

Annex 10 Baseline Household Survey Report

LUFWANYAMA INTEGRATED NEWBORN AND CHILD HEALTH PROJECT IN ZAMBIA (LINCHPIN-ZAMBIA)



REPORT FOR THE BASELINE HOUSEHOLD SURVEY *FINAL DRAFT*

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ACRONYMS

ACT	Artemisinin-based Combination Therapy
ANC	Antenatal Clinic
BU/IRB	Boston University Institutional Review Board
CGHD	Center for Global Health and Development, Boston University
CCM	Community Case Management
CHW	Community Health Worker
CI	Confidence Intervals
CSO	Central Statistics Office
DHMT	District Health Management Team
IMR	Infant Mortality Rate
IPTp	Intermittent Preventive Therapy of Malaria in Pregnancy
ITN	Insecticide-treated Bed Net
LINCHPIN	Lufwanyama Integrated Neonatal and Child Health Program In Zambia
LUNESP	Lufwanyama Neonatal Survival Project
MOH	Ministry of Health
NCHS	National Center for Health Statistics
ORS	Oral Rehydration Solution
ORI	Oral Rehydration Therapy
NMR	Neonatal Mortality Rate
PNMR	Post-neonatal Mortality Rate
PNC	Postnatal Care
PPC	Postpartum Care
RDT	Rapid Diagnostic Test
SBA	Skilled Birth Attendant
SD	Standard Deviation
TBA	Traditional Birth Attendant
TDRC	Tropical Diseases Research Centre
TT	Tetanus Toxoid
U5MR	Under 5 Mortality Rate
WHO	World Health Organization
ZIMMAPS	Zambia Integrated Management of Malaria and Pneumonia Study

EXECUTIVE SUMMARY

Introduction: Save the Children, partnering with Center for Global Health and Development of Boston University and the Lufwanyama District Health Management Team, has launched a catalytic five-year *Innovation* project to decrease under-five mortality in Lufwanyama District in Zambia to increase the use of life-saving interventions through delivery channels that are accessible, available, high quality, demanded and supported. The strategy consists of an integrated, community-based newborn care and community case management of childhood illness package delivered through an enhanced district-wide community health program linked to health facilities and consistent with Ministry of Health plans and policies. This household survey was conducted as part of a comprehensive baseline evaluation to inform the strategy, refine targets, and measure baseline indicators for impact assessment at the end of the project.

Methods: A proportional sampling method was used to select and interview 465 caregivers of children aged 0-23 months from all the nineteen catchment areas in the district. The study instrument was adapted from the RAPID CATCH 2008 questionnaire. Information collected included knowledge about neonatal and child illnesses; recent illnesses of children; actions taken during the illness including type and source of treatment; use of antenatal, delivery, neonatal and child health services; and barriers to accessing health services and interventions. Socio-demographic characteristics of respondents and family were also collected.

Results: The mean age of the respondents was 27.4 years and most of the caregivers were in the age group of 20-35 years. The average number of children per household was 3.7. Almost nine out of ten of the respondents indicated that they had some schooling but most of them only reached the primary level. 55% received at least four antenatal care visits during the pregnancy and 16.8% of them received their only antenatal care from TBAs. 94.4% received at least two tetanus toxoid vaccinations before the birth of their youngest child and at least two doses of sulfadoxine-pyrimethamine as intermittent preventive treatment of malaria in pregnancy. 36.1% were delivered by skilled personnel and 55.7% by trained TBAs. 78.3% were delivered with clean delivery kit. Cord clamp and new string/thread were most commonly used to tie the cord, and a new razor blade was used most often to cut the cord. Most children were dried/wiped (79.8%) and wrapped in a dry warm cloth or blanket (87.5%) immediately after birth before the placenta was delivered. Less than half of the babies (44.3%) were put to the breast immediately (within 1 hour) after birth. 72.7% of the babies received postnatal care in the first week, but only 28% received it in the first two days. Immunization coverage reported for measles was 85.3%, DPT1 92.2%, and DPT3 85.9% while 89.1% had received vitamin A supplementation. The proportion of children with fever/malaria, diarrhea/bloody stool and suspected pneumonia in the past two weeks was 39.4%, 27.1% and 15.5%. Only 11.2% of the children with fever/malaria and 12.5% with suspected pneumonia received early and appropriate treatment. No child with diarrhea received zinc. The proportion of underweight children was 22.8%.

Conclusion: This study has shown the importance of TBAs in the provision of maternal and newborn care and the need to improve the access to case management of malaria, diarrhea and pneumonia in this district. The LINCHPIN project of teaming TBAs and CHWs to provide maternal and newborn care integrated into a program providing community case management of malaria, diarrhea and pneumonia is the right strategy for this district.

1.0 BACKGROUND

An estimated 9 million children under five years of age died worldwide in 2007 with many of these deaths occurring in sub-Saharan Africa (WHO 2009). Zambia contributes approximately 1% of global child mortality, with some 85,000 deaths among children younger than 5 years old annually (UNICEF 2008). For the five-year period 2002-2006, the infant mortality rate (IMR) was reported as 70 per 1,000 live births and the under-five mortality rate (U5MR) as 119 over 1,000 live births (Zambia CSO 2009). This represents a significant downward trend when compared to the IMR of 95/1000 and U5MR of 158/1000 in the preceding five year period (1997-2001). However, the neonatal mortality rate (NMR) of 34/1000 and post-neonatal mortality rate (PNMR) of 36/1000 indicate that 29% of under-five deaths take place during the first month of life and 59% take place before the child's first birthday. Despite some improvement, Zambia is not on track to achieve Millennium Goal 4, a two thirds reduction in child mortality in 2015 compared to its 1990 level.

The main causes of child death in Zambia are (1) newborn conditions (23%); (2) pneumonia (22%); (3) malaria (19%); (4) diarrhea (17%); and (5) HIV/AIDS (16%) (Shiferaw 2007). Although effective interventions to prevent and/or treat neonatal and child mortality exist, children continue to die because the use of these interventions is low. Children with treatable conditions usually die at home, often untreated. The low coverage of these interventions is multi-factorial, involving challenges of access to, perceived quality of, and demand for service as well as the policy environment. Some of the challenges identified include understaffed health facilities, hard-to-reach communities, erratic availability of supplies and drug kits, lack of capacity of district health management teams (DHMTs) to lead and support health interventions, inability to harness and use community based resources and inadequacy of referrals (Nakwala 2007, Geslin 2007).

The Boston University Center for Global Health and Development (CGHD) working with local partners including the DHMTs has just completed two cluster randomized community based research projects. The first study, the Lufwanyama Neonatal Survival Project (LUNESP), used TBAs to deliver three essential newborn care interventions of resuscitation, thermal protection, and identification of newborns with signs of possible sepsis followed by the provision of a first dose of treatment (oral amoxicillin) and referral to the nearest health facility. The LUNESP approach has significantly reduced newborn mortality (Gill 2010). The second, the Zambia Integrated Management of Malaria and Pneumonia Study (ZIMMAPS), pioneered community case management (CCM) in Zambia. CHWs were trained to perform rapid diagnostic tests (RDT) and prescribe artemisinin-based combination therapies (ACT) based on RDT results and prescribe amoxicillin for non-severe pneumonia instead of referral. ZIMMAPS showed the capacity of CHWs to use RDTs, ACT and amoxicillin to manage both malaria and pneumonia at the community level (Yeboah-Antwi 2008). Several studies conducted in South Asia have also demonstrated the effectiveness of using community based health workers to reduce neonatal and child mortality (Bang 1999, Bang 1990, Bang 2005, Jokhio 2005, Baqui 2008, Kumar 2008, Bhutta 2008).

Building upon the findings of LUNESP, ZIMMAPS and studies in South Asia, Save the Children has obtained funds from USAID, ELMA Philanthropies, and a private donor to partner with CGHD and the Lufwanyama DHMT to implement a catalytic five-year *Innovation* project to decrease under-five mortality in Lufwanyama District in Zambia by increasing the use of life-saving interventions through delivery channels that are accessible, available, high quality, demanded and supported. The strategy will consist of an integrated, community-based newborn care and CCM package delivered through an enhanced district-wide community health program linked to health facilities and consistent with Ministry of Health (MOH) plans and policies. The core innovation will be an integrated TBA-CHW team to provide community-based newborn and under-five (0-59 months) care in a government setting.

The project will have four technical intervention areas: 1) Maternal and Newborn Care (40%) which is aimed at providing antenatal care, delivery with clean birth kits for those who cannot deliver at health facility and newborn care including postnatal care. 2) Pneumonia Case Management (PCM) (20%). This is aimed at increasing access to, and availability of, non-severe pneumonia case management services and facilitated referrals delivered by community based volunteers. 3) Malaria Prevention and Treatment (20%) through the use of RDTs and artemether-lumefantrine delivered by CHWs; and 4) Control of Diarrheal Disease (CDD) (20%) delivered by CHWs using low osmolarity ORS and zinc therapy.

Prior to implementing the project, this household survey was conducted as one of comprehensive baseline evaluations to inform the strategy, refine targets, and measure baseline indicators for impact assessment at the end of the project.

2.0 GOAL, OBJECTIVES AND INDICATORS

2.1 Study Goal

To conduct a comprehensive baseline evaluation to identify context-specific information to aid the design and refining of activities for the innovation project, refine targets, and measure baseline indicators for comparison at the end of the project.

2.2 Objective

To measure the knowledge, availability and use of neonatal and child survival interventions.

2.3 Indicators

The following indicators from rapid CATCH indicators as recommended by CORE Monitoring and working group (KPC 2000+) were used:

Antenatal care

Percentage of mothers with children age 0-23 months who received at least four antenatal care visits during the pregnancy of their youngest child.

Maternal tetanus toxoid (TT) vaccination

Percentage of mothers with children age 0-23 months who received at least two TT vaccinations before the birth of their youngest child.

Skilled Delivery Assistance

Percentage of children age 0-23 months whose births were attended by skilled personnel (i.e. qualified medical professionals such as a midwife/nurse, clinical officer or medical doctor)

Postnatal visit to check on newborn within the first 3 days after birth

Percentage of children age 0-23 who received a post-natal visit from an appropriate trained health worker within three days after the birth of the youngest child (appropriately trained health workers includes: skilled birth attendant (SBA) or trained community health worker (CHW) which includes trained traditional birth attendants (TBA).

Exclusive Breastfeeding

Percentage of children age 0-5 months who were exclusively breastfed during the last 24 hours

Appropriate complimentary feeding

Percent of infants and young children age 6-23 months fed at least three of the food groups during the night and day before the survey.

Underweight

Percentage of children 0-23 months who are underweight (-2 SD for the median weight-for-age, according to WHO/NCHS reference population).

Vitamin A supplementation

Percentage of children age 6-23 months who received a dose of vitamin A in the last 6 months (Mother's recall or documented)

Measles vaccination

Percentage of children age 12-23 months who received a measles vaccination

Access to immunization services

Percentage of children age 12-23 months who received a DPT1 vaccination before they reached 12 months.

Health system performance regarding immunization services

Percentage of children age 12-23 months who received a DPT3 vaccination before they reached 12 months.

Appropriate treatment for malaria/fever

Percentage of children age 0-23 months with a febrile episode during the last two weeks who were treated with an effective anti-malarial drug

Early and appropriate treatment for malaria/fever

Percentage of children age 0-23 months with a febrile episode during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began.

Malaria prevention: insecticide-treated bed net ITN use

Percentage of children age 0-23 months who slept under an ITN the previous night.

ORT use

Percentage of children age 0-23 months with diarrhea in the last two weeks who received oral rehydration solution (ORS) and/or recommended home fluids.

Point of use

Percentage of households of children age 0-23 months that treat water effectively (i.e. by boiling, chlorination, solar, disinfection, or filtration to reduce or eliminate microbiological contaminants) before drinking

Appropriate hand washing practices

Percentage of mothers of children 0-23 months who live in a household with soap or a locally appropriate cleanser at the place for hand washing that and who washed their hands with soap at least 2 of the appropriate times during the day or night before the interview

Appropriate care seeking for pneumonia

Percentage of children age 0-23 months with chest-related cough and fast and/ or difficult breathing in the last two weeks who were taken to an appropriate health provider (i.e. doctor, nurse, auxiliary nurse or community health provider trained in community case management of pneumonia)

3.0 METHODS**3.1 Study Site**

The study was conducted in Lufwanyama District in the Copperbelt Province of Zambia. Lufwanyama is a recently created, large, rural, undeveloped district with an estimated 2009 population of 85,033 extrapolated from the 2000 census (CSO 2003). At one time, it was part of an administrative zone called Ndola Rural. Despite its location in the mostly urban and industrialized Copperbelt, rural Lufwanyama District is plagued by deplorable physical infrastructure, poorly maintained roads that are frequently impassible during the rainy season, and a near complete absence of electricity except that produced locally by diesel generators, and no piped water or sewage. Lufwanyama's district health office is currently located outside the district in the town of Kalulushi, 14 kilometers west of the mining center town of Kitwe. Lufwanyama has 13 formal health care centers (11 health centers and two health posts) staffed exclusively by nurses, nurse midwives, and/or clinical officers – but not a single physician. Six other health posts have recently been constructed but are not yet operational because they lack personnel. As a consequence of all of these factors, a high proportion of basic health services are provided through several categories of minimally trained community workers – trained TBAs, trained CHWs, male motivators, safe motherhood agents, family planning agents, disease surveillance agents, malaria agents, tuberculosis agents, HIV/AIDS agents, family planning agents, as well as untrained TBAs and untrained CHWs.

3.2 Study Participants

Women resident in the study area with a living child aged below two years (0–23 months) were invited to participate in the survey. Those who refused to participate were excluded.

3.3 Sample Size and Sampling

The sample size calculation was based on the least prevalent condition among the key outcomes (indicators): treatment for pneumonia. It was assumed that 10% of children aged 0–23 months would have a history of cough and fast and/ or difficult breathing (pneumonia) during the last two weeks. The proportion of these children who received antibiotic treatment was 38.8% from the Zambia DHS 2007. The target for this project is to increase the proportion of children receiving antibiotic treatment to 70%. With 80% power at 95% confidence intervals (CI), we will need to enroll 45 children with fast/difficult breathing. Since the prevalence of fast/difficult breathing in children aged 0-23 months was estimated at 10%, we needed to recruit 450 women with children aged 0-23 months in the baseline survey. This sample size calculated from the formula below would give a high level of precision for the other outcomes since the prevalence of these conditions is higher.

$$n = \frac{\left[Z_{\alpha} \sqrt{(1 + 1/m) \bar{p}(1 - \bar{p})} + Z_{\beta} \sqrt{p_0(1 - p_0)/m + p_1(1 - p_1)} \right]^2}{(p_0 - p_1)^2}$$

$$\bar{p} = \frac{p_1 + m p_0}{m + 1} \quad n_c = \frac{n}{4} \left(1 + \sqrt{1 + \frac{2(m + 1)}{n m |p_0 - p_1|}} \right)^2$$

p0 = Probability of event in Control Group

p1 = Probability of event in Experimental Group

m = Ratio of controls to experiment subjects

nc = Continuity correction factor

The sample size was recruited from all of the 19 health facility catchment areas proportional to their population. In each health facility catchment area, one or more villages were randomly selected to ensure that no more than 15 households were enrolled from each village (Annex 1).

In each village, households with mothers with young children (0-23 months) were selected systematically. The center of the village was identified with the help of the village headman and a bottle was spun to determine in which direction to select the first house. An integer “n” from 1-9 was randomly selected by the data collector and the nth house along the ray was selected as the first house. The next house selected was the one with the door nearest to the previous selected house and this continued until the number of survey participants for the village which was 15 was attained. If the selected household did not have a mother with 0-23 month old child, it was replaced by going to the next household. If the household has more than two mothers with a child of this age, the first to be introduced will be recruited. If the mother had more than one child < 24 months, the questions were related to the youngest child.

3.4 Selection and Training of Interviewers

The data collectors, formerly employed by the LUNESP project and now employed by Save the Children-LINCHPIN as community mobilizers, were selected as the interviewers. The team

members (8 males and 4 females) were literate with the level of education ranging from Grades 9-12. The added advantage was that they were very familiar with the study site.

Four-day training for the interviewers was conducted at Chapula in Lufwanyama from 27th to 30th January 2010. There were three facilitators, two from the Tropical Diseases Research Centre (TDRC) in Ndola (a social scientist and a research scientist) and the Principal Investigator from Boston University (CGHD) in the United States. The training was participatory and used several relevant methods including lectures, discussions and role plays. They were trained on how to use the household survey form. They were taken through the forms question by question, explaining each thoroughly and detailing the information required. The training also covered the protection of human subjects, confidentiality and the process of obtaining informed consent.

3.5 Data Collection

The study instrument was adapted from the RAPID CATCH 2008 questionnaire. The information collected included knowledge about neonatal and child illnesses, recent illnesses of children, actions taken during the illness including type and source of treatment, use of antenatal, delivery, neonatal and child health services, and barriers to accessing health services and interventions. Socio-demographic characteristics of respondents and family were also collected. The questionnaire consisted of the following parts:

- Demographics
- Maternal and newborn care
- Childhood illnesses
- Infant and young child feeding
- Vitamin supplementation and immunizations
- Water and sanitation

The questionnaire was pretested on the last day of the interviewers' training, and necessary modifications were made. It was also translated into the local language and each interviewer had a translated copy to guide in the asking of the questions. On assessing knowledge of danger signs of illness that warranted care in a health facility, the respondents were not prompted.

When an interviewer entered a household, he/she briefly introduced him/her self and the purpose of the visit and asked for mothers with child 0-23 months. When a respondent was identified, the interviewer excused the rest of the household and obtained some privacy with her and started the interview with informed consent process. He/she explained the purpose and rationale of the study and informed the participants that they would not be paid for participating, they were not obliged to participate, and they could refuse to answer any question. They were assured of confidentiality regarding any information they were going to provide. They were then asked to sign, mark, or thumbprint the consent form and offered the opportunity to receive a copy of the consent form. It was only after written informed consent was provided that the participant was interviewed with the questionnaire.

The interviewers were supervised by two key personnel of the LINCHPIN project, the deputy project manager and the monitoring and evaluation officer. Completed forms were checked by supervisors in the field. Forms were reviewed before collection and obvious errors and

incompletion corrected on the spot. Supervisors had a check list that was used to ensure that all details in all sections of the questionnaire were correctly completed.

3.6 Data Management and Analysis

Data entry and manipulation were undertaken using CS Pro through customized data entry screens with in-built range and consistency checks. All forms were entered twice by independent data entry clerks and completed data files compared. Errors were validated and reconciled.

Analysis was done using STATA/SAS software. Proportions of key indicators were calculated with 95% CI.

3.7 Ethical Considerations

Ethical approval was obtained from Boston University Institutional Review Board (BU/IRB) and the TDRC Ethical Review Committee. The consent form was developed in accordance with guidelines of BU/ IRB and the TDRC Ethical Review Committee. The consent form was translated into the local languages, which was verified and attested by a bilingual speaker.

4.0 RESULTS

A total of 465 caregivers of children 0-23 months were interviewed in all the 19 health facility areas ranging from 15 (one village) to 60 (four villages).

4.1 Socio-demographic Characteristics of Respondents and Households

The characteristics of respondents and household are shown in table 1. The mean age of the respondents was 27.4 years, and most of the caregivers were in the age group of 20-35 years. The average number of children per household was 3.7, and close to half of the women had 4 or more children. Almost nine out of ten of the respondents indicated that they had some schooling, but most of them reached primary level, with a mere 2.4% reaching higher level. When asked whether they worked outside to home to earn money to support the family, 37.6% responded in the affirmative, and half of this group was engaged in selling and trading. The head of the household was in most cases the husband/partner (82.0%), and the biological father of the target child in most cases lived with the family (83.8%, 95% CI: 80.1% - 87.0%).

4.2 Characteristics of Children

The characteristics of the children of the respondents are shown in table 2. The proportion of male children was 49.3%, and the mean age was 10.2 months. Two out of every 5 children were aged twelve months or more.

4.3 Maternal Care: Antenatal

All the women indicated that they received some form of antenatal care during the pregnancy of their last child with a mean of 3.7 visits; 55 % received at least four antenatal care visits during the pregnancy. About one in six women (16.8%) received their antenatal care only from TBAs. 439 of the mothers (94.4%) received at least two TT vaccinations before the birth of their youngest child. 81.9% of the women also received at least two doses of sulfadoxine-pyrimethamine as intermittent preventive treatment (IPTp) of malaria during the pregnancy of their last child and most of the women used ITNs during their pregnancy (Table 3).

When asked about the mothers' knowledge of danger signs in pregnancy, only 34.4% knew that vaginal bleeding during pregnancy was serious and needed urgent attention (Table 4). 76.1% (95% CI: 71.9 – 79.9) of the women knew two complications, and 19.6% (95% CI: 16.1 – 23.5) knew at least four complications. Very few (5.2% [95% CI 3.4 – 7.7]) knew no complication in pregnancy that warranted immediate referral to health facility.

Table 1: Socio-demographic characteristics of respondents and household

	Numerator	Denominator	Percent	95% CI
Maternal age				
< 20 years	62	462	13.4	10.5-16.9
20 – 35 years	335	462	72.5	68.2-76.5
> 35 years	65	462	14.1	11.1-17.7
Number of children				
1	82	465	17.6	14.3-21.5
2 – 3	167	465	35.0	31.6-40.5
≥4	216	465	46.5	41.9-51.5
Level of education				
No education	50	465	10.8	8.2-14.0
Primary	289	465	62.1	57.6-66.5
Secondary	115	465	24.7	20.9-29.0
Higher	11	465	2.4	1.2-4.3
Head of household				
Mother	42	465	9.0	6.7-12.1
Husband/partner	381	465	82.0	78.1-85.3
Female relative	18	465	3.9	2.4-6.2
Male relative	16	465	3.4	2.0-5.6
Other	8	465	1.7	0.8-3.5
Work outside home to earn money				
No work	290	465	62.4	57.8-66.8
Farm labor	41	465	8.8	6.5-11.9
Selling/trading	108	465	23.2	19.5-27.4
Salaried worker	16	465	3.4	2.0-5.6
Other	10	465	2.2	1.1-4.1

Table 2: Characteristics of children

	Numerator	Denominator	Percent	95% CI
Sex of child (n =465)				
Male	229	465	49.2	44.6-53.9
Female	236	465	50.8	46.1-55.4
Age of child				
< 6 months	134	465	28.8	24.8-33.2
6 – 11 months	138	465	29.7	25.6-34.1
≥ 12 months	193	465	41.5	37.0-46.1

Table 3: Antenatal care

	Numerator	Denominator	Percent	95% CI
Antenatal care				
Received ≥ 4 more	255	465	55.1	50.4-59.7
Only 1 ANC visit	10	465	2.2	1.1-4.1
TBA only source of ANC	78	465	16.8	13.6-20.6
Maternal TT				
At least 2 before birth of last child	439	465	94.4	91.8-96.2
Received TT during pregnancy of last child	340	465	73.1	68.8-77.0
IPTp use				
Received IPTp	445	465	95.7	93.3-97.3
Received IPTp 2	289	465	81.9	78.1-85.3
Bednet use				
All the time	331	465	80.1	75.9-83.8
Most of the time	16	465	3.9	2.3-6.3
Some of time	43	465	10.4	7.7-13.9
Rarely	23	465	5.6	3.6-8.4

Table 4: Maternal knowledge of danger signs in pregnancy

Indicator	Numerator	Denominator	Percent	95% CI
Vaginal bleeding	160	465	34.4	30.1-38.9
Fast /difficult breathing	34	465	7.3	5.2-10.2
Fever	294	465	63.2	58.6-67.6
Severe abdominal pain	293	465	63.0	58.4-67.4
Headache or blurred vision	166	465	35.7	31.4-40.3
Convulsions	19	465	4.1	2.5-6.4
Foul smelling vaginal discharge	35	465	7.5	5.4-10.4
Baby not moving	106	465	22.8	19.1-26.9
Leaking brownish fluid from vagina	13	465	2.8	1.6-4.9

4. 4 Maternal Care: Delivery

Skilled personnel (i.e. qualified medical professionals such as a midwife/nurse, clinical officer or medical doctor) delivered only 168 (36.1%) of the respondents. However, 78.3% were delivered with a clean delivery kit (Table 5).

Table 5: Delivery care

	Numerator	Denominator	Percent	95% CI
Place of delivery				
Health facility	173	465	37.2	32.8-41.8
Home	245	465	52.7	48.0-57.3
TBA hut	31	465	6.7	4.6-9.4
Other	16	465	3.4	2.0-5.6
Who conducted delivery				
Skilled personnel	168	465	36.1	31.8-40.4
Trained TBA	259	465	55.7	51.0-60.3
Others	66	465	14.2	11.2-17.8
Clean delivery kit				
Yes	364	465	78.3	74.2-81.9
No	34	465	7.3	5.2-10.2
Do not know	67	465	14.4	11.4-18.0

Regarding knowledge of danger signs at delivery, about half (52.5%) knew that excessive vaginal bleeding during delivery was serious and needed urgent attention (Table 6). 76.6% (95% CI: 72.4 – 80.3) knew two complications, and 18.7% (95% CI: 15.3 – 22.6) knew at least four complications. Few (5.4% [95% CI: 3.3 – 7.9]) knew no complication in pregnancy that warranted immediate referral to health facility.

Table 6: Maternal knowledge of danger signs during delivery

Indicator	Numerator	Denominator	Percent	95% CI
Vaginal bleeding	244	465	52.5	47.8-57.1
Fast /difficult breathing	19	465	4.1	2.5-6.4
High fever	233	465	50.1	45.5-54.7
Severe abdominal pain	335	465	72.0	67.7-76.0
Headache or blurred vision	150	465	32.3	28.1-36.7
Convulsions	39	465	8.4	6.1-11.4
Foul smelling discharge from vagina	24	465	5.2	3.4-7.7
Pain in calf	49	465	10.5	8.0-13.8
Verbalization	13	465	2.8	1.7-5.1

4.5 Maternal Care: Postpartum

Forty of the 77 (51.9%) women with children less than 3 months received postpartum care within the first week after delivery. In most cases, the care was provided by a nurse/midwife or a TBA (Table 7).

A little over half of the women (53.1%) were currently doing something or using some method to delay or avoid getting pregnant, and 46.7% were using modern method of contraception. The most common modern method of contraception used by nearly half (46.7%) of the women was injectable contraceptives.

Table 7: Postpartum care

	Numerator	Denominator	Percent	95% CI
Place of PPC				
Health center	20	40	50.0	33.8-66.2
Health post	1	40	2.5	0.1-13.2
Clients home	19	40	47.5	31.5-63.9
Who conducted PPC				
Nurse/midwife	19	40	47.5	31.5-63.9
TBA	16	40	40	24.9-56.7
CHW	4	40	10	2.8-23.7
Others	1	40	2.5	0.1-13.2
Using any form of contraception	247	465	53.1	48.5-57.7
Using modern method of contraception	217	465	46.7	42.1-51.3
Pills	87	465	18.7	15.3-22.6
Injectables	108	465	23.2	19.5-27.4
Implants	1	465	0.2	0.0-1.4
Male condom	17	465	3.7	2.2-5.9
Female condom	3	465	0.6	0.2-2.0
Diaphragm	1	465	0.2	0.0-1.4

4.6 Newborn Care

Cord clamp and new string/thread were most commonly used to tie the cord, and a new razor blade was used more often to cut the cord (Table 8). Of those who did not use a new razor blade to cut the cord, only 17.5% (95% CI: 12.5 – 23.5) boiled the instrument before using it to cut the cord. Only 15.3% of the women reported putting something on the cord, and in most cases it was baby powder.

Table 8: Cord care

		Numerator	Denominator	Percent	95% CI
Used to tie cord					
	New string/thread	200	465	43.0	38.5-47.7
	Cord clamp	208	465	44.7	40.2-49.4
	String or thread	40	465	8.6	6.3-11.6
	Do not know	17	465	3.7	2.2-5.9
Used to cut cord					
	New razor blade	237	465	51.0	46.3-55.6
	Scissors	183	465	39.3	34.9-44.0
	Razor blade	17	465	3.7	2.2-5.9
	Do not know	28	465	6.0	4.1-8.7
Cord application					
	Yes	71	465	15.3	12.2-18.9
	No	362	465	77.8	73.7-81.5
	Do not know	32	465	6.9	4.8-9.7

Most children were dried/wiped or wrapped in a dry warm cloth or blanket immediately after birth before the placenta was delivered (Table 9). Indeed, most (79.1%) were dried AND wrapped. Mothers reported that about one in eight (13.6% [95% CI: 10.6 – 17.1]) newborns did not cry or breathe easily immediately after birth; and in 88.9% of cases, something was done to aid crying or breathing. In addition to rubbing, drying and clearing the mouth to aid breathing or crying, tube-and-mask resuscitator (4), suction bulbs (2), mouth-to-mouth resuscitation (1) or putting on oxygen (1) were also described. Less than half (44.3%) of the babies were put to the breast immediately (within 1 hour) after birth.

Table 9: Newborn care

	Numerator	Denominator	Percent	95% CI
Dried immediately after birth				
Yes	371	465	79.8	75.8-83.3
No	76	465	16.3	13.2-20.1
Do not know	17	465	3.9	2.4-6.2
Wrapped immediately after birth				
Yes	407	465	87.5	84.1-90.3
No	42	465	9.0	6.7-12.1
Do not know	16	465	3.5	2.0-5.6
Aid breathing				
Rubbed	38	63	60.3	47.2-72.4
Dried	27	63	42.9	30.5-56.0
Mouth cleared	30	63	47.6	34.9-60.6
Put to breast immediately				
Yes	206	465	44.3	39.7-49.0
No	253	465	54.4	49.8-59.0
Do not know	6	465	1.3	0.5-2.9

About three in four (56/77 [72.7%]) mothers with children less than 3 months old reported receiving postnatal care within the first week, but only about one in four (21/77 [27.3%]) received it within two days after delivery. In most cases, the care was provided by a nurse/midwife or a TBA, and examination of the baby and checking the cord were frequently done (Table 10). In 85.7% (95% CI: 73.8 – 93.6) of cases, two essential newborn care actions were done during the visit, and in 35.7% (95% CI: 23.4 – 49.6) of cases at least four essential actions were performed.

Table 10: Postnatal care of baby

	Numerator	Denominator	Percent	95% CI
Place of PNC				
Health center	29	56	51.8	38.0-65.3
Health post	1	56	1.8	0.0-9.6
Clients home	26	56	46.4	33.0-60.3
Who conducted PNC				
Nurse/midwife	26	56	46.4	33.0-60.3
TBA	24	56	42.8	29.7-56.8
CHW	3	56	5.4	1.1-14.9
Others	3	56	5.4	1.1-14.9
Action taken during PNC				
Baby examined	49	56	87.5	75.9-94.8
Baby weighed	23	56	41.1	28.1-55.0
Cord checked	45	56	80.4	67.6-89.8
Counseled on breastfeeding	20	56	35.7	23.4-49.6
Breastfeeding observed	15	56	26.8	15.8-40.3
Counseled on skin to skin contact	11	56	19.6	10.2-32.4
Checked for danger signs	15	56	26.8	15.8-40.3
Counseled on danger signs	13	56	23.2	13.0-36.4

4.7 Childhood Morbidity

183 of the 465 representing 39.4% (95% CI: 34.9 – 44.0) were classified as having fever/malaria in the past two weeks. 126 representing 27.1% (95% CI: 23.2 – 31.4) and 72 representing 15.5% (95% CI: 12.4 – 19.2) were also classified as having diarrhea/bloody stool and suspected pneumonia, respectively. Mothers had fair knowledge of sick neonates (Table 11) and children (Table 12) needing immediate care at health facility. 69.9% (95% CI: 65.5 – 74.0) of mothers knew at least two danger signs of neonates needing prompt treatment at health facility, but only 11.2% (95% CI: 8.5 – 14.5) knew at least four danger signs. Few 7.5% (95% CI: 5.4 – 10.4) knew no danger sign in neonates needing prompt treatment at health facility. For childhood illnesses, 85.4% (95% CI: 81.8 – 88.4) of mothers knew at least two danger signs, and 22.4% (95% CI: 18.7 – 26.5) knew at least four danger signs. Only 1.1% (95% CI: 0.4 – 2.6) knew no danger sign.

Table 11: Maternal knowledge of danger signs in newborns

Indicator	Numerator	Denominator	Percent	95% CI
Convulsions	69	465	14.8	11.8-18.5
Fever	354	465	76.1	71.9-79.9
Poor sucking or feeding	149	465	32.0	27.9-36.5
Fast/difficult breathing	96	465	20.7	17.1-24.7
Feels cold	40	465	8.6	6.3-11.6
Too small or born too early	40	465	8.6	6.3-11.6
Redness or discharge around cord	86	465	18.5	15.1-22.4
Red swollen eyes/discharge	51	465	11.0	8.3-13.3
Yellow palms/soles/eyes	43	465	9.2	6.8-12.3
Lethargy	48	465	10.3	7.8-13.5
Unconscious	25	465	5.4	3.6-7.9

Table 12: Maternal knowledge of danger signs in children

Indicator	Numerator	Denominator	Percent	95% CI
Looking unwell /not playing	325	465	69.9	65.5-74.0
Not eating/drinking	241	465	51.8	47.2-56.5
Lethargic	85	465	18.3	14.9-22.2
High fever	387	465	83.2	79.4-86.4
Fast/difficult breathing	70	465	15.1	12.0-18.7
Vomiting everything	129	465	27.7	23.8-32.1
Convulsions	44	465	9.5	7.0-12.6

The most common means of getting to the nearest health centre or health post was by walking, and the average time to do so was 93.1 minutes (Table 13).

Table 13: Modes of transportation and time to nearest health facility

		Numerator	Denominator	Percent	95% CI
Mode of transportation					
	Walking	387	465	83.2	79.4-86.4
	Bicycle	65	465	14.0	11.0-17.5
	Vehicle	13	465	2.8	1.6-4.9
Time to health facility					
		Mean	Standard deviation	Max	
	Walking	93.1 min	76 min	420min	
	Bicycle	98.1 min	55min	240 min	
	Vehicle	83.1 min	16.9	105 min	

4.8 Sick Children: Fever/Malaria

Out of 183 with reported fever/malaria, 80 (43.7%) received some care or treatment at home. The most common care received at home was giving antipyretic (Table 14). 152 (83.1%) of the fever/malaria cases sought treatment outside the home. In most cases the treatment was sought at the health center. Only 13 (7.1% [95% CI: 3.3 – 11.8]) of the fever/malaria cases had a RDT done, and eight were positive. Only 12.4 and 11.2 % of the fever/ malaria cases received early effective antimalarial (ACT within 24 hours of onset of fever) and early, appropriate, and effective antimalarial therapy (ACT for three days starting within 24 hours of fever onset) respectively. For prevention, about nine of ten households (88.0%) had ITNs, but only about five in ten (51.0%) children slept under one the previous night.

Table 14: Fever/malaria treatment and prevention

	Numerator	Denominator	Percent	95% CI
Home treatment	80	183	43.7	36.4-51.2
Antimalarial (ACT)	13	80	16.3	8.9-26.2
Antipyretic	49	80	61.3	49.7-71.9
Sponged and washed	16	80	20	11.9-30.4
Traditional herbs	6	80	7.5	2.8-15.6
Sought treatment outside home	152	183	83.1	76.8-88.2
Health center	101	183	66.4	58.3-73.9
Health post	30	183	19.7	13.7-27.0
CHW	13	183	8.6	4.6-14.2
Other	8	183	5.3	2.3-10.1
Effective antimalarial (ACT) within 24 hours of fever onset				
Yes	22	178	12.4	7.9-18.1
No	156	178	87.6	81.9-92.1
Appropriate effective antimalarial (ACT) within 24 hours of fever onset				
Yes	20	178	11.2	7.0-16.8
No	158	178	88.8	83.2-93.0
Household with bednets				
Yes	409	465	88.0	84.6-90.7
No	56	465	12.0	9.3-15.4
ITN use the previous night				
Yes	237	465	51.0	46.3-55.6
No	228	465	49.0	44.4-53.7

4.9 Sick Children: Diarrhea/Bloody Stools

Out of 126 who reported diarrhea/bloody stool, 90 (71.4%) sought care outside the home, and in most cases the care was sought at the health center. 93 (73.8%) of the diarrhea/bloody stool cases received ORT (ORS and/or recommended home fluids). No child received zinc (Table 15). One in five (19.8%) and one in three (34.1%) mothers reported giving less breastfeeding or less other feeding during diarrhea, respectively. Very few reported giving more breastfeeding (17.5%) or other feeding (9.5%) during the illness.

Table 15: Diarrhea/bloody stools treatment

	Numerator	Denominator	Percent	95% CI
Sought treatment outside home	90	126	71.4	62.7-79.1
Health center	60	90	66.7	55.9-76.3
Health post	17	90	18.9	11.4-28.5
CHW	8	90	8.9	3.9-16.8
Hospital	1	90	1.1	0.0-6.0
Private clinic	1	90	1.1	0.0-6.0
Friend/Relative	2	90	2.2	0.3-7.8
Other	1	90	1.1	0.0-6.0
ORT use				
Yes	93	126	73.8	65.2-81.2
No	33	126	26.2	18.8-34.8
Other therapy				
Antibiotic	8	126	6.3	2.8-12.1
Antimotility agent	0	126	0	
Zinc	0	126	0	
Unknown pill	3	126	2.4	0.5-6.8
Injection	4	126	3.2	0.9-7.9
IV fluid	1	126	0.8	0.0-4.3
Herbs	9	126	7.1	3.3-13.1
Breast feeding during diarrhea				
Less than usual	25	126	19.8	13.3-27.9
Same amount	70	126	55.6	46.4-64.4
More than usual	22	126	17.5	11.3-25.2
Do not know	9	126	7.1	3.3-13.1
Feeding during diarrhea				
Less than usual	43	126	34.1	25.9-43.1
Same amount	57	126	45.2	36.4-54.3
More than usual	12	126	9.5	5.0-16.0
Exclusive breastfeeding	13	126	10.3	5.6-17.0
Do not know	1	126	0.8	0.0-4.3

196 of the respondents representing 42.2% (95% CI: 37.6 – 46.8) reported treating their water to make it safe for drinking. The commonest method of treating water was adding bleach or chlorine. 279 of the respondents representing 60% (95% CI: 55.4-64.5) also reported washing hands with detergent.

4.10 Sick Children: Pneumonia

About two thirds (66.7%) of the children with suspected pneumonia sought care from an appropriate health provider (doctor, clinical officer, nurse, auxiliary nurse or community health provider trained in CCM of pneumonia); but only half (50.0%) of the pneumonia cases received antibiotics, and very few (12.5%) received early and appropriate antibiotic for their pneumonia episode (Table 16).

Table 16: Pneumonia treatment

		Numerator	Denominator	Percent	95% CI
Appropriate care seeking					
	Yes	48	72	66.7	54.6-77.3
	No	24	72	33.3	22.9-45.4
Antibiotic therapy					
	Yes	36	72	50	38.0-62.0
	No	36	72	50	38.0-62.0
Early and appropriate antibiotic					
	Yes	9	72	12.5	5.9-22.4
	No	63	72	87.5	77.6-94.1

4.11 Breastfeeding and Nutrition

110 of the 134 women with children aged 0-5 months representing 82.1% (95% CI: 74.5 – 88.2) reported exclusively breastfeeding their children (Table 17). About half of the 6-23 month old children received appropriate complementary feeding (fed with at least three of the food groups during the night and day before the survey).

One in five (22.8%) children were underweight (<-2 SD for the median weight-for-age) (Table 18), and one in ten (10.8%) were severely underweight (<-3 SD for the median weight-for-age) (Table 19). The mean weight-for-age Z-Score was Mean (SD) WFA Z-Score -0.96 (Table 20). On average children's weight-for-age decreased dramatically (2.6 z-scores) from birth to 12-17 months of age, with some recovery thereafter for boys, but continued deterioration for girls during age 18-23 months.

Table 17: Breastfeeding and nutrition

		Numerator	Denominator	Percent	95% CI
Exclusive breastfeeding					
	Yes	110	134	82.1	74.5-88.2
	No	24	134	17.9	11.8-25.5
Appropriate complimentary feeding					
	Yes	171	329	52.0	46.4-57.5
	No	158	329	48.0	42.5-53.6
Underweight					
	Yes	93	408	22.8	18.9-27.2
	No	315	408	77.2	72.8-81.1

Table 18: Moderate and severe malnutrition: % WFA Z-Score < -2

Sex	0-5 months	6-11 months	12-17 months	18-23 months	0-23 months
Female	6.8 (4/59)	25.0 (17/68)	32.1 (18/56)	32.1 (9/28)	22.7 (48/211)
Male	8.8 (5/57)	20.0 (10/50)	41.8 (23/55)	20.0 (7/35)	22.8 (45/197)
Total	7.8 (9/116)	22.9 (27/118)	36.9 (41/111)	25.4 (16/63)	22.8 (93/408)

Table 19: Severe malnutrition: % WFA Z-Score < -3

Sex	0-5 months	6-11 months	12-17 months	18-23 months	0-23 months
Female	1.7 (1/59)	10.3 (7/68)	21.4 (12/56)	17.9 (5/28)	11.8 (25/211)
Male	1.8 (1/57)	6.0 (3/50)	20.0 (11/55)	11.4 (4/35)	9.6 (19/197)
Total	1.7 (2/116)	8.5 (10/118)	20.7 (23/111)	14.3 (9/63)	10.8 (44/408)

Table 20: Malnutrition: Mean (SD) WFA Z-Score

Sex	0-5 months	6-11 months	12-17 months	18-23 months	0-23 months
Female	0.68 (1.85)	-0.75 (1.80)	-1.59 (2.00)	-1.81 (1.50)	-0.72 (2.05)
Male	0.18 (1.70)	-0.90 (1.56)	-2.76 (5.69)	-1.50 (1.13)	-1.22 (3.44)
Total	0.43 (1.79)	-0.81 (1.69)	-2.17 (4.27)	-1.64 (1.31)	-0.96 (2.82)

4.12 Vitamin A Supplementation and Immunization

Vitamin A supplementation and immunization coverage in this population was high (Table 21). All indicators exceeded 85%.

Table 21: Vitamin A and immunization

		Numerator	Denominator	Percent	95% CI
Vitamin A					
	Yes	293	329	89.1	85.2-92.1
	No	36	329	10.9	7.9-14.9
Measles					
	Yes	163	191	85.3	79.5-90.0
	No	28	191	14.7	10.0-20.5
DPT 1					
	Yes	176	191	92.2	87.4-95.5
	No	15	191	7.8	4.5-12.6
DPT 3					
	Yes	164	191	85.9	80.1-90.5
	No	27	191	14.1	9.5-19.9

5.0 DISCUSSION

This household survey assessed the knowledge and use of maternal, neonatal and child interventions in a typical rural district in Zambia. The sampling method used ensured that data were collected from all the nineteen health facility catchment areas of the district, thus making the results reflective of the entire district.

Although the mean number of ANC visit was close to four, only 55% of the women received the recommended minimum four visits during their last pregnancy. This is lower than the national average of 60% for a rural area (CSO 2009). It is important to note that 16.8% of the women received their antenatal care only from TBAs. The proportion of women whose last birth was protected against neonatal tetanus (received at least two doses of TT) and malaria (received at least two doses of IPTp) was impressively higher than the national average. The proportion of women delivered by skilled providers in this study was not much different from the national average for rural areas but was different in terms of the TBA deliveries. In this district, trained TBAs conducted 55.7% of the deliveries compared to the national average of 30.8%. This highlights the importance of TBAs in maternal care in this district.

Most children were dried/wiped and wrapped in a dry warm cloth or blanket immediately after birth before the placenta was delivered. Considering that most of the deliveries were conducted by trained TBAs who were recently re-trained by the LUNESP team to deliver essential newborn care, it is reassuring to note that these TBAs are sustaining the skills acquired during the project.

Despite the excellent immunization and high vitamin A supplementation coverage, this area is surprisingly a community with a substantial burden of childhood illness. The proportions of children with fever/malaria, diarrhea/bloody stool and suspected pneumonia in the past two weeks were 39.4%, 27.1% and 15.5%, respectively. These proportions were far higher than the national average. The proportion of underweight children (<-2SD for the median weight-for-age)

of 22.8% is also quite high. The access to case management for these conditions is extremely low. Only 11.2% of the children with fever/malaria and 12.5% with suspected pneumonia received early and appropriate treatment for their condition. Zinc was not provided as an adjunct to the treatment of diarrhea at all. This is not surprising since currently case management of malaria with RDTs and ACT, and pneumonia with antibiotics happens only at health facilities and not at the community level, and the means of getting to these facilities are by walking or bicycle. On average, people have to walk more than one and half hours to get to a health facility. This situation calls for the introduction of improved CCM delivered by trained and supplied CHWs.

This study has shown the importance of TBAs in the provision of maternal and newborn care and the need to improve the access to case management of malaria, diarrhea and pneumonia in this district. The LINCHPIN project of teaming TBAs and CHWs to provide maternal and newborn care and CCM of malaria, diarrhea and pneumonia came at the right time.

This population-based survey is a rich data set for additional analyses, including: (1) comparing reported use of newborn interventions among respondents from LUNESP intervention vs. comparison communities; (2) comparing reported use of curative intervention among respondents from communities with CHW and/or TBAs vs. those from communities without them; (3) comparing reported use of curative (and preventive) interventions among respondents stratified by their communities' distance from health facilities; (4) stratifying indicators by common demographic and socio-economic variables (sex, maternal schooling, etc.).

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7.0 ANNEXES

7.1 Annex 1: LINCHPIN Rapid CATCH Indicators

CSHGP Intervention Area	Rapid CATCH Indicator	Numerator	Denominator	Percentage	95% CI
Maternal Newborn Care	(1) <u>Antenatal Care</u> : Percentage of mothers of children age 0-23 months who had four or more antenatal visits when they were pregnant with the youngest child	255	463	55.1%	50.4 – 59.7
	(2) <u>Maternal TT Vaccination</u> : Percentage of mothers with children age 0-23 months who received at least two Tetanus toxoid vaccinations before the birth of their youngest child	439	465	94.4%	91.8 - 96.2
	(3) <u>Skilled Birth Attendant</u> : Percentage of children age 0-23 months whose births were attended by skilled personnel	168	465	36.1%	31.8 – 40.4
	<u>*(4) Post-natal visit to check on newborn within</u>	21	77	27.3	17.7-38.6

CSHGP Intervention Area	Rapid CATCH Indicator	Numerator	Denominator	Percentage	95% CI
	<u>the first 2 days after birth:</u> Percentage of children age 0-23 who received a post-natal visit from an appropriate trained health worker within two days after the birth of the youngest child				
	(5) <u>Current Contraceptive Use Among Mothers of Young Children:</u> Percentage of mothers of children age 0-23 months who are using a modern contraceptive method	217	465	46.7%	42.1 – 51.3
Breastfeeding	(6) <u>Exclusive breastfeeding:</u> Percentage of children age 0-5 months who were exclusively breastfed during the last 24 hours	110	134	82.1%	74.5 – 88.2
Nutrition	(7) <u>Infant and Young Child Feeding:</u> Percent of infants and young children age 6-23 months fed according to a minimum of appropriate	171	329	52.0%	46.4 – 57.5

CSHGP Intervention Area	Rapid CATCH Indicator	Numerator	Denominator	Percentage	95% CI
	feeding practices.				
Vitamin A	(8) <u>Vitamin A Supplementation</u> in the last 6 months: Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months: card verified or mother's recall	293	329	89.1%	85.2 – 92.2
Immunization	(9) <u>Measles vaccination</u> : Percentage of children age 12-23 months who received a measles vaccination	163	191	85.3%	79.5 – 90.0
	(10) <u>Access to immunization services</u> : Percentage of children aged 12-23 months who received DTP1 according to the vaccination card or mother's recall by the time of the survey	176	191	92.2%	87.4 – 95.5
	(11) <u>Health System Performance regarding Immunization services</u> : Percentage of children aged 12-23 months who received DTP3	164	191	85.9%	80.1 – 90.5

CSHGP Intervention Area	Rapid CATCH Indicator	Numerator	Denominator	Percentage	95% CI
	according to the vaccination card or mother's recall by the time of the survey				
Malaria	(12) <u>Treatment of Fever in Malarious Zones</u> Percentage of children age 0-23 months with a febrile episode during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began	20	178	11.2%	7.0 – 16.8
Control of Diarrheal Diseases	(13) <u>ORT use:</u> Percentage of children age 0-23 months with diarrhea in the last two weeks who received oral rehydration solution (ORS) and/or recommended home fluids.	93	126	73.8%	65.2 – 81.2

CSHGP Intervention Area	Rapid CATCH Indicator	Numerator	Denominator	Percentage	95% CI
Pneumonia Case Management	(14) <u>Appropriate Care Seeking for Pneumonia:</u> Percentage of children age 0-23 months with chest-related cough and fast and/ or difficult breathing in the last two weeks who were taken to an appropriate health provider.	48	72	66.7%	54.6 – 77.3
Control of Diarrheal Diseases	(15) <u>Point of Use (POU):</u> Percentage of households of children age 0-23 months that treat water effectively.	196	465	42.2%	37.6 – 46.8
	(16) <u>Appropriate Hand washing Practices:</u> Percentage of mothers of children age 0-23 months who live in households with soap at the place for hand washing	279	465	60.0%	55.4 – 64.5
Malaria	(17) <u>Child sleeps under an insecticide-treated bednet:</u> Percentage of children age 0-23 months who slept under an insecticide-treated bed net (in	237	465	51.0%	46.3 – 55.6

CSHGP Intervention Area	Rapid CATCH Indicator	Numerator	Denominator	Percentage	95% CI
	malaria risk areas, where bed net use is effective) the previous night.				
Nutrition	(18) <u>Underweight:</u> Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to WHO/NCHS reference population)	93	408	22.8%	18.9 – 27.2

* Mothers of children < 3 months.

7.2 Annex 2: Data Collection Sites

Name of health facility	Village and code
Bulaya	1. Bulaya 2. Misako
Chikabuke	1. Chikabuke
Chinemu	1. Chinemu
Mibila	1. Mibila
Fungulwe	1. Fungulwe 2. Chitaba
Kapilamikwa	1. Kapilamikwa
Lumpuma	1. Lumpuma 2. Kapimbe
Mibenge	1. Mibenge
Mukutuma	1. Mukutuma 2. Kanchule
Mukumbo	1. Mukumbo 2. Lwela A 3. Chifumpa A
Mushingashi	1. Mushingashi 2. Bwandu
Nkana	1. Nkana A
Shimukunami	1. Katembula A
Matipa	1. Kansoka
Kashininkisha	1. Kashininkisha
St. Mary's Mission	1. Chitashi 2. Luswishi East 3. Fumbwe 4. Kantende
St. Joseph Mission	1. St. Joseph 2. Kawama 3. Kandole
Chantete	1. Chantete
Kamakanga	1. Kamakanga

7.3 Annex 3: Household Survey Questionnaire

Identification			
Health Facility Name and Code			
Village Name and Code			
Household Number			
Name of Mother			

Interview			
Interview date		<div> <div>/</div> <div>/</div> <div>/</div> </div> <div>dd/mm/yy</div>	
Name of Interviewer and Code			
Result Code	1. Completed	2. Not completed	3. Refused
Name of Supervisor and Code			

Data Entry		
	Name	Date
First Data Entry		<div> <div>/</div> <div>/</div> <div>/</div> </div> <div>dd/mm/year</div>
Second Data Entry		<div> <div>/</div> <div>/</div> <div>/</div> </div> <div>dd/mm/year</div>

1. DEMOGRAPHICS

1.1 How old are you? (99 IF DO NOT KNOW)

--	--

1.2 Have you ever attended school?

1. Yes	2. No
--------	-------

1.3 What is the highest level of education that you attained?

1. Primary	2. Secondary	3. Higher	8. NA
------------	--------------	-----------	-------

1.4 How many children do you have?

--	--

1.5 What is the name of the surveyed child? _____

1.6 What is the date of birth of (NAME)

--	--	--	--	--	--	--	--

1.7 What is the sex of (NAME)?

1. Male	2. Female
---------	-----------

1.8 Does (NAME'S) biological father live in this household?

1. Yes	2. No	
--------	-------	--

1.9 Who is the head of this household?

1. Mother (Respondent)	2. Husband/Partner
3. Female relative _____	
4. Male relative _____	
5. Other _____	

1.10 Do you work outside of the home to earn money?

1. Yes	2. No
--------	-------

1.11 What kind of work do you do?

1. Handicrafts	2. Farm labour
3. Sellers/traders	4. Shop keeper
5. Servant/Household worker	6. Salaried worker/formal employment
7. Other _____	
8. NA	

1.12a What is the most common means of getting to the nearest health centre/post?

1. Walking	2. Bicycle
3. Ox-cart	4. Vehicle
5. Other _____	

1.12b About how long does it take you to get to the nearest health center/post by this means?

--	--

 hrs

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 Mins

2. MATERNAL AND NEWBORN CARE

2.1 During your pregnancy with (NAME), did you see anyone for antenatal care?

1. Yes	2. No
--------	-------

2.2 Whom did you see for the antenatal care?

2.2.1 Doctor/Clinical officer

2.2.2 Nurse /Midwife

2.2.4 Traditional Birth Attendant

2.2.5 Other _____

1. Yes	2. No	8. NA
1. Yes	2. No	8. NA
1. Yes	2. No	8. NA
1. Yes	2. No	8. NA

2.3 How many times did you receive antenatal care? (88 IF NO ANC)

--	--

2.4 During pregnancy, a woman may encounter severe problems or illnesses and should go or be taken immediately to a health facility. What type of symptoms would cause you to seek immediate care at a health facility? DO NOT READ RESPONSES

2.4.1 Vaginal bleeding

2.4.2 Fast/difficult breathing

2.4.3 Fever

2.4.4 Severe abdominal pain

2.4.5 Headache/blurred vision

2.4.6 Convulsions

2.4.7 Foul smelling discharge/fluid from vagina

2.4.8 Baby stop moving

2.4.9 Leaking brownish/greenish fluid from vagina

2.4.10 Other _____

1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No

2.5 During your pregnancy with (NAME) did you receive an injection in the arm to prevent the baby from getting tetanus, that is convulsions after birth?

1. Yes	2. No	9. Do not know
--------	-------	----------------

2.6 While pregnant with (name), how many times did you receive such an injection?

1. One	2. Two	3. Three or more	8. NA	9. Do not know
--------	--------	------------------	-------	----------------

2.7 Did you receive any tetanus toxoid injection at any time before that pregnancy, including during a previous pregnancy or between pregnancies?

1. Yes	2. No	9. Do not know
--------	-------	----------------

2.8 Before the pregnancy with (Name), how many times did you receive a tetanus injection?

1. One	2. Two	3. Three or more	8. N/A	9. Do not know
--------	--------	------------------	--------	----------------

2.9 When you were pregnant with (NAME), did you take any drugs in order to prevent you from getting malaria?

1. Yes	2. No	9. Do not know
--------	-------	----------------

2.10 Which drugs did you take to prevent malaria?

2.2.1	SP/Fansidar	1. Yes	2. No	8. NA
2.2.2	Chloroquine	1. Yes	2. No	8. NA
2.2.5	Other _____	1. Yes	2. No	8. NA

2.11 How many times did you take SP/Fansidar (88 IF NO FANSIDAR TAKEN)

--	--

2.12 When you were pregnant with (NAME), did you sleep under a bednet?

1. Yes	2. No	
--------	-------	--

2.13 How often did you sleep under the bed net?

1. All the time	2. Most of the time	3. Some of time
4. Rarely	8. NA	

2.14 Where did you deliver?

1. Health facility	2. Home	3 TBA hut
4. Other _____		

2.14a Was (NAME) delivered by caesarean section?

1. Yes	2. No
--------	-------

2.15 Who assisted with the delivery of (NAME)?

2.15.1	Doctor/Clinical Officer	1. Yes	2. No
2.15.2	Nurse/ Midwife	1. Yes	2. No
2.15.5	Other health staff with midwifery skills	1. Yes	2. No
2.15.6	Trained TBA	1. Yes	2. No
2.15.7	CHW	1. Yes	2. No
2.15.8	Untrained TBA	1. Yes	2. No
2.15.9	Relative/Friend	1. Yes	2. No

2.16 Was a Clean Delivery Kit used during delivery?

1. Yes	2. No	9. Do not know
--------	-------	----------------

2.17 What was used to tie the cord?

1. New string of thread	2. String or thread	3. Other _____
9. Do not know		

2.18 Was the thread/string used to tie the cord boiled prior to use?

1. Yes	2. No	8. NA	9. Do not know
--------	-------	-------	----------------

2.19 What was used to cut the cord?

1. New razor blade	2. Razor blade	3. Scissors
4. Other	9. Do not know	

2.20 Was the instrument used to cut the cord boiled prior to use?

1. Yes	2. No	8. NA	9. Do not know
--------	-------	-------	----------------

2.21 Was anything placed on the umbilical cord after it was cut?

1. Yes	2. No	9. Do not know
--------	-------	----------------

2.22 What was placed on the cut cord?

1. Cow dung	2. Any type of oil	3. Antiseptic
4. Ash	5. Other	8. NA 9. Do not know

2.23 Was (NAME) dried (wiped) immediately after birth before the placenta was delivered?

1. Yes	2. No	9. Do not know
--------	-------	----------------

2.24 Was (NAME) wrapped in a dry, warm cloth or blanket immediately after birth before the placenta was delivered?

1. Yes	2. No	9. Do not know
--------	-------	----------------

2.25 Did your baby cry or breathe easily immediately after birth?

1. Yes	2. No	9. Do not know
--------	-------	----------------

2.26 Was anything done to help the baby cry or breathe at the time of birth?

1. Yes	2. No	9. Do not know
--------	-------	----------------

2.27 What was done to help the baby cry or breathe at the time of birth? (DO NOT READ RESPONSES: ASK ANYTHING ELSE? IF NOTHING WAS DONE, SELECT NA)

2.27.1	Rubbed /massaged	1. Yes	2. No	8. NA
2.27.2	Dried	1. Yes	2. No	8. NA
2.27.3	Mouth cleared	1. Yes	2. No	8. NA
2.27.4	Other	1. Yes	2. No	8. NA

2.28 Did this child (NAME) put to the breast immediately (within 1 hour) after birth?

1. Yes	2. No	9. Do not know/remember
--------	-------	-------------------------

2.29 IF NO TO 2.28, How long after birth did you first put (NAME) to the breast?(88 IF NA, 99 IF DO NOT KNOW)

		days			hrs
--	--	------	--	--	-----

2.30 Sometimes after delivery mothers have severe illnesses and should be taken immediately to a health facility. What types of symptoms would cause you to go to a health facility right away? (DO NOT READ RESPONSES: ASK ANYTHING ELSE?)

2.30.1	Excessive vaginal bleeding	1. Yes	2. No
2.30.2	Fast/difficult breathing	1. Yes	2. No
2.30.3	High fever	1. Yes	2. No
2.30.4	Severe abdominal pain	1. Yes	2. No
2.30.5	Headache/blurred vision	1. Yes	2. No
2.30.6	Convulsions/loss of consciousness	1. Yes	2. No
2.30.7	Foul smelling discharge from vagina	1. Yes	2. No
2.30.8	Pain in calf	1. Yes	2. No
2.30.9	Verbalization/behavior that indicates she may hurt herself or the baby	1. Yes	2. No
2.30.10	Other _____	1. Yes	2. No

2.31 Sometimes newborns, within the first month of life, have severe illnesses and should be taken immediately to a health facility. What types of symptoms would cause you to take your newborn to a health facility right away? (DO NOT READ RESPONSES: ASK ANYTHING ELSE?)

2.31.1	Convulsions	1. Yes	2. No
2.31.2	Fever	1. Yes	2. No
2.31.3	Poor sucking or feeding	1. Yes	2. No
2.31.4	Fast/difficult breathing	1. Yes	2. No
2.31.5	Feels cold	1. Yes	2. No
2.31.6	Too small or born too early	1. Yes	2. No
2.31.7	Redness or discharge around cord	1. Yes	2. No
2.31.8	Red swollen eyes/discharge	1. Yes	2. No
2.31.9	Yellow palms/soles/eyes	1. Yes	2. No
2.31.10	Lethargy	1. Yes	2. No
2.31.11	Unconscious	1. Yes	2. No
2.31.12	Other _____	1. Yes	2. No

2.32 Are you currently doing something or using any method to delay or avoid getting pregnant?

1. Yes	2. No
--------	-------

2.33 What **main** method are you (or your husband/partner) using?

1. Female Sterilization	2. Male Sterilization	3. Pill	4. IUD
5. Injectables	6. Implants	7. Male Condom	8. Female condom
9. Diaphragm	10. Foam/Jelly	11. Lactational Amen. Method	
12. Standard Days method/Cyclebeads			
13. Rhythm method (other than Standard days)		14. Withdrawal	
15. Other			
88. NA			

3. MATERNAL AND NEWBORN CARE (MOTHERS WITH INFANTS LESS THAN 3 MONTHS)

IF CHILD IS MORE THAN 3 MONTHS OLD,
DRAW TWO LINES ACROSS THIS SECTION

3.1 After (NAME) was born, did any health care provider or volunteer community health worker check on your baby's health in the first week?

PROBE FOR VISITS IN AND OUTSIDE THE HOME WHERE DISCUSSION OR COUNSELLING OR EXAMINATION TOOK PLACE

1. Yes	2. No
--------	-------

3.2 How long after delivery did the first check take place? (88 IF NA) days hrs

3.3. Who checked on your baby's health at that time?

1. Doctor/Clinical officer	2. Nurse/Midwife	
3. Other health worker	4. TBA	5. Volunteer Community health worker
6. Other		8. NA

3.4 Where did this first check take place?

1. Hospital	2. Health Center	3. Health Post
4. Private Clinic		5. Your home
6. Other		8. NA

3.5 What did the health worker do during that visit to check the health of your baby?

3.5.1	Generally examined/looked at baby's body	1. Yes	2. No	8. NA
3.5.2	Weighed baby	1. Yes	2. No	8. NA
3.5.3	Checked cord	1. Yes	2. No	8. NA
3.5.4	Counseled on breastfeeding	1. Yes	2. No	8. NA
3.5.5	Observed breastfeeding	1. Yes	2. No	8. NA
3.5.6	Counseled on skin-to-skin contact/warmth	1. Yes	2. No	8. NA
3.5.7	Checked baby for danger signs	1. Yes	2. No	8. NA
3.5.8	Counseled on danger signs	1. Yes	2. No	8. NA
3.5.9	Other	1. Yes	2. No	8. NA

3.6 Was there a second check on (NAME) after the delivery ?

1. Yes	2. No	8. NA
--------	-------	-------

3.7 How long after delivery did the second check take place? days hrs
CODE 88 IF NA

3.8 Who checked on your baby's health at this second check?

1. Doctor/ Clinical officer	2. Nurse/Midwife		
3. Other health worker	4. TBA	5. Volunteer community health worker	
6. Other			8. NA

3.9 After (NAME) was born, did any health care provider or volunteer community health worker check on your health in the first week?

PROBE FOR VISITS IN AND OUTSIDE THE HOME WHERE DISCUSSION OR COUNSELLING OR EXAMINATION TOOK PLACE

1. Yes	2. No
--------	-------

3.10 How long after delivery did the first check take place? (88 IF NA) days hrs

3.11 Who checked on your health at that time?

1. Doctor/Clinical officer	2. Nurse/Midwife		
3. Other health worker	4. TBA	5. Volunteer Community health worker	
6. Other			8. NA

3.12 Where did this first check take place?

1. Hospital	2. Health Center	3. Health Post	
4. Private Clinic		5. Your home	
6. Other			8. NA

3.13 Was there a second check on your health after the delivery?

1. Yes	2. No	8. NA
--------	-------	-------

3.14 How long after delivery did the second check take place? days hrs
CODE 88,88 IF NA

3.15 Who checked on your health at this second check?

1. Doctor	2. Nurse/Midwife		
3. Other health worker	4. TBA	5. Volunteer Community health worker	
6. Other			8. NA

4. CHILDHOOD ILLNESS

4.1 Sometimes children get sick and need to receive care or treatment for illnesses. What are the signs of illness that would indicate your child needs treatment? (DO NOT READ RESPONSES: ASK ANYTHING ELSE?)

4.1.1	Looks unwell or not playing normally	1. Yes	2. No
4.1.2	Not eating or drinking	1. Yes	2. No
4.1.3	Lethargic or difficult to wake	1. Yes	2. No
4.1.4	High fever	1. Yes	2. No
4.1.5	Fast/difficult breathing	1. Yes	2. No
4.1.6	Vomits everything	1. Yes	2. No
4.1.7	Convulsions	1. Yes	2. No
4.1.8	Other 1 _____	1. Yes	2. No
4.1.9	Other 2 _____	1. Yes	2. No

4.2 Did (NAME) experience any of the following in the past two weeks?

4.2.1	Diarrhea	1. Yes	2. No
4.2.2	Blood in stool	1. Yes	2. No
4.2.3	Cough	1. Yes	2. No
4.2.4	Difficult breathing	1. Yes	2. No
4.2.5	Fast breathing/short quick breaths	1. Yes	2. No
4.2.6	Fever	1. Yes	2. No
4.2.7	Malaria	1. Yes	2. No

IF RESPONSE TO **4.2.1** OR **4.2.2** IS YES, ADMINISTER **DIARRHEA MODULE**

IF RESPONSE TO (**4.2.3** AND **4.2.4**) OR **4.2.3** AND **4.2.5**) ARE YES ADMINISTER **PNEUMONIA MODULE**

IF RESPONSE TO **4.2.6** OR **4.2.7** IS YES ADMINISTER **MALARIA MODULE**

5.0 MALARIA OR FEVER TREATMENT MODULE

5.1 Did you give any special care or treatment at home to (NAME) when s/he had the fever or malaria?

1. Yes	2. No
--------	-------

5.2 What did you give?

5.2.1	Antimalarial: ACT (Coartem/Lumet)	1. Yes	2. No	8. NA
5.2.2	Paracetamol/Aspirin	1. Yes	2. No	8. NA
5.2.3	Sponge/ Wash with water	1. Yes	2. No	8. NA
5.2.4	Traditional herbs/Steaming	1. Yes	2. No	8. NA
5.2.5	Other _____	1. Yes	2. No	8. NA

5.3 Did you seek advice or treatment for the fever/malaria outside the home?

1. Yes	2. No
--------	-------

5.4 Where did you go first for advice or the treatment?

1. Hospital	2. Health Center	3. Health Post
4. Clinic	5. Community health worker	
6. Traditional practitioner		
7. Pharmacy	8. Friend /Relative	
9. Other	88. NA	

5.5 Did you go anywhere else for advice or treatment?

1. Yes	2. No	8. NA
--------	-------	-------

5.6 Where did you go for this next advice or the treatment?

1. Hospital	2. Health Center	3. Health Post
4. Clinic	5. Community health worker	
6. Traditional practitioner		
7. Pharmacy	8. Friend /Relative	
9. Other	88. NA	

5.7 How many days after the fever began did you first seek treatment for (NAME)?

1. Same day	2. next day	3. Two days
4. Three days	5. Four or more days	8. NA
		9. Do not know

5.8 Did the child have a finger-prick for a malaria rapid diagnostic test when you sought treatment for the fever?

1. Yes	2. No	8. NA	9. Do not know
--------	-------	-------	----------------

5.9 What was the result of the test?

1. Positive	2. Negative	8. NA	9. Do not know
-------------	-------------	-------	----------------

5.10 IF 5.3 IS NO, Why didn't you seek care for your child outside the home?

1. Expecting self resolution of the illness	2. Health facility too far/no transportation
3. Cost of treatment service high	4. Don't trust facility/poor quality of care
5. Family member did not allow	
6. Other	8. NA

5.11 At any time during the illness did (NAME) take any drugs for the fever?

1. Yes	2. No	9. Do not know
--------	-------	----------------

5.12 What drugs did (NAME) take?

5.12.1 ACT (Coartem/Lumet)

5.12.2 SP/Fansidar

5.12.3 Chloroquine

5.12.4 Amodiaquine

5.12.5 Quinine

5.12.6 Paracetamol/Aspirin

5.12.7 Other _____

1. Yes	2. No	8. NA
1. Yes	2. No	8. NA
1. Yes	2. No	8. NA
1. Yes	2. No	8. NA
1. Yes	2. No	8. NA
1. Yes	2. No	8. NA
1. Yes	2. No	8. NA

5.13 How long after the fever started did (NAME) start taking the medicine?

5.13.1 ACT (Coartem/Lumet)

5.13.2 SP/Fansidar

5.13.3 Chloroquine

5.13.4 Amodiaquine

5.13.5 Quinine

5.13.6 Paracetamol/Aspirin

0. D0	1. D1	2. D2	3. D3	8. NA	9. DK
0. D0	1. D1	2. D2	3. D3	8. NA	9. DK
0. D0	1. D1	2. D2	3. D3	8. NA	9. DK
0. D0	1. D1	2. D2	3. D3	8. NA	9. DK
0. D0	1. D1	2. D2	3. D3	8. NA	9. DK
0. D0	1. D1	2. D2	3. D3	8. NA	9. DK

5.14 How many days did (NAME) take the drugs? (88 IF DRUG WAS NOT TAKEN)

5.14.1 ACT (Coartem/Lumet)

5.14.2 SP/Fansidar

5.14.3 Chloroquine

5.14.4 Amodiaquine

5.14.5 Quinine

6. DIARRHEA TREATMENT MODULE

6.1 When (NAME) had the diarrhea how did you breast him/her?

1. Less than usual	2. About same amount	3. More than usual
8. NA (Child is not breastfeeding)	9. Do not know	

6.2 When (NAME) had the diarrhea how did you offer drink to him/her?

1. Less than usual	2. About same amount	3. More than usual
9. Do not know		

6.3 When (NAME) had the diarrhea how did you offer food to him/her to eat?

1. Less than usual	2. About same amount	3. More than usual
8. NA exclusive breast-feeding	9. Do not know	

6.4 Did you seek advice or treatment for the diarrhea outside the home?

1. Yes	2. No
--------	-------

6.5 Where did you go first for advice or the treatment?

Where did you go first for advice of the treatment?		
1. Hospital	2. Health Center	3. Health Post
4. Clinic		5. Community health worker
6. Traditional practitioner		
7. Pharmacy		8. Friend /Relative
9. Other		88. NA

6.6 How many days after the diarrhea began did you first seek treatment for NAME?

1. Same day	2. next day	3. Two days
4. Three days	5. Four or more days	8. NA
		9. Do not know

6.7 IF NO TO 6.4, Why didn't you seek care for your child outside the home?

1. Expecting self resolution of the illness	2. Health facility too far/no transportation
3. Cost of treatment service high	4. Don't trust facility/poor quality of care
5. Family member did not allow	
6. Other	8. NA

6.8 Was (NAME) given any of the following to drink at anytime since started having the diarrhea?

6.8.1 Fluid from ORS packet/sachet/powder

1. Yes	2. No	9. DK
1. Yes	2. No	9. DK
1. Yes	2. No	9. DK

6.8.2 ORS liquid

6.8.3 Homemade fluid

6.9 Was (NAME) given any of the following to treat the diarrhea?

6.9.1 Antibiotic pill or syrup

6.9.2 Anti motility pill or syrup

6.9.3 Zinc

6.9.4 Unknown pill or syrup

6.9.5 Injection

6.9.6 Intravenous

6.9.7 Home remedies/herbal medicines

6.9.8 Other _____

1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No
1. Yes	2. No

6.10 How many days did (NAME) take the drugs? (88 IF DRUG WAS NOT TAKEN)

6.10.1 Antibiotic pill or syrup

6.10.2 Anti motility pill or syrup

6.10.3 Zinc

7.0 PNEUMONIA TREATMENT MODULE

7.1 Did you seek advice or treatment outside the home for (NAME) when s/he had cough with fast/difficult breathing (suspected pneumonia)?

1. Yes	2. No
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7.2 Where did you go first for advice or the treatment?

1. Hospital	2. Health Center	3. Health Post
4. Clinic	5. Community health worker	
6. Traditional practitioner		
7. Pharmacy	8. Friend /Relative	
9. Other	88. NA	

7.3 Did you go anywhere else for advice or treatment?

1. Yes	2. No	8. NA
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7.4 Where did you go next for this advice or the treatment?

1. Hospital	2. Health Center	3. Health Post
4. Clinic	5. Community health worker	
6. Traditional practitioner		
7. Pharmacy	8. Friend /Relative	
9. Other	88. NA	

7.5 How many days after the cough/fast breathing began did you first seek treatment for NAME?

1. Same day	2. next day	3. Two days
4. Three days	5. Four or more days	8. NA
9. Do not know		

7.6 Why didn't you seek care for your child outside the home?

1. Expecting self resolution of the illness	2. Health facility too far/no transportation
3. Cost of treatment service high	4. Don't trust facility/poor quality of care
5. Family member did not allow	
6. Other	8. NA

7.7 At any time during the illness did (NAME) take any drugs for the cough/fast breathing?

1. Yes	2. No	9. Do not know
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7.8 Did (NAME) take any of the following drugs?

7.8.1	Amoxicillin pill/syrup	1. Yes	2. No	8. NA
7.8.2	Cotrimoxazole/Septrin	1. Yes	2. No	8. NA
7.8.3	Erythromycin	1. Yes	2. No	8. NA
7.8.4	Other antibiotic	1. Yes	2. No	8. NA
7.8.5	Cough mixture	1. Yes	2. No	8. NA
7.8.6	Paracetamol/Panadol/Aspirin	1. Yes	2. No	8. NA
7.8.7	Other	1. Yes	2. No	8. NA

7.9 How long after the cough/fast breathing started did (NAME) start taking the medicine?

7.9.1	Amoxicillin pill/syrup	0. D0	1. D1	2. D2	3. D3	8. NA	9.DK
7.9.2	Cotrimoxazole/Septin	0. D0	1. D1	2. D2	3. D3	8. NA	9.DK
7.9.3	Erythromycin	0. D0	1. D1	2. D2	3. D3	8. NA	9.DK

7.10 How many days did (NAME) take the drugs? (88 IF DRUG WAS NOT TAKEN)

7.10.1	Amoxicillin pill/syrup		
7.10.2	Cotrimoxazole/Septin		
7.10.3	Erythromycin		

8. BREASTFEEDING/INFANT AND YOUNG CHILD FEEDING

8.1 Now I would like to ask you about liquids or foods (NAME) had yesterday during the day or at night. Did s/he drink/eat any of the following?

8.1.1	Breast milk	1. Yes	2. No	9. DK
8.1.2	Plain water	1. Yes	2. No	9. DK
8.1.3	Commercially produced infant formula	1. Yes	2. No	9.DK
8.1.4	Fortified commercially infant and young child food (e.g. cerelac)	1. Yes	2. No	9.DK

8.2 Now I would like to ask you about (other) liquids or foods that (NAME) may have had yesterday during the day or at night. I am interested in whether your child had the item even if it was combined with other foods. Did s/he drink/eat-

8.2.1	Group 1: Dairy			
8.2.1.1	Milk such as tinned, powdered, or fresh animal milk	1. Yes	2. No	9. DK
8.2.1.2	Cheese, yogurt, or other milk products	1. Yes	2. No	9.DK
8.2.2	Group 2: Grain			
8.2.2.1	Any (other) porridge or gruel	1. Yes	2. No	9. DK
8.2.2.2	Bread, rice, noodles, or other foods made from grains	1. Yes	2. No	9. DK
8.2.2.3	White potatoes, white yams, , cassava, or any other foods made from roots	1. Yes	2. No	9.DK
8.2.3	Group 3: Vitamin A Rich vegetables			
8.2.3.1	Pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside	1. Yes	2. No	9. DK
8.2.3.2	Any dark green leafy vegetables	1. Yes	2. No	9. DK
8.2.3.3	Ripe mangoes, papayas	1. Yes	2. No	9.DK
8.2.3.4	Foods made with red palm oil, palm nut, palm nut pulp sauce	1. Yes	2. No	9.DK
8.2.4	Group 4: Other Fruits/Vegetables			
8.2.4.1	Any fruits or vegetables like oranges, bananas, or pineapple	1. Yes	2. No	9. DK
8.2.5	Group 5: Eggs			

8.2.5.1	Egg	1. Yes	2. No	9.DK
8.2.6	Group 6: Meat, poultry, fish			
8.2.6.1	Liver, kidney, heart or other organ meats	1. Yes	2. No	9.DK
8.2.6.2	Any meat such as beef, pork, lamb, goat, chicken or duck	1. Yes	2. No	9. DK
8.2.6.3	Fresh or dried fish	1. Yes	2. No	9.DK
8.2.6.4	Grubs, snails, insects, other small protein food	1. Yes	2. No	9.DK
8.2.7	Group 7: Legumes/nuts			
8.2.7.1	Any foods made from beans, peas, lentils, or nuts	1. Yes	2. No	9. DK
8.2.8	Group 8: Oils/fats			
8.2.8.1	Any oils, fats, or butter, or foods made with any of these	1. Yes	2. No	9.DK
8.2.9	Group 9: Other foods			
8.2.9.1	Tea or coffee	1. Yes	2. No	9. DK
8.2.9.2	Any other liquid	1. Yes	2. No	9.DK
8.2.9.3	Any sugary foods, such as chocolates, candy, sweets, pastries, cakes, or biscuits	1. Yes	2. No	9.DK
8.2.9.4	Any other solid or soft food	1. Yes	2. No	9.DK

8.3 How many times did (NAME) eat solid, semi-solid, or soft foods other liquids yesterday during the day or at night

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9. VITAMIN A SUPPLEMENTATION AND IMMUNIZATIONS

9.1 Has (NAME) ever received a vitamin A dose? SHOW COMMON TYPES

1. Yes	2. No	9. Do not know
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9.2 Did (NAME) receive a vitamin A dose within the last 6 months?

1. Yes	2. No	8. NA	9. Do not know
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9.3. Do you have a card or child health booklet where (Name's) vaccinations and vitamin A (capsules) are written down?

1. Yes	2. No	9. Do not know
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COPY VACCINATION DATE FROM BOOKLET OR CARD (88 /88/88 IF CARD NOT AVAILABLE AND 99/99/9999 IF DATE NOT RECORDED

9.4.1	Vitamin A						
9.4.2	DPT1						
9.4.3	DPT3						
9.4.4	Measles						

9.5. Has (NAME) received any vaccinations that are not recorded on this card, including vaccinations given during immunization campaigns?

1. Yes	2. No	8. NA	9. Do not know
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9.6 How many times (88 IF NA AND 99 IF DO NOT KNOW)?

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9.7. Has (NAME) received a DPT vaccination that is an injection given in the arm/thigh, sometimes at the same time as polio drops?

1. Yes	2. No	8. NA (CARD SEEN)	9. Do not know
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9.8 How many times (88 IF NA AND 99 IF DO NOT KNOW)?

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9.9. Has (NAME) ever received an injection in the arm to prevent measles?

1. Yes	2. No	8. NA (CARD SEEN)	9. Do not know
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10. WATER AND SANITATION

10.1. Do you treat your water in any way to make it safe for drinking?

1. Yes	2. No
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10.2 What do you usually do to the water to make it safer to drink?

10.2.1	Let it stand and settle/Sedimentation	1. Yes	2. No	8. NA
10.2.2	Strain it through cloth	1. Yes	2. No	8. NA
10.2.3	Boil	1. Yes	2. No	8. NA
10.2.4	Add bleach/chlorine	1. Yes	2. No	8. NA
10.2.5	Water filter (ceramic, sand, composite)	1. Yes	2. No	8. NA
10.2.6	Solar disinfection	1. Yes	2. No	8. NA
10.2.7	Other _____	1. Yes	2. No	8. NA

10.3. Can you show me where you usually wash your hands and what you use to wash hands?

ASK TO SEE AND OBSERVE

10.3.1 SITE OF WASH

1. Inside /near toilet	2. Inside or near kitchen or cooking place	
3. Elsewhere in yard	4. Outside yard	5. No specific place
6. No permission to see		

10.3.2 WASHING SUBSTANCE

1. Soap	2. Detergent	3. None
4. Other _____		7. No permission to see

11 MALARIA – ITN USE

11.1 Does your household have any mosquito nets that can be used while sleeping?

1. Yes	2. No
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11.2 Did (NAME) sleep under the bed net last night?

1. Yes	2. No	8. NA
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11.3 Was the bed net that (Name) slept under last night ever soaked or dipped in a liquid or treated to repel mosquitoes or bugs?

1. Yes	2. No	9. Do not know
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11.4 How long ago was the net last soaked or dipped in a liquid/treated to repel mosquitoes or bugs?

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months

MORE THAN 2 YEARS = 90; LLINS = 95, NA = 98, DO NOT KNOW = 99

12. LUNESP

12.1 Have you heard of a program in Lufwanyama called LUNESP?

1. Yes	2. No
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12.2 Did you participate in LUNESP?

1. Yes	2. No	8. NA
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12.3 Have you changed your TBA because of LUNESP?

1. Yes	2. No	8. NA
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13. ANTHROPOMETRICS

13.1 May I weigh (NAME)? 99.9 IF WEIGHT NOT TAKEN

		.		kg
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CHECK FOR THE COMPLETENESS OF THE
FORM AND THANK THE MOTHER FOR THE INTERVIEW