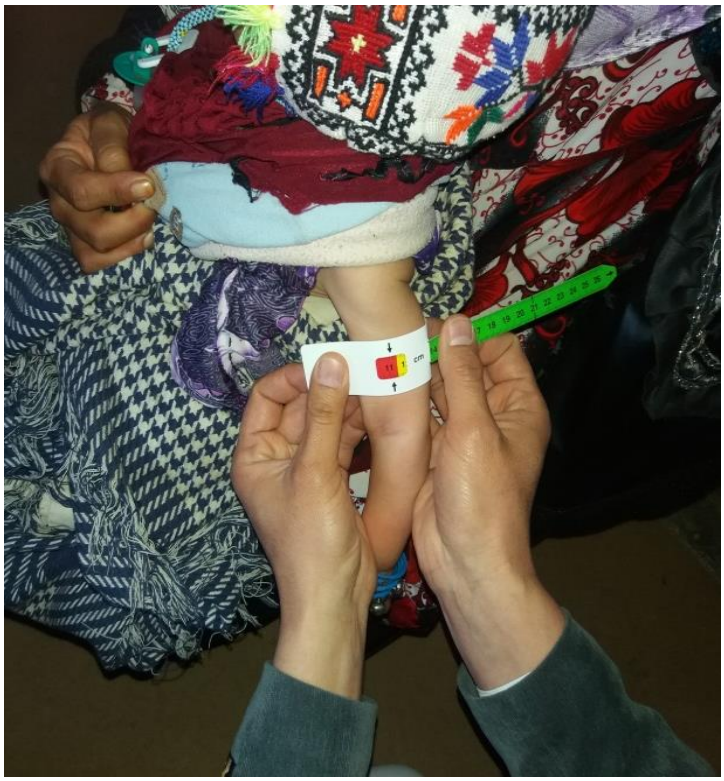
AFGHANISTAN

Nutrition & Mortality SMART Survey
Preliminary Report

Badghis Province, Afghanistan

3rd to 20th February, 2016



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Action Contre la Faim
ACF is a non-governmental, non-political and non-religious organization

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- Survey teams composed of enumerators, team leaders and supervisors for making the whole process smooth.

ABBREVIATIONS

ACF	Action Contre la Faim
BCG	Bacillus Calmette Guerin
BPHS	Basic Package of Health Services
CDR	Crude Death Rate
CHF	Common Humanitarian Fund
CI	Confidence Interval
C-IYCF	Community Infant Young Child Feeding
CSO	Central Statistics Organisation
DH	District Hospital
ENA	Emergency Nutrition Assessment
EPI	Expanded Programme for Immunisation
GAM	Global Acute Malnutrition
HA	Height for Age
HF	Health Facility
HH	Household
HP	Health Post
IEC	Information Education and Communication
IYCF	Infant Young Child Feeding
MAM	Moderate Acute Malnutrition
MOPH	Ministry of Public Health
MUAC	Mid-Upper Arm Circumference
NNS	National Nutrition Survey
OTP	Out-Patient Therapeutic Program
PLW	Pregnant and Lactating women
PNO	Public Nutrition Officer
PPHD	Provincial Public Health Department
RC	Reserve/Recommended Cluster
RW	Reserve Weight
SAM	Severe Acute Malnutrition
SD	Standard Deviation
SMART	Standardized Monitoring and Assessment of Relief Transition
TSFP	Therapeutic Supplementary Food Program
U5DR	Under-five Death Rate
UNICEF	United Nations International Children's Emergency Fund
UNOCHA	United Nation Office for the Coordination of Humanitarian Affairs
WASH	Water Sanitation and Hygiene
WFP	World Food Programme
WHO	World Health Organisation
WHZ	Weight for Height z-scores

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EXECUTIVE SUMMARY

The nutrition and mortality SMART[1] survey was conducted from 3rd to 20th of February 2016, in the six districts of Badghis Province. A total of 524 randomly selected households were assessed. The nutrition and mortality SMART survey preliminary report provides a summary of the methodology used, analysis and interpretation of survey findings and recommendations proposed. The final report will comprehensively provide an analysis and interpretation of nutritional findings and potential risk factors contributing to under-nutrition. The final report will be disseminated to the wider stakeholders after validation process scheduled to complete in month of May, 2016.

Summary findings

- A total of 944 children aged (0-59) months and 873 children aged (6-59) months children were assessed
- Global Acute Malnutrition (GAM) and Severe Acute Malnutrition (SAM) prevalence based on Weight –for- Height Z-scores (WHZ) was at 6.5% (4.8- 8.8 95% CI) and 0.4% (0.1- 1.1 95% CI) respectively. Prevalence of oedema was at 0.0%
- GAM and SAM prevalence based on Mid Upper Arm Circumference (MUAC) was at 8.6% (6.5-11.3 95% CI) and 1.6% (0.9- 3.0 95% CI) respectively.
- The combined MUAC and WHZ based on both criteria revealed GAM and SAM rates 13.1% (10.8-15.3 95% C.I.) and 3.2%(2.0-4.4 95% C.I.) respectively
- Crude Death Rate (CDR) and Under-five Death Rate (U5DR) was at 0.13 (0.06-0.30 95% CI) and 0.60 (0.28-1.27 95% CI) respectively.
- Prevalence of stunting was at 52.5% (47.1-57.8 95% CI) while severe stunting was at 25.0% (20.8-29.7 95% CI).
- Prevalence of underweight was 23.0% (19.5-27.0 95% CI) and severe underweight was 6.7% (5.1- 8.7 95% CI).
- The nutritional status of pregnant and lactating mothers based on MUAC cut off <230mm was at 21.2%.

[1] Standardized Monitoring of Assessment for Relief and Transition

INTRODUCTION

Badghis is one of the 34 provinces of Afghanistan, located in the northwest of the country next to Turkmenistan. Its northern border extends to the edge of the desert of Sarakhs. Badghis includes the Chul formations through which the Turkmen-Afghan boundary runs. The province was carved out of portions of Herat and Faryab Province in 1964 and has a total area of 20,591 km^2. Two rivers cross the province, namely Murghab River in the north and the Hari-Rud River in the south. Badghis is listed as one of the most underdeveloped province in the country. Qala-i-Naw, a small town halfway between Maimana and Herat, serve as the provincial center.

According to Central Statistic Organization (CSO) Badghis has seven districts namely Ab Kamari, Jawand, Muqur, Qadis ,Ghormach, Murghab and the city of Qalai Naw. However, the system of Basic Package of Health Services (BPHS) considers that Badghis has six districts. BPHS in Ghormach district is under Farah province. The total population of Badghis is 394,689[2] consisting of mainly Tajik (62%), Pashtun (28%), Uzbek (5%), Turkmen (3%), and Baloch (2%). The surveyed population was 283,935 representing 71.9 % of the entire population. The remaining population was not included in to the sampling frame due to limitation attributed to insecurity at the time of the assessment.

The survey was conducted from 3rd – 20th February 2016. ACF technically supported MOVE welfare Organization[3] to implement this survey with the justification of investigating and finding the current prevalence of nutrition, mortality and IYCF. It is expected that the survey findings will be used to inform programing and it was considered as a good opportunity to build capacity of MOVE Welfare Organization staffs. The information generated from the assessment will provide an updated nutrition, mortality and children health and immunization situation of most venerable population of Badghis province. This information is also expected to complement the National Nutrition Survey in 2013.

SURVEY OBJECTIVES

The overall survey objective was to evaluate the nutritional status of vulnerable groups mainly children less than five years of age in the Badghis province and factors contributing to it.

[2] Estimated Settled Population by Civil Division , Urban, Rural and Sex-2013
[3] The current BPHS implementing partner in Badghis province.

METHODOLOGY

Sample Size

The sample size of households to be surveyed was determined using ENA for SMART software version 2011 (up dated 9th July 2015). A two stage cluster methodology was applied. In first stage random selection of clusters/villages (48 clusters) from total list of villages using probability proportion of size (PPS) was applied. This was done before starting the data collection. The **table 1 and 2 highlights** sample size calculation for anthropometric, mortality surveys.

Table 1: Parameters for sample size calculation of anthropometric indicators, Badghis SMART, February 2016

Parameters for Anthropometry	Value	Assumptions based on context
Estimated prevalence of GAM (%)	5.6 %	As GAM results for Badghis Province from NNS 2013 was displaying Standard Deviation (SD) of 1.8, above the recommended limit of 1.2, it was preferred to retain the GAM prevalence for Herat (5.6 % (95 % CI: 3.99-7.77)) as the SD was within the limit of 1.2
± Desired precision	2.5%	For an estimate point prevalence of 5.6% a precision of ±2.5 is recommended by SMART methodology
Design Effect	1.5	The standard design effect of 1.5 was used
Children to be included	531	Minimum Children 6-59 months old. However all children from 0 to 59 months old found in the selected households were surveyed
Average HH Size	7.7	According to the National Nutrition Survey 2013, the average household size was 7.7
% 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[4]
% Non-response Households	6%	Based on previous experiences, the percentage of non-respondent households was estimated at 6%.
Households to be included	522	Minimum households to be surveyed to get the minimum anthropometric sample

[4] Afghanistan Mortality survey, 2010

Table 2: Sample size calculation for mortality survey, Badghis SMART, February 2016

Parameters for Mortality	Value	Assumptions based on context
Estimated Death Rate /10,000/day	0,5	Recommended in cases where there is no specific mortality data from the area
± Desired precision	0.3	In order to meet set mortality objectives and inline to estimated death rate
Design Effect	1.5	Caters for heterogeneity in the population being sampled
Recall Period in days	142	Starting point of recall period (during the start of 1st Mezan1394 (from Eid Qorban) is equal to (23rd September 2015 Georgian calendar.)
Population to be included	2,904	Minumum individuals
Average HH Size	7.7	National vulnerability assessment of Afghanistan -2014 and National Nutrition Survey 2013
% Non-response Households	6%	The percentage of non-respondent households was estimated at 6%. Using the same percentage as that of 2011 and similar to the non-response rate of the national nutrition survey for Afghanistan (2013)[5] of 6%.
Households to be included	401	Minimum households

Based on the parameters indicated above, Anthropometric sample will be 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 (522 HH) the other indicators will have representation within the larger sample size selected.

Final Sample Strategy

A two-stage cluster sampling methodology was employed. In the first stage, clusters/villages were randomly selected from a total list of villages (401) representing all the districts (Murghab, Ab Kamari, Jawand, Muqar, Qadis and Qali Naw) of the province (with exception of insecure villages) using Probability Proportional to Size (PPS[6]) design. Selection of villages to be covered as well as Reserve Clusters (RC[7]) was automatically provided using ENA for SMART. A total of 48 clusters were proposed and successfully covered. It have been estimated that a single team can cover a maximum of 11 households in a day. The extrapolation of required number of villages was derived from dividing the minimum sample size of 522 households by 11 to get an approximate 48 clusters (522HHs/11HHs). During survey data collection when large population, the village was sub-divided into smaller segments using natural borders (neighborhoods, rivers, roads, streets and mosque) and a segment was selected randomly to represent the village.

[5] National Nutrition Survey of Afghanistan, UNICEF, 2013
[6] . Villages with large population have higher chance of being selected than those with small populations
[7] To be used only if 10% of the selected clusters are not accessible

The second stage involved random selection of households from a total list of households for each of the sampled villages. All households in each of sampled villages were enumerated and given numbers by the survey team. A total of 11 households were chosen randomly by survey team drawing folded papers with numbers of households from a hat.

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 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.

A total of 524 households were reached with 944 children under-5 living in respective randomly sampled households. Out of them, 873 were children 6-59 months. 608 women of childbearing age were surveyed too.

Table 3 summarizes the sample size proposed and the actual achieved. During data collection, survey team had to revisit households at the end of the day to ensure children missing or households not present at the initial visit were covered. A cluster control form was used to record all the missed and absent households.

Table 3: Details of proposed and actual sample size achieved, Badghis SMART, February 2016

Number of HH planned	Number of HH surveyed	% surveyed /planned	Number of children 6-59 months planned	Number of children 6-59 months surveyed	% surveyed /planned
528	524	99.2%	531	873	164.4%

Survey team composition

The survey data collection team of six teams with each team having four members. Each team was composed of one MOVE Welfare Organization supervisor, one team leader and two data collector. Each team had at least one female data collectors to ensure acceptance of the team amongst the surveyed households. During data collection every female member of the survey team was accompanied with a mahram[8] to facilitate the work of the female data collectors at the community level. The teams were supervised by ACF and MOVE Welfare Organization nutrition program manager/nutrition focal points. The survey teams were trained on SMART methodology. The 5 days theoretical training was completed with

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

standardization tests and pilot test exercise. The standardization test was also used to group various teams especially the data collectors.

Data entry and analysis

ENA for SMART software was also used to generate anthropometric and mortality results automatically. For the rest of the indicators, they were entered and analysed in Excel.

The anthropometric results are presented as percentage z-scores from WHO 2006 Growth references for the weight-for-height (wasting), height-for-age (stunting) and weight-for-age (underweight) indexes. Separate analysis of wasting based on MUAC cut-offs is automatically done by ENA for SMART too.

Plausibility check automatically generated is used to evaluate quality and representativeness of the data, and therefore – the reliability of the results.

RESULTS

Anthropometric results

The results are presented with exclusion of z- score from observed mean SMART flags: WHZ -3 to + 3, HAZ -3 to +3 and WHZ -3 to +3. Percentage of values flagged with SMART flags were classified as "excellent" (WHZ: 2,1 %, HAZ: 2,4 %, WAZ: 1,0 %). Age ratio was of 0,99 and sex ratio was 1,1 (refer to plausibility check in Annex 1).

Table 4: Distribution of age and sex of sample, Badghis SMART, February 2016

	Boys		Girls		Total		Ratio
AGE (mo)	**no.**	**%**	**no.**	**%**	**no.**	**%**	**Boy:girl**
6-17	136	58.1	98	41.9	234	26.8	1.4
18-29	108	53.7	93	46.3	201	23.0	1.2
30-41	119	51.3	113	48.7	232	26.6	1.1
42-53	65	44.8	80	55.2	145	16.6	0.8
54-59	28	45.9	33	54.1	61	7.0	0.8
Total	**456**	**52.2**	**417**	**47.8**	**873**	**100.0**	**1.1**

Undernutrition rates

The following tables present the under-nutrition rates as follows:

- ✓ Sex disaggregated weight-for-height z-scores (and/or oedema) and by sex (Table 5)
- ✓ Rates of oedema (Table 6)
- ✓ Sex disaggregated rates of MUAC cut-offs (Table 7)
- ✓ Sex disaggregated weight-for-age z-scores (Table 8)
- ✓ Sex disaggregated height-for-age z-scores (Table 9)

Table 5: prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex, Badghis SMART, February 2016

	All n = 855	Boys n = 444	Girls n = 411
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(56) 6.5 % (4.8 - 8.8 95% C.I.)	(29) 6.5 % (4.4 - 9.6 95% C.I.)	(27) 6.6 % (4.5 - 9.5 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(53) 6.2 % (4.6 - 8.4 95% C.I.)	(27) 6.1 % (3.9 - 9.3 95% C.I.)	(26) 6.3 % (4.4 - 9.0 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(3) 0.4 % (0.1 - 1.1 95% C.I.)	(2) 0.5 % (0.1 - 1.8 95% C.I.)	(1) 0.2 % (0.0 - 1.8 95% C.I.)

Table 6: Distribution of acute malnutrition and oedema based weight-for-height z-scores, Badghis SMART, February 2016

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 18 (2.1 %)	Not severely malnourished No. 855 (97.9 %)

The prevalence of oedema is 0.0 %

Table 7: Prevalence of acute malnutrition based on MUAC cut offs (and/or oedema), Badghis SMART, February 2016

	All n = 860	Boys n = 449	Girls n = 411
Prevalence of global malnutrition (< 125 mm and/or oedema)	(74) 8.6 % (6.5 - 11.3 95% C.I.)	(31) 6.9 % (4.7 - 10.1 95% C.I.)	(43) 10.5 % (7.6 - 14.2 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(60) 7.0 % (5.2 - 9.3 95% C.I.)	(26) 5.8 % (3.7 - 9.0 95% C.I.)	(34) 8.3 % (5.7 - 11.8 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(14) 1.6 % (0.9 - 3.0 95% C.I.)	(5) 1.1 % (0.4 - 3.1 95% C.I.)	(9) 2.2 % (1.1 - 4.4 95% C.I.)

Table 8: Prevalence of underweight based on weight-for-age z-scores and by sex, Badghis SMART, February 2016

	All n = 864	Boys n = 452	Girls n = 412
Prevalence of underweight (<-2 z-score)	(199) 23.0 % (19.5 - 27.0 95% C.I.)	(107) 23.7 % (19.5 - 28.4 95% C.I.)	(92) 22.3 % (17.7 - 27.7 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(141) 16.3 % (13.4 - 19.7 95% C.I.)	(77) 17.0 % (13.8 - 20.8 95% C.I.)	(64) 15.5 % (11.7 - 20.3 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(58) 6.7 % (5.1 - 8.7 95% C.I.)	(30) 6.6 % (4.3 - 10.1 95% C.I.)	(28) 6.8 % (4.7 - 9.6 95% C.I.)

Table 9: Prevalence of stunting based on height-for-age z-scores and by sex, Badghis SMART, February 2016

	All n = 852	Boys n = 449	Girls n = 403
Prevalence of stunting (<-2 z-score)	(447) 52.5 % (47.1 - 57.8 95% C.I.)	(248) 55.2 % (49.0 - 61.3 95% C.I.)	(199) 49.4 % (42.6 - 56.2 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(234) 27.5 % (24.5 - 30.7 95% C.I.)	(114) 25.4 % (22.5 - 28.5 95% C.I.)	(120) 29.8 % (24.5 - 35.7 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(213) 25.0 % (20.8 - 29.7 95% C.I.)	(134) 29.8 % (24.2 - 36.1 95% C.I.)	(79) 19.6 % (15.1 - 25.1 95% C.I.)

Quality of the anthropometric data

The digit preference score of the survey teams was classified as "excellent" for all. The sex ratio was within accepted limits, while the age ration vas above the limit of 0,85. This suggest slightly biased sample, including more children from the younger age groups. Standards Deviations[9] are within accepted limits.

The summary of the Mean Z-scores with their Standard Deviations, the design effects and number of the out of range data per index is the table 10 below.

Table 10: Mean z-scores, design effect and excluded subjects, Badghis SMART, February 2016

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	855	-0.16±1.10	1.34	0	18
Weight-for-Age	864	-1.27±1.03	1.69	0	9
Height-for-Age	852	-2.06±1.21	2.43	0	21

[9] http://www.who.int/nutgrowthdb/about/introduction/en/index5.html

Nutritional status of women in childbearing age

608 women in childbearing age (15-49 years) living in the selected households have been surveyed. All of them accepted to have their mid-upper arm circumference measured. The results expressed in proportion from the total number of measured using MUAC cut-off of 230 mm, as per Afghani protocol, are presented in the table 11 below.

Table 11: Maternal nutritional status based on MUAC cut-off<230mm, n=608, Badghis SMART, February 2016

MUAC cut off	Frequency(n)	Proportion (%)
< 230 mm	129	21,2
≥ 230 mm	479	78,8

Crude and Under 5 Mortality Rates

The crude and under five mortality rates were below the emergency threshold[10].

Table 12: Mortality rates, Badghis SMART, February 2016

Definition	Results (95 % CI)
CMR (total deaths/10,000/day)	0.13 (0.06-0.30)
U5MR (deaths in children-5/10,000/day)	0.61 (0.29-1.29)

Health and immunization

Retrospective morbidity data was collected among children 0 -59 months (two weeks recalls) to assess the occurrence of main symptoms of illness. Based on the data, overall 46.7 % of the children had episode of illness in the past 2 weeks prior to the survey (Table 14).

Table 13: Under five morbidity two weeks prior of the survey (n=944), Badghis SMART, February 2016

Parameter	Frequency	Results (%)
Acute Respiratory Infection (ARI)	379	40.1
Fever	401	42.4
Diarrhoea	159	16.8

[10] WHO's emergency thresholds of CMR 2/10,000/day and U5MR 4/10,000/day respectively.

In addition, the survey also assessed the coverage for Vitamin A supplementation, deworming, and immunization among children 0-59 months, results are presented in table 14 and 15 below.

Table 14: Immunization coverage, Badghis SMART, February 2016

Indicators	Criteria	Frequency	Results (%)
Measles among children from 9-59 months (n=816)	Confirmed by card	158	19.3
	Both by recall and by card	567	69.4
BCG among children 0-59 months (n=944)	Scar observed	600	63.6
Polio among children 0-59 months (n=944)	Confirmed by card	263	27.9
	Both by recall and by card	824	87.2

Table 15: Vitamin A supplementation and Deworming, Badghis SMART, February 2016

Indicators	Class	Frequency	Results (%)
Vitamin A supplementation among children 6-59 months (n=867)	Yes	545	62.8
	No	272	31.2
	DK	50	5.7
Deworming among children 12-59 months (n=750)	Yes	249	33.2
	No	428	57.1
	DK	73	9.7

CONCLUSION

The survey findings revealed that the prevalence of Global Acute Malnutrition (GAM) based on weight-for-height z-scores (WHZ) was at 6.5% (4.8-8.8 95% CI) and the prevalence of GAM based on MUAC cut-offs was 8.6 % (6.5-11.3 95% CI) might be classified as "poor" according to WHO classification of acute malnutrition[11]. SAM prevalence by WHZ and MUAC was at 0.4% and 1.6% respectively. Further analysis of the data suggests that these rates do not refer to the same children. Children classified as wasted based WHZ are not fully overlapping with those classified wasted based on MUAC. If both criteria are combined, overall rate of children likely to be eligible for SAM and MAM management rises to 13.1% (95% CI 10.8-15.3). SAM combined rates is estimated to be 3.2% (2.0 – 4.4 95% CI). It's recommended to use the combined rates for estimation of GAM and SAM in the province for program design and caseload calculation.

Crude Death Rate and Under-five Death rate was at 0.13/10,000/day and 0.61/10,000/per day. The rates are both below SPHERE emergency thresholds.

In conclusion the survey has indicated that there is a problem of malnutrition in Badghis province. From the results presented above it is notable that although the different measures of malnutrition (WHZ and MUAC) are indicating a poor nutrition situation, but a combination

[11] WHO acute malnutrition classification : <5% acceptable, 5-9 % poor, 10-14 % serious, >15 % critical

of these results/measures indicate that the number of cases found malnourished is high in the province. It is also noted that cases of child morbidity are high in the province; almost 1 in 2 children was reported ill. This is possibly contributed by seasonality (survey was conducted in winter) and hence the reason why ARI and fever were higher than diarrhea.

Chronic Malnutrition continues to be a major problem in Badghis and follows the same trend as the other provinces of Afghanistan. Poor micronutrient supplementation and deworming, low maternal nutritional status as witnessed in Badghis can also be contributing factors to the high levels of chronic malnutrition. The fact that chronic malnutrition is not given the attention in the health facilities could be a factor exacerbating the situation. Currently there is no clear guidance in Afghanistan on how to address chronic malnutrition.

SUMMARY RECOMMENDATIONS

Following recommendation can be drown based on the preliminary findings, per category of action:

High undernutrition rates

- Extension of TSFP and OTP to those districts that still have not OPD-SAM services
- Strengthening of referral system from community up-to hospital (IPD-SAM)
- Strengthening of IYCF and C-IYCF
- HFs staffs to conduct trainings (nutrition and health) at community levels.

Low preventive nutrition and health care coverage (immunization, deworming and supplementation)

- To improve and strengthen fix and outreach EPI activities
- To increase sensitization on BCG, polio and measles as well

High morbidity

- Consider tracking nutritional and immunization status through profiling of cases found.
- Strength health education based on seasonal condition.

Maternal nutrition status

- Strengthening of counseling for community members and HFs staffs
- Provision of IEC material
- Provision of Iron-folate for PLW at HF

More recommendations will be integrated in the final report.

ANNEX: PLAUSIBILITY CHECK

Badghis_ Integrated Nutrition & Mortality SMART Assessment_ 02_2016.as
Standard/Reference used for z-score calculation: WHO standards 2006
(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)
Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (2.1 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.187)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**4** (p=0.021)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (3)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (5)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (3)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.				and	and	and	or
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**5** (1.10)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.18)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.16)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=0.050)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**9** %

The overall score of this survey is 9 %, this is excellent.
There were no duplicate entries detected.
Percentage of children with no exact birthday: 84 %
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=42/ID=42: HAZ (1.112), Age may be incorrect
Line=45/ID=45: HAZ (1.313), WAZ (2.407), Age may be incorrect
Line=67/ID=67: HAZ (1.090), WAZ (1.794), Age may be incorrect
Line=69/ID=69: HAZ (1.808), Height may be incorrect
Line=96/ID=96: HAZ (1.375), Age may be incorrect
Line=103/ID=103: HAZ (2.282), Height may be incorrect
Line=107/ID=107: HAZ (4.261), Height may be incorrect
Line=110/ID=110: HAZ (-5.480), Height may be incorrect
Line=111/ID=111: **WHZ (3.970)**, HAZ (-6.015), Height may be incorrect
Line=115/ID=115: **WHZ (-4.319)**, Weight may be incorrect
Line=142/ID=142: HAZ (1.130), Age may be incorrect
Line=153/ID=153: HAZ (1.760), Age may be incorrect
Line=161/ID=161: HAZ (2.239), Age may be incorrect
Line=162/ID=162: HAZ (-5.536), Age may be incorrect
Line=163/ID=163: HAZ (3.166), WAZ (1.859), Age may be incorrect
Line=169/ID=169: **WHZ (-4.142)**, HAZ (9.009), Height may be incorrect
Line=175/ID=175: **WHZ (3.064)**, Height may be incorrect
Line=177/ID=177: HAZ (-5.029), Height may be incorrect
Line=203/ID=203: HAZ (1.166), Age may be incorrect
Line=223/ID=223: HAZ (1.481), Age may be incorrect
Line=236/ID=236: **WHZ (-3.676)**, Weight may be incorrect
Line=246/ID=246: WAZ (1.748), Weight may be incorrect
Line=253/ID=253: **WHZ (-4.051)**, Weight may be incorrect
Line=293/ID=293: HAZ (1.061), Height may be incorrect
Line=473/ID=473: HAZ (-5.984), WAZ (-5.347), Age may be incorrect
Line=479/ID=479: **WHZ (-3.458)**, WAZ (-4.271), Weight may be incorrect
Line=499/ID=499: **WHZ (-3.472)**, Weight may be incorrect
Line=507/ID=507: **WHZ (-3.877)**, Weight may be incorrect
Line=598/ID=598: **WHZ (-4.278)**, Weight may be incorrect

Line=623/ID=623: **WHZ (-3.284)**, Weight may be incorrect
Line=626/ID=626: **WHZ (-3.328)**, Height may be incorrect
Line=649/ID=649: WAZ (-4.521), Age may be incorrect
Line=711/ID=711: **WHZ (7.758)**, WAZ (5.232), Weight may be incorrect
Line=717/ID=717: **WHZ (-4.184)**, Weight may be incorrect
Line=743/ID=743: **WHZ (-3.732)**, Height may be incorrect
Line=749/ID=749: HAZ (1.271), Height may be incorrect
Line=763/ID=763: **WHZ (-3.254)**, Height may be incorrect
Line=771/ID=771: **WHZ (-5.409)**, WAZ (-4.459), Weight may be incorrect
Line=932/ID=933: **WHZ (-3.845)**, Height may be incorrect
Percentage of values flagged with SMART flags:WHZ: 2.1 %, HAZ: 2.4 %, WAZ: 1.0 %
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: 0.99 (The value should be around 0.85).:

p-value = 0.021 (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	136/105.8 (1.3)	98/96.8 (1.0)	234/202.6 (1.2)	1.39
18 to 29	12	108/103.2 (1.0)	93/94.3 (1.0)	201/197.5 (1.0)	1.16
30 to 41	12	119/100.0 (1.2)	113/91.4 (1.2)	232/191.4 (1.2)	1.05
42 to 53	12	65/98.4 (0.7)	80/90.0 (0.9)	145/188.4 (0.8)	0.81
54 to 59	6	28/48.7 (0.6)	33/44.5 (0.7)	61/93.2 (0.7)	0.85
6 to 59	54	456/436.5 (1.0)	417/436.5 (1.0)		1.09

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.187 (boys and girls equally represented)
Overall age distribution: p-value = 0.000 (significant difference)
Overall age distribution for boys: p-value = 0.000 (significant difference)
Overall age distribution for girls: p-value = 0.056 (as expected)
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: **3** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0.546

Digit preference Height:

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

Digit preference score: **5** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0.032 (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: **3** (0-7 excellent, 8-12 good, 13-20 acceptable and > 20 problematic)
p-value for chi2: 0.673

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:	1.24	1.20	1.10
(The SD should be between 0.8 and 1.2)			
Prevalence (< -2)			
observed:	8.1%	8.0%	6.5%
calculated with current SD:	7.4%	6.8%	4.8%
calculated with a SD of 1:	3.7%	3.7%	3.3%

HAZ

Standard Deviation SD: 1.38 1.33 1.21
(The SD should be between 0.8 and 1.2)
Prevalence (< -2)
observed: 51.8% 51.8% 52.5%
calculated with current SD: 50.2% 50.4% 52.1%
calculated with a SD of 1: 50.2% 50.5% 52.5%

WAZ

Standard Deviation SD: 1.10 1.08 1.03
(The SD should be between 0.8 and 1.2)
Prevalence (< -2)
observed: 23.3% 23.3% 23.0%
calculated with current SD: 25.2% 25.0% 24.1%
calculated with a SD of 1: 23.1% 23.4% 23.3%

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

WHZ p= 0.000 p= 0.000 p= 0.008
HAZ p= 0.000 p= 0.000 p= 0.000
WAZ p= 0.000 p= 0.000 p= 0.000
(If p < 0.05 then the data are not normally distributed. If p > 0.05 you can consider the data normally distributed)

Skewness

WHZ -0.15 -0.40 -0.18
HAZ 0.85 0.36 0.09
WAZ -0.05 -0.28 -0.30
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 2.46 0.58 -0.16
HAZ 4.62 0.46 -0.66
WAZ 1.59 0.44 0.05
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=1.36 (p=0.050)
WHZ < -3: ID=0.96 (p=0.556)
GAM: ID=1.36 (p=0.050)
SAM: ID=0.96 (p=0.556)
HAZ < -2: ID=2.36 (p=0.000)
HAZ < -3: ID=2.01 (p=0.000)
WAZ < -2: ID=1.61 (p=0.005)
WAZ < -3: ID=1.13 (p=0.257)
Subjects with SMART flags are excluded from this analysis.
The Index of Dispersion (ID) indicates the degree to which the cases are aggregated into certain clusters (the degree to which there are "pockets"). If the ID is less than 1 and p > 0.95 it indicates that the cases are UNIFORMLY distributed among the clusters. If the p value is between 0.05 and 0.95 the cases appear to be randomly distributed among the clusters, if ID is higher than 1 and p is less than 0.05 the cases are aggregated into certain cluster (there appear to be pockets of cases). If this is the case for Oedema but not for WHZ then aggregation of GAM and SAM cases is likely due to inclusion of oedematous cases in GAM and SAM estimates.

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

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

Time SD for WHZ
point 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.16 (n=48, f=0) ###############
02: 1.02 (n=39, f=0) #########
03: 1.78 (n=46, f=3) ##
04: 1.17 (n=45, f=1) ###############
05: 1.37 (n=47, f=1) ########################
06: 0.92 (n=43, f=0) #####
07: 1.11 (n=45, f=1) #############
08: 1.18 (n=45, f=1) ################

09: 1.41 (n=45, f=2) ########################
10: 1.02 (n=42, f=0) ########
11: 1.39 (n=43, f=2) ########################
12: 1.12 (n=41, f=0) ############
13: 1.14 (n=44, f=0) ##############
14: 1.06 (n=38, f=0) ##########
15: 1.28 (n=38, f=1) ##################
16: 1.36 (n=40, f=2) ######################
17: 1.23 (n=36, f=1) ################
18: 1.51 (n=33, f=2) ##############################
19: 0.91 (n=27, f=0) #####
20: 1.23 (n=24, f=0) ################
21: 1.51 (n=19, f=1) OOOOOOOOOOOOOOOOOOOOOOOOOOOO
22: 0.92 (n=12, f=0) OOOOO
23: 1.06 (n=07, f=0) ~~~~~~~~~~
24: 1.85 (n=05, f=0) ~~~~~~
25: 0.60 (n=04, f=0)
26: 1.63 (n=04, f=0) ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
27: 0.48 (n=03, f=0)
28: 0.01 (n=02, f=0)
29: 1.16 (n=02, f=0) ~~~~~~~~~~~~~~~
30: 0.29 (n=02, f=0)

(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%; The numbers marked "f" are the numbers of SMART flags found in the different time points)

Analysis by Team

Team	**1**	**2**	**3**	**4**	**5**	**6**
n =	167	185	135	122	136	128
Percentage of values flagged with SMART flags:						
WHZ:	0.6	1.1	4.4	3.3	0.0	3.9
HAZ:	3.6	0.0	3.7	0.8	0.0	7.0
WAZ:	0.6	0.0	2.2	0.8	0.7	2.3
Age ratio of 6-29 months to 30-59 months:						
	0.99	0.97	0.99	0.97	1.06	1.00
Sex ratio (male/female):						
	0.99	1.37	1.01	1.03	0.94	1.21
Digit preference Weight (%):						
.0 :	11	9	8	12	7	9
.1 :	13	5	21	10	14	8
.2 :	9	9	10	13	14	3
.3 :	9	17	5	7	8	9
.4 :	8	10	10	9	4	8
.5 :	17	4	13	6	12	12
.6 :	8	9	4	10	11	18
.7 :	8	15	11	16	8	13
.8 :	7	9	7	10	13	14
.9 :	10	14	8	7	10	8
DPS:	9	13	15	9	11	13

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

Digit preference Height (%):						
.0 :	4	9	4	30	4	15
.1 :	11	11	13	6	16	6
.2 :	11	6	16	7	15	12
.3 :	16	9	16	5	13	5
.4 :	12	6	11	10	12	13
.5 :	4	4	15	17	2	11
.6 :	8	14	11	7	11	13
.7 :	15	18	9	12	9	7
.8 :	8	12	1	3	4	12
.9 :	13	11	4	2	15	6
DPS:	13	13	17	27	16	11

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

Digit preference MUAC (%):						
.0 :	8	14	8	11	5	8
.1 :	19	8	12	6	8	6
.2 :	10	7	9	12	9	15
.3 :	8	13	7	8	16	11
.4 :	9	12	11	9	19	9
.5 :	15	5	15	17	6	8

.6 :	13	8	11	7	7	7
.7 :	10	14	7	14	7	12
.8 :	3	7	8	12	9	16
.9 :	5	12	11	4	16	9
DPS:	14	11	9	12	16	11

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

Standard deviation of WHZ:

SD	1.07	1.21	1.29	1.38	1.07	1.42

Prevalence (< -2) observed:

%	4.8	8.1	10.4	8.2	5.9	12.5

Prevalence (< -2) calculated with current SD:

%	4.2	6.5	11.4	8.3	3.7	12.1

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

%	3.2	3.3	6.0	2.8	2.8	4.9

Standard deviation of HAZ:

SD	1.39	1.21	1.60	1.11	1.17	1.61

observed:

%	41.3	63.8	38.5	46.7	62.5	55.5

calculated with current SD:

%	42.4	59.3	38.7	49.0	60.3	53.8

calculated with a SD of 1:

%	39.4	61.3	32.4	48.9	62.1	56.2

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	27/19.3 (1.4)	25/19.5 (1.3)	52/38.7 (1.3)	1.08
18 to 29	12	16/18.8 (0.9)	15/19.0 (0.8)	31/37.8 (0.8)	1.07
30 to 41	12	23/18.2 (1.3)	21/18.4 (1.1)	44/36.6 (1.2)	1.10
42 to 53	12	9/17.9 (0.5)	9/18.1 (0.5)	18/36.0 (0.5)	1.00
54 to 59	6	8/8.9 (0.9)	14/9.0 (1.6)	22/17.8 (1.2)	0.57
6 to 59	54	83/83.5 (1.0)	84/83.5 (1.0)		0.99

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.938 (boys and girls equally represented)
Overall age distribution: p-value = 0.002 (significant difference)
Overall age distribution for boys: p-value = 0.054 (as expected)
Overall age distribution for girls: p-value = 0.037 (significant difference)
Overall sex/age distribution: p-value = 0.001 (significant difference)

Team 2:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	35/24.8 (1.4)	16/18.1 (0.9)	51/42.9 (1.2)	2.19
18 to 29	12	26/24.2 (1.1)	14/17.6 (0.8)	40/41.9 (1.0)	1.86
30 to 41	12	28/23.5 (1.2)	26/17.1 (1.5)	54/40.6 (1.3)	1.08
42 to 53	12	17/23.1 (0.7)	19/16.8 (1.1)	36/39.9 (0.9)	0.89
54 to 59	6	1/11.4 (0.1)	3/8.3 (0.4)	4/19.7 (0.2)	0.33
6 to 59	54	107/92.5 (1.2)	78/92.5 (0.8)		1.37

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.033 (significant excess of boys)
Overall age distribution: p-value = 0.001 (significant difference)
Overall age distribution for boys: p-value = 0.003 (significant difference)
Overall age distribution for girls: p-value = 0.054 (as expected)
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	20/15.8 (1.3)	23/15.5 (1.5)	43/31.3 (1.4)	0.87
18 to 29	12	14/15.4 (0.9)	10/15.2 (0.7)	24/30.5 (0.8)	1.40
30 to 41	12	23/14.9 (1.5)	17/14.7 (1.2)	40/29.6 (1.4)	1.35
42 to 53	12	6/14.7 (0.4)	11/14.5 (0.8)	17/29.1 (0.6)	0.55
54 to 59	6	5/7.3 (0.7)	6/7.2 (0.8)	11/14.4 (0.8)	0.83
6 to 59	54	68/67.5 (1.0)	67/67.5 (1.0)		1.01

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.931 (boys and girls equally represented)
Overall age distribution: p-value = 0.004 (significant difference)

Overall age distribution for boys: p-value = 0.022 (significant difference)
Overall age distribution for girls: p-value = 0.152 (as expected)
Overall sex/age distribution: p-value = 0.001 (significant difference)

Team 4:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	13/14.4 (0.9)	11/13.9 (0.8)	24/28.3 (0.8)	1.18
18 to 29	12	22/14.0 (1.6)	14/13.6 (1.0)	36/27.6 (1.3)	1.57
30 to 41	12	9/13.6 (0.7)	18/13.2 (1.4)	27/26.7 (1.0)	0.50
42 to 53	12	12/13.4 (0.9)	15/12.9 (1.2)	27/26.3 (1.0)	0.80
54 to 59	6	6/6.6 (0.9)	2/6.4 (0.3)	8/13.0 (0.6)	3.00
6 to 59	54	62/61.0 (1.0)	60/61.0 (1.0)		1.03

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.856 (boys and girls equally represented)
Overall age distribution: p-value = 0.270 (as expected)
Overall age distribution for boys: p-value = 0.170 (as expected)
Overall age distribution for girls: p-value = 0.217 (as expected)
Overall sex/age distribution: p-value = 0.016 (significant difference)

Team 5:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	20/15.3 (1.3)	13/16.2 (0.8)	33/31.6 (1.0)	1.54
18 to 29	12	14/14.9 (0.9)	23/15.8 (1.5)	37/30.8 (1.2)	0.61
30 to 41	12	18/14.5 (1.2)	12/15.3 (0.8)	30/29.8 (1.0)	1.50
42 to 53	12	9/14.2 (0.6)	17/15.1 (1.1)	26/29.3 (0.9)	0.53
54 to 59	6	5/7.0 (0.7)	5/7.5 (0.7)	10/14.5 (0.7)	1.00
6 to 59	54	66/68.0 (1.0)	70/68.0 (1.0)		0.94

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.732 (boys and girls equally represented)
Overall age distribution: p-value = 0.539 (as expected)
Overall age distribution for boys: p-value = 0.300 (as expected)
Overall age distribution for girls: p-value = 0.225 (as expected)
Overall sex/age distribution: p-value = 0.030 (significant difference)

Team 6:

Age cat.	mo.	boys	girls	total	ratio boys/girls
6 to 17	12	21/16.2 (1.3)	10/13.5 (0.7)	31/29.7 (1.0)	2.10
18 to 29	12	16/15.8 (1.0)	17/13.1 (1.3)	33/29.0 (1.1)	0.94
30 to 41	12	18/15.3 (1.2)	19/12.7 (1.5)	37/28.1 (1.3)	0.95
42 to 53	12	12/15.1 (0.8)	9/12.5 (0.7)	21/27.6 (0.8)	1.33
54 to 59	6	3/7.5 (0.4)	3/6.2 (0.5)	6/13.7 (0.4)	1.00
6 to 59	54	70/64.0 (1.1)	58/64.0 (0.9)		1.21

The data are expressed as observed number/expected number (ratio of obs/expect)
Overall sex ratio: p-value = 0.289 (boys and girls equally represented)
Overall age distribution: p-value = 0.053 (as expected)
Overall age distribution for boys: p-value = 0.270 (as expected)
Overall age distribution for girls: p-value = 0.100 (as expected)
Overall sex/age distribution: p-value = 0.008 (significant difference)

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

Team: 1

Time point — SD for WHZ

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: 1.21 (n=10, f=0) ##################
02: 1.09 (n=09, f=0) ############
03: 0.91 (n=10, f=0) #####
04: 0.83 (n=08, f=0) #
05: 1.15 (n=10, f=0) ###############
06: 1.16 (n=10, f=0) ###############
07: 1.10 (n=10, f=0) #############
08: 0.63 (n=09, f=0)
09: 1.07 (n=09, f=0) ###########
10: 0.72 (n=07, f=0)
11: 1.20 (n=10, f=0) ##################
12: 0.99 (n=08, f=0) ########

13: 1.48 (n=08, f=0) ############################
14: 0.61 (n=07, f=0)
15: 1.05 (n=09, f=0) ##########
16: 1.19 (n=07, f=0) ################
17: 0.54 (n=06, f=0)
18: 0.97 (n=05, f=0) OOOOOOO
19: 0.25 (n=04, f=0)
20: 1.34 (n=05, f=0) OOOOOOOOOOOOOOOOOOOOOOO
21: 2.40 (n=04, f=1) OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%;
The numbers marked "f" are the numbers of SMART flags found in the different time points)

Team: 2

Time   SD for WHZ
point   0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.01 (n=10, f=0) #########
02: 0.60 (n=09, f=0)
03: 0.97 (n=10, f=0) #######
04: 1.57 (n=09, f=1) ################################
05: 1.43 (n=09, f=0) ###########################
06: 1.06 (n=09, f=0) ###########
07: 1.40 (n=10, f=1) #########################
08: 0.91 (n=10, f=0) #####
09: 1.38 (n=10, f=0) ########################
10: 1.62 (n=10, f=0) ##################################
11: 0.83 (n=10, f=0) #
12: 1.28 (n=08, f=0) ####################
13: 1.33 (n=10, f=1) ######################
14: 1.03 (n=10, f=0) ##########
15: 1.31 (n=09, f=0) #####################
16: 1.00 (n=09, f=0) ########
17: 1.42 (n=08, f=0) ##########################
18: 1.19 (n=08, f=0) #################
19: 1.10 (n=07, f=0) ############
20: 0.78 (n=05, f=0)
21: 1.81 (n=02, f=0) ~~~~~~
22: 1.46 (n=02, f=0) ~~~~~~~~~~~~~~~~~~~~~~~~~~~~
(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%;
The numbers marked "f" are the numbers of SMART flags found in the different time points)

Team: 3

ime   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: 1.04 (n=07, f=0) ##########
02: 0.72 (n=05, f=0)
03: 0.86 (n=05, f=0) ##
04: 1.53 (n=07, f=0) ###############################
05: 1.08 (n=07, f=0) ############
06: 0.99 (n=06, f=0) ########
07: 0.57 (n=05, f=0)
08: 2.15 (n=07, f=1) ###
09: 0.71 (n=06, f=0)
10: 0.85 (n=06, f=0) ##
11: 1.92 (n=06, f=1) ###
12: 1.39 (n=06, f=0) #########################
13: 0.52 (n=06, f=0)
14: 1.35 (n=06, f=0) #######################
15: 1.90 (n=07, f=1) ##
16: 1.22 (n=07, f=0) ##################
17: 1.12 (n=07, f=1) #############
18: 1.93 (n=07, f=1) ###
19: 0.81 (n=04, f=0)
20: 1.02 (n=04, f=0) #########
21: 1.27 (n=04, f=0) ####################
22: 1.06 (n=02, f=0) OOOOOOOOOOO
(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: 0.83 (n=07, f=0) #
02: 1.33 (n=05, f=0) ####################
03: 3.41 (n=07, f=2) ##
04: 0.94 (n=07, f=0) ######
05: 1.09 (n=07, f=0) ############
06: 0.43 (n=05, f=0)
07: 1.34 (n=07, f=0) ####################
08: 0.79 (n=07, f=0)
09: 1.72 (n=06, f=1) ######################################
10: 0.78 (n=07, f=0)
11: 1.29 (n=07, f=0) ####################
12: 0.82 (n=07, f=0) #
13: 1.00 (n=07, f=0) ########
14: 1.37 (n=05, f=0) ########################
15: 0.24 (n=06, f=0)
16: 1.88 (n=06, f=1) ##
17: 0.75 (n=04, f=0)
18: 1.76 (n=04, f=0) ##
19: 0.68 (n=03, f=0)
20: 1.98 (n=02, f=0) OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
21: 1.00 (n=02, f=0) OOOOOOOO
(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%;
The numbers marked "f" are the numbers of SMART flags found in the different time points)

Team: 5

Time SD for WHZ
point 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 0.71 (n=06, f=0)
02: 1.18 (n=04, f=0) ################
03: 0.48 (n=06, f=0)
04: 0.85 (n=06, f=0) ##
05: 1.02 (n=06, f=0) #########
06: 1.07 (n=05, f=0) ###########
07: 0.73 (n=06, f=0)
08: 0.80 (n=06, f=0)
09: 1.47 (n=06, f=0) ############################
10: 0.57 (n=05, f=0)
11: 0.96 (n=05, f=0) #######
12: 1.07 (n=05, f=0) ###########
13: 1.12 (n=06, f=0) #############
14: 1.24 (n=05, f=0) ##################
15: 1.13 (n=05, f=0) ##############
16: 1.23 (n=06, f=0) ##################
17: 1.14 (n=06, f=0) ##############
18: 1.38 (n=05, f=0) ########################
19: 1.27 (n=05, f=0) ####################
20: 1.65 (n=04, f=0) ####################################
21: 0.98 (n=04, f=0) ########
22: 0.78 (n=04, f=0)
23: 0.03 (n=03, f=0)
24: 1.41 (n=04, f=0) ########################
25: 0.33 (n=02, f=0)
26: 1.62 (n=02, f=0) OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
27: 0.04 (n=02, f=0)
(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%;
The numbers marked "f" are the numbers of SMART flags found in the different time points)

Team: 6

Time SD for WHZ
point 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 2.1 2.2 2.3
01: 1.84 (n=08, f=1) ##
02: 1.25 (n=07, f=0) ###################
03: 2.23 (n=08, f=1) ##
04: 1.22 (n=08, f=0) #################
05: 2.01 (n=08, f=1) ##
06: 0.68 (n=08, f=0)
07: 1.02 (n=07, f=0) #########
08: 1.27 (n=06, f=0) ###################
09: 1.79 (n=08, f=1) ##
10: 0.90 (n=07, f=0) ####

11: 2.36 (n=05, f=1) ##
12: 1.00 (n=07, f=0) ########
13: 0.94 (n=07, f=0) ######
14: 0.53 (n=05, f=0)
15: 0.85 (n=02, f=0) ~~
16: 2.09 (n=05, f=1) ##
17: 1.49 (n=05, f=0) ############################
18: 0.98 (n=04, f=0) OOOOOOOO
19: 0.65 (n=04, f=0)
20: 1.32 (n=04, f=0) OOOOOOOOOOOOOOOOOOOO
21: 2.16 (n=03, f=0) OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO
22: 0.52 (n=02, f=0)
(when n is much less than the average number of subjects per cluster different symbols are used: 0 for n < 80% and ~ for n < 40%;
The numbers marked "f" are the numbers of SMART flags found in the different time points)
(for better comparison it can be helpful to copy/paste part of this report into Excel)