



NUTRITION SURVEY REPORT Using SMART Methodology

World Vision Niger Intervention zones
(ADPs)

SMART

Standardized Monitoring & Assessment
of Relief & Transitions



Elaborated by World Vision Niger Office

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ABBREVIATIONS

ADP	Area Development Program
ACF	Action Contre la Faim
AoP	Annual Operation Plan
CI:	Confidence Interval
CMR:	Crude Mortality Rate
CHWs	Community Health Workers
CMAM	Community Management of Acute Malnutrition
CMR	Crude Mortality Rate
DHS	Demographic and Health Survey
ENA	Emergency Nutrition Assessment
EPI:	Expanded Program for Immunization
FANTA	Food and Nutrition Technical Assistance
GAM:	Global Acute Malnutrition
HAZ:	Height for Age Z-score
H&N	Health and Nutrition
IGA	Income Generating Activities
IYCF	Infant and Young Child Feeding
LLIN	Long Lasting Insecticidal Nets
KAP:	Knowledge, Attitude and Practice
MDGs	Millennium Development Goals
MoH	Ministry of Health
MUAC	Mid Upper Arm Circumference
NCHS:	National Centre for Health Statistics.
NO	National Office
NGO:	Non - Governmental Organization
OTP:	Outpatient Therapeutic Program
RGPH	General Census of Population
SAM:	Severe Acute Malnutrition
SFP:	Supplementary Feeding Program
SLT	Senior Leadership Team
SPSS:	Statistical Package for Social Sciences
SMART	Standardized Monitoring and Assessment for Relief and Transition
UNICEF:	United Nations Children Funds
WHZ:	Weight for Height Z-score
WAR:	West Africa Regional
WAZ:	Weight for Age Z- score
WHO:	World Health Organization
WV Niger:	World Vision Niger

EXECUTIVE SUMMARY

World Vision Niger has carried out the current cross-sectional Health and Nutrition survey in all its 19 ADPs from January 23th, to Feb 28th, 2012. The purpose of this assessment is to measure the nutritional status in children aged from 6-59 months and the favourable factors that have led to the observed situation and the level of the mortality and morbidity in the target populations (18 ADPs). The results from this reported survey will provide with accurate and reliable nutritional data in order to inform decision-making related to the nutrition programming in the country.

SMART/ENA (Standardized Monitoring and Assessment of Relief and Transition) methodology package was used for sampling and collecting data through Anthropometric measurements and a standardized questionnaire. About 2478 eligible children (6 – 59 months) in the selected households were measured (anthropometric survey), the estimation of retrospective crude and under five child mortality rates were done using period recall (96 days), the recent child morbidity and other nutrition (IYCF) and health coverage indicators (Immunization, vitamin A, deworming etc.) were collected using a pre-tested interview schedule containing both open and closed questions. Data analysis was done using ENA/SMART software package based on NCHS/WHO 1977/85 references. The proportions with 95% confidence interval were used with 5% of precision and 2 as sampling effect.

Globally, analysis of anthropometric data revealed that about 358 of children aged from 6 to 59 months out of 2,480 recorded were acutely malnourished - GAM: 14.4 % (12.1 - 17.1 95% C.I.) H/W – 2 Z-scores and/or oedema/ WHO standards 2006) and 82 of them have been suffering from severe acute malnutrition - SAM: 3.3 % (2.6 - 4.2 95% C.I.) (H/W – 3 Z-scores and/or oedema/ WHO standards 2006). These average rates indicated that the current nutritional situation in WV Niger intervention zones (ADPs) is near the emergency threshold (GAM>15%) and in some assessed regions, and mainly in Tillabery, the nutritional situation was already over the emergency threshold with a GAM level at 17.1 % (14.5 - 20.0 95% C.I.) (WHO Standards 2006). The current survey has found out significant variations within the 5 surveyed regions, ranging from to GAM 12.4% (9.4-16.3 C.I.) Z-score in Niamey to GAM 17.1 % (14.5 -20.0) Z-score in Tillaberi, which is actually the most affected. **So, the global nutritional situation in WV Niger intervention zones could be considered as critical.** In comparison with data from the latest nutrition survey conducted by the Government of Niger on October 2011 and only limited to two regions (Tillabery and Agadez), which has already showed a serious situation with a GAM rate of 13.1 % (5.7 – 27.1 at 95% C.I.) (H/W – 2 Z-scores and/or oedema) and the Severe Acute Malnutrition (SAM) was 1.1% (0.4 – 2.8 at 95% C.I.) (H/W –3 Z-scores and/or edema -WHO standards 2006); the nutritional situation in the country by extension could be considered to be deteriorated and worsen from day to day due to the severe food shortage in the country.

819 children under 5 out of 2480 recorded with underweight. That meant the underweight rate in the assessed population was about 33.0% (27.6-38.9 95%)(WHO standards 2006) which is considered as critical (Underweight >30%) according to the World Vision International HIV & AIDS and Health & Nutrition Triggers for Action. Meanwhile, 987 out of 2479 were stunted 39.8 % (25.9 - 56,3 95% C.I.) (H/A<– 2 Z-scores/ WHO standards 2006). This figure is near to the critical threshold and required a particular attention (Stunting: 30-40%).

On the other hand, many aggravating factors were observed during the survey such as the lack of hygiene and sanitation (Use of latrine 34.78%), limited access to potable (46.32%), low immunization rate (Penta 71.64%), Exclusive Breast-feeding (26.64%) and the high rate of infectious diseases amongst under 5 children mainly diarrhea, malaria and Respiratory Infectious Diseases etc;

The findings from the reported survey are summarized below:

1. General Household Information

- Total population of the 15 ADPs:	969,643
- Total Households	135,784
- Total under 5 population:	209,108
- Number of households interviewed:	1,906
- Average household size:	7

2. Distribution of sex in the sample

- Sample survey size:	2,480
- Males:	1,284
- Female:	1,196
- Sex ratio F/M:	1.1

3. Malnutrition Indicators (Z-score NCHS standards)

a) WHZ - measured in children (n= 2,478)

- Prevalence of Global Acute Malnutrition:	14.4% (12.1-17.1	95% C.I.)
- Moderate Acute Malnutrition (<-2 and ≥-3 z-score):	11.1% (9.3- 13.2	95% C.I.)
- Prevalence of Severe Acute Malnutrition:	3.3% (2.6- 4.2	95% C.I.)

b) WAZ - measured in children (n= 2,480)

- Prevalence of underweight (<-2 z-score):	33.0% (27.6-38.9	95% C.I.)
- Moderate underweight (<-2 and ≥-3 z-score):	21.1% (18.6-23.9	95% C.I.)
- Prevalence of severe underweight (<-3 z-score):	11.9% (8.9- 15.7	95% C.I.)

c) HAZ - measured in children (n= 2,479)

- Prevalence of stunting (<-2 z-score):	39.8% (25.9-56.3	95% C.I.)
- Moderate stunting (<-2 and ≥-3 z-score):	29.48% (19.2-39.6	95% C.I.)
- Prevalence of severe stunting (<-3 z-score):	10.32% (6.7-14.3	95% C.I.)

4. Mortality results

- Recall Period:	96 days
- CMR (total deaths/10.000 people / day):	0.78 (0.43-1.39) (95% CI)
- U5MR (deaths in children under five/10.000/ day):	1.23 (0.68-2.56) (95% CI)

5. Maternal and child Health Results

a) Infant and Young Child Feeding

	N	n	%
- Early Breastfeeding Initiation (0 - 24 months):	1,122	488	43.49%
- Consumption of colostrums (0 – 24 months):	1,122	324	28.90%
- Exclusive breastfeeding under 6 months (0 - 5 months):	488	130	26.64%
- Continued Breastfeeding at 1 year (12 -15 months):	126	83	65.73%
- Introduction of appropriate compl. food (6 - 8 mos):	96	70	73.18%
- Minimum dietary diversity (6 - 23 months):	634	82	12.94%

b) Child health

• EPI coverage for Children from (12 – 23 months):			
- Penta 3:	429	307	71.64%
• Vitamin A supplementation coverage (12 – 59 months):	1984	1652	83.27%
• Seeking Cares for sick children under 5 yrs:	2480	1026	41.37%
- Using TRO during diarrhea episodes:	284	96	33.80%
- Diarrhea and abdominal complaints:	1258	350	27.83%
- Fever and malaria type illness:	1720	796	46.26%
- Acute respiratory infections:	1676	773	46.11%

c) <u>Maternal health</u>			
- Anti tetanus vaccination (TT 2):	513	139	27.18%
- Ante Natal Care (CPN 3):	896	282	31.48%
- Assisted delivery by a health professional:	610	146	23.90%
d) <u>Household health and sanitation</u>			
- Washing Hands with Soap:	1884	854	45.36%
- Sleep under Long Lasting Impregnated Net (-5years)	1900	1168	61.50%
- Use of safe water:	1889	874	46.32%
- Availability of Latrines:	1900	661	34.78%

I – BACKGROUND INFORMATION

1.1 Introduction

The geographic location of Niger makes it a crossroads of exchanges between North Africa and South-saharian Africa. Situated in Western Africa between (the 11°37' and 23°33') of the Northern latitude, and 16° Eastern longitude, Niger spreads out on 1, 267 000 km². It is the most vast of the Western African countries ranks 6th on the continental scale after Sudan (2,505, 813 km²), Algeria (2, 381,741 km²) the DRC (2, 344, 860 km²), (Libya) (1759540 km²) and Chad (1, 284, 000 km²). Bordered by Burkina Faso and Mali to the West, Algeria and Libya to the North, Chad to the East, Nigeria and Benin to the South, The Nigerien *territory is a vast peneplain, of which the "weak" (relief) is interrupted only by the massive air (80.000km²) and the high plateau of Djado in the North-East. Located in one of the sunniest and hottest areas of the earth, Niger is subjected to a primarily desert, and thus extremely dry climate. We can distinguish three climatic regions: the Saharan arid region in north, the transitional sahelio-tropical arrangement of Air and the sahelian region to the south. Niger is a continental country of which the minimal distance from the ocean is 1700 km. It is an immense plateau of an average altitude of 500 m. It belongs to the Sahara (Sahelo) zone of Africa. The climate is distinguished into three main seasons: hot (March-May), rainy (June - September) and cold or tourist (October - February). The 5th Francophone Games took place during the tourist period of the year 2005. Niger belongs to the group of Least Developed Countries (LDCs). In the last 2009 classification of the Human Development Report of UNDP, it was ranked 182nd out of 182 on the Human Development Index (HDI).

This country of about 14.1 million people is essentially rural with an agricultural population concentrated on the South-South East border strip with Benin and Nigeria. More than three quarters of its 1.267.000 km² are located in the Northern desert zone. The population of Niger is very unevenly distributed across its territory - ¾ covered by a hot desert – while 75% of Nigeriens occupy in effect, the Southern strip of the country, which represents only 12% of the total area. The demographic density of the country is among the weakest in the region; with 5.7 habitants /sq km. Population growth is particularly high with an annual growth rate of 3.3% and a fertility rate of 8 children per woman within childbearing age, which ranks the country of Niger among those with the highest fertility rate in the world. By comparison, the average rate of the countries of the sub-Saharan Africa is 5.5. Niger is the third country with the highest natural population growth rate in the world and the second with the highest proportion of young people. Half of the population is therefore less than fifteen years of age. The poor yield in agricultural production only encourages the universal tendency for rural migration. From 1965 to 2000, the urban population increased from 6.8% to 17% of the total rate which altogether remains modest.

The economy is very dependent on the results of agricultural campaigns, which is also largely dependent on climatic conditions. Thus, out of the last nineteen campaigns, from 1982 to 2000, twelve have been deficit in terms of cereal assessments. The growth is in this regards marked by huge irregularity. The country suffered a drought in 2010 which reduced the coping mechanism of the rural population, especially the smallholder livestock farmers who were still struggling to recapitalize their herds. This situation was exacerbated by the influx of more than 200,000 Nigerien migrant workers from Libya and the Ivory Coast who have been forced to return home as result of recent unrest in the two countries. These workers represented a significant coping mechanism for poor families in Niger putting more pressure on communities with no infrastructure in place to accommodate them and deprived of the remittances they used to receive from those migrants.

1.2 Food Security and Nutrition background

The rural sector counts for less than 40% of the PIB and this part is the same regression due to degradation of climate conditions and of the environment. However, agriculture is becoming an important contributor in currencies. In 1998, the exports of cattle, leathers and skins, beans accounted for 22,5% for the total of exports against 16% en 1990. The main crops (millet, sorghum and beans) are obtained mostly in the south fringe of the country, which shelters more than three quarters of the population. The livestock, estimated has more than five million of 'UBT'¹, is more dispersed. Fishing constitutes a source of revenue for about 10,000 families of fishermen, with an annual production to the order of 20,000 tons. The systems of production are essentially the traditional type and they favour neither the innovation, nor the increase in productivity or the modern exploitation techniques. The Government, which has taken an active part in the exploitation of agricultural resources, is rather disengaged currently. The agricultural production benefitted lately from several better management decisions, modest irrigation systems, and the diffusion of improved cultural techniques. The natural environment is in constant degradation. The drop of production per capita pushed the farmers to over-exploit the earth, and the access to cultivable land becomes a source of conflict. On the traditionally exploited fields, the fertility of the ground has diminished. The reduction of pasture land is combined with the degradation of land, and deforestation in order to create new thought poor quality agricultural land.

The potential of the rural reserves are far from being negligible. Only one third of 15 million cultivable hectares are annually cultivated and only 20% have irrigable systems. More than 400.000 have the potential halieutic and have been identified, without counting the numerous hill barricades and potential piscicultural ponds. The food security is a recurrent problem in Niger, especially considering the strong demographics. One year out three records a deficit of 200,000 to 300,000 tons of cereals of an annual need of about 2,5 million tons. Permanently, there are vulnerable groups that are likely more affected than the rest of the population. The Early Management Alarm System of Catastrophes (SAP/GC), the constitution of security stock, integrated organization of prevention of crises with the donators having eased the direct effects climatic rigors but certain zones remain under the threat of a shortage or of food deficiencies. The water is a determining element for the agricultural production and for the safeguarding of the environment. The enormous reserve of underground water (around 2.000 thousand of m³, compared to 30 thousand carted annually) in the network hydrographic is not exploited in the societies of minerals prospection because of the high costs of access. The absence of electricity and low family incomes contribute to a minimal access to information via rural radio and the village press. The state of infrastructures constitutes equally a serious limitation to progress in the rural sector.

1.3 Maternal and Child Health & Nutrition

Niger has one (1) doctor to the provision for 47,531 inhabitants, one (1) pharmacist for 769,230 inhabitants, one (1) dental surgeon for 769,230 inhabitants, one (1) qualified nurse of State for 9,000 inhabitants, and one qualified wise-woman for 6,650 women at childbearing age. The medical rate covered in Niger is 48 % and vaccination is around 18 %. The rate of infant mortality falls at 126 for 1,000 while the rate of maternal mortality illustrates 700 deaths for 100,000. The aggregative index stagnates at 8 children by woman. It is the highest fertility rate in the world according to the estimate of the Division of the population of the United Nations. The prevalence of HIV/AIDS is at 0,87 % and remains the lowest of the African sub-saharian countries. This gives Niger the opportunity to contain the endemic by some efficient interventions and co-ordination. Only 48 % of the Nigerien population benefits from an easy access to health services i.e. living less than 5 km away from a medical centre. The limited capacity for purchasing medicines, the inability of health centers to cover health-related costs and the insufficient availability of medicines in pharmacies are among the issues that restrict the utilization of health services including the contraceptives. For obtaining a good result in the realization of millennium objectives for the development in health matters, Niger needs to follow a vaccination program for children less than 5 years old, the protection of mother and child, the popularization of reproductive health measures, the intensification of the fight against HIV/AIDS, malaria, and the development of community care.

1.4 World Vision Niger interventions in the country

WVN began its activities in Niger with Child Survival Programs in 1995. Seventeen years later, WVN is operating 18 Area Development Programs (ADPs), with a commitment to serve the people of Niger through sustainable and holistic development. Using resources from child sponsorship and grant funding, ADPs focus on local capacity building, food

¹ Unity of Tropical Livestock (a UBT = a cattle of 250 kg)

security, education and literacy training, health, rural water supply and micro-enterprise development. WVN works in close collaboration with the Government of Niger, partner NGOs, Institutes of Research, churches and local communities associations. ADP is focused on transformational development including local capacity building, food security, education and literacy training, health and nutrition, rural water supply and micro-enterprise development etc. Each ADP has at least a manager, development agent and a Sponsorship. So, during this time, WV Niger has gained much experience in working closely with local government institutions and other partners such as UN Organizations, research institutes, faith-based organizations etc. World Vision Niger has developed a strong capacity for managing acute malnutrition since 2005 through the successful implementation of several nutrition projects. The table 1 below shown WV Niger intervention zones (ADPs) covered by the reported survey and their respective populations

Table 1: WV Niger ADPs intervention zones (2012)

REGIONS/BASES	ADP Names	Updated population	Households /AD	Under 5 children
ZINDER	Kassama	31,920	4560	7022
	Gamou	21,767	3110	4789
	DTK	46,545	6649	10240
MARADI	Kornaka West	47880	6840	10534
	Goulbi' N Kaba	61553	8793	13542
	Gobir Yama	74480	10640	16386
	Chadakori	74230	10604	16331
TAHOUA	Tahoua I	35112	5016	7725
	Tahoua II	54264	5016	7725
TILLABERI	Isame	52136	7448	11470
	Ouallam	72352	10336	15917
	Tera	68096	9728	14981
	Sirba	55860	7980	12289
	Koumabangou	42560	6080	9363
	Simiri	57456	8208	12640
NIAMEY URBAN	Karadje	22344	3192	4916
	Talladje	50008	7144	11002
	Harobanda East	37240	5320	8193
	Makalondi	63840	9120	14045
TOTAL	19 ADPs	969,643	135784	209,108

II - SURVEY PURPOSE AND OBJECTIVES

2.1. The purpose of the Nutrition baseline survey

The purpose of this assessment is to measure the nutritional status in children aged from 6-59 months and the favourable factors that have led to the observed situation and the level of the mortality and morbidity in the beneficiary populations. From the collected data, the survey aimed to enable WV Niger assesses the actual nutritional situation in order to inform decision-making related to the nutrition programming in the country.

2.2. Survey Objectives

The specific objectives were the following:

- ✓ Estimate the prevalence of GAM and SAM and the level of acute and chronic malnutrition in children 6-59 months of age, based upon weight, height, age and/or presence of oedema. Identify the causes of malnutrition through

assessments of other related parameters; Immunization coverage, food aid coverage (if any), micro- nutrient supplementation, access to improved water and sanitation, IYCF practices, infectious disease prevalence, utilization of ITNs, assisted delivery rates etc

- ✓ Collect information on potential risk factors that are underlining malnutrition such as communities practices related to child feeding including early initiation to the breastfeeding, exclusive breastfeeding up to 6 months, complementary feeding, feeding of sick children and weaning practices etc
- ✓ Estimate retrospective crude and under five child mortality rates.
- ✓ Make recommendations for better implementing the food security, Health and nutrition projects in WV Niger intervention zones (ADPs).

2.3. Justification for nutrition baseline survey

In view of the prevailing food and nutrition situation in the country and before implementing any comprehensive Health and Nutrition projects/Programs within ADPs, there was need to determine the actual health and nutritional status of children to availing recent information, not only give new insights into the nutritional situation of children but also highlight other non-food areas requiring attention in ADPs beneficiary communities. The current survey has targeted mainly children under 5 years, as these are the most vulnerable in a population and their nutritional status could be reflective of the whole communities in ADPs zones.

III – SURVEY METHODOLOGY

3.1. General approach and sampling size

The nutrition survey was carried out in 19 ADPs throughout 5 regions (Maradi, Niamey, Tahoua, Tillabery and Zinder). This methodology has been used so that each region could have its own separate data. The total population in the survey areas was estimated at 969,643 inhabitants in 2012. The sampling was done using ENA software with an average of 7 persons per household and the total of under 5 children was estimated at 22% of the total population (209,108). According to their sizes, some villages had more than one cluster such as Niamey urban ADPs (Karadje, Talladje, Harobanda East etc.) and it was subdivided into respectively 3 to 5 sides to fit with the number of clusters needed and households were selected from these sub-areas. The survey has covered rural and urban as well as Semi-urban areas. All the villages/clusters randomly selected were surveyed as well as the most part of eligible children in selected households were measured and recorded. Their mothers submitted to the standardized CMAM & IYCF questionnaire accordingly.

- Total population of the 19 ADPs:	969,643
- Total under 5 population:	209,108
- Number of Households:	135,784
- Number of households interviewed:	1,906
- Average household size:	7

3.2. Sampling procedures

Based on the SMART/ENA (Standardized Monitoring and Assessment of Relief and Transition) methodology package, a two-stage cluster sampling was used for sampling and collecting data through Anthropometric measurements and a standardized questionnaire. Using the probability proportional to size (PPS) sampling principle, the sampling procedures had two stages as the following:

- a) Stage one (Selection of clusters/Villages): Clusters are selected randomly within the villages located into the 19 ADPs surveyed according to their size. The basic principle of this first stage (cluster selection) is that the relative size of a locality affects its chance of being included into the survey. So, using ENA software system and SMART procedures, clusters were designed in villages randomly selected within the survey areas (ADPs).

- b) Stage two (Selection of the eligible children and households): Using ENA, a total number of 2,478 children aged from 6 to 59 was calculated to be included in the survey. Having identified the 125 clusters, each team of data collectors went to the identified cluster to select households and get appropriate number of eligible children.

3.3. Cluster and household selection

Data were collected from March January 23th, to Feb 30th, 2012, by twenty five (25) teams of three to four (3 - 4) people (1 nurse or ADP facilitator from WV Niger, 1 field assistants from MOH and 1-2 sponsorship volunteers as enumerators. Each team has its one computer for entering data on field. At any given cluster, once discussions have been held with the local leader(s), the modified EPI sampling approach was used and each survey team has proceeded as followed:

- The survey team went to the centre of a given cluster (village). And a direction was chosen randomly by spinning a pencil on the ground noting the direction in which it pointed. The direction that the pencil point indicated was been the direction where the survey team went up to the outer perimeter of the selected locality. Once at the outer perimeter and for a second time, a direction was chosen randomly by spinning once again a pencil on the ground noting the direction in which it pointed, the survey team walked in this particular direction, counting the number of households along this line.
- The first household was selected to be visited by drawing a random number between one and the number of households counted when walking etc.
- The selection criteria for a household was the presence of children aged 6-59 months for anthropometry meanwhile mortality sheet is submitted to households even if there are no under 5 children.
- In a selected household all eligible children were measured one or two even three mothers of selected children in each household were submitted to the questionnaire.
- If a child was not present when the team went to a house, they went back later and measured the child. If a child was admitted to hospital or a feeding centre (OTP or SFP), they went there to measure the child even if s/he is receiving care from the nutrition program.
- After the first household had been surveyed, the team went to the next household, following the same direction as was selected earlier. At the cluster boundary the team moved to the next house on the left-hand side within the boundary of the cluster following the nearest household pattern until the full cluster had been interviewed.

3.4 Data collection

a) Anthropometric data

All children aged 6 to 59 months (65 – 110 cm) in a household were measured and checked for Oedema. The Child's age was recorded using the birth certificate first if this is not available mothers recall using a designed calendar of events and counter checked with the Child health card was used. Where the age was unknown, the height of the child was used as a proxy for age (65 – 110 cm). The anthropometrical measurements taken were weight (to the nearest 0.1kg) and height (to the nearest 0.1cm). Children less than 24 months (65 – 87 cm) were measured in recumbent length (lying down), whereas those above 24 months (>87 cm) were measured in height (standing). Oedema checking was done by applying normal thumb pressure on both legs near the ankle. A child would be classified as having Oedema if an indentation or pit remained on both feet (bilateral Oedema) after applying the pressure.

The questionnaire was completed for every single household. The questions were related to the mortality, maternal and child health and Infant and young child feeding practices, EPI coverage, water and sanitation and existence of latrine etc. Many mothers were interviewed for the youngest child. From each household all the children aged from 6 to 59 months were recorded and mothers were interviewed for the youngest child even if there are many under 5 children's mothers in the same household (polygamy system household).

b) Child survival and IYCF data

Age group used for collecting data varied from one indicator to another and most of indicators were generated using the data from living children less than 24 months of age. Except for the indicators such as "early initiation of breastfeeding"

etc, all indicators are based on current status data, i.e., the current age of the child and other information for the day preceding the survey. The previous-day recall period was used to assess infant feeding practices.

3.5 Training and capacity building

To ensure a good quality of data collection, training was organized January 20 to 23th, 2012. All the stakeholders (75 persons) involved in this baseline survey were trained, included WV Niger staff, MOH agents, community volunteers etc. The training sessions included classroom based orientation (3 days) as well as a one day field practice for methodology validation, administration of the questionnaire in Diadia Peulh village near Tillabery city (Training venue) and none randomly selected for the survey. The global Survey process including training was conducted by WAR Nutrition Advisor, expert in SMART Methodology and was assisted by two Medical Doctors from WV Niger and the Nutrition Point Person from Niger MoH, all experienced people in SMART survey methodology. In addition the selection of stakeholders involved in this survey was based on their experiences in SMART Survey which is annually taken place in the country since 2006.

The following topics were covered during the Nutrition Survey training sessions:

- An introduction on the Malnutrition causes conceptual framework (UNICEF)
- Survey justification and objectives
- Steps on carrying out survey using SMART methodology (sampling, selection of households, identification of eligible children etc.
- How to take anthropometrical measurements (Height, Weight and MUAC).
- Examining presence of pitting nutritional oedema.
- How to fill the questionnaire and its administration on filed
- Selection of survey team members and planning how the cluster sites could be combined for logistical ease were done at the end of the training.

Note: Under the leadership of WAR Nutrition Advisor, 4 supervisors (Medical Doctors, and Nutritionist from WV as well as from the MOH have overseen the global implementation of the Survey at National level. At zonal level each zone has team leaders mainly Regional Health and Nutrition Supervisors from WV Niger (5) and District Nutrition Point Person from MOH (5). All survey team leaders, supervisors at National as well as at regional level were trained and/or refreshed in SMART methodology and using of /ENA software for data entering and checking of the reliability of data (Plausibility checking and report etc.)

3.6. Data analysis

As required by SMART methodology a double entry was done by an external consultant in Niamey city for about two weeks. There was not a significant difference between data entry in the field and the double entry that is why the double entry has been selected as database after merging data of the 19 ADPs surveyed. Then wrong data were cleaned and the anthropometric analysis was done using ENA/SMART software package based on WHO Standards 2006 and for qualitative data, the Microsoft Excel (Version 2007) was used. The proportions with 95% confidence interval were used with 5% of precision and 2 as sampling effect.

3.7. Nutritional indicators and cut off points

A child was considered to be malnourished if he /she fell below -2 Z-scores weight for height (W/H) of the WHO Standards 2006 tables). Global Acute malnutrition was defined as weight for Height below -2 Scores and/or the presence of Oedema. Severe Acute malnutrition was classified as weight for Height below $-3Z$ scores and/or the presence of Oedema. The same cut off levels were used to classify Underweight (Weight for Age below -2 Scores) and Stunting (Height for Age below -2 Scores).

3.8. Reliability and validity of data

All the supervisors and enumerators involved in this survey were trained and had already experiences with nutritional surveys (SMART) as they had been participating in the other health zone surveys. A 3 days training on survey methodology was organized and one day for validating the methods to ensure that all enumerators knew how to take

correct anthropometrical measurements, as well as how to administer the questionnaire to obtain appropriate data. During the method validation process, anthropometric equipments supplied by UNICEF were tested. To ensure that the electronic scale reflected accurate readings, they were tested and calibrated with a known weight of 5 kg at the beginning and in the middle of the survey period. All the questionnaires were examined every evening by the team leaders and supervisors for any discrepancies. If any discrepancy, checking for clarification and correction was done with relevant team leaders/enumerators the next day before the teams moved to the field. The plausibility check reports were produced on daily basis and if there was need for checking on ground the data flagged, the teams were sent back to the field to repeat collection of any information that was not clear or fill in any missing information.

IV – WV NIGER SMART SURVEY RESULTS

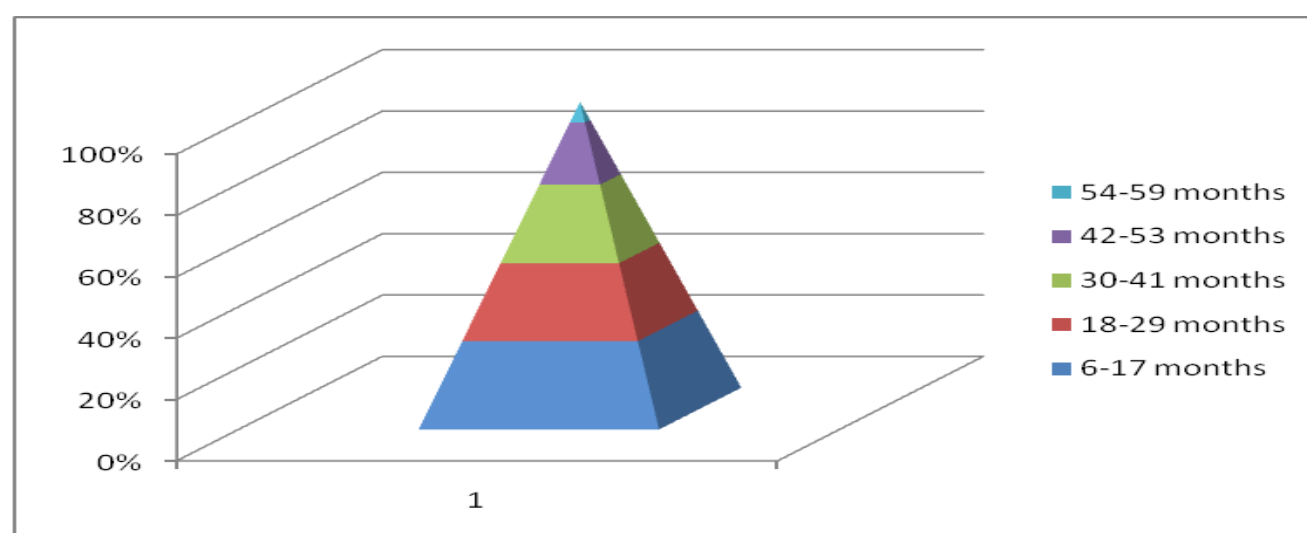
4.1 Distribution of age and sex of sample studied

Both sexes (female and male) were considered in the survey and the ratio sex is around 1.1%. The table above indicates that there is no significant difference in the proportions of males to females in the survey sample.

Table 2: Distribution of age and sex of sample

	Boys		Girls		Total		Ratio
AGE (mo)	no.	%	no.	%	no.	%	Boy/girl
6-17	299	53.8	257	46.2	556	22.4	1.2
18-29	356	53.8	306	46.2	662	26.6	1.2
30-41	300	48.3	321	51.7	621	25.1	0.9
42-53	267	52	246	48	513	20.7	1.1
54-59	62	48.4	66	51.6	128	5.2	0.9
Total	1284	51.8	1196	48.2	2480	100	1.1

Figure 1: Population age pyramid



4.2 Anthropometric findings (based on NCHS reference 1977):

A total of 2480 children aged from 6 to 59 months were recorded (Measured and weighted) within 19 WV Niger intervention zones (ADPs). The analysis of anthropometric data revealed that about 358 of children aged from 6 to 59 months out of 2,478 recorded were acutely malnourished - GAM: 14.4 % (12.1 - 17.1 95% C.I.)H/W – 2 Z-scores and/or oedema/ WHO standards 2006) and 82 of them have been suffering from severe acute malnutrition -

SAM: 3.3 % (2.6 - 4.2 95% C.I.) (H/W – 3 Z-scores and/or oedema/ WHO standards 2006). The current survey has found out significant variations within the 5 surveyed regions, ranging from to GAM 12.4% (9.4-16.3 C.I.) Z-score in Niamey to GAM 17.1 % (14.5 -20.0) Z-score in Tillabéri, which is actually the most affected. Globally the acute nutrition situation in WV Niger intervention zones could be considered as critical. On the other hand, 819 children under 5 recorded with underweight out of 2,480. That meant the underweight rate in the assessed population was about 33.0% (27.6-38.9 95%)(WHO standards 2006) which is considered also as critical (Underweight >30%) according to the World Vision International HIV & AIDS and Health & Nutrition Triggers for Action. Meanwhile, 987 out of 2,479 were stunted 39.8 % (25.9 – 56.3 95% C.I.) (H/A<– 2 Z-scores/ WHO standards 2006). This last figure is near to the critical level and required a particular attention (Stunting: 30-40%). The nutritional situation in WV Niger intervention zones (ADPs) is summarized in the table 3 below.

Table 3: Acute malnutrition rates per WV Niger Operation zones (ADPs)

WV Niger Operation Bases	Number Recorded	Wasting Rates (W/H Z-Score-and/or Oedema)			Underweight Rates (W/A <-2 Z-Score)			Stunting Rates (H/A <-2Z-Score)		
		Global	Moder	Severe	Global	Moder	Severe	Global	Moder	Severe
Maradi	454	12.6	9.3	3.3	41.4	24.4	17.0	55.5	37.7	14.3
Niamey	483	12.4	9.5	2.9	41.6	24.2	17.4	56.3	39.6	12.3
Tahoua	412	14.4	10.9	3.4	30.0	19.9	10.2	41.3	31.6	11.6
Tillabéry	715	17.1	12.9	4.2	27.7	18.6	9.1	25.9	19.2	6.7
Zinder	416	14.5	12.3	2.2	26.0	19.5	6.5	26	19.3	6.7
Total	2480	14.4	11.1	3.3	33.0	21.1	11.9	39.8	29.48	10.32

A. Classification of Acute malnutrition using weight for height Z-scores (WHZ)

The average Global acute malnutrition rate in under-five children in the 19 ADPs is 14.4 % (12.1 – 17.1 95% C.I.) (H/W – 2 Z-scores and/or oedema/ WHO standards 2006), with 3.3 % (2.6 - 4.2 95% C.I.) of severe acute malnutrition cases. However, the table 3 shows that the malnutrition rate in boys 16,7 % (14.2 – 19.6 95% C.I.) is higher than Girls 12.0 % (8,9 - 16,0 95% C.I.) and the difference is significant and boys are mostly affected than girls.

Globally, marasmus is the main observed form of acute malnutrition in under 5 children and no oedema case was identified in the surveyed population (0.0 %) as highlighted by the table 4 below.

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

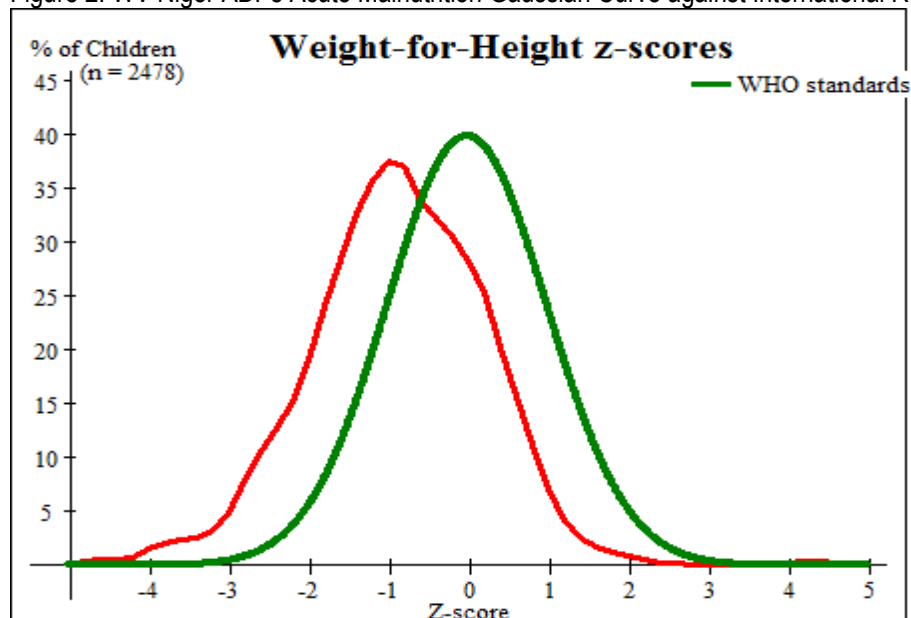
	All n = 2478	Boys n = 1284	Girls n = 1194
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(358) 14.4 % (12.1 - 17.1 95% C.I.)	(215) 16.7 % (14.2 - 19.6 95% C.I.)	(143) 12.0 % (8.9 - 16.0 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=3 z-score, no oedema)	(276) 11.1 % (9.3 - 13.2 95% C.I.)	(172) 13.4 % (11.4 - 15.6 95% C.I.)	(104) 8.7 % (6.1 - 12.3 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(82) 3.3 % (2.6 - 4.2 95% C.I.)	(43) 3.3 % (2.5 - 4.5 95% C.I.)	(39) 3.3 % (2.4 - 4.4 95% C.I.)

*The prevalence of oedema is 0.0 %

Remarks:

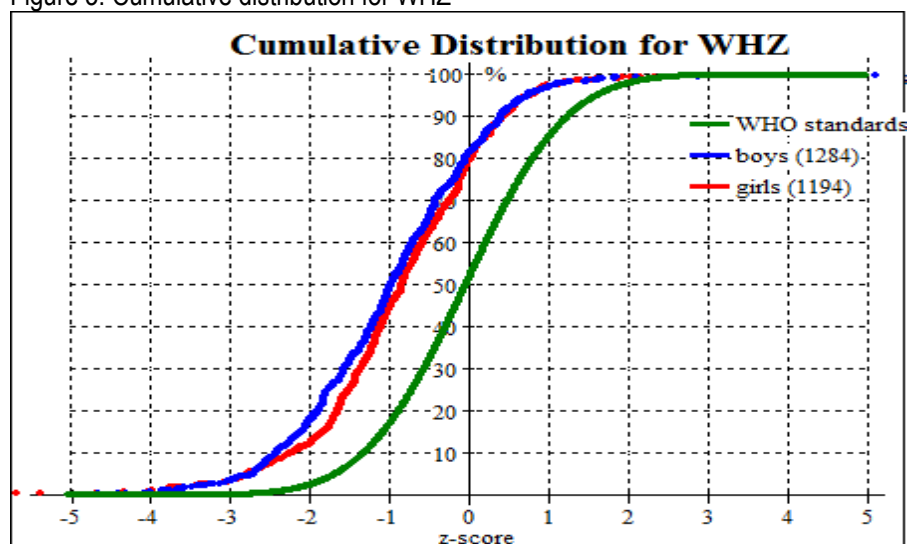
Considering the average GAM rate of 14.4% and the SAM rate at 3.3 with (2) as the incidence multiplying factor accounting for dynamic increase of malnutrition over the year, about 60,223 under 5 Children are expected to be acutely malnourished within the 19 ADPs surveyed and from who 13,801 will be severe cases (SAM).

Figure 2: WV Niger ADPs Acute Malnutrition Gaussian Curve against International References (WHO standards 2006)



The figure 2 shows that the WV Niger Gaussian curve (Red) is slightly inclined on left side than WHO standards 2006 curve (Green). That means the total number of acutely malnourished children in the studied population is high than the well nourished population of reference. According to the WVI Health & Nutrition Triggers for Action, the actual level of wasting in ADPs is near to the critical level (GAM>15%) and required immediate action.

Figure 3: Cumulative distribution for WHZ



The cumulative distribution of wasting cases showed that boys are more affected than girls but both are inclined on the left side than the standards curve from WHO Standards 2006.

Table 5: Prevalence of acute malnutrition by age based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Mod. wasting (>= -3 and <-2 z-score)		Normal (>= -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	555	31	5.6	76	13.7	448	80.7	0	0.0
18-29	659	32	4.9	102	15.5	525	79.7	0	0.0
30-41	621	8	1.3	44	7.1	569	91.6	0	0.0
42-53	512	10	2.0	34	6.6	468	91.4	0	0.0
54-59	128	1	0.8	19	14.8	108	84.4	0	0.0
Total	2475	82	3.3	275	11.1	2118	85.6	0	0.0

Table 6: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>= -3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 82 (3.3 %)	Not severely malnourished No. 2396 (96.7 %)

Table 7: Prevalence of acute malnutrition based on the percentage of the median and/or oedema

	All n = 2477	Boys n = 1281	Girls n = 1196
Prevalence of global malnutrition (< 125 mm and/or oedema)	(246) 9.9 % (5.4 - 17.7 95% C.I.)	(115) 9.0 % (4.1 - 18.6 95% C.I.)	(131) 11.0 % (6.6 - 17.6 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(156) 6.3 % (3.9 - 9.9 95% C.I.)	(70) 5.5 % (2.8 - 10.3 95% C.I.)	(86) 7.2 % (4.8 - 10.6 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(90) 3.6 % (1.3 - 9.6 95% C.I.)	(45) 3.5 % (1.1 - 10.8 95% C.I.)	(45) 3.8 % (1.6 - 8.7 95% C.I.)

Figure 4: Cumulative Distribution for MUAC

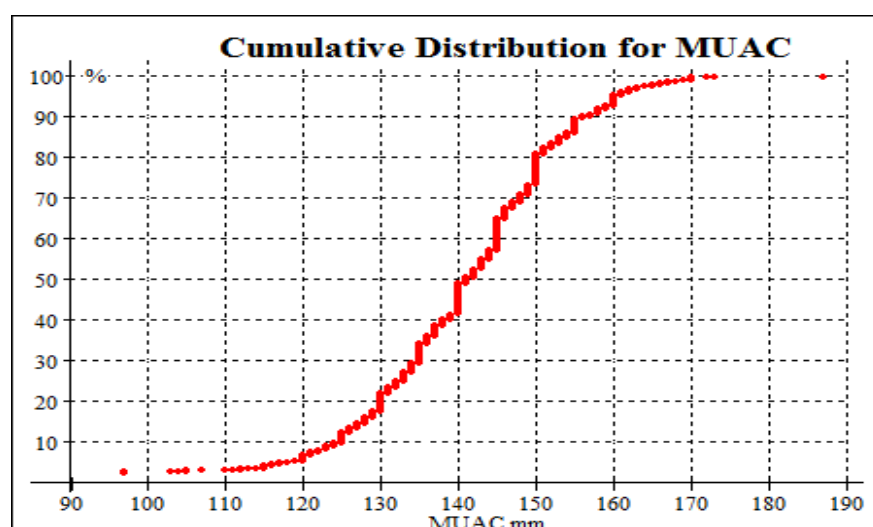
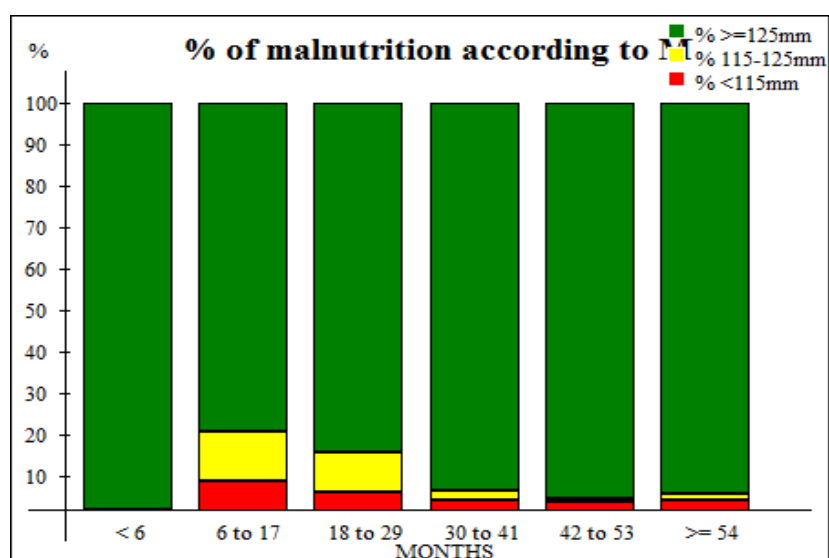


Table 8: Prevalence of malnutrition by age, based on weight-for-height percentage of the median and oedema

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (\geq 115 mm and < 125 mm)		Normal (\geq 125 mm)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	554	37	6.7	69	12.5	448	80.9	0	0.0
18-29	660	26	3.9	67	10.2	567	85.9	0	0.0
30-41	619	14	2.3	14	2.3	591	95.5	0	0.0
42-53	512	10	2.0	4	0.8	498	97.3	0	0.0
54-59	128	2	1.6	2	1.6	124	96.9	0	0.0
Total	2473	89	3.6	156	6.3	2228	90.1	0	0.0

Table 5: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema



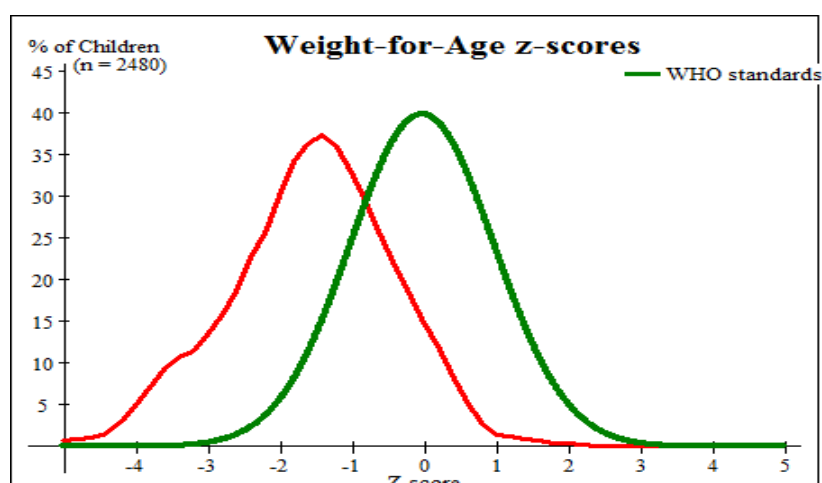
B. Classification of Underweight using weight-for-age z-scores (WAZ)

The table 9 below is showing that the prevalence of underweight is 33,0 % (27.6 – 38.9 95% C.I.) WHO standards. The observed rates are as considered as critical (Underweight >30%) according to the World Vision International HIV & AIDS and Health & Nutrition Triggers for Action.

Table 9: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 2480	Boys n = 1284	Girls n = 1196
Prevalence of underweight (<-2 z-score)	(819) 33.0 % (27.6 - 38.9 95% C.I.)	(447) 34.8 % (27.9 - 42.5 95% C.I.)	(372) 31.1 % (26.4 - 36.2 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and \geq-3 z-score)	(524) 21.1 % (18.6 - 23.9 95% C.I.)	(284) 22.1 % (18.6 - 26.1 95% C.I.)	(240) 20.1 % (17.2 - 23.3 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(295) 11.9 % (8.9 - 15.7 95% C.I.)	(163) 12.7 % (8.6 - 18.3 95% C.I.)	(132) 11.0 % (8.3 - 14.6 95% C.I.)

Figure 6: WV Niger underweight Curve against International References (WHO Standards 2006)



The figure 6 is showing also a WV Niger Gaussian curve in red color is significantly inclined on left side than the WHO Standards 2006 curve in green color. That means the total number of children with an underweight in the studied population is higher than the well nourished population of reference. The actual Underweight level in WV Niger intervention zones (ADPs) is considered as critical (>30%) according to the WVI Health & Nutrition Triggers for Action.

Table 9: Prevalence of underweight by age based on weight-for-height z-scores and oedema

Age (mo)	Total no.	Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (>= -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	555	60	10.8	122	22.0	373	67.2	0	0.0
18-29	660	126	19.1	129	19.5	405	61.4	0	0.0
30-41	621	54	8.7	135	21.7	432	69.6	0	0.0
42-53	512	46	9.0	113	22.1	353	68.9	0	0.0
54-59	128	9	7.0	25	19.5	94	73.4	0	0.0
Total	2476	295	11.9	524	21.2	1657	66.9	0	0.0

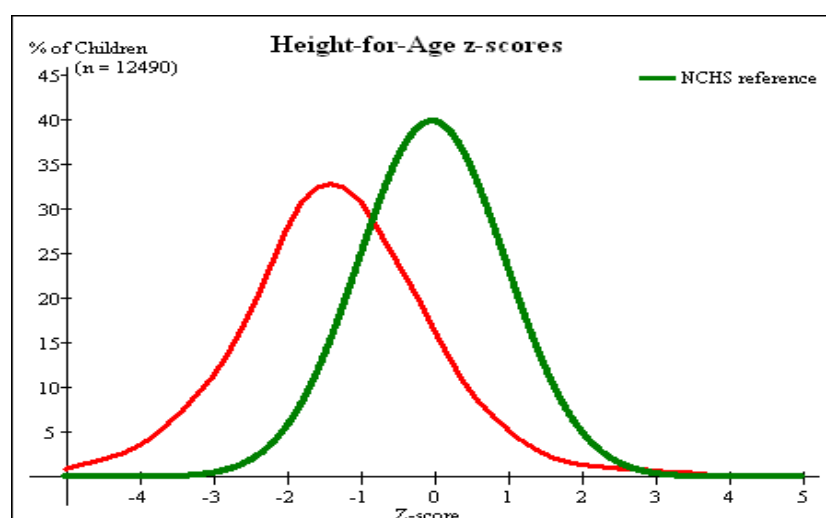
C. Classification of Chronic malnutrition using height-for-age z-scores (HAZ)

The stunting rate in the recorded population is around 39.8 % (25.9 – 56.3 95% C.I.) (H/A<- 2 Z-scores/ WHO Standards 2006). Severe cases of chronic malnutrition represented 10.32 % (6.7 – 14.3 95% C.I.). This figure is near to the critical threshold and required a particular attention (Stunting: 30-40%) according to the WVI Health & Nutrition Triggers

Table 10: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 2479	Boys n = 1284	Girls n = 1195
Prevalence of stunting (<-2 z-score)	(987) 39.8 % (25.9 - 56.3 95% C.I.)	(524) 40.8 % (28.2 - 54.8 95% C.I.)	(463) 38.7 % (28.5 - 50.1 95% C.I.)
Prevalence of moderate stunting(<-2 z-score and >=-3 z-score)	(519) 29.48 % (19.2 – 39.6 95% C.I.)	(261) 30.3 % (28.2 - 30.6 95% C.I.)	(258) 28.6 % (26.5 - 30.8 95% C.I.)
Prevalence of severe stunting(<-3 z-score)	(468) 10.32 % (6.7 – 14.3 95% C.I.)	(263) 12.1 % (10.4 – 13.6 95% C.I.)	(205) 8.5 % (7.6 - 11.4 95% C.I.)

Figure 7: WV Niger Stunting Gaussian Curve against International



The Gaussian curve for WV Niger in red above is inclined on left side and also oblate than / WHO Standards 2006 curve in green. That means the total number of stunted children in the studied population is higher than the normal and well nourished population.

Table 11: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (< -3 z-score)		Moderate stunting (≥ -3 and < -2 z-score)		Normal (≥ -2 z score)	
		No.	%	No.	%	No.	%
6-17	555	69	12.4	97	17.5	389	70.1
18-29	659	159	24.1	143	21.7	357	54.2
30-41	621	111	17.9	162	26.1	348	56.0
42-53	512	111	21.7	95	18.6	306	59.8
54-59	128	17	13.3	22	17.2	89	69.5
Total	2475	467	18.9	519	21.0	1489	60.2

Table 12: Mean z-scores, Design Effects and excluded subjects

Indicator	n	Mean z-scores \pm SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	2478	-0.90 \pm 1.18	2.89	4	0
Weight-for-Age	2480	-1.56 \pm 1.16	8.37	2	0
Height-for-Age	2479	-1.68 \pm 1.56	35.10	3	0

* contains for WHZ and WAZ the children with oedema.

4.3. Mortality results (retrospective over 95 days prior to the interview)

Recall period: 96 days
CMR (total deaths/10,000 people / day): 0.78 (0.43-1.39) (95% CI)
U5MR (deaths in children under five/10,000 children under five / day): 1.23 (0.68-2.56) (95% CI)

Observations: The leading causes of under-five mortality and morbidity reported by the MOH agents and community leaders and confirmed by interviewed mothers were respectively Fever and Malaria type illnesses (46.26%), Acute Respiratory infections: 46.10% and diarrhoea and abdominal complaints (27.83%). In most of the time, under-nutrition was evident in more than 58% of cases reported. However, the actual crude mortality as well as the under 5 mortality rates remained at an acceptable level (1, 23 deaths / 10,000 under 5 children / day) during the recall period of 96 days.

4.4. Infant and Young Child Feeding Practices findings

Optimal Infant and Young Child Feeding (IYCF) are presented in the WHO/UNICEF Global Strategy for Infant and Young Child Feeding (2003) as follows: "As a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional needs, infants should receive safe and nutritionally adequate complementary foods while breastfeeding continues for up to two years of age or beyond. Exclusive breastfeeding from birth is possible except for a few rare medical conditions as specified by WHO and UNICEF and virtually every mother can breastfeed. Policy and strategy documents produced by WHO and UNICEF over the last 25 years provide a sound basis for action. This has resulted in the prioritization of IYCF in programs in many countries, leading to improvements in breastfeeding practices in those countries today compared to the late 1980s and early 1990s, as well as achievements in reducing stunting in countries that moved towards more comprehensive approaches to IYCF.

a) Early Breastfeeding Initiation (children aged 0 - 24 months)

A growing body of recent evidence underscores the important global recommendation that breastfeeding be initiated within the first hour of birth. Early initiation of breastfeeding is estimated using the proportion of children born in the last 24 months who were put to the breast within one hour of birth. It is considered vital to successful breastfeeding because it enhances mother/child bonding and generally lengthens the duration of breastfeeding. 488 out of 11, 22 children aged from 0 to 24 months were put to the breast within one hour of birth (43.49%).

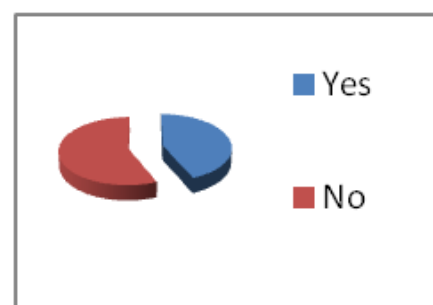
Table 13: Early initiation of breastfeeding

EARLY BF INITIATION	NUMBER	FREQ
Yes	488	43.49
No	634	56.51
TOTAL	1122	100.00

CUM

488

1122



Note: In order to assess progress toward achieving the targets of the WHO/UNICEF Global Strategy for Infant and Young Child Feeding, WHO in 2003 has prepared a "Tool for Assessing National Practices, Policies and Programs" The tool was designed to assist planners and decision – makers at various levels in assessing the status of IYCF practices, policies and programs in their country.

In referring to the Guidelines assessment for Rating IYCF, the percentage of babies breastfed within one hour of birth in the studied area is fair (43,49%).

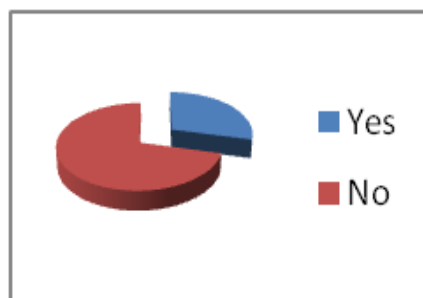
Percentages	Rating
0 – 29%	Poor
30 – 49%	Fair
50 – 89%	Good
90 – 100%	Very Good

However, only 324 mothers who have declared to early initiate their new born to the breastfeeding have extracted first the colostrums and didn't give it to the new born (28.90%).

Table 13: Early initiation of breastfeeding

CONSUMPTION OF COLOSTRUM	NUMBER	FREQ
Yes	324	28.88
No	798	71.12
TOTAL	1122	100.00

CUM
324
1122



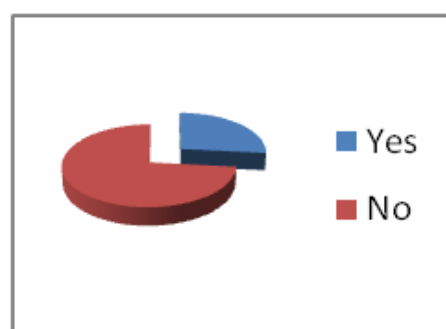
b) Exclusive breastfeeding under 6 months(children 0 - 5 months)

The proportion of infants 0–5 months of age who are fed exclusively with breast milk was estimated using the previous day recall period. Only 130 mothers out of 488 interviewed have declared to exclusively breastfeed their children (26.66%) compared to 2768 (60.25%) who are given additional liquid or solid food resources to their children aged from 0 to 5 months.

Table 13: Exclusive Breastfeeding:

EXCLUSIVE BREAST FEEDING	NUMBER	FREQ
Yes	130	26.64
No	358	73.36
TOTAL	488	100.00

CUM
130
488



According to WHO/UNICEF 2003 guidelines for rating exclusive breastfeeding, the current exclusive breastfeeding is rated at 26.64% which is fair (12-49%).

Percentage	Rating
0 – 11%	Poor
12 – 49%	Fair
50 – 89%	Good
90 – 100%	Very Good

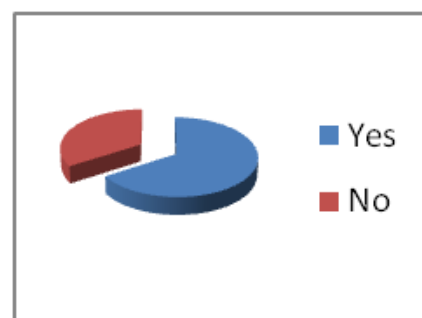
c) Continued Breastfeeding at 1 year (Children 12 – 15 months):

The Innocenti Declaration (4) recommends that babies continue to be breastfed for up to two (2) years of age or beyond. When provided along with appropriate and adequate complementary food, breast milk continues to be an important source of nutrition and fluids and immunological protection for the child after six months of age. The continued bonding between mother and child provided by breastfeeding encourages optimal psychosocial development.

Continued breastfeeding at 1 year is the estimation of the proportion of children aged from 12 to 15 months of age who are fed breast milk. In studied areas, 65.73% of mothers were recorded as practicing continued breastfeeding as indicated in the table 14 below

Table 14: Continued breastfeeding (12-15 months)

CONTINUED BREASTFEEDING	NUMBER	FREQ	CUM
Yes	83	65.87	83
No	43	34.13	126
TOTAL	126	100.00	



Continued Breastfeeding rate is about 65.87%. That means Percentage of breastfed babies 0 - < 12 months of age who received any food or drink (even breast milk) from bottles in the last 24 hours is around 34.13% which is rated as poor according to the IYCF assessing tool.

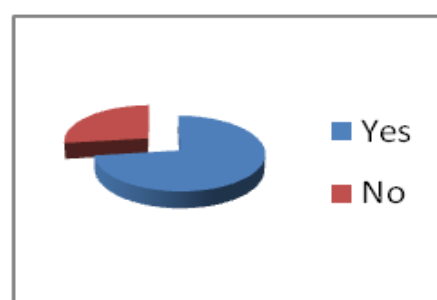
Percentage	Rating
30 – 100%	Poor
5 – 29 %	Fair
3 – 4 %	Good
0 – 2 %	Very Good

d) Introduction of appropriate complementary food (6 - 8 months)

The proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods was estimated from the mothers recall based on the previous day. This indicator has a very narrow age range of 3 months; estimates from surveys with small sample sizes are likely to have wide confidence intervals. In addition, this indicator is one of the two parts of the previous composite indicator for timely complementary feeding, which also included continued breastfeeding (1). The findings from the current survey have shown that the proportion of mothers who have practiced introduction of appropriate complementary food represented 73.18% of the surveyed population as indicated in the table 15 below.

Table 15: Introduction of appropriate food

INTRODUCTION OF APPROPRIATE FOOD	NUMBER	FREQ	CUM
Yes	70	72.92	70
No	26	27.08	96
TOTAL	96	100.00	



The percentage of breastfed infants 6–8 months of age who received supplementary solid, semi-solid or soft foods in the last 24 hours (70.0%) is rated as fair.

Percentage	Rating
0 – 59%	Poor
60 – 79%	Fair
80 – 94%	Good
95 – 100%	Very Good

e) Minimum dietary diversity ((children aged 6 - 23 months)

The Minimum dietary diversity stated about the proportion of children 6–23 months of age who receive foods from 4 or more food from the 7 foods groups used for tabulation of this indicator:

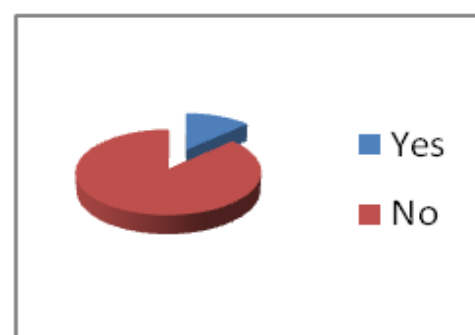
- Grains, roots and tubers
- Legumes and nuts
- Dairy products (milk, yogurt, cheese)
- Flesh foods (meat, fish, poultry and liver/organ meats)
- Eggs
- Vitamin-A rich fruits and vegetables
- Other fruits and vegetables

Only 82 mothers out of 634 interviewed met the minimum dietary diversity (consumption of diversified diet or more foods from 4 or more food groups during the previous day) (12.94%). The Consumption of foods from at least 4 food groups on the previous day means that in most populations the child had a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable that day, in addition to a staple food (grain, root or tuber). The table 16 below indicated minimum dietary statement in the assessed population.

Table 16: minimum dietary diversification

MINIMUM DIETARY DIVERSITY	NUMBER	FREQ
Yes	82	12.93
No	552	87.07
TOTAL	634	100.00

CUM
82
634



4.5. Child Health Results

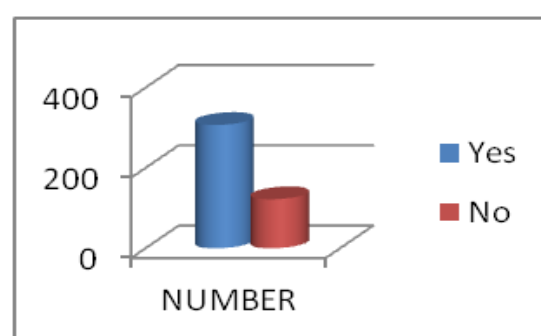
a) EPI coverage for Children

The source of information collected on immunization was either the child health card records or the mother's recall. A child is considered fully vaccinated if he has received three times PENTA Combined vaccine (DPT+ Hib+Polio) plus 1 dose of BCG (at birth or first clinic contact), and one dose of measles vaccine (at 9 months of age). According to WHO, children should receive the complete schedule of vaccination by the age of 12 months. The Penta 3 immunization rate in the studied areas (ADPs) was about 71.64% which is at a critical level according to World Vision International HIV & AIDS and Health & Nutrition Triggers for Action (<75%).

Table 17: Vaccination coverage for children aged from 0-59 months (BCG, DPT and measles) – Recording with card and/or confirmation from mother)

EPI COVERAGE PENTA 3	NUMBER	FREQ
Yes	307	71.56
No	122	28.44
TOTAL	429	100.00

CUM
307
429

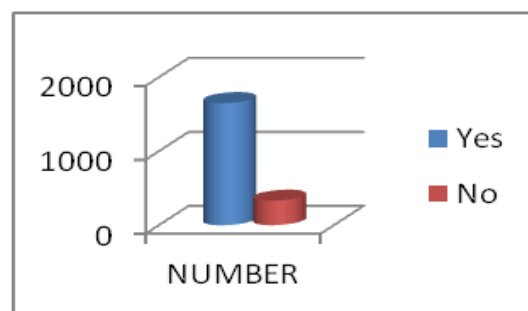


b) Vitamin A supplementation and deworming (Children 6 – 59 months)

The survey showed a good coverage rate of the vitamin A supplementation. So, about 6441 children aged from 6 to 59 month out of 8029 surveyed have received Vitamin A supplementation during the last 6 months (80.22%).

Table 18: Vitamin A supplementation and Deworming

VITAMIN A SUPPLEMENTATION COVERAGE	NUMBER	FREQ	CUM
Yes	1652	83.27	1652
No	332	16.73	1984
TOTAL	1984	100.00	



c) Children's morbidity and childhood illnesses recorded during the last 2 weeks

Table 19: Symptom breakdown in under 5 children in the 2 weeks prior to interview (n=4654)

DISEASES	N	n	FREQ
Diarrhoea	1258	350	27.82
Cough	1720	796	46.26
Fever	1676	773	46.11
Total	4654	1919	41.23

a) Other Child health indicators

DURING ILLNESSES	SEEKING FOR CARE		USING TRO/SRO	
	NUMBER	FREQ	NUMBER	FREQ
Yes	1026	41.37	96	33.80
No	1400	56.45	175	61.62
Don't Know	54	2.18	13	4.6
TOTAL	2480	100	284	100.00

4.6. Maternal Health Results

Maternal and child health are closely linked and the maternal health is Influencing infant and childhood status. This relationship between maternal, neonatal and child health is now regarded as a continuum in which all are essential.

In the current assessment, it was found out that 27.18% of mothers interviewed have received anti tetanus vaccination (TT 2) during their pregnancy. The Pre and antenatal consultation (CPN 3) is about 31.48% and 23.90% of the deliveries were assisted by a health professional in the whole ADPs intervention.

- Washing Hands with Soap: 45.36%
- Sleep under Long Lasting Impregnated Net (-5years) 61.50%
- Use of safe water: 46.32%

4.7. Household health and sanitation

The survey has revealed that only 46.32% of the households interviewed are using a safe water source and about 34.78% of them have their latrines, mainly in Niamey urban areas. The remaining rural households are using outlying areas such as fields and bush for defecation. The proportion of those who are washing hand with soap before eating and after using toilet is about 45.36%. However, under 5 children who have slept under LLIN the night before the interview was around 61.5%. The table 21 below is summarizing health and sanitation coverage at household level in the project areas.

Table 21. Household health and sanitation findings

	N	n	Freq
- Washing Hands with Soap:	1884	854	45.36%
- Sleep under Long Lasting Impregnated Net (-5years)	1900	1168	61.50%
- Use of safe water:	1889	874	46.32%
- Availability of Latrines:	1900	661	34.78%

VI – CONCLUSION AND RECOMMENDATIONS

The anthropometric survey findings from the current survey have shown that the nutritional status of ADPs beneficiary communities is at a critical level with many aggravating factors such as the lack of hygiene and sanitation (Use of latrine 34.78%), limited access to potable (46.32%), low immunization rate (Penta 71.64%), Exclusive Breast-feeding (26.64%) and the high rate of infectious diseases amongst under 5 children mainly diarrhea, malaria and Respiratory Infectious Diseases etc. Globally, analysis of anthropometric data revealed that about 358 of children aged from 6 to 59 months out of 2,478 recorded were acutely malnourished - GAM: 14.4 % (12.1 - 17.1 95% C.I.) H/W – 2 Z-scores and/or oedema/ WHO standards 2006) and 82 of them have been suffering from severe acute malnutrition - SAM: 3.3 % (2.6 - 4.2 95% C.I.) (H/W – 3 Z-scores and/or oedema/ / WHO standards 2006). These average rates indicated that the current nutritional situation in WV Niger intervention zones (ADPs) is near the emergency threshold (GAM>15%) and in some assessed regions, and mainly in Tillabery, the nutritional situation was already over the emergency threshold with a GAM level at GAM: 17.1 % (14.5 - 20.0 95% C.I.) (WHO Standards 2006). The current survey has found out significant variations within the 5 surveyed regions, ranging from to GAM 12.4% (9.4-16.3 C.I.) Z-score in Niamey to GAM 17.1 % (14.5 -20.0) Z-score in Tillabery, which is actually the most affected. So, the global nutritional situation in WV Niger intervention zones could be considered as critical. In comparison with data from the latest nutrition survey conducted by the Government of Niger on October 2011 and only limited to two regions (Tillabery and Agadez), which has already showed a serious situation with a GAM rate of 13.1 % (5.7 – 27.1 at 95% C.I.) (H/W – 2 Z-scores and/or oedema) and the Severe Acute Malnutrition (SAM) was 1.1% (0.4 – 2.8 at 95% C.I.) (H/W –3 Z-scores and/or edema -WHO standards 2006); the nutritional situation in the country by extension could be considered to be deteriorated and worsen from day to day due to the severe food shortage in the country.

819 children under 5 out of 2480 recorded with underweight. That meant the underweight rate in the assessed population was about 33.0% (27.6-38.9 95%)(WHO standards 2006) which is considered as critical (Underweight >30%) according to the World Vision International HIV & AIDS and Health & Nutrition Triggers for Action. Meanwhile, 987 out of 2479 were stunted 39.8 % (25.9 - 56,3 95% C.I.) (H/A<– 2 Z-scores/ WHO standards 2006). This figure is near to the critical threshold and required a particular attention (Stunting: 30-40%). The following are the recommendations drafted from the current survey findings:

1. **Strengthening and reinforcing CMAM** Programming in the country in order to respond to the looming food and nutrition crisis in the country. WV Niger needs to assign necessary resources to nutrition interventions
2. **A sustainable nutritional monitoring system:** It is required to follow up nutritional status of targeted communities through setting the nutrition data base system and the Community based growth monitoring.

3. **The coordination with other partners:** Partnering with International agencies with a great expertise in Health and Nutrition programming as well as Government entities is important for long term planning, revision and improvement of nutrition interventions, including advocacy for better caring for malnutrition within ADPs.
4. **To further increase the exclusive breastfeeding rate in WV Niger ADP Zones,** 3 programmatic priorities should be inferred from this graph as the following:
 - Encourage optimal breastfeeding including early initiation, colostrums consumption, exclusive breastfeeding up to the 6 months of age and appropriate complementary feeding etc. for every single infant in ADPs interventions zones
 - Discourage feeding of other milks/formula starting at age 0 months (to decrease the dark blue area) and the introduction of solid, semi-solid and soft foods before 6 months of age (to decrease the grey area) and then
 - Encourage continued breastfeeding up to 24 months and beyond (Increase the red area)

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APPENDICES

Appendix 1: Sample of Evaluation of Enumerators

Weight:				
	Precision: Sum of Square [W2-W1]	Accuracy: Sum of Square [Superv.(W1+W2)- Enum.(W1+W2)]	No. +/- Precision	No. +/- Accuracy
Supervisor	0.00		0/0	
Enumerator 1	0.00 OK	0.00 OK	0/0	0/0
Enumerator 2	0.00 OK	0.00 OK	0/0	0/0

Enumerator 3	0.00 OK	0.00 OK	0/0	0/0
Enumerator 4	0.00 OK	0.00 OK	0/0	0/0
Enumerator 5	0.00 OK	0.00 OK	0/0	0/0

Height:	Precision: Sum of Square [H2-H1]	Accuracy: Sum of Square [Superv.(H1+H2)- Enum.(H1+H2)]	No. +/- Precision	No. +/- Accuracy
Supervisor	0.00		0/0	
Enumerator 1	0.00 OK	0.00 OK	0/0	0/0
Enumerator 2	0.00 OK	0.00 OK	0/0	0/0
Enumerator 3	0.00 OK	0.00 OK	0/0	0/0
Enumerator 4	0.00 OK	0.00 OK	0/0	2/1
Enumerator 5	0.07 POOR	0.11 POOR	2/2	3/2

For evaluating the enumerators the precision and the accuracy of their measurements is calculated.

For precision the sum of the square of the differences for the double measurements is calculated. This value should be less than two times the precision value of the supervisor. For the accuracy the sum of the square of the differences between the enumerator values (weight1+weight2) and the supervisor values (weight1+weight2) is calculated. This value should be less than three times the precision value of the supervisor. To check for systematic errors of the enumerators the number of positive and negative deviations can be used.

Appendix 2: Result Tables for WHO standards 2006

Table 3.2: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

Table 3.2: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	All n = 2479	Boys n = 1284	Girls n = 1195
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(339) 13.7 % (10.9 - 17.0 95% C.I.)	(193) 15.0 % (12.5 - 17.9 95% C.I.)	(146) 12.2 % (8.7 - 16.9 95% C.I.)
Prevalence of mod. malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(288) 11.6 % (9.6 - 14.0 95% C.I.)	(167) 13.0 % (10.9 - 15.4 95% C.I.)	(121) 10.1 % (7.5 - 13.5 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(51) 2.1 % (1.2 - 3.4 95% C.I.)	(26) 2.0 % (1.2 - 3.3 95% C.I.)	(25) 2.1 % (1.1 - 3.9 95% C.I.)

The prevalence of oedema is 0.0 %

Table 3.3: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (>= -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	555	18	3.2	78	14.1	459	82.7	0	0.0
18-29	659	20	3.0	123	18.7	516	78.3	0	

									0.0
30-41	621	4	0.6	39	6.3	578	93.1	0	0.0
42-53	512	8	1.6	34	6.6	470	91.8	0	0.0
54-59	128	1	0.8	13	10.2	114	89.1	0	0.0
Total	2475	51	2.1	287	11.6	2137	86.3	0	0.0

Table 3.4: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 51 (2.1 %)	Not severely malnourished No. 2428 (97.9 %)

Table 3.5: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	All n = 2477	Boys n = 1281	Girls n = 1196
Prevalence of global malnutrition (< 125 mm and/or oedema)	(246) 9.9 % (5.4 - 17.7 95% C.I.)	(115) 9.0 % (4.1 - 18.6 95% C.I.)	(131) 11.0 % (6.6 - 17.6 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(156) 6.3 % (3.9 - 9.9 95% C.I.)	(70) 5.5 % (2.8 - 10.3 95% C.I.)	(86) 7.2 % (4.8 - 10.6 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(90) 3.6 % (1.3 - 9.6 95% C.I.)	(45) 3.5 % (1.1 - 10.8 95% C.I.)	(45) 3.8 % (1.6 - 8.7 95% C.I.)

Table 3.6: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (>= 115 mm and < 125 mm)		Normal (>= 125 mm)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	554	37	6.7	69	12.5	448	80.9	0	0.0
18-29	660	26	3.9	67	10.2	567	85.9	0	0.0
30-41	619	14	2.3	14	2.3	591	95.5	0	0.0
42-53	512	10	2.0	4	0.8	498	97.3	0	0.0
54-59	128	2	1.6	2	1.6	124	96.9	0	0.0
Total	2473	89	3.6	156	6.3	2228	90.1	0	0.0

Table 3.5: Prevalence of acute malnutrition based on the percentage of the median and/or oedema

	n = 2479
Prevalence of global acute malnutrition (<80% and/or oedema)	(233) 9.4 % (7.5 - 11.7 95% C.I.)
Prevalence of moderate acute malnutrition (<80% and \geq 70%, no oedema)	(210) 8.5 % (6.7 - 10.6 95% C.I.)
Prevalence of severe acute malnutrition (<70% and/or oedema)	(23) 0.9 % (0.6 - 1.4 95% C.I.)

Table 3.6: Prevalence of malnutrition by age, based on weight-for-height percentage of the median and oedema

		Severe wasting (<70% median)		Moderate wasting (\geq70% and <80% median)		Normal (\geq80% median)		Oedema	
Age (mo)	Total no.	No.	%	No.	%	No.	%	No.	%
6-17	555	8	1.4	60	10.8	487	87.7	0	0.0
18-29	659	11	1.7	85	12.9	563	85.4	0	0.0
30-41	621	2	0.3	35	5.6	584	94.0	0	0.0
42-53	512	2	0.4	21	4.1	489	95.5	0	0.0
54-59	128	0	0.0	8	6.3	120	93.8	0	0.0
Total	2475	23	0.9	209	8.4	2243	90.6	0	0.0

Table 3.7: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 2480	Boys n = 1284	Girls n = 1196
Prevalence of underweight (<-2 z-score)	(987) 39.8 % (33.9 - 46.1 95% C.I.)	(523) 40.7 % (33.5 - 48.4 95% C.I.)	(464) 38.8 % (33.2 - 44.7 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and \geq-3 z-score)	(689) 27.8 % (24.7 - 31.1 95% C.I.)	(359) 28.0 % (24.3 - 32.0 95% C.I.)	(330) 27.6 % (24.0 - 31.5 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(298) 12.0 % (9.0 - 15.8 95% C.I.)	(164) 12.8 % (8.7 - 18.3 95% C.I.)	(134) 11.2 % (8.4 - 14.7 95% C.I.)

Table 3.8: Prevalence of underweight by age, based on weight-for-age z-scores

		Severe underweight (<-3 z-score)		Moderate underweight (\geq -3 and <-2 z-score)		Normal (\geq -2 z score)		Oedema	
Age (mo)	Total no.	No.	%	No.	%	No.	%	No.	%

6-17	555	64	11.5	171	30.8	320	57.7	0	0.0
18-29	660	134	20.3	192	29.1	334	50.6	0	0.0
30-41	621	54	8.7	162	26.1	405	65.2	0	0.0
42-53	512	39	7.6	133	26.0	340	66.4	0	0.0
54-59	128	7	5.5	31	24.2	90	70.3	0	0.0
Total	2476	298	12.0	689	27.8	1489	60.1	0	0.0

Table 3.9: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 2479	Boys n = 1284	Girls n = 1195
Prevalence of stunting (<-2 z-score)	(851) 34.3 % (22.8 - 48.0 95% C.I.)	(457) 35.6 % (23.2 - 50.2 95% C.I.)	(394) 33.0 % (21.9 - 46.3 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(485) 19.6 % (16.5 - 23.1 95% C.I.)	(248) 19.3 % (16.3 - 22.7 95% C.I.)	(237) 19.8 % (15.9 - 24.5 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(366) 14.8 % (7.4 - 27.3 95% C.I.)	(209) 16.3 % (7.9 - 30.4 95% C.I.)	(157) 13.1 % (6.6 - 24.4 95% C.I.)

Table 3.10: Prevalence of stunting by age based on height-for-age z-scores

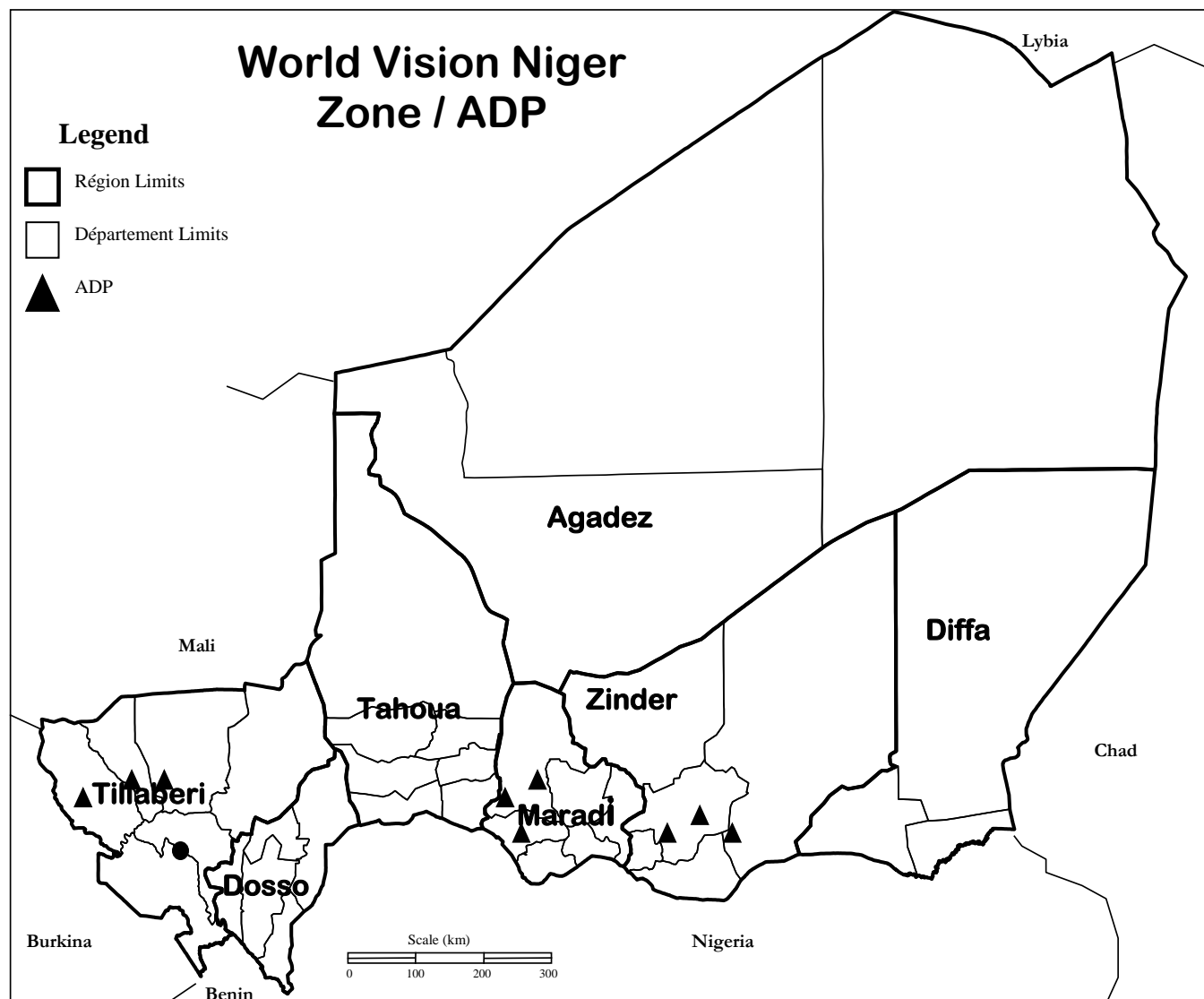
Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (>= -2 z score)	
		No.	%	No.	%	No.	%
6-17	555	50	9.0	104	18.7	401	72.3
18-29	659	112	17.0	146	22.2	401	60.8
30-41	621	83	13.4	135	21.7	403	64.9
42-53	512	103	20.1	81	15.8	328	64.1
54-59	128	17	13.3	19	14.8	92	71.9
Total	2475	365	14.7	485	19.6	1625	65.7

Table 3.11: Mean z-scores, Design Effects and excluded subjects

Indicator	n	Mean z-scores \pm SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	2479	-1.05 \pm 0.98	4.53	3	0
Weight-for-Age	2480	-1.75 \pm 1.08	9.11	2	0
Height-for-Age	2479	-1.46 \pm 1.52	42.60	3	0

* contains for WHZ and WAZ the children with edema.

Annex 3: Map of Niger Republic

**Appendix 4: World Vision International HIV & AIDS and Health & Nutrition Triggers for Action**

The following list of indicators coupled with threshold ranges for action is offered to assist with prioritization of programmatic components for a given setting. The list includes a total of 31 indicators. 21 pertaining to Health & Nutrition programming and 13 pertaining to Hope Initiative programming (6 indicators apply to both programs). Several of these indicators are only suitable for settings where a given health condition is highly prevalent for example, use of long-lasting insecticidal nets to prevent malaria infection.

Estimates of the level of an indicator in a given program area may be based on TDI reports, demographic and health survey data or other national data source (See data sources below).

It is preferable to use appropriate district-level information instead of national estimates. Whenever possible, district-level estimates should be compared with available recent TDI information to arrive at a more solid approximation of the level of an indicator in a given ADP. This exercise is particularly important in situations where the value of an indicator is near the boundary for red, yellow or green action levels. More detailed guidance is offered below.

Child Well-Being Outcome	Sector		Indicators	Thresholds		
	HIV & AIDS	Health &		Acceptable	Attention required	Critical
Enjoy Good Health	X	X	HIV prevalence among children 0-15 years	<0.5%	0.5%-4%	>4%
	X	X	HIV prevalence in pregnant women	<0.1%	0.1-1%	>1%
	X	X	HIV prevalence among adults (age 15-49) by sex	<1%	1%-4%	>4%
	X		HIV prevalence among adolescents and youth 15-24	<1%	1%-4%	>4%
	X	X	Infant mortality (IMR)	<65	65-80	>80
		X	Maternal mortality ratio (MMR)	<350	350-500	>500
		X	Low birthweight <2500g (LBW)	<20%	20-35%	>35%
		X	Stunting in children 6-59 months (HAZ \leq -2) by sex	<20%	20-40%	>40%
		X	Wasting (acute undernutrition) in children 6-59 months (WHZ \leq -2) by sex	<5%	5-15%	>15%
	X		Wasting (acute undernutrition) in OVC children 6-59 months (WHZ \leq -2)	<5%	5-15%	>15%
		X	Underweight in children 6-59 months (WAZ \leq -2) by sex	<10%	10-30%	>30%
	X		Underweight in OVC 6-59 months (WAZ \leq -2) by sex	<10%	10-30%	>30%
		X	Households using iodized salt	>70%	50-70%	<50%
		X	Iron deficiency anemia in children under 5 (Hg < 11g/dL)	<5%	5-40%	>40%
		X	Children 6-59 months received at least 2 vitamin A capsules (VAC) within the past 12 months	<50%	35-50%	<35%
Enjoy Good Health (continued)		X	Mothers of children age 0-23 months who report that they had four or more antenatal visits while they were pregnant with youngest child	>60%	40-60%	<40%
		X	Mothers of children age 0-23 months whose births were attended by skilled personnel	>70%	30-70%	<30%
		X	Contraceptive prevalence in women age 15-45	>35%	25-35%	<25%
		X	Immunization coverage in children under 2 (completed 3rd DPT dose plus measles)	>80%	75-80%	<75%
		X	Children 0-23 months who received all 3 components of essential newborn care	<50%	35-50%	<35%
		X	Children under 5 who had an episode of diarrhea in the past 2 weeks	<15%	15-40%	>40%
		X	Children under 5 who received oral rehydration therapy (ORT) during episode of diarrhea in the past two weeks	>80%	70-80%	<70%
		X	Infants 0-6 months who are exclusively breastfed	>80%	75-80%	<75%
		X	Households with year-round access to improved water source	>90%	60-90%	<60%

		X	Principal caretaker of children age 0-23 months reports practicing hand-washing using an effective product such as soap or ash at least two out of five critical times during the last 24 hours	>80%	50-80%	<50%
		X	Mothers of child under 5 w presumed pneumonia (defined as fast breathing rate) report that child was taken to appropriate health provider	>80%	70-80%	<70%
		X	Households with access to iodized salt	>90%	50-90%	<50%
		X	Mother and child under 2 sleep under long-lasting insecticidal net (LLIN) last night	>60%	50-60%	<50%
		X	Tuberculosis case detection rate in mothers of children under 5 (new smear-positive diagnosed with Tb)	>70%	60-70%	<60%
		X	Tuberculosis treatment effectiveness (registered tuberculosis cases that complete treatment)	>85%	75-85%	<75%
	X	X	HIV-infected pregnant women and infants who received nevarapine (NVP) for prevention of mother-to-child transmission (PMTCT)	>80%	80-50%	<50%
Educated For Life	X		OVC 10-14 years currently enrolled in school or vocational training by sex	> 99%	90-99%	< 90%
Children are cared for, protected, and participate	X		Children orphaned by AIDS and other causes	<2%	2-9%	> 9%
	X		Children who are orphan and vulnerable	<2%	2%-12%	>12%
	X		Prevalence of HIV&AIDS-related stigma and discrimination attitudes (express accepting attitudes towards PLHIV)	>60%	30%-60%	<30%
	X		Unmarried children having sexual intercourse by sex	<2%	2% - 5%	>5%
	X		Children married by sex	<2%	2%-5%	>5%
		X	Children age 0-5 years with birth registration	> 95%	90%-95%	<90%
	X		OVC with birth registration	> 95%	90%-95%	<90%

Guidance on how to use triggers for diagnosis and planning

Step 1: document government data for each indicator (secondary data source). All of these indicators should be available from either government counterparts or from public access databases (e.g. DHS). Preferably, each indicator should be reported on two levels

- Overall national estimate AND
- Estimate for the provincial or district level where the collaborating ADP is located OR if this is not available
- National estimate disaggregated by one or more socio-demographic factor (e.g. urban/rural; education level, socioeconomic level) and highlight the sub-group most representative of our collaborating ADP

Step 2: Document any available TDI information (primary data source) that measures directly or approximates each indicator, recognizing that information will not be available for several indicators.

Step 3: For each ADP, use primary and secondary data to discuss the likely health status pattern that affects maternal and child health or OVC care and prevention of HIV transmission to choose intervention priorities offered by existing program models.

ote: All of the above indicators are expressed as a ratio or percentage unless otherwise indicated. Please contact Dr. Jane Chege, Dr. Annette Ghee or the Nutrition Center of Expertise for suggestions regarding secondary data sources if needed. This list of triggers is under continuous review and will be updated annually.

Appendix 5: New Indicators for Monitoring and Evaluating IYCF Practices – WVI Nutrition CoE nutrition_coe@wvi.org January 2009

Since 1991's publication on indicators used to assess and evaluate infant feeding within and across countries, there's been important developments and recommendations about infant and young child feeding (IYCF)

Participants of World Health Organization (WHO) Global Consensus Meeting on Indicators of IYCF (November 2007) developed 8 new valid and reliable core indicators based on 5-year effort (Refer to table below)

The purpose of the core indicators is primarily used for assessment, targeting, and monitoring and evaluations (M&E) in large-scale surveys or national programs. Smaller and regional programs could also use, but may not meet all needs for M&E at this level. The Methodology to be used for measuring the proposed indicators should be derived from interviews conducted at household level using household survey methodology and assessed using LQAS (operational guidelines will be issued as early as end of July 2008)

D. Core indicators and definitions

Core Indicators	Definition
1. Early Initiation of Breastfeeding	Proportion of children born in last 23.9 months (mo) who were put to breast within 1hr of birth
2. Exclusive Breastfeeding under 6 mo	Proportion of infants 0-5.9 mo, fed exclusively with breast milk (BM)
3. Continued Breastfeeding at 1 year	Proportion of children 12-15.9 mo old, fed BM
4. Introduction of Solid, Semi- solid Foods or Soft Foods	Proportion of infants 6-8.9 mo old who receive solid, semi-solid or soft foods
5. Minimum Dietary Diversity	Proportion of children 6-23.9 mo old who receive foods from 4 food groups*
6. Minimum Meal Frequency	Proportion of breastfed and non-breastfed children 6-23.9mo old who receive solid, semi-solid or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more*
7. Minimum Acceptable Diet	Proportion of children 6-23.9 mo old who receive minimum acceptable diet (apart from BM)*
8. Consumption of Iron-Rich or Iron-Fortified Foods	Proportion of children 6-23.9 mo old who receive an iron-rich food or iron-fortified food that is specially designed for infants and young children, or is fortified at home

Appendix 6: Standard Questionnaire translated in English:

I. Identification

Date	_ _ / _ _ / 20	
Cluster Number		
Team Number		
Health Area Number		
	Name	Code
Region		
Department / Commune		Urban _ _ Rural _ _
Village / Area		
ADP		
Household Number		
Name of the head of the Household		
Household Interview Result:	Filled 1 _ _ Not at Home 2 _ _ Refused 3 _ _ Other (Specify) _____ 4 _ _	
Survey Team leader comments		

II. Anthropometry : Children 6 – 59 months

N°	Name	Sex	Birth date	Age	Weight	Height	Edema	MUAC	OTP/SC	SFP
		M/F	d/m/a	months	(kg) ± 100g	(cm) ± 0.1cm	Yes = Y No = N	(mm) ± 1mm	Yes = Y No = N	Yes = Y No = N
01										
02										
03										
04										
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15										

III. Questionnaire: Mortality

IV. Health Questionnaire (Children 0 - 59 months)

4.1. CARE FOR SICK CHILDREN WITH MALARIA, DIARRHEA AND COUGH (MOTHERS OF CHILDREN 0-59 MONTHS)

	CHILD 1	CHILD 2	CHILD 3
CHILD IDENTIFICATION	_ _ _	_ _ _	_ _ _

No.	Names and Surnames	C 2 Sex	C 3 Ages (Years)	C 4 Ages (months)	C 5 Born since the last.....	C6 Arrived since the last.....
-----	--------------------	------------	------------------------	-------------------------	---	---

A. List all the household members actually present in the household

1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

B. How many household members have left since the

last..... ?

List the household members who have left

1						
2						
3						
4						
5						

C. Since the last, how many household members have passed away (deceased) ?




List all those died.

1						
2						
3						
4						
5						

Mortality Summary

	Total	Under 5 years	
Household members actually present in the household	/ / /	/ / /	A. col. 1
Household members arrived since the last	/ / /	/ / /	A. col. 5
Household members have left since the last	/ / /	/ / /	B. col. 1
Birth occurred in the household since the last		/ / /	A, B, C. col. 4
Death occurred in the household since the last	~ 36 / / /	/ / /	C. col. 1

ML1. DO YOUR HOUSEHOLD HAS A MOSQUITO BED ?	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8
ML2. OBSERVE or ASK FOR THE MOUSQUITO BED NET ?	NON IMPREGNATED NET1 IMPREGNATED NET2 Don't Know.....8	NON IMPREGNATED NET1 IMPREGNATED NET2 Don't Know.....8	NON IMPREGNATED NET1 IMPREGNATED NET2 Don't Know.....8
ML 3. DID YOUR CHILD U5 (NAME) SLEEP UNDER THE INSECTICIDE TREATED NET THE LAST NIGHT ?	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8
ML 4. HAS YOUR CHILD (NAME) RECEIVED A VITAMIN A CAPSULE LIKE THIS ONE IN THE LAST 6 MONTHS? (SHOW SAMPLE OF VITAMIN A CAP)	YES.....1 No2 Don't Know.....8 N/A (<6MONTHS).....9	YES.....1 No2 Don't Know.....8 N/A (<6MONTHS).....9	YES.....1 No2 Don't Know.....8 N/A (<6MONTHS)9
ML 5. HAS YOUR CHILD (NAME) RECEIVED DEWORMING TABLET LIKE THIS ONE IN THE LAST 6 MONTHS? (SHOW SAMPLE OF DEWORMING TABLET)	YES.....1 No2 Don't Know.....8 N/A (<6MONTHS).....9	YES.....1 No2 Don't Know.....8 N/A (<6MONTHS)9	YES.....1 No2 Don't Know.....8 N/A (<6MONTHS)9
CA1. HAS THE CHILD SUFFERED FROM DIARRHEA IN THE PAST TWO WEEKS? (DIARRHEA IS DEFINED AS 3 OR MORE LOOSE STOOLS IN A DAY)	YES.....1 No.....2 → CA5 Don't Know.....8 → CA5	YES.....1 No.....2 → CA5 Don't Know.....8 → CA5	YES.....1 No.....2 → CA5 Don't Know.....8 → CA5
DURING THE LAST DIARRHEA, DID YOUR CHILD (CHILD) HAS TAKEN ONE OF THE FOLLOWING ITEMS:			
CA2A. ORAL REHYDRATION THERAPY ORS FROM UNICEF?	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8
CA2B. A HOMEMADE LIQUID (RECOMMENDED HOME SALT/SUGAR DRINK)AND ADVISED BY HEALTH AGENTS?	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8
CA2c. DURING THE LAST DIARRHEA, DID YOUR CHILD (NAME) TAKE ZINC TABLETS FOR 10DAYS	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8
CA3. DURING THE LAST DIARRHEA EPISODE, DID YOUR CHILD (NAME) HAS RECEIVED LESS LIQUID AS USUALLY OR MORE THAN BEFORE?	LESS THAN BEFORE.....1 ABOUT THE SAME QUANTITIES THAN BEFORE2 MORE THAN BEFORE.....3 Don't Know.....8	LESS THAN BEFORE.....1 ABOUT THE SAME QUANTITIES THAN BEFORE2 MORE THAN BEFORE.....3 Don't Know.....8	LESS THAN BEFORE.....1 ABOUT THE SAME QUANTITIES THAN BEFORE2 MORE THAN BEFORE.....3 Don't Know.....8
CA4. . DURING THE LAST DIARRHEA EPISODE, DID YOUR CHILD (NAME) HAS EATEN LESS FOOD AS USUALLY OR MORE THAN BEFORE?	LESS THAN BEFORE.....1 ABOUT THE SAME QUANTITIES THAN BEFORE2 MORE THAN BEFORE.....3 Don't Know.....8	LESS THAN BEFORE.....1 ABOUT THE SAME QUANTITIES THAN BEFORE2 MORE THAN BEFORE.....3 Don't Know.....8	LESS THAN BEFORE.....1 ABOUT THE SAME QUANTITIES THAN BEFORE2 MORE THAN BEFORE.....3 Don't Know.....8
CA5A. HAS THE CHILD (NAME) SUFFERED FROM FEVER IN THE PAST TWO WEEKS? (MALARIA IS DEFINED AS HIGH FEVER IN MALARIAL EPIDEMIC AREA)	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8
CA5B. DURING THE MALARIA, DID YOUR CHILD (NAME) TAKE ANTI MALARIA TREATMENT AS PER THE NATIONAL PROTOCOL WITHIN 24 HRS?	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8
CA6. HAS THE CHILD (NAME) SUFFERED FROM COUGH IN THE PAST TWO WEEKS?	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8

CA7. DURING THE COUGH, YOUR CHILD HAD TROUBLE BREATHING, OR BREATHED FASTER THAN USUAL WITH QUICK, SHORT BREATHS)?		YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8																											
CA8. VERIFY CA 5 and CA 6 : FEVER OR COUGH?		"If YES" TO CA5 OR TO CA6, IF NOT GO TO → CA11 	"If YES" TO CA5 OR TO CA6, IF NOT GO TO → CA11 	"If YES" TO CA5 OR TO CA6, IF NOT GO TO → CA11 																											
CA9. DURING THE OF COUGH OR FEVER ,HAVE YOU SEEK FOR TREATMENT?		YES.....1 No2 DON'T KNOW.....8 → CA11	YES.....1 No2 DON'T KNOW.....8 → CA11	OUI.....1 NON2 NSP.....8 → CA11																											
CA10. WHERE DID YOU SEEK TREATMENT OR ADVISE?		YES NO	YES NO	YES NO																											
CA10a. HOSPITAL		1 2	1 2	1 2																											
CA10b. PRIVATE CLINIC		1 2	1 2	1 2																											
CA10c. HEALTH CENTER		1 2	1 2	1 2																											
CA10d. PHARMACY		1 2	1 2	1 2																											
CA10e. SHOP		1 2	1 2	1 2																											
CA10f. TRADITIONAL HEALER		1 2	1 2	1 2																											
CA10g. ITINERANT SELLER		1 2	1 2	1 2																											
CA10h. OTHERS, PLEASE PRECISE		1 2	1 2	1 2																											
CA 11a. DO YOU CHANGE THE CHILD FEEDING PATTERN DURING ILLNESS ?		YES.....1 No2 Don't Know..... 8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know..8																											
CA11.B IF YES WHAT DID YOU DO?	BREASTFEED MORE OFTEN	1	1	1																											
	AMOUNT OF FOOD INCREASED	2	2	2																											
	BREASTFEED LESS OFTEN	3	3	3																											
	AMOUNT OF FOOD REDUCED	4	4	4																											
	ONLY LIQUID IS GIVEN	5	5	5																											
CA12. USUALLY WHEN ARE YOU WASHING ? <i>NB. Ask only one time a mother even if she has many children 0- 59 months</i>		<table border="0"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>A. AVANT DE PREPARER A MANGER.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>B. AVANT DE PREPARER A MANGER POUR LES ENFANTS</td> <td>1</td> <td>2</td> </tr> <tr> <td>C. AVANT DE NOURRIR LES ENFANTS.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>D.AVANT LE REPAS</td> <td>1</td> <td>2</td> </tr> <tr> <td>E.APRES LE REPAS.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>F. APRES AVOIR DEFEQUE.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>G. APRES AVOIR NETTOYE UN ENFANT QUI A DEFEQUE.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>H. AUTRES (À PRÉCISER).....</td> <td>1</td> <td>2</td> </tr> </tbody> </table>				Yes	No	A. AVANT DE PREPARER A MANGER.....	1	2	B. AVANT DE PREPARER A MANGER POUR LES ENFANTS	1	2	C. AVANT DE NOURRIR LES ENFANTS.....	1	2	D.AVANT LE REPAS	1	2	E.APRES LE REPAS.....	1	2	F. APRES AVOIR DEFEQUE.....	1	2	G. APRES AVOIR NETTOYE UN ENFANT QUI A DEFEQUE.....	1	2	H. AUTRES (À PRÉCISER).....	1	2
	Yes	No																													
A. AVANT DE PREPARER A MANGER.....	1	2																													
B. AVANT DE PREPARER A MANGER POUR LES ENFANTS	1	2																													
C. AVANT DE NOURRIR LES ENFANTS.....	1	2																													
D.AVANT LE REPAS	1	2																													
E.APRES LE REPAS.....	1	2																													
F. APRES AVOIR DEFEQUE.....	1	2																													
G. APRES AVOIR NETTOYE UN ENFANT QUI A DEFEQUE.....	1	2																													
H. AUTRES (À PRÉCISER).....	1	2																													
CA12 A. IF YES, WHAT DO YOU USED ?		EAU SIMPLE.....1 EAU +SABLE+CENDRE.....2 EAU+SAVON.....3 AUTRES.....8																													

CA13. WHAT KIND OF WATER DO YOUR DRINK IN YOUR HOUSEHOLD ?		Yes	No
	ROBINET A DOMICILE.....	1	2
	FONTAINE OU ROBINET PUBLIC.....	1	2
	FORAGE.....	1	2
	PUITS	1	2
	RIVIERE OU FLEUVE.....	1	2
	AUTRES.....	1	2
SI AUTRES VEUILLEZ PRECISEZ LA QUELLE SOURCE : _____			
CA14. DOES YOUR HOUSEHOLD HAS ITS OWN TOILET/LATRINE THAT ONE COULD VISIT?	YES.....	1	
	NON.....	2	

4.2. INFANT AND YOUNG CHILD FEEDING (IYCF) – MOTHERS OF CHILDREN AGED 0-23 MONTHS

	CHILD 1	CHILD 2	CHILD 3
CHILD IDENTIFICATION	____ ____ ____	____ ____ ____	____ ____ ____
BF1. HAS YOUR CHILD (NAME) BEEN EXCLUSIVELY BREASTFED DURING HIS 6 FIRST MONTH OF BIRTH?	YES.....1 NO..... 2 → BF4 DON'T KNOW.8 → BF4	YES.....1 NO..... 2 → BF4 DON'T KNOW8 → BF4	YES.....1 NO..... 2 → BF4 DON'T KNOW8 → BF4
BF2. HOW LONG AFTER BIRTH YOUR CHILD (NAME) WAS PUT TO THE BREAST FOR THE FIRST TIME?	LESS THAN ONE HOUR1 1 - 24 HOURS2 > 24 HOURS3 DON'T KNOW.....8	LESS THAN ONE HOUR ...1 1 - 24 HOURS2 > 24 HOURS3 DON'T KNOW.....8	LESS THAN ONE HOUR1 1 - 24 HOURS2 > 24 HOURS3 DON'T KNOW.....8
BF3. HAVE YOU GIVEN COLOSTRUMS TO YOUR CHILD (NAME)? <i>COLOSTRUMS IS DEFINED AS THE FIRST BREAST MILK YELLOWISH (PLEASE, GET LOCAL DEFINITION OF COLOSTRUMS)</i>	YES.....1 No2 Don't Know..... 8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8
BF4. YESTERDAY DURING THE DAY OR NIGHT TIME, DID YOU BREASTFEED YOUR CHILD (NAME)?	YES.....1 No2 Don't Know..... 8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8
IS THE CHILD STILL BREASTFEEDING	YES1 No.....2 DON'T KNOW.....8	YES1 No.....2 DON'T KNOW.....8	YES1 No.....2 DON'T KNOW.....8
IF NO, HOW OLD WAS THE CHILD WHEN BREAST FEEDING WAS STOPPED?	<3 MONTHS.....1 3-5 MONTHS.....2	<3 MONTHS.....1 3-5 MONTHS.....2	<3 MONTHS.....1 3-5 MONTHS.....2
AT WHAT AGE WAS THE CHILD INTRODUCED TO WATER OR OTHER LIQUIDS AND SOLIDS (SUCH AS PORRIDGE)?	< 1 MONTH.....1 1-2 MONTHS.....2 3 – 4 MONTHS.....3 5 MONTHS.....4 6 MONTHS.....5	< 1 MONTH.....1 1-2 MONTHS.....2 3 – 4 MONTHS.....3 5 MONTHS.....4 6 MONTHS.....5	< 1 MONTH.....1 1-2 MONTHS.....2 3 – 4 MONTHS.....3 5 MONTHS.....4 6 MONTHS.....5
BF5 . SINCE THIS TIME YESTERDAY, DID (NAME) RECEIVE ANY OF THE FOLLOWING: <i>(READ EACH ITEM ALOUD AND RECORD RESPONSE BEFORE PROCEEDING TO THE NEXT ITEM).</i>	YES No	YES No	YES No
BF5A. VITAMIN, MINERAL SUPPLEMENTS OR MEDICINE?	1 2	1 2	1 2
BF5B. PLAIN WATER?	1 2	1 2	1 2
BF5C. SWEETENED, FLAVORED WATER OR FRUIT JUICE OR TEA OR INFUSION?	1 2	1 2	1 2
BF5D. ORAL REHYDRATION SOLUTION (ORS)?	1 2	1 2	1 2
BF5E. INFANT FORMULA?	1 2	1 2	1 2
BF5F. CANNED, POWDERED OR FRESH MILK?	1 2	1 2	1 2
BF3G. ANY OTHER LIQUIDS?	1 2	1 2	1 2

BF5H. SOLID OR SEMI-SOLID (MUSHY) FOOD?	1	2	1	2	1	2			
BF5J. SOLID FOOD OR SEMI-LIQUID FOOD (PORRIDGE,PUREE, MUSH OF VEGETABLE) ?	1	2	1	2	1	2			
BF5K. BREAD, PASTA, COUSCOUS OR OTHER FOOD MADE FROM CEREALS	1	2	1	2	1	2			
BF5L. GRAINS, ROOTS & TUBERS (MAIZE, CASAVA, SWEET POTATO ETC)?	1	2	1	2	1	2			
BF5M. VITAMIN A RICH FRUITS & VEGATABLES (RIPE MANGO, PAPAYA, KALE, SPINACH, AMARANTH, CARROT)?	1	2	1	2	1	2			
BF5N. ANY OTHER FRUITS OR VEGETABLES (BANANAS, BEET ROOTS, OKRA)?	1	2	1	2	1	2			
BF5O. DAIRY PRODUCTS (MILK, YOGURT, CHEESE ETC?	1	2	1	2	1	2			
BF5P. EGG ?	1	2	1	2	1	2			
BF5R. FLESH FOOD (MEAT, POULTRY, LIVER/ORGAN MEATS?	1	2	1	2	1	2			
BF5S. FRESH FISH, SHELLFISH AND OTHER SEA FOOD ETC?	1	2	1	2	1	2			
BF5T. INSECTS, LOCUSTS AND OTHER ETC.	1	2	1	2	1	2			
BF5V. LEGUMES AND NUTS (BEANS, PEAS, LENTILS ETC)?	1	2	1	2	1	2			
BF5W. OIL, FAT STREAKY BACON, BUTTER , MARGARINE AND OTHER FAT FOOD?	1	2	1	2	1	2			
BF6. YOUR CHILD (NAME) AGED 12 – 23 MONTHS CONTINUE TO BE BREASTFEED IN ADDITION TO COMPLEMENTARY FOOD YOU ARE GIVEN TO HIM?	YES.....1 No2 Don't Know.. 8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8	YES.....1 No2 Don't Know.....8					
BF6A. IN ADDITION TO THE BREAST MILK, HOW MANY MEALS ARE YOU GIVEN TO YOUR CHILD (NAME) A DAY?		1 meals	2 meals	3 meals	≥ 4 meals	1= cups	2=Cup +spoon	3=bottle food	4= others
	6-8 months								
	9-11 months								
	12-24 months								
	>24 months								

4.2. IMMUNIZATION (IM) - CHILDREN 12-23 MONTHS

Si une carte de vaccination est disponible, copiez les dates de chaque type de vaccin inscrites sur la carte.

IDENTIFIANT ENFANT		_ _ _ _		_ _ _ _		_ _ _ _	
(NOM) A-T-IL /elle ETE VACCINÉ POUR :							
PLEASE COPY DATES OF VACCINATION FROM THE IMMUNIZATION CARD	DATE OF VACCINATION JJ/MM/AA	1 =ACCORDING TO THE CARD 2 = SELON LE SOUVENIR DE LA MERE 3 = NON 8 = NSP	DATE DE VACCINATION JJ/MM/AA	1 = SELON LE CARNET 2 = SELON LE SOUVENIR DE LA MERE 3 = NON 8 = NSP	DATE DE VACCINATION JJ/MM/AA	1 = SELON LE CARNET 2 = SELON LE SOUVENIR DE LA MERE 3 = NON 8 = NSP	
IM4A. BGC (PLEASE CHECK IT ON THE ARM)	___/___/___	1 2 3 8	___/___/___	1 2 3 8	___/___/___	1 2 3 8	
IM4B. PENTA1	___/___/___	1 2 3 8	___/___/___	1 2 3 8	___/___/___	1 2 3 8	
IM4C. PENTA 2	___/___/___	1 2 3 8	___/___/___	1 2 3 8	___/___/___	1 2 3 8	
IM4D. PENTA 3	___/___/___	1 2 3 8	___/___/___	1 2 3 8	___/___/___	1 2 3 8	
IM4E YELLOW FEVER	___/___/___	1 2 3 8	___/___/___	1 2 3 8	___/___/___	1 2 3 8	

IM4E. MEASLES	___/___/___	1	2	3	8	___/___/___	1	2	3	8	___/___/___	1	2	3	8
---------------	-------------	---	---	---	---	-------------	---	---	---	---	-------------	---	---	---	---

4.4. SANTÉ DE LA MÈRE ET DU NOUVEAU-NÉ (MN) (MERES DES ENFANTS DE 0 - 11 MOIS)

CE MODULE S'ADRESSE À TOUTES LES FEMMES QUI ONT EU UNE NAISSANCE VIVANTE OU DÉCÉDÉE AU COURS DES 12 DERNIERS MOIS AYANT PRÉCÉDÉ LA DATE DE L'INTERVIEW. VÉRIFIER LE DERNIER ENFANT ET INSCRIRE ICI LE NOM DU DERNIER ENFANT _____. EN POSANT LES QUESTIONS SUIVANTES, UTILISER LE NOM DE L'ENFANT OU C'EST INDIQUE.

IDENTIFIANT ENFANT	___ ___	___ ___	___ ___
MN1. POUR LA GROSSESSE DE (NOM), AVEZ-VOUS REÇU DES SOINS PRÉNATALS ?	Oui.....1 Non..... 2 → MN5 NSP8 → MN5	Oui.....1 Non..... 2 → MN5 NSP8 → MN5	Oui..... 1 Non.....2 → MN5 NSP 8 → MN5
MN2. COMBIEN DE FOIS AVEZ-VOUS ÉTÉ CONSULTÉE ?	Une seule fois.....1 Deux à trois fois.....2 Quatre fois et plus.....3 NSP.....8	Une seule fois.....1 Deux à trois fois.....2 Quatre fois et plus.....3 NSP.....8	Une seule fois.....1 Deux à trois fois.....2 Quatre fois et plus.....3 NSP.....8
MN3. EST-CE QUE VOUS AVEZ REÇU UNE DOSE DE VACCINATION ANTITÉTANIQUE ?	Oui.....1 Non..... 2 → MN5 NSP8 → MN5	Oui.....1 Non..... 2 → MN5 NSP8 → MN5	Oui.....1 Non.....2 → MN5 NSP8 → MN5
MN4. COMBIEN DE FOIS VOUS AVEZ REÇU CETTE DOSE ?	Une seule fois.....1 Deux à trois fois.....2 Quatre fois et plus.....3 NSP.....8	Une seule fois.....1 Deux à trois fois.....2 Quatre fois et plus.....3 NSP.....8	Une seule fois.....1 Deux à trois fois.....2 Quatre fois et plus.....3 NSP.....8
MN5. IN THE FIRST 2 MONTHS AFTER DELIVERY OF YOUR YOUNGEST CHILD, DID YOU RECEIVE A VAC LIKE THIS (SHOW CAPSULE) FOR YOURSELF?	Yes.....1 No.....2 Don't know.....8	Yes.....1 No.....2 Don't know.....8	Yes.....1 No.....2 Don't know.....8
MN4. WHEN YOU WERE PREGNANT WITH (CHILD'S NAME), DID YOU RECEIVE OR BUY ANY IRON TABLETS? (SHOW TABLET)	Yes.....1 No.....2 Don't know.....8	Yes.....1 No.....2 Don't know.....8	Yes.....1 No.....2 Don't know.....8
MN5. FOR HOW MANY DAYS DID YOU TAKE THE TABLETS?	≥ 4month.....1 <4months.....2 Don't Know.....8	≥ 4month.....1 <4months.....2 Don't Know.....8	≥ 4month.....1 <4months.....2 Don't Know.....8
MN6. DID YOU DO ANYTHING TO PREVENT MALARIA DURING YOUR LAST PREGNANCY?	sleeping under an untreated bednet.....1 sleeping under a treated bednet.....2 sleeping under a LLIN.....3 took drugs.....4 other.....5	sleeping under an untreated bednet.....1 sleeping under a treated bednet.....2 sleeping under a LLIN.....3 took drugs.....4 other.....5	sleeping under an untreated bednet.....1 sleeping under a treated bednet.....2 sleeping under a LLIN.....3 took drugs.....4 other.....5

MN7. DO YOU HAVE A LLIN THAT WAS FACTORY TREATED WITH A LONG LASTING INSECTICIDE?	Yes..... 1 No.....2 Don't Know.....8	Yes..... 1 No.....2 Don't Know.....8	Yes..... 1 No.....2 Don't Know.....8
MN8. ASK ONLY IF THE ANSWER TO Q22.1 INCLUDES "DRUGS": WHICH DRUGS DID YOU TAKE	SP/Fansidar.....1 Other.....2 Don't know.....8	SP/Fansidar.....1 Other.....2 Don't know.....8	SP/Fansidar.....1 Other.....2 Don't know.....8
MN9. ASK ONLY IF THE ANSWER TO Q6.3 WAS "SP/FANSIDAR": HOW MANY TIMES DID YOU TAKE SP/FANSIDAR	# times _____	# times _____	# times _____
MN10. FROM WHERE DID YOU RECEIVE THESE DRUGS?	Government facility (hospital, clinic, mobile).....1 Mission health facility of any type.....2 Traditional birth attendant.....3 Private physician.....4 Pharmacy or chemical shop... 5 Peddlers.....6 Friend/relative.....7 Other.....8	Government facility (hospital, clinic, mobile).....1 Mission health facility of any type.....2 Traditional birth attendant.....3 Private physician.....4 Pharmacy or chemical shop... 5 Peddlers.....6 Friend/relative.....7 Other.....8	Government facility (hospital, clinic, mobile).....1 Mission health facility of any type.....2 Traditional birth attendant.....3 Private physician.....4 Pharmacy or chemical shop... 5 Peddlers.....6 Friend/relative.....7 Other.....8
MN11. WHERE DID YOU GIVE BIRTH?	Home1 Health facilities.....2 Other3	Home1 Health facilities.....2 Other3	Home1 Health facilities.....2 Other3
MN12. WHEN YOU GAVE BIRTH TO (NAME) WHO ASSISTED YOU WITH THE DELIVERY?	HEALTH PROFESSIONAL MEDICAL DOCTOR.....1 MIDWIFE.....2 NURSE.....3 NON HEALTH PROFESSIONAL (OTHERS) TRAINED TRADITIONAL BIRTH ATTENDANT.....4 NNT TRAINED TRADITIONAL ATTENDANT..... 5 NO ONE6	HEALTH PROFESSIONAL MEDICAL DOCTOR.....1 MIDWIFE.....2 NURSE.....3 NON HEALTH PROFESSIONAL (OTHERS) TRAINED TRADITIONAL BIRTH ATTENDANT.....4 NNT TRAINED TRADITIONAL ATTENDANT..... 5 NO ONE	HEALTH PROFESSIONAL MEDICAL DOCTOR.....1 MIDWIFE.....2 NURSE.....3 NON HEALTH PROFESSIONAL (OTHERS) TRAINED TRADITIONAL BIRTH ATTENDANT.....4 NNT TRAINED TRADITIONAL ATTENDANT..... 5 NO ONE6.