AFGHANISTAN

ANTHROPOMETRIC AND MORTALITY SMART SURVEY FINAL REPORT

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EXECUTIVE SUMMARY

Between 1st and 10th June 2015, Afghanistan Center for Training and Development (ACTD), with support from Action contre la Faim (ACF), conducted a Nutrition, Mortality and IYCF SMART survey in Paktya province. The assessment covered 4 out of 13 districts of the province namely: Chamkani, Ahmad abad, Said karam and Gardez. These included about 40.15% (210,8001) of the total population of the province. The remaining districts were classified as insecure and therefore inaccessible due to insecurity.

The objective of this survey was to assess the current nutrition status of children under-5 and women of childbearing age, crude and under-5 mortality rates were collected as well as data on several indicators representing risk factors leading to undernutrition (IYCF, immunization, supplementation, WASH) in Paktya in order to guide further response and recommend changes in the ongoing programming.

Findings showed that the prevalence of Global Acute malnutrition (GAM), based on WHZ for those 4 districts in Paktya, was 5.2 % (CI: 4.1- 6.7). GAM based on MUAC was 6.6% (CI: 4.8-9.0). The rate of severe acute malnutrition (WHZ<-3 score and/ or oedema) was 0.6 % (CI: 0.3-1.3). The prevalence of stunting among children 6-59 months, was 31.7 % (CI: 27.9 - 35.8), out of which, 12.5 % (CI: 10.1 - 15.4) was severely stunted. The crude mortality rate (CMR) was 0.48 death/10,000/Day (CI: 0.21-1.09) and under 5 mortality rate was 0.30 death/10,000/Day (CI: 0.18-0.49).

Based on the WHO thresholds, the current findings indicate that the acute malnutrition rate in Paktya remain poor while chronic malnutrition is of serious concern. The overall IYCF indicators were also worrying especially the two core indicators: excusive breastfeeding and introduction of solid, semi-solid or soft foods (complementary feeding). Overall health indicators were in the acceptables levels, except the iron/folate supplementation coverage for pregnant women. Common 2-weeks recall illness among children under five was high: 19.9%.

[1] Settled Population of Paktya province by Civil Division, Urban, Rural and Sex-2012-2013

In order to improve the situation, specially the chronic malnutrition, long term nutrition interventions are indeed important. Nutrition services are already integrated into the basic health services. However, not all health facilities are yet to provide the full set of these services. Implementing partners need to expand the geographical coverage of the services. Expanding the number of trained health staffs would support the quality nutrition services delivery.

On the prevention side, all components of IYCF need to be equally integrated both at facility and community levels. In addition, communities have to be mobilized and sensitized on the importance of adequate IYCF but by mainstreaming these activities with maternal nutrition and reproductive health sensitization comprehensively. The improved health seeking behavior in its preventive and curative part is a key to address high levels of stunting.

INTRODUCTION

Paktya is one of the 34 provinces of Afghanistan. Paktya province is located in eastern of Afghanistan and share a border with Pakistan in the east. Although the province is small, it is divided into 13 districts namely: Jaji (Zazi Arub), Lija Mangal, Dand wa Patan, Ahmad Abad, Chamkani, Said karam, Janikkhial, Zormat, Ahmad Khail, Merzaka, Wazi Zadran, Shwak and Gardez, the provincial capital.

Paktya borders the Pakistan-ruled tribal areas of North Waziristan, Bannu and Kurma Agency[2]. Like most of the traditional Pashtun areas of Afghanistan, intra border movements are common between residents in these two countries. Within Afghanistan, it borders Logar, Ghazni, Paktika and Khost Provinces. The province covers an area of 229153 km^2.

It is largely a mountainous province with most of the population living in the central valley stretching from Ahmad Khail in the east down to Zormat and into neighbouring Paktika province. The eastern part of the province, particularly Chamkani and Dand wa Patan, in second valley leading into Pakistan, Jaji (Zazi) and Janikhail districts are largely mountainous with much smaller inhabited valleys. A high pass crosses a regular mountain ridge from the lowest part of Logar and descends into the Gardez river valley to the south. The pass receives heavy snowfall during the winter months, often to the point of being impassable. Snow tends to persist into the summer months on the north–facing side of the mountain (Annex 1: Physical map of Paktya).

The total population of the province is about 516,3004. The ethnic groups of the province are 91% Pashtun and 9% Tajik. Paktya province also has a population of Kochis or nomads whose numbers vary in different seasons.The majority of Paktya's population (96%) lives in rural districts while 4% lives in urban areas. Around 51% of the population is male and 49% is female.

[2] Agency is the terms used in Pakistan for administrative regions.
[3] CSO-2012/2013 Population Statistics
[4] Estimate population of Afghanistan CSO 2011 (1390)

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Figure 1: Map of Paktya with surveyed areas

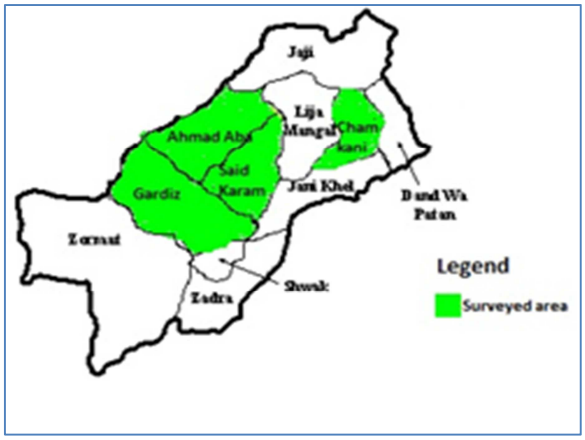


Table 1 List of covered districts

District	Total Population[6]
Grades	81,000
Ahmad Abad	27,100
Chamkani	48,500
Said karam	54,200
Total	**210,800**

OBJECTIVES

The broad objective of the current study was to estimate the prevalence of undernutrition amongst children from 6 to 59 months in Paktya Province. However, a set of more specific objectives was agreed with partners in order to have more in depth analysis about nutritional

[5] Settled Population of Paktia province by Civil Division, Urban, Rural and Sex-2012-2013
[6] Settled Population of Paktya province by Civil Division, Urban, Rural and Sex-2012-2013

status of pregnant and lactating women, as well as possible contributing factors. So these specific objectives were:

- To estimate the Crude and under five death rates.
- To determine the prevalence of under nutrition among children 0-59 months.
- To determine the core IYCF practices of children 0-23 months.
- To determine the nutrition status of pregnant and lactating women (PLW) using MUAC.
- To understand the household WASH situation, such as households storages of water households use of water and hand washing practices.
- To estimate the coverage of Vitamin A supplementation and deworming in the last 6 months among children under five and the coverage of Iron/folate supplementation among pregnant women.
- To estimate the morbidity patterns among children 0-59 months.

JUSTIFICATION OF THE SURVEY

The latest National Nutrition Survey (NNS) was conducted in 2013. Till date, no updated information is available on the nutritional situation in Paktya. This survey is to shade more lights on the nutritional status of Under 5 Children and Pregnant and Lactating Women (PLW) in Paktya.

Since there is no district specific information on nutritional status of local population, this survey will provide information relevant only for the 3 covered districts. This information will also complement the results from 2013 National Nutrition Survey providing an update for those 4 districts: areas of intervention for ACTD. ACTD is BPHS implementing partner of MoPH in Paktya. As such ACTD is charged to mainstream CMAM in health facilities under their responsibility. The present survey will help them to improve their programming and it is viewed as a great opportunity to build ACTD staffs capacity on the ground.

METHODOLOGY

Sample size

The following assumptions (based on the given context) were used to calculate the sample size in number of children, which were then converted into number of households to survey. All calculations were made using ENA Software for SMART 2011 (November 2014 update). The Tables 2, 3 and 4 below summarize all parameters.

Table 2: Parameters for sample size calculation for anthropometry, SMART Paktya 2015

Parameters for Anthropometry	Value	Assumptions based on context
Estimated Prevalence of GAM (%)	6.1%	According to the MoPH National Nutrition Survey-2013[7], the Global Acute Malnutrition prevalence in Paktya is estimated at 16.7% (95% CI 13.21-20.94). As the standard deviation of these results was out of the limit of 1.2 (3.5), it was decided to consider the most recent data from the neighboring province Paktika[8].
Desired precision	±2.5	Since the expected GAM prevalence is low, a precision of ± 2,5 was chosen.
Design Effect	1.5	The population living in the 3 targeted districts is considered as having similar living conditions and the same access to food and social conditions.
Children to be included	575	Minimum required age of Children 6-59 months old. However to avoid possible bias of selection for younger age group, all children from 0 to 59 months old found in the selected households were surveyed.
Average HH Size	7	Based on 2 more recent data (National Nutrition Survey 2013 and National Vulnerability Assessment of Afghanistan 2014), the average household size is around 7.
% Children under-5	15.6%	The estimated U5 population according to the Afghanistan Mortality survey 2010 is at 15.6% providing a more conservative and accurate percentage[9].
% Non-response Households	6%	The percentage of non-respondent households was estimated at 6%.
Households	622	Households to be surveyed

[7] National Nutrition Survey of Afghanistan, UNICEF, 2013
[8] SMART survey Paktika May 2015
[9] Afghanistan Mortality survey, 2010

Table 3: Parameters for sample size calculation for mortality, SMART-Paktya 2015

Parameters for mortality	Value	Assumptions based on context
Estimated death rate	0.5/10000/day	No updated death rate at population level; Recommended in cases where there is no specific mortality data for the area to be surveyed
± Desired precision	0.3%	In order to meet set mortality objectives and inline to estimated death rate
Design effect	1.5	Cater for heterogeneity in the province population being sampled.
Recall period	120	Start point of recall period was considered to be 120 days or 4 months
Average HH size	7	National vulnerability assessment of Afghanistan -2014 and National Nutrition Survey 2013
Per cent of non-respondent	6%	Refer to Table 2 above
Population to be included	2904	Population
Households to be Included	441	Households

As there was no recent data on IYCF indicators for Paktya so core IYCF indicators have been assumed to be 50 % (Table 4). It was assumed as well that precision of 10% would be enough.

Table 4: Parameters for sample size calculation for additional IYCF indicators, SMART-Paktya 2015

Parameters for Anthropometry	Value	Assumptions based on context
Estimated Prevalence of additional indicators (%)	50%	No recent data
± Desired precision	10%	
Design Effect	1,5	Cluster effect
Survey subjects to be included	157	
Average HH Size	7,5	As above
% of target population	6.25%	Children 0-23 months
% Non-response Households	6%	
Households to be included	395	

Based on the parameters indicated above, the anthropometric sample was used as the overall sample size since it is the highest and therefore qualifies to represent the other indicators. Therefore with the selection of the highest sample size (622 HH) the other indicators would have representation within the larger sample size selected.

Sampling procedure

Selecting clusters

A two stage sampling methodology was employed. In the first stage is the cluster selection. Clusters were sampled using probability proportional to population size (PPS).

It is estimated that one team could cover 16 households (HHs) per day. By targeting 16 HHs per cluster per day, a total number of 39 clusters were expected to be reached over the duration of this survey (662 HHs/116HHs/day=38.87 clusters, which were rounded up to 39 clusters) in order to reach the required 622 HHs. This allowed the survey to reach the minimum sample required of 575 children 0-59 months for the anthropometric survey. Out of total villages, 39 villages, corresponding to 39 clusters were included in the survey (see Cluster selection in Annex 2). Reserve Clusters (RCs) were selected by ENA software version 2011 updated 21st April 2015. Reserve clusters will only be used if 10% or more clusters were impossible to reach during the survey.

Selecting households and children

Simple random sampling method was used where an up-to-date list of the households in each village was created to select the households at random, with enough information to allow them to be located. All households was enumerated and given numbers by the survey team. The 15 households were chosen randomly from these enumerated households, by randomly drawing from a hat or using a random number table. In each selected village, one or more community member(s) was asked to help the survey teams to conduct their work by providing information about the village with regard to the geographical organization or the number of households.

In cases where it was difficult to obtain an updated list of Households systematic random sampling was used to identify the households to be surveyed. The teams were trained on both methods of sampling (simple and systematic random sampling) and they were also offered with materials to assist in determining the households during the data collection exercise.
In cases where there are large villages in a cluster, the village was divided into smaller segments and a segment was selected randomly to represent the cluster. This division was

done based on existing administrative units e.g. neighborhoods, or streets or natural landmarks like river, road, or public places like market, schools, and mosques.
All the children living in the selected house in the correct age range (children from 0 to 59 months old were included for anthropometric measurement and 0-23 months for IYCF was included, without regard to height). If more than one eligible child is found in a household, both were included, even if there are twins. Eligible orphans living in the selected Households were also be surveyed.

All of the selected HH was included in the mortality survey as well as were responding to questions concerning the HH as a whole (ex. water storage).

Any empty households, or households with missing or absent children were revisited at the end of the sampling day in each cluster; any missing or absent children that were not be subsequently found was not included in the survey. A cluster control form was used to record all these missed and absent households.

Case definitions and inclusion criteria

The household was the basic sampling unit. Here, a household was defined as all people eating from the same pot and living together (WFP definition). In Afghanistan, the term household is often defined and/or used synonymous with a compound – which potentially represents more than one household as defined here. In this case, a two-step process was ensured with the village leaders/community elders supporting in identification of compounds and then identifying compound together with the use of the list of households within the community, asking if there are multiple cooking areas to determine what members of the household/compound should be included in the study.

Anthropometric Indicators: Definition of nutritional status of children 0-59 months

Different parameters are used to assess the nutritional status of an individual. Weight, height, Mid-Upper Arm Circumference and bilateral oedema are the most commonly used. These are often linked to sex and age. For each selected child, the following information was collected:

Age (in months): Only children between 0 and 59 months old of age were included. Height was not considered as a valid criterion in absence of age due to the high stunting rates in Paktika province. Age was confirmed by showing a vaccination card or a birth certificate, if available. If these documents were not available, the use of a local event calendar built for Paktika province was used to determine the age (Annex 4). The age was recorded into the questionnaire in months.

Sex: Male or female

Weight (in kg): Children were weighed to the nearest 0.1kg by using an Electronic Uni-scale. The children who can easily stand was asked to stand on the weighing scale and their weight recorded. In a situation when the children could not stand up, the double weighing method was applied.

Height (in cm): Measuring board was used to measure bare headed and barefoot children. The precision of the measurement is 1 mm. Children of less than 2 years of age was measured lying down and those equal to or above 2 years of age measured standing up.

Mid-Upper Arm Circumference (in mm): MUAC was used as an indicator of mortality risk for malnutrition and was measured to the nearest 1mm for all children with an indicated age of greater than 6 months, using the UNICEF MUAC strips. An adult MUAC tape was used to measure women of reproductive age (15-49 years)

Oedema: Only children with bilateral pitting nutrition oedema was recorded as having nutritional oedema This was checked by applying normal thumb pressure for at least 3 seconds to both feet.

Acute malnutrition

Acute malnutrition in children 0-59 months could be expressed by using 2 indicators: Weight-for-Height (WHZ) or Mid Upper Arm Circumference (MUAC). The presence of bilateral pitting oedema classifies the clinical form of kwashiorkor as severe acute malnutrition. The acute malnutrition in Afghanistan is defined as described below.

Table 5: Definition of acute malnutrition in Afghanistan (according to WHO standards)

Severe Acute Malnutrition (SAM)
W/H <-3 z-score and /or bilateral oedema and/or MUAC < 115 mm
Moderate Acute Malnutrition
W/H <-2 z-score and >= -3 z-score and absence of bilateral oedema and/or MUAC >= 115mm and <125mm
Global Acute Malnutrition (GAM)
W/H <-2 z-score and /or bilateral oedema and MUAC < 125 mm

Weight-for-Height Z-score (WHZ): A child's nutritional status is estimated by comparing it to the weight-for-height curves of a reference population (WHO standards data10). These curves have a normal shape and are characterized by the median weight (value separating the population into two groups of the same size) and its standard deviation (SD).

The expression of the weight-for-height index as a Z-score (WHZ) compares the observed weight (OW) of the surveyed child to the mean weight (MW) of the reference population, for a child of the same height. The Z-score represents the number of standard deviations (SD) separating the observed weight from the mean weight of the reference population: WHZ = (OW - MW) / SD.

During the field data collection, the weight-for-height index in Z-score was calculated on the field for each child in order to refer malnourished cases to appropriate centre if needed. Moreover, the results were presented in Z-score using WHO reference in the final report.

Mid Upper Arm Circumference (MUAC): The mid upper arm circumference does not need to be related to any other anthropometric measurement. It is a reliable indicator of the muscular status of the child and is mainly used to identify children with a risk of mortality. The MUAC is an indicator of malnutrition only for children greater or equal to 6 months.

Table 6: Cut offs points of MUAC, children 6-59 months, WHO Recommendations

Target group	MUAC (mm)	Nutritional status
Children 6-59 months	> or = 125 and < 135	No malnutrition
	< 125 and > or = 115	Moderate acute malnutrition
	< 115	Severe acute malnutrition

[10] WHO: World Health Organization, WHO growth curves for children, 2006

Nutritional bilateral pitting oedema: Nutritional bilateral pitting oedema is a sign of Kwashiorkor, one of the major clinical forms of severe acute malnutrition. When associated with Marasmus (severe wasting), it is called Marasmic-Kwashiorkor. Children with bilateral oedema are automatically categorized as being severely malnourished, regardless of their weight-for-height index.

Chronic malnutrition

The height-for-age index: The height-for-age measure indicates if a child of a given age is stunted and so if he is considered as chronically malnourished. This index reflects the nutritional history of a child. The same principle is used as for WHZ index except that a child's chronic nutritional status is estimated by comparing its height with WHO standards height-for-age curves, as opposed to weight-for-height curves. The height-for-age index of a child from the studied population is expressed in Z-score (HAZ). The HAZ cut-off points are presented in Table 7.

Table 7: Cut-off points of the Height for Age index (HAZ) expressed in Z-score, WHO standards

Not stunted	≥ -2 z-score
Moderate stunting	-3 z-score ≤ H/A < -2 z-score
Severe stunting	< -3 z-score

Underweight

The weight-for-age index: Underweight indicates the weight of the child compared to his age. It is expressed by the Weight-for-Age index and in Z-scores of WHO Standards (2006). Weight-for-Age (WFA) indices give a mixed reflection of both the current and past nutritional experience of the community, therefore, does not differentiate malnutrition due to current and past nutritional/health experience. As such, it is a composite measure of both wasting and stunting, thus, a useful tool in individual child growth monitoring.The table below show underweight classes with their cut-off points.

Table 8: Cut-off point of the Height for Age index (HAZ) expressed in Z-score, WHO standards

Normal	≥ -2 z-score
Moderate underweight	-3 z-score ≤ W/A < -2 z-score
Severe underweight	< -3 z-score

Mortality Indicator Calculation

The mortality indicators included all household members. All members of the household were counted, using the household definition.

Crude death rate (CDR): Number of persons in the total population that dies over a defined period of time.

$$CDR = \frac{\text{Nb of deaths x 10000 persons}}{\text{population at mid} - \text{interval x time interval in days}}$$

Under-5 death rate (U5DR): The probability for those children aged 0-5 years to die during a specific time interval. Calculated as:

$$U5DR = \frac{\text{Nb of deaths of U5s x 10000 U5s}}{\text{population of U5s at mid} - \text{interval x time interval in days}}$$

Additional Indicators – Health & WASH

Beside anthropometric data, additional information was collected as follows:

Immunization status, deworming and vitamin A supplementation: Mothers/caretakers of all children were asked if children received all the necessary vaccinations, which was subsequently be verified by reviewing the vaccination card, if available. If the vaccination card was not available, then recall of the caregiver option was considered. The deworming and the Vitamin A supplementation of children were also recorded using samples.

Morbidity: Mothers/caretakers of children were asked if children had experienced an illness in the past 2 weeks. Acute respiratory infection, fever and diarrhoea were recorded when symptoms according to the case definition are described by the caretaker.

Mother's nutritional status and Iron/Folate supplementation for pregnant: Women in childbearing age were assessed for their nutritional status based on MUAC using the cut-off of 230 mm.

Water storage and Usage: House hold heads were asked what type of container they use for storing drinking water and also how much water they used in the HH in the last 24 hours to assess the water use per person per day.

Hand washing practices: The mothers were asked on what occasions they wash their hands and also what they use to wash their hands to determine the hand washing practices in the surveyed area.

Infant and Young Child Feeding Practices Indicators (IYCF)

The IYCF indicators used in the measurement of infant and young child feeding practices asked to the mothers/caretakers of children aged 0-23 months are described as follows.

Child ever breastfed: Proportion of children who have ever received breast milk.

Timely initiation of breastfeeding: Proportion of children born in the last 23 months who were put to the breast within one hour of birth.

Provision of colostrum in the first 3 days of life: Proportion of children who received colostrum (yellowish liquid) within the first 3 days after birth.

Exclusive breastfeeding under 6 months: Proportion of infants 0-5 months of age who are fed exclusively with breast milk.

Continued breastfeeding at 1 year: Proportion of children 12 – 15 months of age who are fed with breast milk.

Individual Dietary Diversity Score: Proportion of 6-23 months children consumed minimum 4 food groups the last 24 hours.

Introduction of solid, semi-solid or soft foods: Proportion of infants 6-8 months of age who receive solid, semi-solid or soft foods.

Continued breastfeeding at 2 years: Proportion of children 20–23 months of age who are fed breast milk.

Questionnaire, training and supervision

Four teams of three members collected data in the field. Each team was composed of one ACTD team leader and two ACTD data collectors. Each team had at least two female data collectors to ensure acceptance of the team amongst the surveyed households particularly for IYCF questionnaires. Each female member of the survey team was accompanied with a mahram[11] to facilitate the work of the female data collectors at the community level. The teams were supervised by ACF and ACTD nutrition program manager/nutrition focal points.

[11] Women are not allowed to go outside without being accompanied by one male relative called locally a 'mahram'.

The entire teams received a 7-day training on the survey methodology and all its' practical aspects conducted by ACF Nutrition SMART Program Manager. A standardization test was conducted over the course of 1 day, measuring 10 children, in order to evaluate the accuracy and the precision of the team members in taking the anthropometrics measurements. A one-day field test was conducted by the teams in order to evaluate their work in real field conditions. Feedback was provided to the team in regard to the results of the field test, particularly in relation to digit preferences and data collection. Refresher training on the anthropometric measurement, filling the questionnaires and the household's selection were organized on the last day of the training by ACF to ensure overall understanding before going to the field.

One field guideline document with instructions on household definition and selection was provided to each team member. All documents, such as local event calendar, questionnaires or consent forms were translated in Pashtu, one of the local languages widely specking in the area, for better understanding and to avoid direct translation during the data collection. The questionnaires were back translated using a different translator and were pre-tested during the field test. Alterations were made as necessary.

Daily data entry was done using ENA for anthropometric data. Plausibility check and feedback was provided directly to the data collection teams on daily basis. Anthropometric data was entered directly into the ENA while IYCF and other data were compiled through an excel spreadsheet.

Data analysis

The anthropometric and mortality data were analyzed using the ENA software 2011 version, November 2014 update. Survey results were presented in reference to WHO standards for overall final analysis.

Other indicators were analyzed using the Microsoft Excel 2010 and were expressed in percentage.

SURVEY RESULTS

Child health and Nutrition

Description of the sample (households and children)

A total number of 614 households have been surveyed. These represent 98.7% from the initially required 622 households (non-response rate was of 1.3%). This still remain in the limits of 10% missing data. Overall, this does not affect the GAM estimates as the sample for the Anthropometry was reached. 1211 children from 0 to 59 months were surveyed. Out of them 1133 children were from 6 to 59 months.

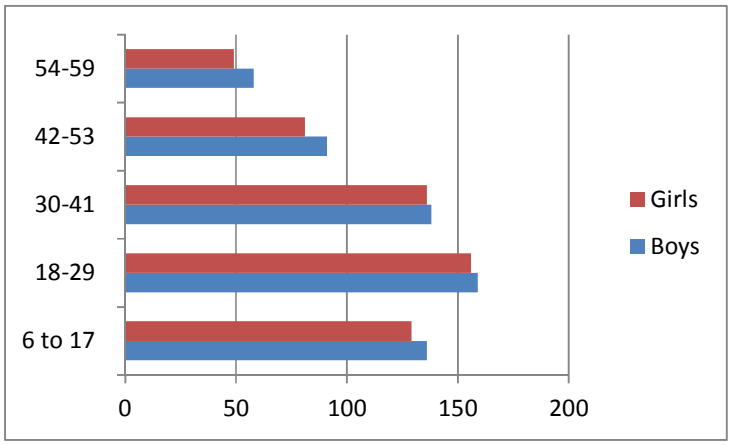
The overall boy to girl ratio was 1.0 indicating that sampling was within the expected range values of 0.8 – 1.2. Age ratio of 6-29 months to 30-59 months was 1.05, meaning that younger age group have been overrepresented[12]. This could probably be due to approximation of ages amongst 75% of the sampled children. The population age and sex pyramid was following the normal shape (**Figure 2** below).

Table 9: Distribution of age and sex of sample, SMART-Paktya, June 2015

	Boys		Girls		Total		Ratio
AGE (mo)	**no.**	**%**	**no.**	**%**	**no.**	**%**	**Boy: girl**
6-17	136	51.3	129	48.7	265	23.4	1.1
18-29	159	50.5	156	49.5	315	27.8	1.0
30-41	138	50.4	136	49.6	274	24.2	1.0
42-53	91	52.9	81	47.1	172	15.2	1.1
54-59	58	54.2	49	45.8	107	9.4	1.2
Total	**582**	**51.4**	**551**	**48.6**	**1133**	**100.0**	**1.1**

[12] The value shouldbe arround 0.85

Figure 2: Population age and sex pyramid, SMART Paktya, June 2015



Anthropometric results

Data quality

The anthropometric data were analyzed using ENA for SMART Software (version 2011, 21st April 2015 updated). Exclusion of z-scores is computed from the Observed mean (SMART flags): WHZ -3 to 3; HAZ -3 to 3; WAZ -3 to 3. A summary of the statistical parameters by index is in the table below. The overall quality of the survey as evaluated by the ENA software is reported as good, with plausibility score of 13%. Full version of the plausibility check is available in Annex 3.

A summary of the statistical parameters by index is in the table below.

Table 10: Mean z-scores, Design Effects and excluded subjects, SMART-Paktya, June 2015

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	1108	-0,29±1,00	1,00	0	25
Weight-for-Age	1108	-0,89±1,13	1,66	0	25
Height-for-Age	1021	-1,31±1,36	1,82	0	112

* contains for WHZ and WAZ the children with oedema

Prevalence of Acute Malnutrition

Weight-for-Height Z scores (WHZ), WHO 2006

The sex and age disaggregated results are presented in **Table 11 and Table 12.** It was observed that the prevalence of wasting is higher among girls than boys although there is no significant difference. The younger children (6-29 months) seem to be more affected by wasting than the older (30-59 months). However severe wasting seems to be evenly distributed among the age groups. There were no edematous cases (**Table 13**).

Table 11: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex, SMART-Paktya, June 2015

	All **n = 1108**	Boys **n = 569**	Girls **n = 539**
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(58) 5.2 % (4.1 – 6.7 95% C.I.)	(27) 4.7 % (3.2 – 6.9 95% C.I.)	(31) 5.8 % (4.2 - 7.9 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(51) 4.6 % (3.5 – 6.0 95% C.I.)	(24) 4.2 % (2.9 – 6.2 95% C.I.)	(27) 5.0 % (3.5 – 7.2 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(7) 0.6 % (0.3 – 1.3 95% C.I.)	(3) 0.5 % (0.2 – 1.6 95% C.I.)	(4) 0.7 % (0.3 – 2.0 95% C.I.)

*The prevalence of oedema is 0 %.

Table 12: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema, SMART-Paktya, June 2015

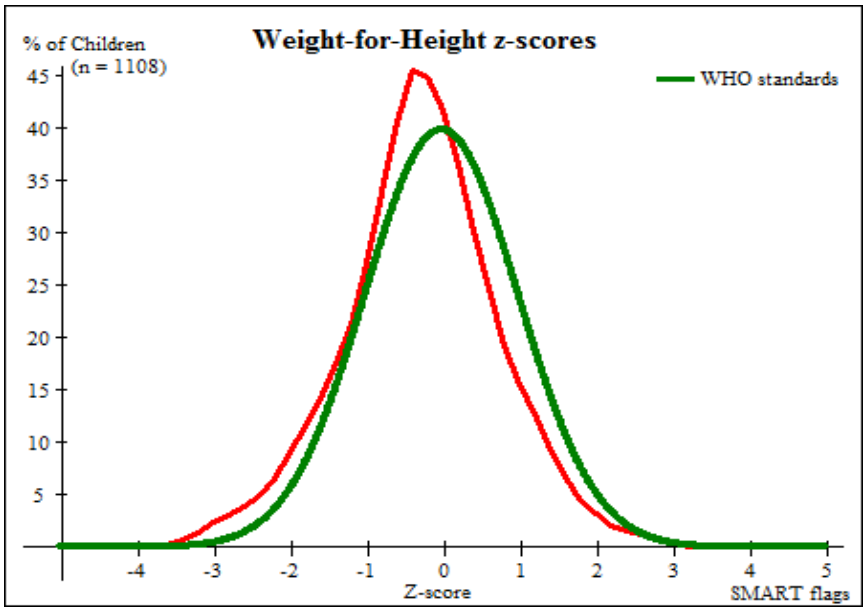
		Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	258	2	0.8	23	8.9	233	90.3	0	0.0
18-29	307	3	1.0	11	3.6	293	95.4	0	0.0
30-41	270	0	0.0	11	4.1	259	95.9	0	0.0
42-53	169	1	0.6	3	1.8	165	97.6	0	0.0
54-59	104	1	1.0	3	2.9	100	96.2	0	0.0
Total	**1108**	**7**	**0.6**	**51**	**4.6**	**1050**	**94.8**	**0**	**0.0**

Table 13: Distribution of acute malnutrition and oedema based on weight-for-height z-scores, SMART-Paktya, June 2015

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 15 (1.3 %)	Not severely malnourished No. 1118 (98.7 %)

Overall, the normal (Gaussian) distribution curve of the observed population with SMART flags excluded, was equally distributed and slightly shited to the left from the reference WHO 2006 WHZ curve (Figure 3 below). The mean ±SD of WHZ was -0.29±1.00. This confirms that there were more malnourished children in the 4 districts when compared with the reference population.

Figure 3: Population age and sex pyramid, SMART Paktya, June 2015



Based on Mid Upper Arm Circumference (MUAC)

As shown in Table 14, the prevalence of global acute malnutrition, based on MUAC (<125 mm) and/or oedema was 6.6% (95% CI: 4.8 - 9.0). The prevalence of severe acute malnutrition

(MUAC<115 mm and/or oedema) was 1.2 % (95% CI: 0.6 - 2.5). There was no significant difference between genders.

Table 14: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex, SMART-Paktya, June 2015

	All n = 1129 (CI: 95%)	Boys n = 579 (CI: 95%)	Girls n = 550 (CI: 95%)
Prevalence of global malnutrition (< 125 mm and/or oedema)	6.6% (75) (4.8 - 9.0)	5.2% (30) (3.5 - 7.5)	8.2% (45) (5.4 - 12.2)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	5.4% (61) (3.8 - 7.7)	3.8% (22) (2.5 - 5.8)	7.1% (39) (4.5 - 10.9)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	1.2% (14) (0.6 - 2.5)	1.4% (8) (0.6 - 3.0)	1.1% (6) (0.4 - 3.2)

Table 15 shows the distribution of acute malnutrition based on MUAC by age. The younger children (6-29 months) seem to be more affected by low MUAC compared to older ones (30-59 months).

Table 15: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema, SMART-Paktya, June 2015

		Severe wasting (< 115 mm)		Moderate wasting (>= 115 mm and < 125 mm)		Normal (> = 125 mm)		Oedema	
Age (mo)	Total no.	No.	%	No.	%	No.	%	No.	%
6-17	261	10	3.8	39	14.9	212	81.2	0	0.0
18-29	315	3	1.0	17	5.4	295	93.7	0	0.0
30-41	274	1	0.4	5	1.8	268	97.8	0	0.0
42-53	172	0	0.0	0	0.0	172	100.0	0	0.0
54-59	107	0	0.0	0	0.0	107	100.0	0	0.0
Total	**1129**	**14**	**1.2**	**61**	**5.4**	**1054**	**93.4**	**0**	**0.0**

Prevalence of Underweight (WHO 2006)

The underweight is defined by weight-for-age (WAZ) below -2 z-scores. The sex and age disaggregated results are represented in **Table 16 and 17**.

Table 16: Prevalence of underweight based on weight-for-age z-scores by sex, SMART-Paktya, June 2015

	All n = 1108 (CI: 95%)	Boys n = 572 (CI: 95%)	Girls n = 536 (CI: 95%)
Prevalence of underweight (<-2 z-score)	18.3% (203) (15.5 - 21.6)	19.9% (114) (16.6 - 23.7)	16.6% (89) (13.0 - 20.9)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	14.4% (159) (12.0 - 17.0)	15.7% (90) (12.7 - 19.3)	12.9% (69) (9.7 - 17.0)
Prevalence of severe underweight (<-3 z-score)	4.0% (44) (2.7 - 5.8)	4.2% (24) (2.8 - 6.3)	3.7% (20) (2.1 - 6.6)

Table 17: Prevalence of underweight by age, based on weight-for-age z-scores, SMART-Paktya, June 2015

		Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	253	6	2.4	47	18.6	200	79.1	0	0.0
18-29	308	19	6.2	45	14.6	244	79.2	0	0.0
30-41	268	9	3.4	40	14.9	219	81.7	0	0.0
42-53	172	8	4.7	21	12.2	143	83.1	0	0.0
54-59	107	2	1.9	6	5.6	99	92.5	0	0.0
Total	**1108**	**44**	**4.0**	**159**	**14.4**	**905**	**81.7**	**0**	**0.0**

Prevalence of Stunting (WHO 2006)

The chronic malnutrition or stunting is defined by Height-for-age Z-scores (HAZ) <-2. The sex and age disaggregated results are represented in **Table 18 and 19**.

Table 18: Prevalence of stunting based on height-for-age z-scores and by sex, SMART-Paktya, June 2015

	All n = 1021 (CI: 95%)	Boys n = 518 (CI: 95%)	Girls n = 503 (CI: 95%)
Prevalence of stunting (<-2 z-score)	31.7% (324) (27.9 - 35.8)	31.3% (162) (26.1 - 37.0)	32.2% (162) (27.3 - 37.5)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	19.2% (196) (17.0 - 21.6)	18.5% (96) (14.9 - 22.8)	19.9% (100) (16.6 - 23.6)
Prevalence of severe stunting (<-3 z-score)	12.5% (128) (10.1 - 15.4)	12.7% (66) (9.7 - 16.5)	12.3% (62) (9.7 - 15.6)

Table 19: Prevalence of stunting by age based on height-for-age z-scores, SMART- Paktya, June 2015

		Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	236	27	11.4	36	15.3	173	73.3
18-29	279	52	18.6	67	24.0	160	57.3
30-41	244	30	12.3	62	25.4	152	62.3
42-53	157	15	9.6	23	14.6	119	75.8
54-59	105	4	3.8	8	7.6	93	88.6
Total	**1021**	**128**	**12.5**	**196**	**19.2**	**697**	**68.3**

Figure 4 shows the distribution of HAZ of the observed population (SMART flags excluded) compared to WHO reference curve. The curve is strongly shifted to the left, suggesting restricted linear growth of the observed population computed to the normal. The overall trend observed is that stunting decreases with the increase of the age **(Figure 5).**

Figure 4: Gaussian (normal) distribution curve, HAZ, SMART - Paktya, June 2015

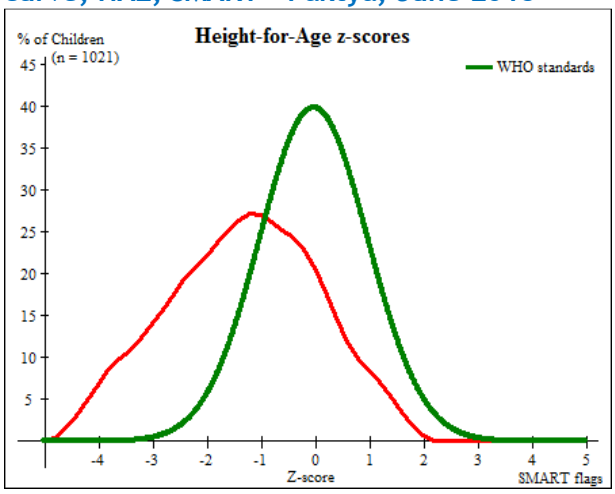
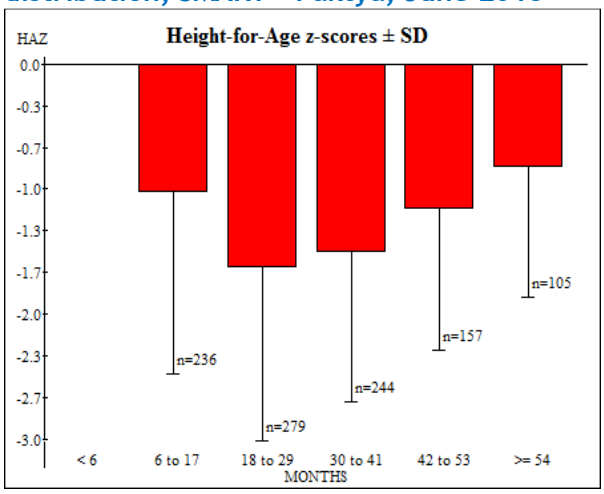


Figure 5: Trends of stunting over the age distribution, SMART - Paktya, June 2015



Prevalence of overweight (WHO 2006)

The prevalence of overweight, based on weight-for-height z-score >2 and no oedema was found low.

Table 20: Prevalence of overweight based on weight for height cut offs and by sex (no oedema), SMART-Paktya, June 2015

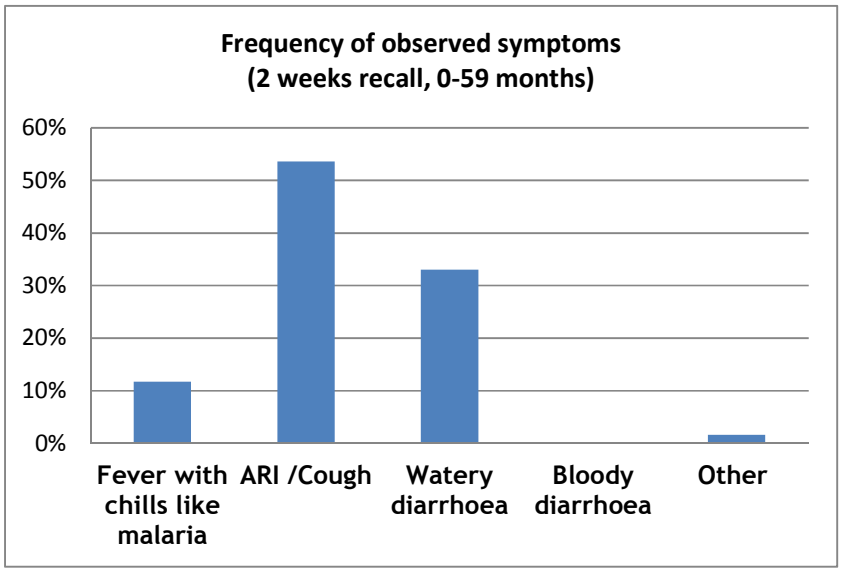
	All n = 1108 (CI: 95%)	Boys n = 569 (CI: 95%)	Girls n = 539 (CI: 95%)
Prevalence of overweight (WHZ > 2)	1.4% (15) (0.7 - 2.5)	0.9% (5) (0.4 - 2.1)	1.9% (10) (1.0 - 3.4)
Prevalence of severe overweight (WHZ > 3)	0.0% (0) (0.0 - 0.0)	0.0% (0) (0.0 - 0.0)	0.0% (0) (0.0 - 0.0)

Child health indicators

Two weeks recall morbidity (children 0-59 months)

A total of 1211 respondents answered about their recent experience related to illness (2 weeks prior to the day of visit of the survey team). 19.9% responded with “yes”. The frequencies of the symptoms are presented in the figure below.

Figure 6: Morbidity data, SMART -Paktya, June 2015



Immunization, supplementation and deworming

Immunization, supplementation and deworming are proxy indicators informing community health outreach and health seeking behaviours. The survey reflects high rates of immunization; 93.1% of 9-59 children received measles, 94.8 % of the children in the sample had BCG and 96.8% had polio immunization. Vitamin A supplementation and deworming among the targeted children in the sample was of 95.8% and 70.3%, respectively. A summary of the results are presented in the tables below.

Table 21: Immunization, SMART - Paktya, June 2015

Type of Vaccine	Class	Frequency	%
Measles immunization coverage ≥9 months (n = 1050)	Yes, card	272	25,9
	Yes, recall	706	67,2
	No	53	5,0
	No not know	19	1,8
	By card and recall	978	93,1
BCG immunization coverage 0-59 months (n= 1207)	Scar	1144	94,8
	No Scar	63	5,2
Polio immunization coverage 0-59 months (n = 1211)	Yes, card	379	31,7
	Yes, recall	778	65,1
	No	32	2,7
	No not know	6	0,5
	By card and recall	1157	96,8

Table 22: Vitamin A and Deworming, SMART - Paktya, June 2015

	Class	Frequency	%
Vitamin A supplementation aged 6-59 months (6 months recall) , n=1123	Yes	1076	95,8
	No	47	4,2
Deworming aged 12-59 months (6 months recall), n=995	Yes	699	70,3
	No	296	29,7

IYCF Indicators

The Infant and Young Children Feeding (IYCF) practices were assessed in order to establish baseline data for the surveyed districts. The IYCF practices were found to have a direct relationship with malnutrition in any given community. Indicators of IYCF included all children 0 – 23 months. A total of 485 children were included in the sample. The results are presented in **Table 23**.

Table 23: Infant and Young Child Feeding, SMART -Paktya, June 2015

Core Indicators	Definition	N	%
Child ever breastfed **(n=485)**	Proportion of children who have ever received breast milk	485	100,0
Timely initiation of breastfeeding **(n=485)**	Proportion of children born in the last 23 months who were put to the breast within one hour of birth	378	77.9
Provision of colostrum within first 3 days **(n=485)**	Proportion of children who received colostrum (yellowish liquid) within the first 3 days after birth	485	100,0
Still breast feeding at 1 year **(n=481)**	Proportion of children 12-15 months of age who are fed breast milk.	381	79.2
Exclusive breast feeding **(n=90)**	Proportion of infants 0-5 months of age who are fed exclusively with breast milk.	36	40,0
Introduction of solid, semi-solid or soft foods **(n=72)**	Proportion of infants 6-8 months of age who receive solid, semi-solid or soft foods.	18	25,0

Maternal nutritional status and hand washing

All women aged between 15 and 49 years, in the selected households, were included in the analysis of the following 3 key indicators:

- Physiological status

- Nutritional status based on MUAC cut-off
- Iron/folate for pregnant women (at least once during the visit of the survey team)
- Handwashing practices for caretakers

A total of 1376 women of childbearing age, living in the selected households accepted to participate in the survey. The results are presented in the tables below.

Table 24: Physiological status, (15 - 49 years), (n=1376), SMART - Paktya, June 2015

Status	Frequency	%
Pregnant	318	23,1%
Lactating	352	25,6%
Pregnant & Lactating	18	1,3%
Non-pregnant & non-lactating	688	50,0%

Table 25: Nutritional status of women of reproductive age based on Mid-upper arm Circumference, (n=1375), SMART - Paktya, June 2015cut

MUAC Cutoff	Frequency	%
MUAC <230 mm	99	7,2
MUAC =or > 229 mm	1276	92,8

Table 26: Iron folate for pregnant women based on available answers, (n=311), SMART - Paktya, June 2015

Iron/Folate for PLW	Frequency	%
Yes	148	47,6
No	88	28,3
Do not know	75	24,1

Appropriate hand washing is a general measure that contributes to the prevention and control of communicable disease. All 611 responders confirmed to wash their hands to all 4 critical moments (after toilet/latrine, before cooking, before eating, after taking child to toilet). **As this information was largely based on recall method, there is no practical**

verification/observation process to know if mothers/caretakers actually practiced hand washing.

Table 27: Use of soap, (n=609), SMART -Paktya, June 2015

	Frequency	%
Only water	200	32,8
Soap	340	55,8
Soap when I can afford it	69	11,3
Traditional herb	0	0,0
Other	0	0,0

Mortality and Demographics

Mortality Results

Both CMR and U5MR rates are below the WHO's *emergency* thresholds of 1/10,000/day and 2/10,000/day respectively **(Table 28)**. The recall period was of 120 days. The design effects for CMR and U5MR were between 1.46 and 1.16 respectively, indicating little inter-cluster variations (clustering of deaths) in the population.

Table 28: Mortality rate, recall 120 days, SMART- Paktya, June 2015

Retrospective Mortality in 120 days prior to survey	Rate	(95% CI)
CMR (total deaths/10,000 people/day)	0.30	0.18-0.49
U5MR (deaths in children under five/10,000 children under five /day)	0.48	0.21-1.09

Demography

The mortality questionnaire in SMART surveys is designed in a way that some additional useful demographic data can be withdrawn. Summary is available in **Table 29**. A total of 6746 individuals were surveyed and 1223 were children below age of 5 years.

Table 29: Short summary of demographics, SMART- Paktya, June 2015

Indicator	Value
Average HH size	10.9 members
Children under 5	18.1 %
Most frequent HH size	7 members
Min HH Size	2 members
Min HH Size	41 members

Household information

Several questions concerning the surveyed households were collected which included structure and type of households, livelihoods, water access and storage.

Structure and type of household

This information is presented in the below table:

Table 30: Structure of households, (n=612) SMART - Paktya, June 2015

Head of HH	Frequency	%
Male	534	90.1
Female	7	1.2
Both	33	5.6
Others	19	3.2

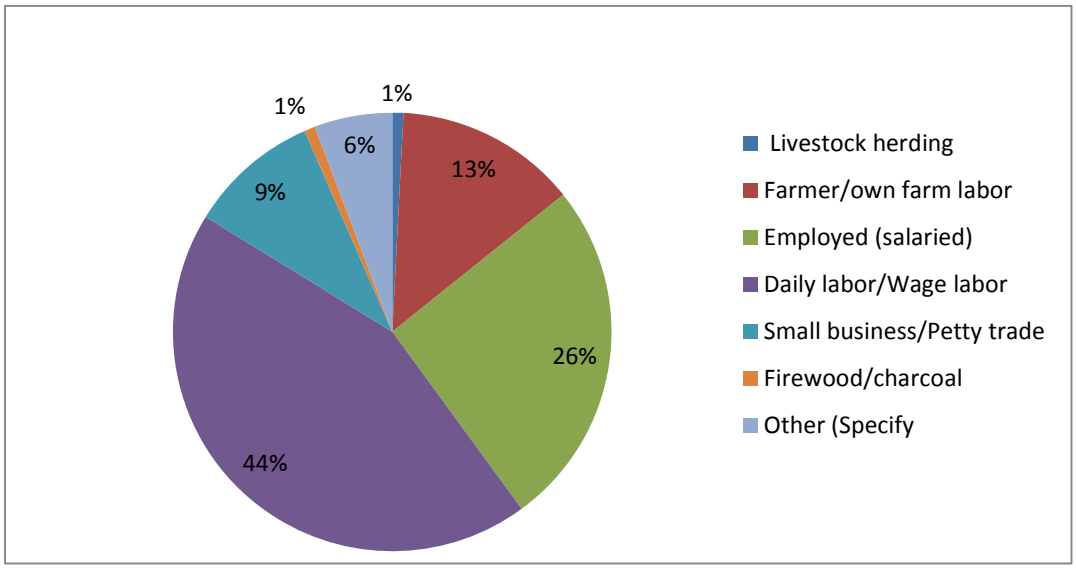
Table 31: Family type, (n=612) SMART - Paktya, June 2015

	Frequency	%
Monogamous	548	89,5
Polygamous	25	4,1
Single parent	39	6,4

Main livelihoods

The main livelihoods were defined by the heads of the family. The daily labor appears to be one of the most important livelihoods of the surveyed households (43,9 %). More details are in the figure below.

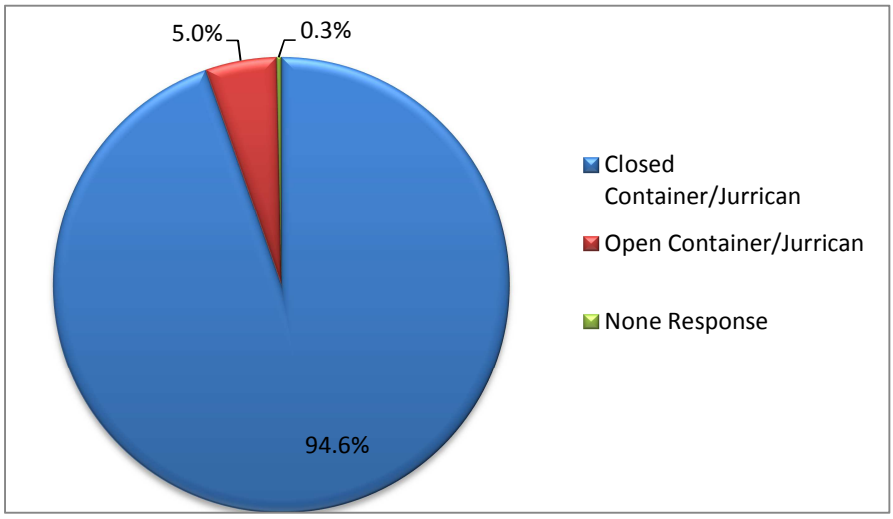
Figure 7: Main livelihoods, (n= 611), SMART – Paktya, June 2015



Water consumption and storage at household level

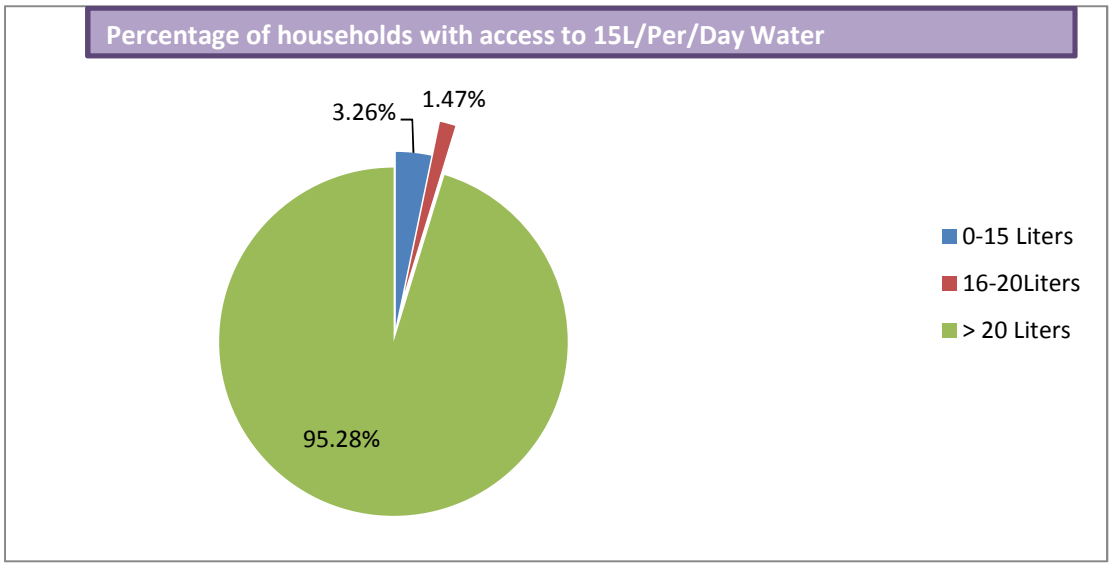
A total of 612 households responded to this question. Findings showed that most of respondents (94.6%) stored water in closed container/Jerricans, 5% respondents stored water in open container and 0.3% did not provide any response (**Figure 8**).

Figure 8: Water storage, (n=612), SMART-Paktia, June 2015



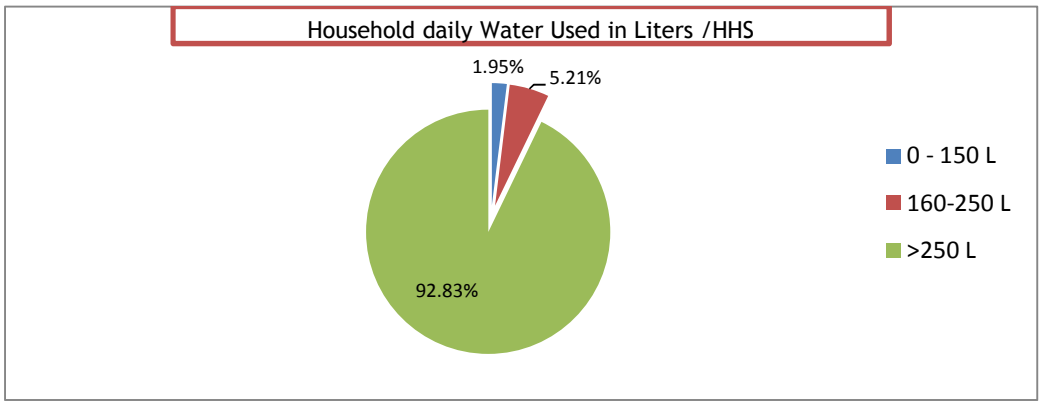
The amount of water consumed per person per day as well as the overall amount consumed by the HH per day was also calculated based on the number of people in the HH and the amount in liters used by the HH in a day. The results are as indicated in figures 9 and 10.

Figure 9: Percentage of households with access to 15L of water/person/day (n=614), SMART – Paktia, June 2015



According to the 24 hours recall of water availability in the studied households, 3.26 % of the individuals had less than 15Lit per person/day of water available.

Figure 10: Household level daily quantity of water used in litters n=612), SMART – Paktia, June 2015



DISCUSSION

Nutritional Status

Global Acute Malnutrition

This SMART Nutrition Survey was conducted in 4 districts of Paktya province between April 2015 and May 2015. The GAM rate, based on WHZ was 5.2 % (CI: 4.1 - 6.7). It is lower than the WHO emergency threshold of 15%, and could be classified as poor. The SAM rate, based on WHZ, was 0.6% (CI: 0.3 - 1.3), also lower than the 4%, used in the context of Afghanistan to trigger emergency.

MUAC is a useful tool for identifying children at a higher risk of mortality. The GAM rate based on MUAC was 6.6% (CI: 4.8 - 9.0), slightly higher than the GAM rate based on WHZ but no significant differences were found. MUAC<125 and Weight-for height <-Z score does not necessarily cohabite in the same children and this was the case in Paktya. Boys and girls were equally affected by GAM based on MUAC and GAM based on WHZ (WHO 2006). This was not the case when age groups are analyzed: children from 6-29 months have been more affected by both GAM based on WHZ and GAM based on MUAC.

Chronic malnutrition

Stunting (Height-for-Age) measures linear growth, thus an indicator of chronic malnutrition, which is reflective of cumulative effects of long-standing nutritional inadequacy and/or recurrent chronic illness. Unlike wasting, it is not affected by seasonality but is rather related to the effects of socio-economic development, long-standing food security situation, maternal nutrition and the child care practices and child morbidity.

Results from the current survey showed that the prevalence of chronic malnutrition or stunting among children 6-59 months, was 31.7 % (CI: 27.9 - 35.8), out of which, 12.5 % (CI: 10.1 - 15.4) was severely stunted. According to the WHO thresholds[13] this prevalence indicates that levels of stunting are of serious concern. Children aged 6-29 months were the more stunted (p= 0.012). Both genders were equally affected.

[13] <10% acceptable; 10% - 20% poor; 20% - 40% serious; >40% critical

The findings also indicated that 18.3 % (CI: 15.5 - 21.6) of the children were underweight and 4.0 % (CI: 2.7 – 5.8) were severely underweight.

Maternal nutritional status

There is no commonly accepted standard for maternal nutrition status. In line with the Afghanistan National Guideline, the MUAC cut-off of 230 mm is used to identify their women nutritional status.

In this survey 7.8 % of the mothers were found to have a MUAC<230mm. This suggests that PLWs in Paktya might have compromised nutritional status. One of the main concerns related to the nutritional status of PLW is iron supplementation. Iron supplementation prevent anemia during pregnancy and life-threatening complications during delivery and decrease maternal mortality, prenatal and perinatal infant loss and prematurity. This can be directly linked to stunting among children in the first 2 years of their life. The current survey identified the coverage of iron/folate supplementation is of 47,6%. The Iron/Folate supplementation for pregnant women needs to be increased significantly by reinforcing the usual distribution channels. The BPHS Implementing partner needs to make significant progress by reinforcing ANC and CHW home visits to PLW.

Risk factors

Morbidity, immunization, supplementation and deworming

The prevalence of morbidity was among children under-five in this survey was 19.9 %. ARI was the main causes of illness followed by diarrhea and fever. All these conditions have on impact on food intake and nutrient absorption while at the same time increases body's demand for nutrients. This could have a significant effect on the nutritional status of these children resulting to malnutrition.

The coverage of Vitamin A supplementation was good. About 95.8% children received vitamin A supplementation 6 months prior to the survey. One of the core functions of Vitamin A is to boost an individuals' immunity hence important of supplement. The current rates are high compared to the recommended WHO target of 80%.

The proportion of all children aged 12-59 months who had received deworming in the last 6 months was 70.3%, below the national coverage threshold (80%).

Immunization for measles (93.1%), BCG (94,8%) and Polio (96.8%) are following national and international targets.

Infant and young child feeding practices

Optimal infant and young child feeding practices, especially exclusive breastfeeding up to 6 months of age, is estimated to prevent 1.4 million14 deaths every year among children under five years old.

Current findings indicated that timely initiation of breastfeeding; colostrum feeding and continuation of breastfeeding up to the first year of life were well practiced by the mothers. However, the exclusive breastfeeding rate was found to be 40% which is below the national target (50%). The complementary feeding, is quite poor and often mixed with tea (inhibits iron absorption). These two practices need to be improved significantly.

Water Hygiene and Sanitation (WASH)

The WASH indicators collected in this survey were mostly limited to the most pragmatic and easy to collect using a SMART methodology. Findings indicated from the 4 districts that about 3% of Households had an access to the recommended amount (15L/person/day) of water. Good hand washing practices was reported by 100% mothers/ caretakers. About 95% HHs stored water in closed container/Jerricans.

These last positive indicators have to be cautiously crosschecked, as the survey did not include observation, such as hand washing practice hence, the responses may need to be considered as more of knowledge-based than practice-based. In order to understand the WASH situation better, it is important to conduct a more in depth WASH assessment.

[14] Lancet Series 2013

CONCLUSIONS

Based on the WHO threshold, the current findings indicate that the acute malnutrition (WHZ), in Paktya remain low while chronic malnutrition is of serious concern. The overall IYCF indicators were also worrying especially the two core indicators: excusive breastfeeding and Introduction of solid, semi-solid or soft foods (complementary feeding). Common morbidity among children includes diarrhea, ARI and fever. Deworming coverage is only 70%. Moreover, less than the half of the pregnant women was covered by iron/folate supplementation. All these factors are interrelated and have significant impact on the nutritional status of children under-5 years of old.

In order to address the situation, especially the chronic malnutrition, long term nutrition interventions are indeed important. Nutrition services are already integrated in to the basic health services. However, not all health facilities are yet to provide the full set of these services. Implementing partners need to expand the geographical coverage of the services. Expanding the number of trained health staffs would support the quality nutrition services delivery.

All components of IYCF equally need to be integrated both at facility and in community levels. In addition, communities have to be mobilized and sensitized on the importance of adequate IYCF but mainstreaming these activities with sensitization on the importance of maternal nutrition and reproductive health comprehensively. The improved health seeking behavior in its preventive and curative part is a key to address high levels of stunting.

The achieved good immunization coverage has to be further maintained in the surveyed zones. Sharing and multiplying good practices is a key to sustain this success. There will be need to assess the situation in inaccessible and insecure zones. Provision of mobile team can bring the services to the doorsteps of the beneficiaries and increase the coverage. Community also needs to be mobilized on the importance of immunization.

Continue integrate WASH in nutrition services in all levels. All health related education in community and facility should include basic WASH messages such as hand washing, treatment of water/safe drinking water etc.

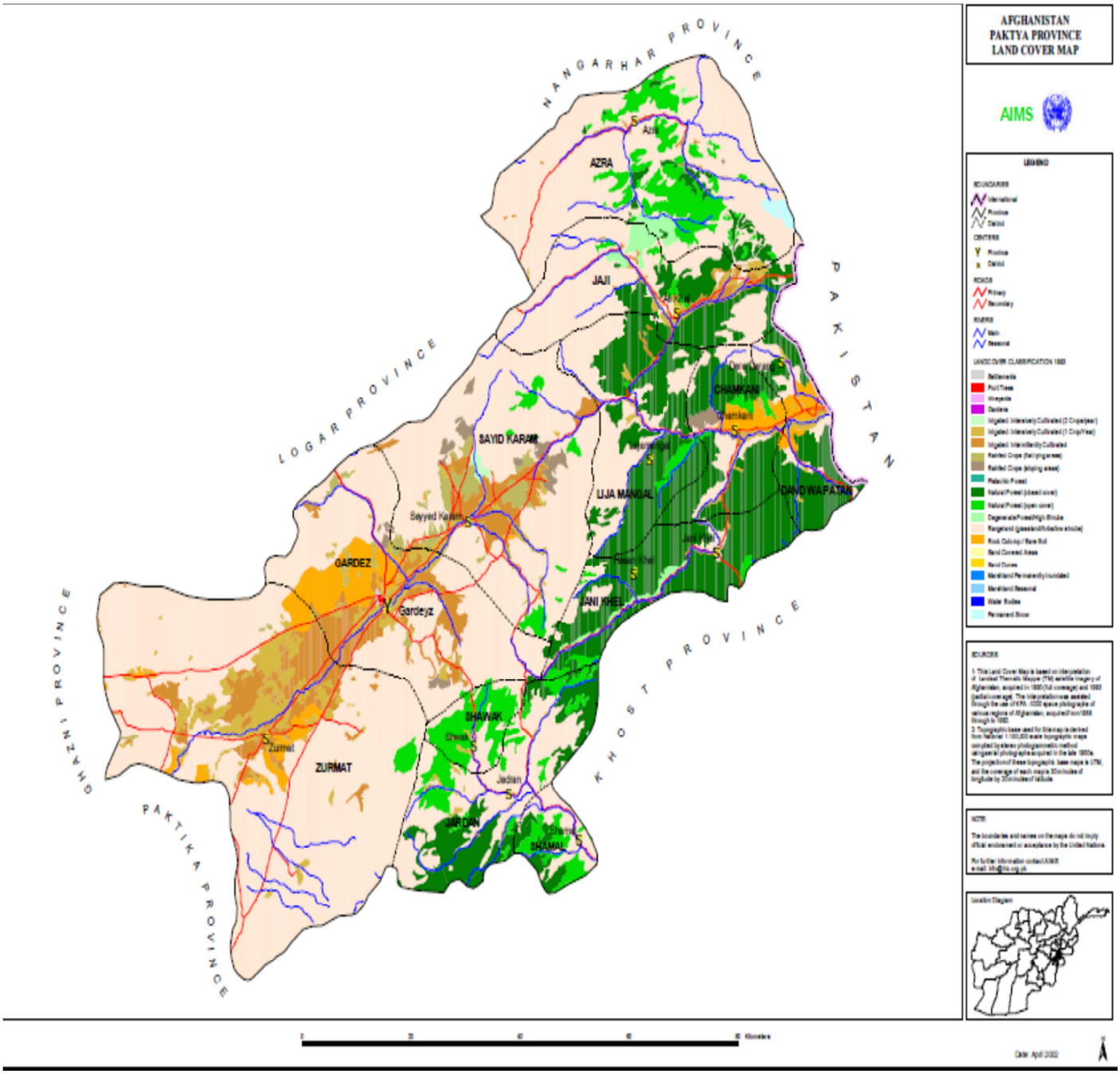
Finally, the findings of this survey might support policy-makers, planners and organizations seeking to meet national and international developmental targets.

RECOMMENDATIONS

Survey finding	Recommendations	Responsible
GAM rates classified as "poor" Stunting rates classified as "serious"	- Strength and support community health workers (CHWs) to increase outreach activities in order to increase access and coverage at community level. - Support community based nutrition programs to provide information and counseling on optimal appropriate complementary feeding practice. - Promote health education about importance of prenatal care and protect maternal nutrition and health to prevent low birth weight. - Integrate IMAM services in all HFs - Strengthen capacity of existing health facilities staffs and the community to manage acutely malnourished children and improve active case finding. - Maintain continued monitoring, fallow up and referral system of SAM and MAM malnourished children.	MOPH, Nutrition Cluster BPHS and EPHS implementers
Deworming coverage	- To strength education and awareness on deworming. - To strength distribution channels of deworming campaign and evaluate, monitoring and supervision of NIDs campaign.	MOPH , WHO, BPHS and EPHS implementers
Childhood illness	- Promote behavior change communication to increase community awareness and improve health seeking behavior to struggle. - To increase Zinc supplementation through facilities and community health workers (CHWs) to struggle diarrhea cases at facilities and community level to prevent diarrhea cases. - To strength water, sanitation and hygiene practice at health facilities and community level to decrease morbidity rate. - Scale up health education in health facilities and community level to prevent spread of preventable disease such as diarrhea, upper respiratory infections and other communicable disease.	MOPH, Community , BPHS and EPHS implementer
Maternal Nutrition status; Iron folate supplementation for PLWs	- To strength awareness on Iron folate and micronutrient during pregnancy and lactating period to prevent low birth weight and anemia. - To strength maternal health care (MCH) and promote health education on adequate food during pregnancy, IYCF, Antenatal care and postnatal care (ANC & PNC) - Promote and strength SFP program to prevent maternal malnutrition.	MOPH, WFP, BPHS and EPHS implementers

ANNEXES

Annex 1: Physical map of Paktya



Annex 2: Cluster sampling

No	District	Village/community name	Population (individuals)	Cluster
1	Gardez	Khawaja Hasan	1897	1
2		Karmashee	1256	2
3		Saloo Khil	1658	3
4		Askari Family	2608	RC
5		Itefaq Mena	2892	4,5
6		Ahingran	921	6
7		Mula Khil	879	7
8		Peer Bagh	2621	8
9		Dogh Abad	793	9
10		Qaria Baba Abdullah	531	10
11		Banoozee	752	11
12		Khayat khail	1600	RC
13		Mehlan	1426	12
14		Shekhan Mehlan	762	13
15		Baladah	1632	14
16		Raees Khil	1162	15
17		Hajian	1253	16
18		Gochi Khil Bala	652	17
19		Dara	466	RC
20		Sar Sang	1100	18
21		Hasan kalai	452	19
22	Ahmad Aba	Wakil Mohammad Kareem Kale	680	20
23		Nidir Shah Khil	145	21
24		Dawlat Khil Bala	310	22
25		Jamalu idin kalai	178	23
26		Talbek khail	237	24
27		Nawabad esakhail	145	25
28	Chamkani	Taroo Kale Ragha	722	RC
29		Kotke	520	26
30		Peer Kale	508	27
31		Shir Ali Kale	445	28
32		Peerano Ragha	829	29
33		Babo Khil	1116	30
34		Speen Kot	516	31
35		Chinargy	583	32
36		toshai	583	33
37		Goda khail	731	34
38		Abdurrahman khail	1311	35
39	Said Karam	Zoor Shahar	628	36
40		Kotkai	660	37
41		Shalyan	484	38
42		Abdul Rahman kalia	385	39

Annex 3: Plausibility Check Summary

Plausibility check for: AFG_201506_ACF_PAKTYA_SMART.as

Standard/Reference used for z-score calculation: WHO standards 2006

(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data (% of out of range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	**0** (2,2 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**0** (p=0,357)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**10** (p=0,000)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (5)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**2** (9)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (5)
Standard Dev WHZ .	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	
.	Excl	SD	>0.9 0	>0.85 5	>0.80 10	<=0.80 20	**0** (1,00)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (-0,07)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**1** (0,38)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	**0** (p=0,493)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**13** %

The overall score of this survey is 13 %, this is good.

There were no duplicate entries detected.

Percentage of children with no exact birthday: 75 %

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=30/ID=1: HAZ (-5,741), Height may be incorrect
Line=32/ID=3: HAZ (5,099), Age may be incorrect
Line=52/ID=1: HAZ (2,120), Age may be incorrect
Line=53/ID=2: HAZ (4,074), Height may be incorrect
Line=54/ID=1: HAZ (3,209), Age may be incorrect
Line=72/ID=2: HAZ (-4,680), Height may be incorrect
Line=90/ID=1: HAZ (7,410), WAZ (2,642), Age may be incorrect
Line=110/ID=1: HAZ (2,917), Height may be incorrect
Line=141/ID=1: HAZ (-5,069), WAZ (-4,589), Age may be incorrect

Line=143/ID=2: HAZ (-4,733), Age may be incorrect
Line=149/ID=6: **WHZ (3,288)**, Height may be incorrect
Line=150/ID=7: HAZ (-4,688), Age may be incorrect
Line=154/ID=1: HAZ (-4,583), Age may be incorrect
Line=168/ID=1: HAZ (3,113), Age may be incorrect
Line=181/ID=1: **WHZ (2,824)**, Height may be incorrect
Line=188/ID=4: HAZ (7,161), WAZ (2,791), Age may be incorrect
Line=215/ID=4: HAZ (1,986), Age may be incorrect
Line=225/ID=1: HAZ (2,108), Age may be incorrect
Line=226/ID=2: HAZ (-4,459), Age may be incorrect
Line=228/ID=2: HAZ (-5,177), Age may be incorrect
Line=233/ID=3: HAZ (-5,468), Age may be incorrect
Line=241/ID=1: HAZ (2,124), Height may be incorrect
Line=242/ID=2: HAZ (1,828), Age may be incorrect
Line=246/ID=1: HAZ (-5,648), Age may be incorrect
Line=248/ID=3: HAZ (2,641), Age may be incorrect
Line=261/ID=1: HAZ (2,141), Age may be incorrect
Line=264/ID=1: HAZ (2,770), Age may be incorrect
Line=265/ID=2: HAZ (3,065), Age may be incorrect
Line=269/ID=4: HAZ (-5,089), Age may be incorrect
Line=273/ID=4: HAZ (2,685), Height may be incorrect
Line=276/ID=3: HAZ (2,164), Age may be incorrect
Line=283/ID=2: HAZ (2,598), Age may be incorrect
Line=284/ID=3: HAZ (2,021), Age may be incorrect
Line=292/ID=2: HAZ (2,246), Age may be incorrect
Line=366/ID=2: HAZ (3,233), Age may be incorrect
Line=371/ID=4: HAZ (3,668), Height may be incorrect
Line=388/ID=2: HAZ (-4,346), Age may be incorrect
Line=392/ID=2: HAZ (-4,754), Age may be incorrect
Line=395/ID=2: HAZ (-5,042), Age may be incorrect
Line=398/ID=1: HAZ (-5,059), Age may be incorrect
Line=427/ID=1: HAZ (1,992), Age may be incorrect
Line=436/ID=1: HAZ (1,686), Height may be incorrect
Line=441/ID=1: **WHZ (3,964)**, Height may be incorrect
Line=453/ID=1: HAZ (2,872), Height may be incorrect
Line=460/ID=3: HAZ (1,874), Height may be incorrect
Line=474/ID=4: HAZ (-4,416), WAZ (-4,249), Age may be incorrect
Line=477/ID=1: HAZ (-4,828), Height may be incorrect
Line=483/ID=4: **WHZ (2,847)**, Height may be incorrect
Line=486/ID=2: WAZ (-4,075), Age may be incorrect
Line=487/ID=1: HAZ (1,754), Height may be incorrect
Line=494/ID=1: HAZ (-4,799), Age may be incorrect
Line=503/ID=2: HAZ (2,084), Age may be incorrect
Line=505/ID=2: HAZ (-5,742), Age may be incorrect
Line=513/ID=1: HAZ (1,838), Age may be incorrect
Line=519/ID=1: HAZ (-4,558), Age may be incorrect
Line=524/ID=1: HAZ (2,508), Age may be incorrect
Line=535/ID=1: HAZ (-4,450), Height may be incorrect
Line=548/ID=2: HAZ (4,956), WAZ (2,225), Age may be incorrect
Line=549/ID=3: HAZ (5,343), WAZ (2,285), Age may be incorrect
Line=565/ID=2: HAZ (3,026), Age may be incorrect
Line=575/ID=2: **WHZ (2,777)**, Weight may be incorrect
Line=584/ID=1: HAZ (1,691), Age may be incorrect
Line=585/ID=1: HAZ (-7,443), Age may be incorrect

Line=587/ID=2: HAZ (-4,972), WAZ (-4,865), Age may be incorrect
Line=629/ID=1: HAZ (-5,555), Age may be incorrect
Line=646/ID=1: HAZ (-4,371), WAZ (-4,021), Age may be incorrect
Line=648/ID=1: HAZ (-6,164), WAZ (-4,612), Age may be incorrect
Line=652/ID=1: HAZ (-5,318), Age may be incorrect
Line=660/ID=2: HAZ (-4,421), Age may be incorrect
Line=665/ID=1: HAZ (-5,633), Age may be incorrect
Line=683/ID=2: HAZ (-4,722), Age may be incorrect
Line=694/ID=1: HAZ (-4,656), Height may be incorrect
Line=712/ID=1: HAZ (3,573), Age may be incorrect
Line=726/ID=2: HAZ (-5,297), Age may be incorrect
Line=727/ID=1: HAZ (-5,052), Height may be incorrect
Line=731/ID=1: HAZ (-4,435), Age may be incorrect
Line=758/ID=2: HAZ (2,008), Age may be incorrect
Line=766/ID=2: HAZ (-5,180), Age may be incorrect
Line=767/ID=1: HAZ (2,858), Height may be incorrect
Line=769/ID=1: HAZ (2,214), Age may be incorrect
Line=780/ID=2: HAZ (1,790), Height may be incorrect
Line=803/ID=2: HAZ (-4,688), Age may be incorrect
Line=809/ID=3: HAZ (2,832), Age may be incorrect
Line=822/ID=2: **WHZ (-3,597)**, Weight may be incorrect
Line=828/ID=3: **WHZ (4,147)**, HAZ (-6,171), Height may be incorrect
Line=829/ID=1: **WHZ (3,644)**, Height may be incorrect
Line=830/ID=2: **WHZ (4,268)**, Height may be incorrect
Line=833/ID=1: **WHZ (3,439)**, Weight may be incorrect
Line=834/ID=1: **WHZ (3,802)**, Weight may be incorrect
Line=837/ID=1: HAZ (-6,507), WAZ (-3,952), Age may be incorrect
Line=850/ID=1: HAZ (-7,660), WAZ (-4,987), Age may be incorrect
Line=851/ID=2: HAZ (-4,946), Height may be incorrect
Line=873/ID=1: **WHZ (-3,508)**, Weight may be incorrect
Line=881/ID=1: **WHZ (-3,874)**, Height may be incorrect
Line=897/ID=2: HAZ (-6,710), WAZ (-5,369), Age may be incorrect
Line=913/ID=1: HAZ (-4,878), WAZ (-4,987), Age may be incorrect
Line=941/ID=1: **WHZ (-4,228)**, HAZ (3,266), Height may be incorrect
Line=942/ID=2: HAZ (2,005), Age may be incorrect
Line=944/ID=1: HAZ (3,817), Age may be incorrect
Line=946/ID=3: **WHZ (3,223)**, Height may be incorrect
Line=948/ID=2: **WHZ (4,164)**, HAZ (-7,699), Height may be incorrect
Line=953/ID=3: HAZ (-7,373), Height may be incorrect
Line=954/ID=1: HAZ (1,856), Age may be incorrect
Line=958/ID=1: HAZ (2,280), Age may be incorrect
Line=959/ID=2: HAZ (2,856), WAZ (2,099), Age may be incorrect
Line=962/ID=2: **WHZ (3,586)**, Weight may be incorrect
Line=963/ID=1: HAZ (3,223), WAZ (2,744), Age may be incorrect
Line=970/ID=2: HAZ (-5,970), Age may be incorrect
Line=972/ID=2: HAZ (-5,276), Age may be incorrect
Line=990/ID=1: HAZ (-5,130), Age may be incorrect
Line=1006/ID=3: **WHZ (3,189)**, HAZ (-4,938), Height may be incorrect
Line=1012/ID=3: HAZ (1,949), Age may be incorrect
Line=1014/ID=1: HAZ (-5,824), WAZ (-4,404), Age may be incorrect
Line=1034/ID=2: **WHZ (-3,755)**, Height may be incorrect
Line=1037/ID=1: HAZ (3,016), Height may be incorrect
Line=1056/ID=1: HAZ (-5,218), WAZ (-4,136), Age may be incorrect
Line=1064/ID=1: HAZ (-5,851), WAZ (-4,352), Age may be incorrect

Line=1084/ID=2: **WHZ (3,023)**, Height may be incorrect
Line=1086/ID=2: **WHZ (4,675)**, Height may be incorrect
Line=1096/ID=2: **WHZ (-5,222)**, WAZ (-4,502), Weight may be incorrect
Line=1102/ID=1: HAZ (-4,396), Age may be incorrect
Line=1116/ID=1: HAZ (1,946), WAZ (2,454), Age may be incorrect
Line=1117/ID=1: HAZ (2,452), Age may be incorrect
Line=1132/ID=1: HAZ (-6,589), WAZ (-4,986), Age may be incorrect
Line=1139/ID=2: **WHZ (3,433)**, Weight may be incorrect
Line=1141/ID=1: HAZ (-6,117), WAZ (-4,869), Age may be incorrect
Line=1154/ID=1: HAZ (-4,720), Age may be incorrect
Line=1157/ID=2: HAZ (-4,586), Age may be incorrect
Line=1182/ID=2: HAZ (-5,573), Age may be incorrect
Line=1196/ID=1: **WHZ (-3,462)**, HAZ (-5,327), WAZ (-4,897)
Line=1197/ID=2: **WHZ (-4,347)**, HAZ (-5,438), WAZ (-5,930)
Line=1205/ID=1: HAZ (-4,408), Age may be incorrect

Percentage of values flagged with SMART flags:WHZ: 2,2 %, HAZ: 9,9 %, WAZ: 2,2 %

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 : ########################
Month 60 : #

Age ratio of 6-29 months to 30-59 months: 1,05 (The value should be around 0.85).:
p-value = 0,000 (significant difference)

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

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	136/135,0 (1,0)	129/127,8 (1,0)	265/262,9 (1,0)	1,05
18 to 29	12	159/131,7 (1,2)	156/124,6 (1,3)	315/256,3 (1,2)	1,02
30 to 41	12	138/127,6 (1,1)	136/120,8 (1,1)	274/248,4 (1,1)	1,01
42 to 53	12	91/125,6 (0,7)	81/118,9 (0,7)	172/244,5 (0,7)	1,12
54 to 59	6	58/62,1 (0,9)	49/58,8 (0,8)	107/120,9 (0,9)	1,18
6 to 59	54	582/566,5 (1,0)	551/566,5 (1,0)		1,06

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

Overall sex ratio: p-value = 0,357 (boys and girls equally represented)
Overall age distribution: p-value = 0,000 (significant difference)

Overall age distribution for boys: p-value = 0,003 (significant difference)
Overall age distribution for girls: p-value = 0,000 (significant difference)
Overall sex/age distribution: p-value = 0,000 (significant difference)

Digit preference Weight:

Digit .0 : ##############################
Digit .1 : ##
Digit .2 : ##
Digit .3 : ##
Digit .4 : ##
Digit .5 : ##
Digit .6 : ##
Digit .7 : ##
Digit .8 : ##
Digit .9 : ##

Digit preference score: **5** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0,000 (significant difference)

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: **9** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0,000 (significant difference)

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: **5** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0,001 (significant difference)

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:	1,14	1,14	1,00
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	5,8%	5,7%	5,2%
calculated with current SD:	6,4%	6,2%	4,4%
calculated with a SD of 1:	4,1%	4,0%	4,3%
HAZ			
Standard Deviation SD:	1,85	1,74	1,36
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	33,9%	33,4%	31,7%
calculated with current SD:	35,9%	34,4%	30,7%
calculated with a SD of 1:	25,2%	24,2%	24,6%
WAZ			
Standard Deviation SD:	1,25	1,25	1,13
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	19,5%	19,5%	18,3%
calculated with current SD:	19,6%	19,6%	16,4%
calculated with a SD of 1:	14,3%	14,3%	13,4%
Results for Shapiro-Wilk test for normally (Gaussian) distributed data:			
WHZ	p= 0,000	p= 0,000	p= 0,000
HAZ	p= 0,000	p= 0,001	p= 0,000
WAZ	p= 0,000	p= 0,000	p= 0,004
(If p < 0.05 then the data are not normally distributed. If p > 0.05 you can consider the data normally distributed)			
Skewness			
WHZ	0,21	0,28	-0,07
HAZ	0,07	0,10	-0,11
WAZ	-0,32	-0,32	-0,10
If the value is:			
-below minus 0.4 there is a relative excess of wasted/stunted/underweight subjects in the sample			
-between minus 0.4 and minus 0.2, there may be a relative excess of wasted/stunted/underweight subjects in the sample.			
-between minus 0.2 and plus 0.2, the distribution can be considered as symmetrical.			
-between 0.2 and 0.4, there may be an excess of obese/tall/overweight subjects in the sample.			
-above 0.4, there is an excess of obese/tall/overweight subjects in the sample			
Kurtosis			
WHZ	1,96	1,80	0,38

```
HAZ                                     1,28            0,41            -0,64
WAZ                                     0,55            0,55            -0,32
Kurtosis characterizes the relative size of the body versus the tails of the distribution.
Positive kurtosis indicates relatively large tails and small body. Negative kurtosis indicates
relatively large body and small tails.
If the absolute value is:
-above 0.4 it indicates a problem. There might have been a problem with data collection or
sampling.
-between 0.2 and 0.4, the data may be affected with a problem.
-less than an absolute value of 0.2 the distribution can be considered as normal.
```

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

```
WHZ < -2: ID=0,99 (p=0,493)
WHZ < -3: ID=0,84 (p=0,742)
GAM:      ID=0,99 (p=0,493)
SAM:      ID=0,84 (p=0,742)
HAZ < -2: ID=1,74 (p=0,003)
HAZ < -3: ID=1,65 (p=0,007)
WAZ < -2: ID=1,57 (p=0,014)
WAZ < -3: ID=1,69 (p=0,005)
```

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: 0,81 (n=39, f=0)  #
02: 1,20 (n=37, f=1)  ##################
03: 1,25 (n=38, f=1)  ####################
04: 0,76 (n=37, f=0)
05: 1,21 (n=38, f=1)  ##################
06: 1,40 (n=33, f=1)  ##########################
07: 1,12 (n=37, f=0)  #############
08: 1,03 (n=38, f=1)  ##########
09: 1,14 (n=36, f=0)  ##############
10: 1,24 (n=33, f=1)  ###################
11: 1,21 (n=36, f=1)  ##################
12: 1,31 (n=37, f=1)  ######################
13: 1,01 (n=36, f=1)  #########
```

```
14: 1,07 (n=38, f=0)  ##########
15: 1,21 (n=36, f=0)  ################
16: 1,18 (n=37, f=0)  ################
17: 1,00 (n=33, f=1)  ########
18: 1,34 (n=36, f=1)  ######################
19: 1,39 (n=37, f=2)  ########################
20: 0,94 (n=33, f=1)  ######
21: 1,27 (n=34, f=1)  ####################
22: 0,96 (n=37, f=1)  #######
23: 0,86 (n=35, f=0)  ##
24: 1,36 (n=34, f=2)  ######################
25: 1,12 (n=31, f=0)  ##############
26: 0,92 (n=29, f=0)  #####
27: 0,92 (n=27, f=0)  #####
28: 1,65 (n=26, f=3)  ###################################
29: 0,92 (n=25, f=0)  #####
30: 1,19 (n=21, f=1)  ################
31: 1,37 (n=19, f=1)  ######################
32: 1,30 (n=14, f=1)  00000000000000000000
33: 1,07 (n=12, f=0)  0000000000
34: 1,12 (n=11, f=0)  00000000000
35: 0,40 (n=07, f=0)
36: 1,20 (n=09, f=0)  ~~~~~~~~~~~~~~~~
37: 1,37 (n=08, f=1)  ~~~~~~~~~~~~~~~~~~~~~~
38: 1,16 (n=05, f=0)  ~~~~~~~~~~~~~~
39: 0,87 (n=06, f=0)  ~~~
40: 0,62 (n=06, f=0)
41: 0,96 (n=04, 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**
n =	277	347	264	245
Percentage of values flagged with SMART flags:				
WHZ:	2,2	0,3	5,7	0,8
HAZ:	9,7	5,2	8,7	8,2
WAZ:	2,2	0,0	1,9	2,9
Age ratio of 6-29 months to 30-59 months:				
	1,22	1,12	1,02	0,84
Sex ratio (male/female):				
	1,13	1,04	1,13	0,93
Digit preference Weight (%):				
.0 :	4	6	8	2
.1 :	15	9	9	9
.2 :	8	12	12	13
.3 :	14	11	7	9
.4 :	10	11	8	11
.5 :	8	8	12	11
.6 :	10	7	13	11
.7 :	9	11	9	11

.8 :	8	13	10	12
.9 :	13	11	11	10
DPS:	11	7	6	9

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

Digit preference Height (%):

.0 :	9	10	11	9
.1 :	17	5	12	11
.2 :	12	16	17	16
.3 :	9	24	11	7
.4 :	9	9	12	11
.5 :	8	13	7	7
.6 :	10	7	5	10
.7 :	10	4	7	7
.8 :	7	2	11	8
.9 :	10	9	8	15
DPS:	9	20	11	10

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

Digit preference MUAC (%):

.0 :	9	14	10	4
.1 :	12	14	11	7
.2 :	12	7	18	15
.3 :	8	13	4	9
.4 :	12	9	11	14
.5 :	10	16	9	11
.6 :	9	9	11	12
.7 :	9	4	6	8
.8 :	10	9	9	9
.9 :	10	6	13	10
DPS:	4	12	12	10

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

Standard deviation of WHZ:

SD	1,10	0,92	1,40	1,07

Prevalence (< -2) observed:

%	6,1		5,3	6,1

Prevalence (< -2) calculated with current SD:

%	6,0		6,2	5,8

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

%	4,5		1,6	4,6

Standard deviation of HAZ:

SD	1,83	1,97	1,85	1,62

observed:

%	30,3	42,4	28,8	31,4

calculated with current SD:

%	32,9	42,2	30,9	35,0

calculated with a SD of 1:

%	20,9	34,9	17,8	26,7

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

Team 1:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	37/34,1 (1,1)	36/30,2 (1,2)	73/64,3 (1,1)	1,03
18 to 29	12	41/33,3 (1,2)	38/29,4 (1,3)	79/62,7 (1,3)	1,08
30 to 41	12	31/32,2 (1,0)	29/28,5 (1,0)	60/60,7 (1,0)	1,07
42 to 53	12	23/31,7 (0,7)	15/28,1 (0,5)	38/59,8 (0,6)	1,53
54 to 59	6	15/15,7 (1,0)	12/13,9 (0,9)	27/29,6 (0,9)	1,25
6 to 59	54	147/138,5 (1,1)	130/138,5 (0,9)		1,13

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

Overall sex ratio: p-value = 0,307 (boys and girls equally represented)
Overall age distribution: p-value = 0,009 (significant difference)
Overall age distribution for boys: p-value = 0,340 (as expected)
Overall age distribution for girls: p-value = 0,041 (significant difference)
Overall sex/age distribution: p-value = 0,004 (significant difference)

Team 2:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	39/41,1 (0,9)	42/39,4 (1,1)	81/80,5 (1,0)	0,93
18 to 29	12	56/40,0 (1,4)	46/38,5 (1,2)	102/78,5 (1,3)	1,22
30 to 41	12	47/38,8 (1,2)	49/37,3 (1,3)	96/76,1 (1,3)	0,96
42 to 53	12	28/38,2 (0,7)	25/36,7 (0,7)	53/74,9 (0,7)	1,12
54 to 59	6	7/18,9 (0,4)	8/18,1 (0,4)	15/37,0 (0,4)	0,88
6 to 59	54	177/173,5 (1,0)	170/173,5 (1,0)		1,04

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

Overall sex ratio: p-value = 0,707 (boys and girls equally represented)
Overall age distribution: p-value = 0,000 (significant difference)
Overall age distribution for boys: p-value = 0,001 (significant difference)
Overall age distribution for girls: p-value = 0,005 (significant difference)
Overall sex/age distribution: p-value = 0,000 (significant difference)

Team 3:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	27/32,5 (0,8)	25/28,8 (0,9)	52/61,3 (0,8)	1,08
18 to 29	12	40/31,7 (1,3)	41/28,1 (1,5)	81/59,7 (1,4)	0,98
30 to 41	12	31/30,7 (1,0)	25/27,2 (0,9)	56/57,9 (1,0)	1,24
42 to 53	12	18/30,2 (0,6)	18/26,8 (0,7)	36/57,0 (0,6)	1,00
54 to 59	6	24/14,9 (1,6)	15/13,2 (1,1)	39/28,2 (1,4)	1,60

```
-------------------------------------------------------------------------------
6  to 59     54    140/132,0 (1,1)    124/132,0 (0,9)                      1,13
```

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

Overall sex ratio: p-value = 0,325 (boys and girls equally represented)
Overall age distribution: p-value = 0,000 (significant difference)
Overall age distribution for boys: p-value = 0,009 (significant difference)
Overall age distribution for girls: p-value = 0,045 (significant difference)
Overall sex/age distribution: p-value = 0,000 (significant difference)

Team 4:

```
Age cat.     mo.        boys              girls             total     ratio boys/girls
-------------------------------------------------------------------------------
6  to 17     12      33/27,4 (1,2)      26/29,5 (0,9)      59/56,8 (1,0)    1,27
18 to 29     12      22/26,7 (0,8)      31/28,7 (1,1)      53/55,4 (1,0)    0,71
30 to 41     12      29/25,9 (1,1)      33/27,8 (1,2)      62/53,7 (1,2)    0,88
42 to 53     12      22/25,5 (0,9)      23/27,4 (0,8)      45/52,9 (0,9)    0,96
54 to 59      6      12/12,6 (1,0)      14/13,6 (1,0)      26/26,1 (1,0)    0,86
-------------------------------------------------------------------------------
6  to 59     54    118/122,5 (1,0)    127/122,5 (1,0)                      0,93
```

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

Overall sex ratio: p-value = 0,565 (boys and girls equally represented)
Overall age distribution: p-value = 0,621 (as expected)
Overall age distribution for boys: p-value = 0,582 (as expected)
Overall age distribution for girls: p-value = 0,687 (as expected)
Overall sex/age distribution: p-value = 0,246 (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: 0,44 (n=11, f=0)
02: 1,04 (n=10, f=0)  ##########
03: 1,25 (n=10, f=0)  ###################
04: 0,95 (n=10, f=0)  ######
05: 0,86 (n=11, f=0)  ##
06: 1,55 (n=08, f=0)  ################################
07: 0,82 (n=11, f=0)  #
08: 1,47 (n=11, f=1)  ############################
09: 1,50 (n=09, f=0)  ############################
10: 1,71 (n=09, f=1)  ####################################
11: 0,81 (n=10, f=0)  #
12: 1,57 (n=10, f=1)  ################################
13: 0,56 (n=11, f=0)
14: 1,00 (n=10, f=0)  ########
15: 0,82 (n=08, f=0)  #
```

```
16: 1,05 (n=11, f=0)  ##########
17: 0,55 (n=10, f=0)
18: 0,95 (n=10, f=0)  ######
19: 0,76 (n=11, f=0)
20: 1,32 (n=08, f=1)  #####################
21: 1,59 (n=10, f=1)  ################################
22: 0,86 (n=11, f=0)  ###
23: 0,99 (n=10, f=0)  ########
24: 0,57 (n=09, f=0)
25: 0,82 (n=08, f=0)  #
26: 0,62 (n=07, f=0)
27: 0,84 (n=04, f=0)  OO
28: 1,60 (n=04, f=0)  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
29: 1,08 (n=03, f=0)  OOOOOOOOOOOO
30: 1,10 (n=02, f=0)  ~~~~~~~~~~~~~
31: 2,37 (n=03, f=1)  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
32: 1,00 (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: 0,99 (n=10, f=0)  ########
02: 1,06 (n=10, f=0)  ###########
03: 1,17 (n=10, f=0)  ###############
04: 0,59 (n=10, f=0)
05: 0,68 (n=10, f=0)
06: 0,69 (n=10, f=0)
07: 1,31 (n=10, f=1)  #####################
08: 0,81 (n=10, f=0)
09: 0,95 (n=10, f=0)  ######
10: 1,16 (n=09, f=0)  ###############
11: 1,20 (n=10, f=0)  #################
12: 0,94 (n=10, f=0)  ######
13: 0,83 (n=10, f=0)  #
14: 1,22 (n=10, f=0)  ##################
15: 0,73 (n=10, f=0)
16: 1,23 (n=10, f=0)  ##################
17: 0,68 (n=10, f=0)
18: 0,76 (n=10, f=0)
19: 1,09 (n=10, f=0)  ############
20: 0,58 (n=10, f=0)
21: 1,19 (n=10, f=1)  #################
22: 0,49 (n=10, f=0)
23: 0,90 (n=10, f=0)  ####
24: 0,76 (n=10, f=0)
25: 0,94 (n=10, f=0)  ######
26: 0,83 (n=10, f=0)  #
27: 0,95 (n=10, f=0)  ######
28: 1,21 (n=10, f=1)  #################
29: 0,91 (n=10, f=0)  #####
30: 0,60 (n=09, f=0)
31: 0,55 (n=07, f=0)
32: 0,90 (n=05, f=0)  OOOO
33: 0,93 (n=05, f=0)  OOOOO
34: 0,54 (n=04, f=0)
35: 0,50 (n=04, f=0)
36: 1,04 (n=04, f=0)  OOOOOOOOOO
37: 1,98 (n=04, f=1)  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
38: 1,31 (n=04, f=0)  OOOOOOOOOOOOOOOOOOOO
39: 0,80 (n=04, f=0)
40: 0,24 (n=04, f=0)
41: 0,17 (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: 1,10 (n=08, f=0)  ############
02: 1,47 (n=08, f=1)  ############################
03: 1,25 (n=08, f=1)  ###################
04: 0,48 (n=08, f=0)
05: 2,00 (n=07, f=1)  ##################################################
06: 1,64 (n=07, f=1)  ####################################
07: 0,90 (n=08, f=0)  ####
08: 0,57 (n=08, f=0)
09: 0,72 (n=08, f=0)
10: 0,83 (n=06, f=0)  #
11: 1,55 (n=07, f=1)  ##############################
12: 1,50 (n=08, f=0)  ##############################
13: 0,91 (n=06, f=0)  ####
14: 1,25 (n=08, f=0)  ###################
15: 2,05 (n=08, f=1)  ##########################################################
16: 1,00 (n=08, f=0)  ########
17: 0,92 (n=05, f=0)  #####
18: 1,70 (n=08, f=1)  ########################################
19: 2,43 (n=08, f=2)  ########################################################################
20: 0,88 (n=07, f=0)  ###
21: 1,52 (n=06, f=0)  ##############################
22: 1,32 (n=08, f=0)  ######################
23: 0,84 (n=07, f=0)  ##
24: 2,66 (n=08, f=2)  ########################################################################
25: 1,14 (n=07, f=0)  ##############
26: 1,41 (n=06, f=0)  ##########################
27: 0,81 (n=08, f=0)
28: 1,90 (n=08, f=2)  ################################################
29: 0,77 (n=08, f=0)
30: 1,50 (n=07, f=1)  ##############################
31: 1,58 (n=05, f=1)  ####################################
32: 1,88 (n=05, f=1)  ################################################
33: 1,05 (n=05, f=0)  ##########
34: 0,72 (n=05, f=0)
35: 0,11 (n=02, f=0)
36: 1,24 (n=04, f=0)  OOOOOOOOOOOOOOOOO
37: 0,66 (n=03, f=0)
39: 0,23 (n=02, f=0)
40: 0,92 (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: 0,71 (n=10, f=0)
02: 1,08 (n=09, f=0)  ############
03: 1,05 (n=10, f=0)  ###########
04: 0,79 (n=09, f=0)
05: 1,11 (n=10, f=0)  #############
06: 1,20 (n=08, f=0)  #################
07: 1,03 (n=08, f=0)  ##########
08: 0,93 (n=09, f=0)  ######
09: 0,83 (n=09, f=0)  #
10: 0,99 (n=09, f=0)  ########
11: 0,74 (n=09, f=0)
```

```
12: 1,29 (n=09, f=0)  ####################
13: 1,54 (n=09, f=1)  ################################
14: 0,61 (n=10, f=0)
15: 1,08 (n=10, f=0)  ############
16: 1,29 (n=08, f=0)  ####################
17: 1,50 (n=08, f=1)  ##############################
18: 1,09 (n=08, f=0)  ############
19: 0,96 (n=08, f=0)  #######
20: 0,61 (n=08, f=0)
21: 0,87 (n=08, f=0)  ###
22: 0,59 (n=08, f=0)
23: 0,62 (n=08, f=0)
24: 0,58 (n=07, f=0)
25: 1,40 (n=06, f=0)  ########################
26: 0,65 (n=06, f=0)
27: 0,82 (n=05, f=0)  O
28: 1,10 (n=04, f=0)  OOOOOOOOOOO
29: 0,89 (n=04, f=0)  OOOO
30: 1,71 (n=03, f=0)  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
31: 1,48 (n=04, f=0)  OOOOOOOOOOOOOOOOOOOOOOOOO
32: 0,38 (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)

Annex 4: Local Event Calendar

1394	ماهای	1393	ماهای	1392	ماهای	1391	ماهای	1390	ماهای	1389	میاشتی	د میاشتو نومونه
د نوروز ورځ د نیالونه د کشینولو وخت دمکتبونو د شورع کیدو وخت د اوروو د وتلو وخت دونو د ګلانو د غوړیدو وخت	3	د نوروز ورځ د نیالونه د کشینولو وخت دمکتبونو د شورع کیدو وخت د اوروو د وتلو وخت دونو د ګلانو د غوړیدو وخت	15	د نوروز ورځ د نیالونه د کشینولو وخت دمکتبونو د شورع کیدو وخت د اوروو د وتلو وخت دونو د ګلانو د غوړیدو وخت	27	د نوروز ورځ د نیالونه د کشینولو وخت دمکتبونو د شورع کیدو وخت د اوروو د وتلو وخت دونو د ګلانو د غوړیدو وخت	39	د نوروز ورځ د نیالونه د کشینولو وخت دمکتبونو د شورع کیدو وخت د اوروو د وتلو وخت دونو د ګلانو د غوړیدو وخت	51	د نوروز ورځ د نیالونه د کشینولو وخت دمکتبونو د شورع کیدو وخت د اوروو د وتلو وخت دونو د ګلانو د غوړیدو وخت		حمل
د مجاهدینو د کامیابی ورځ د کوچیانو د راختلو وخت د خټو وخت یا میاشت	2	د مجاهدینو د کامیابی ورځ د کوچیانو د راختلو وخت د خټو وخت یا میاشت	14	د مجاهدینو د کامیابی ورځ د کوچیانو د راختلو وخت د خټو وخت یا میاشت	26	د مجاهدینو د کامیابی ورځ د کوچیانو د راختلو وخت د خټو وخت یا میاشت	38	د مجاهدینو د کامیابی ورځ د کوچیانو د راختلو وخت د خټو وخت یا میاشت	50	د مجاهدینو د کامیابی ورځ د کوچیانو د راختلو وخت د خټو وخت یا میاشت		ثور
ډ خدای میاشت د غنمو د لو دخت برات میاشت د معلم ورځ	1	ډ خدای میاشت د غنمو د لو دخت برات میاشت د معلم ورځ	13	ډ خدای میاشت د غنمو د لو دخت برات میاشت د معلم ورځ	25	ډ خدای میاشت د غنمو د لو وخت برات میاشت د معلم ورځ	37	ډ خدای میاشت د غنمو د لو دخت برات میاشت د معلم ورځ	49	ډ خدای میاشت د غنمو د لو دخت برات میاشت د معلم ورځ		جوزا
د روژي میاشت د ګرمی موسم		د روژي میاشت د ګرمی موسم	12	د روژي میاشت د ګرمی موسم	24	د روژي میاشت د ګرمی موسم	36	د روژي میاشت د ګرمی موسم	48	د روژي میاشت د ګرمی موسم		سرطان
کوچنی اختر سیلابونه وخت ، د جشن ورځ		کوچنی اختر سیلابونه وخت ، د جشن ورځ	11	کوچنی اختر سیلابونه وخت ، د جشن ورځ	23	کوچنی اختر سیلابونه وخت ، د جشن ورځ	35	کوچنی اختر سیلابونه وخت ، د جشن ورځ	47	کوچنی اختر سیلابونه وخت ، د جشن ورځ	59	اسد

د درمندو وخت د میوو د پخیدو وخت		د درمندو وخت د میوو د پخیدو وخت	10	د درمندو وخت د میوو د پخیدو وخت	22	د درمندو وخت د میوو د پخیدو وخت	34	د درمندو وخت د میوو د پخیدو وخت	46	د درمندو وخت د میوو د پخیدو وخت	58	سنبله
د غنمو د کروخت د حج د تگ وخت د جوارو لو وخت ، دمیزان ستوری		د غنمو د کروخت د حج د تگ وخت د جوارو لو وخت ، دمیزان ستوری	9	د غنمو د کروخت د حج د تگ وخت د جوارو لو وخت ، دمیزان ستوری	21	د غنمو د کروخت د حج د تگ وخت د جوارو لو وخت ، دمیزان ستوری	33	د غنمو د کروخت د حج د تگ وخت د جوارو لو وخت ، دمیزان ستوری	45	د غنمو د کروخت د حج د تگ وخت د جوارو لو وخت ، دمیزان ستوری	57	میزان
دحسن او حسین میاشت د ژمی لپاره د تیاری وخت ، د پانو د تویدو وخت ، د لاندي وخت		دحسن او حسین میاشت د ژمی لپاره د تیاری وخت ، د پانو د تویدو وخت ، د لاندي وخت	8	دحسن او حسین میاشت د ژمی لپاره د تیاری وخت ، د پانو د تویدو وخت ، د لاندي وخت	20	دحسن او حسین میاشت د ژمی لپاره د تیاری وخت ، د پانو د تویدو وخت ، د لاندي وخت	32	دحسن او حسین میاشت د ژمی لپاره د تیاری وخت ، د پانو د تویدو وخت ، د لاندي وخت	44	دحسن او حسین میاشت د ژمی لپاره د تیاری وخت ، د پانو د تویدو وخت ، د لاندي وخت	56	عقرب
د اوبو د یخ وهلو وخت زیات بادونه وی ، دواوری دشروع وخت ،او یخ شروع کیږی د کورنو گرمولو وخت ، بښځو ورځ ، د مکتبونو د رخصت وخت د غنمو د ژرنده کولو وخت		د اوبو د یخ وهلو وخت زیات بادونه وی ، دواوری دشروع وخت ،او یخ شروع کیږی د کورنو گرمولو وخت ، بښځو ورځ ، د مکتبونو د رخصت وخت د غنمو د ژرنده کولو وخت	7	د اوبو د یخ وهلو وخت زیات بادونه وی ، دواوری دشروع وخت ،او یخ شروع کیږی د کورنو گرمولو وخت ، بښځو ورځ ، د مکتبونو د رخصت وخت د غنمو د ژرنده کولو وخت	19	د اوبو د یخ وهلو وخت زیات بادونه وی ، دواوری دشروع وخت ،او یخ شروع کیږی د کورنو گرمولو وخت ، بښځو ورځ ، د مکتبونو د رخصت وخت د غنمو د ژرنده کولو وخت	31	د اوبو د یخ وهلو وخت زیات بادونه وی ، دواوری دشروع وخت ،او یخ شروع کیږی د کورنو گرمولو وخت ، بښځو ورځ ، د مکتبونو د رخصت وخت د غنمو د ژرنده کولو وخت	43	د اوبو د یخ وهلو وخت زیات بادونه وی ، دواوری دشروع وخت ،او یخ شروع کیږی د کورنو گرمولو وخت ، بښځو ورځ ، د مکتبونو د رخصت وخت د غنمو د ژرنده کولو وخت	55	قوس
د مجاهدینو د کامیابی ورځ ،وچه ځیله یا سپیره ځیله میلادو نبی یا د مړو شپه ، د واورو میاشت		د مجاهدینو د کامیابی ورځ ،وچه ځیله یا سپیره ځیله میلادو نبی یا د مړو شپه ، د واورو میاشت	6	د مجاهدینو د کامیابی ورځ ،وچه ځیله یا سپیره ځیله میلادو نبی یا د مړو شپه ، د واورو میاشت	18	د مجاهدینو د کامیابی ورځ ،وچه ځیله یا سپیره ځیله میلادو نبی یا د مړو شپه ، د واورو میاشت	30	د مجاهدینو د کامیابی ورځ ،وچه ځیله یا سپیره ځیله میلادو نبی یا د مړو شپه ، د واورو میاشت	42	د مجاهدینو د کامیابی ورځ ،وچه ځیله یا سپیره ځیله د بلاگانو میاشت یا ځپره میلادو نبی یا د مړو شپه ، د واورو میاشت	54	جدی
د روسانو د وتلو خت ، بادوری		د روسانو د وتلو خت ، بادوری	5	د روسانو د وتلو خت ، بادوری	17	د روسانو د وتلو خت ، بادوری	29	د روسانو د وتلو خت ، بادوری	41	د روسانو د وتلو خت ، بادوری	53	دلوه

څیله ، باما او سخت یخ شروع کیږی		څیله ، باما او سخت یخ شروع کیږی		څیله ، باما او سخت یخ شروع کیږی		څیله ، باما او سخت یخ شروع کیږی		څیله ، باما او سخت یخ شروع کیږی		څیله ، باما او سخت یخ شروع کیږی		څیله ، باما او سخت یخ شروع کیږی		
د یخونو د ختمیدو وخت څکل پکل یا شست او شیکست د مرغانو د راتګ وخت د لخچک وخت ، غوړه څیله ، لوی تاو		د یخونو د ختمیدو وخت څکل پکل یا شست او شیکست د مرغانو د راتګ وخت د لخچک وخت ، غوړه څیله، لوی تاو	**4**	د یخونو د ختمیدو وخت څکل پکل یا شست او شیکست د مرغانو د راتګ وخت د لخچک وخت ، غوړه څیله ،لوی تاو	**16**	د یخونو د ختمیدو وخت څکل پکل یا شست او شیکست د مرغانو د راتګ وخت د لخچک وخت ، غوړه څیله ،لوی تاو	**28**	د یخونو د ختمیدو وخت څکل پکل یا شست او شیکست د مرغانو د راتګ وخت د لخچک وخت ، غوړه څیله ،لوی تاو	**40**	د یخونو د ختمیدو وخت څکل پکل یا شست او شیکست د مرغانو د راتګ وخت د لخچک وخت ، غوړه څیله ،لوی تاو	**52**	**ځ**