 :	18	7	7	5	12	
.1 :	13	10	14	16	13	
.2 :	7	10	6	11	13	
.3 :	5	12	9	7	13	
.4 :	11	12	13	12	10	
.5 :	15	6	9	13	2	
.6 :	2	10	10	11	12	
.7 :	5	10	9	11	12	
.8 :	16	9	11	5	6	
.9 :	8	14	12	11	8	
DPS:	18	7	9	11	12	Digit preference score (0-5 excellent, 5-10 good, 10-20 acceptable and > 20 problematic)
Digit preference MUAC (%):						
.0 :	0	0	0	1	0	
.1 :	0	1	0	2	0	
.2 :	0	2	1	0	0	
.3 :	7	12	6	6	10	
.4 :	10	26	23	12	12	
.5 :	41	31	29	26	33	
.6 :	25	18	22	25	33	
.7 :	11	7	14	16	12	
.8 :	7	3	3	11	2	
.9 :	0	0	1	2	0	
DPS:	42	36	35	31	41	Digit preference score (0-5 excellent, 5-10 good, 10-20 acceptable and > 20 problematic)
Standard deviation of WHZ:						
SD	0.91	1.05	1.13	1.15	1.02	
Prevalence (< -2) observed:						
%		7.3	6.7	4.9	7.7	

Prevalence (< -2) calculated with current SD:
% 2.3 2.8 2.4 1.1
Prevalence (< -2) calculated with a SD of 1:
% 1.8 1.5 1.1 0.9
Standard deviation of HAZ:
SD 1.44 1.15 1.28 1.28 1.21
observed:
% 14.8 18.3 16.7 13.7 15.4
calculated with current SD:
% 16.8 17.9 17.6 16.8 17.7
calculated with a SD of 1:
% 8.2 14.5 11.6 10.9 13.1

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 11	6	1/4.1 (0.2)	4/3.0 (1.3)	5/7.1 (0.7)	0.25
12 to 23	12	9/8.0 (1.1)	5/5.9 (0.8)	14/13.9 (1.0)	1.80
24 to 35	12	9/7.7 (1.2)	8/5.8 (1.4)	17/13.5 (1.3)	1.13
36 to 47	12	8/7.6 (1.0)	3/5.7 (0.5)	11/13.3 (0.8)	2.67
48 to 59	12	8/7.5 (1.1)	6/5.6 (1.1)	14/13.1 (1.1)	1.33
6 to 59	54	35/30.5 (1.1)	26/30.5 (0.9)		1.35

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.249 (boys and girls equally represented)
Overall age distribution: p-value = 0.736 (as expected)
Overall age distribution for boys: p-value = 0.606 (as expected)
Overall age distribution for girls: p-value = 0.626 (as expected)
Overall sex/age distribution: p-value = 0.154 (as expected)

Team 2:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 11	6	6/6.8 (0.9)	5/6.0 (0.8)	11/12.8 (0.9)	1.20
12 to 23	12	12/13.2 (0.9)	11/11.6 (0.9)	23/24.9 (0.9)	1.09
24 to 35	12	17/12.8 (1.3)	14/11.3 (1.2)	31/24.1 (1.3)	1.21
36 to 47	12	8/12.6 (0.6)	10/11.1 (0.9)	18/23.7 (0.8)	0.80
48 to 59	12	15/12.5 (1.2)	11/11.0 (1.0)	26/23.5 (1.1)	1.36
6 to 59	54	58/54.5 (1.1)	51/54.5 (0.9)		1.14

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.503 (boys and girls equally represented)
Overall age distribution: p-value = 0.405 (as expected)
Overall age distribution for boys: p-value = 0.439 (as expected)
Overall age distribution for girls: p-value = 0.916 (as expected)
Overall sex/age distribution: p-value = 0.254 (as expected)

Team 3:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 11	6	6/5.4 (1.1)	3/5.2 (0.6)	9/10.5 (0.9)	2.00
12 to 23	12	12/10.5 (1.1)	11/10.0 (1.1)	23/20.6 (1.1)	1.09
24 to 35	12	7/10.2 (0.7)	12/9.7 (1.2)	19/19.9 (1.0)	0.58
36 to 47	12	12/10.0 (1.2)	12/9.6 (1.3)	24/19.6 (1.2)	1.00
48 to 59	12	9/9.9 (0.9)	6/9.5 (0.6)	15/19.4 (0.8)	1.50
6 to 59	54	46/45.0 (1.0)	44/45.0 (1.0)		1.05

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.833 (boys and girls equally represented)
Overall age distribution: p-value = 0.637 (as expected)
Overall age distribution for boys: p-value = 0.781 (as expected)
Overall age distribution for girls: p-value = 0.493 (as expected)
Overall sex/age distribution: p-value = 0.271 (as expected)

Team 4:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 11	6	4/5.4 (0.7)	11/6.6 (1.7)	15/11.9 (1.3)	0.36
12 to 23	12	9/10.5 (0.9)	7/12.8 (0.5)	16/23.3 (0.7)	1.29
24 to 35	12	11/10.2 (1.1)	15/12.4 (1.2)	26/22.6 (1.2)	0.73
36 to 47	12	15/10.0 (1.5)	12/12.2 (1.0)	27/22.2 (1.2)	1.25
48 to 59	12	7/9.9 (0.7)	11/12.1 (0.9)	18/22.0 (0.8)	0.64
6 to 59	54	46/51.0 (0.9)	56/51.0 (1.1)		0.82

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.322 (boys and girls equally represented)
Overall age distribution: p-value = 0.255 (as expected)
Overall age distribution for boys: p-value = 0.410 (as expected)
Overall age distribution for girls: p-value = 0.180 (as expected)
Overall sex/age distribution: p-value = 0.022 (significant difference)

Team 5:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 11	6	2/3.3 (0.6)	5/2.8 (1.8)	7/6.1 (1.1)	0.40
12 to 23	12	7/6.4 (1.1)	3/5.5 (0.5)	10/11.9 (0.8)	2.33
24 to 35	12	5/6.2 (0.8)	8/5.3 (1.5)	13/11.5 (1.1)	0.63
36 to 47	12	8/6.1 (1.3)	3/5.2 (0.6)	11/11.3 (1.0)	2.67
48 to 59	12	6/6.0 (1.0)	5/5.2 (1.0)	11/11.2 (1.0)	1.20
6 to 59	54	28/26.0 (1.1)	24/26.0 (0.9)		1.17

The data are expressed as observed number/expected number (ratio of obs/expect)

Overall sex ratio: p-value = 0.579 (boys and girls equally represented)
Overall age distribution: p-value = 0.959 (as expected)
Overall age distribution for boys: p-value = 0.848 (as expected)
Overall age distribution for girls: p-value = 0.273 (as expected)
Overall sex/age distribution: p-value = 0.162 (as expected)

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: 0.63 (n=06, f=0)
02: 0.71 (n=05, f=0)
03: 0.64 (n=05, f=0)
04: 0.80 (n=05, f=0)
05: 1.04 (n=05, f=0)  ##########
06: 0.89 (n=05, f=0)  ####
07: 0.74 (n=05, f=0)
08: 0.94 (n=05, f=0)  ######
09: 0.47 (n=04, f=0)
10: 1.73 (n=04, f=0)  ########################################
11: 0.52 (n=03, f=0)
12: 2.49 (n=02, f=0)  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
13: 0.61 (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: 1.43 (n=08, f=0)  ##########################
02: 0.81 (n=08, f=0)
03: 0.42 (n=08, f=0)
04: 1.61 (n=08, f=1)  ################################
05: 0.60 (n=08, f=0)
06: 1.44 (n=08, f=0)  ##########################
07: 0.67 (n=08, f=0)
08: 1.09 (n=08, f=0)  ############
09: 0.64 (n=07, f=0)
10: 1.19 (n=07, f=0)  ################
11: 0.95 (n=07, f=0)  ######
12: 1.43 (n=06, f=0)  ##########################
13: 1.58 (n=04, f=0)  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
14: 1.17 (n=04, f=0)  OOOOOOOOOOOOOOOO
15: 1.16 (n=04, f=0)  OOOOOOOOOOOOOOO
16: 0.91 (n=03, f=0)  OOOOO
17: 0.62 (n=03, 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: 1.23 (n=09, f=0)  ##################
02: 1.93 (n=09, f=1)  ##################################################
03: 0.59 (n=09, f=0)
04: 1.21 (n=08, f=0)  ################
05: 0.93 (n=08, f=0)  ######
06: 0.97 (n=07, f=0)  #######
07: 0.53 (n=07, f=0)
08: 1.31 (n=07, f=0)  ####################
09: 1.44 (n=06, f=0)  ##########################
10: 0.70 (n=06, f=0)
11: 1.26 (n=06, f=0)  ####################
12: 1.52 (n=04, f=0)  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
13: 1.16 (n=02, f=0)  ~~~~~~~~~~~~~~~
14: 0.24 (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: 4

```
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: 1.19 (n=08, f=0)  ################
02: 0.57 (n=08, f=0)
03: 0.80 (n=08, f=0)
04: 1.29 (n=08, f=0)  ####################
05: 0.91 (n=08, f=0)  #####
06: 1.09 (n=08, f=0)  ############
07: 1.36 (n=08, f=0)  ######################
08: 0.85 (n=08, f=0)  ##
09: 2.44 (n=07, f=2)  ########################################################################
10: 0.63 (n=07, f=0)
11: 0.93 (n=07, f=0)  ######
12: 0.58 (n=06, f=0)
13: 0.67 (n=05, f=0)
14: 0.66 (n=03, f=0)
15: 0.69 (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: 5

```
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: 0.31 (n=05, f=0)
02: 0.30 (n=05, f=0)
03: 1.53 (n=05, f=0)  ##############################
04: 1.65 (n=05, f=0)  ################################
05: 1.01 (n=05, f=0)  #########
06: 0.71 (n=05, f=0)
```

07: 0.82 (n=05, f=0) #
08: 0.49 (n=04, f=0)
09: 1.92 (n=03, f=0) ##
10: 0.27 (n=03, f=0)
11: 1.72 (n=02, f=0) OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
12: 1.41 (n=02, f=0) OOOOOOOOOOOOOOOOOOOOOOOO
13: 0.06 (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)

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