



**INTEGRATED HEALTH AND NUTRITION BASELINE SURVEY IN THE
NAIROBI SLUMS**

NAIROBI COUNTY

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CONCERN WORLDWIDE KENYA

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ACRONYMS

| | |
|---------|---|
| AMTSL: | Active Management of Third Stage of Labour |
| ANC: | Antenatal Care |
| APHRC: | African Population Health Research Centre |
| BCG: | Bacillus Calmette – Guerin |
| C.I.: | Confidence Interval |
| DMOH: | District Ministry of Health |
| DNO: | District Nutrition Officer |
| DPT: | Diphtheria, Pertussis and Tetanus |
| EBF: | Exclusive Breastfeeding Rate |
| ENA: | Emergency Nutrition Assessment |
| FTC: | Feed the Children |
| GAM: | Global Acute Malnutrition |
| HiNi: | High Impact Nutrition Intervention |
| IMR: | Infant Mortality Rate |
| IYCN: | Infant and Young Children Nutrition |
| KPC: | Knowledge, Practice and Coverage |
| MAM: | Moderate Acute Malnutrition |
| MIYCN: | Maternal Infant and Young Children Nutrition |
| MNCH: | Maternal and New-Born Child Health |
| MoH: | Ministry of Health |
| MoH: | Ministry of Health |
| MUAC: | Mid-Upper Arm Circumference |
| SAM: | Severe Acute Malnutrition |
| SMART: | Standardized Measurement of Relief and Transition |
| SPSS: | Statistical Package for Social Sciences |
| TBA: | Traditional Birth Attendants |
| UNICEF: | United Nations Children Fund |
| VAD: | Vitamin A Deficiency |
| WFA: | Weight for Age |
| WFH: | Weight for Height |
| WHO: | World Health Organization |

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Background

Nairobi, the Capital City of Kenya has experienced an exponential growth in the past 60 years where the current population of 3.5 is almost 29 times higher than the 1948 population which was 120,000. This is despite the fact that the area in kilometers squares has remained the same at 696.1 and hence the current population density is 5028 which is quite high and still increasing. As a result of the skyrocketing population in Nairobi, majority of the people live in the informal settlement which according to estimates house approximately 60% of the Nairobi population and cover only 5% of the city's residential land. .

Emerging evidence reveals that the urban population explosion in the region has been accompanied by increasing rates of poverty and poor health outcomes. It has been documented that the urban poor face worse health indicators than their rural counterparts or their counterparts in the urban non-poor settlements. Despite the urban population enjoying easy access to health services ¹(Essendi et al, 2011), the incidence of child under nutrition, morbidity and mortality has been shown to be higher in slums and peri urban areas than in more privileged urban settings or, sometimes, even rural areas². Life in these slum areas is associated with poor health indicators due to inadequate access to clean water, electricity and health facilities, and generally poor sanitation. Slum conditions create greater exposure to violence (often sexual and gender based), unwanted pregnancy and adverse health and nutrition outcomes, particularly for women and their children. Maternal and child outcomes are intimately linked. Poor maternal health affects the development of the foetus, the likelihood of a healthy pregnancy and birth outcomes. Maternal caring practices, including sub optimal maternal, infant and young child nutrition (MIYCN) practices from gestation up to two years of life, also contribute to poor and often irreversible child health outcomes. Poor nutrition in mothers and young children leave both vulnerable to opportunistic infections and diseases such as diarrhoea, malaria and acute lower respiratory infections.

Concern Worldwide has been supporting the Ministry of Health (MoH) in the improvement of health and survival of children under five and pregnant and lactating women through support to health and nutrition systems to scale up high impact nutrition interventions³ (HINIs). Initially, the program was covering only three districts but later the program has been expanded to cover eight districts out of the nine districts in Nairobi County. These are Dagoretti, Westlands, Kamukunji, Starehe, Kasarani, Makadara, Njiru and Embakasi. In total, there are 80 facilities which are supported by Concern Worldwide in the implementation of the OTP services across the 8 districts.

This survey was, proposed in order to get integrated baseline slum level information on both health and nutrition indicators for needs identification. This was also necessitated by the lack of integrated slum level information and the only available data have only focused on specific slums. The survey was conducted through the partnership of the Ministry of Health, Feed the Children and Concern Worldwide and was funded by UNICEF. The survey was conducted between 26th May and 10th June, 2014.

¹ Barriers to formal emergency obstetric care services utilization, Essendi et al, 2011. *J Urban Health*. Jun 2011; 88(Suppl 2): 356–369

² Maternal and child health services for the urban poor: A case study from Nairobi. Kenya - Jean Christophe Fotso-APHRC 2012

³ The 11 HINI include breastfeeding promotion, complementary feeding for infants after the age of six months, improved hygiene practices including: hand washing, vitamin A supplementation, zinc supplementation for diarrhea management, de-worming, iron-folic acid supplementation for pregnant women, salt iodization, iron fortification of staple foods, prevention of moderate under nutrition and treatment of acute malnutrition.

Methodology

The survey targeted all the slums in Nairobi County which included Kibera, Mukuru, Mathare, Korogocho, Viwandani, Kawangware, Gitare Marigu, Majengo and Mji wa Huruma/Kibarage. Additionally, the survey area was stratified in two strata namely; Stratum 1 and Stratum 2. The stratification was based on the review of literature on the socio-economic, health and sanitation situation of the slums. Due to the complex nature of the urban population; the survey adopted a 3 stage sampling technique. A mapping of all the slums was done before the survey which was meant to provide the distribution of households in each slum. After the mapping was done, the slums were segmented into block of approximately 1000 households. With the list of the blocks for all the slums, then the selection of the blocks to be included in the survey was selected using the simple random sampling which was the 1st stage sampling. The sampled blocks were then segmented into enumeration areas of approximately 100 households where which was the primary sampling unit for this survey. The selection of the enumeration areas was the 2nd stage sampling and this was done using the simple random sampling. Finally, with the sampled enumeration areas, a list of all households was drawn upon which 24 households was sampled using simple random sampling. The sample size for each strata 440 children aged between 0 and 59 months which was obtained from 40 enumeration areas.

Objectives of the KPC survey

The overall objective of the survey was to establish the baseline information on Maternal and Child Health and Nutrition information in the slums of Nairobi County. Specific objectives of the baseline survey:

- To estimate the current prevalence of acute malnutrition in children aged 6 – 59 months and WRA and PLWs
- To estimate Measles, de-worming, BCG vaccination and ‘Vitamin A’ supplementation coverage for children 9-59 months and 6-59 months respectively
- To establish the Morbidity rates of children 0-59 months 2 weeks prior to the survey
- To measure the proportion of households having safe access to water, water treatment and hand-washing at critical times
- To measure other maternal and new-born child health indicators i.e. Antenatal Care Coverage, Active Management of Third Stage Labour and Essential Neonatal Care

Summary of Key Findings

The following table presents the summary of the indicators

| Anthropometric Indicators | | | |
|---|--------------------------------|--------------------------------|--------------------------------|
| Indicator | Overall | Better Off Slums | Worse Off Slums |
| Prevalence of global malnutrition (<-2 z-score and/or oedema) | (53) 5.7% (4.2-7.6 95% CI) | (20) 4.4% (2.7- 6.9 95% CI) | (33) 6.9% (4.7-10.0 95% CI) |
| Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema) | (35) 3.7% (2.7-5.3 95% CI) | (15) 3.3% (1.8- 5.8 95% CI) | (20) 4.2% (2.7- 6.3 95% CI) |
| Prevalence of severe malnutrition (<-3 z-score and/or oedema) | (18) 1.9% (1.1-3.2 95% CI) | (5) 1.1% (0.4- 3.0 95% CI) | (13) 2.7% (1.5- 4.9 95% CI) |
| Prevalence of Global Underweight | (120) 12.9% (10.5-15.9 95% CI) | (61) 13.5% (9.7-18.5 95% CI) | (59) 12.4% (9.4-16.1 95% CI) |
| Prevalence of Moderate Underweight | (100) 10.8% (8.6-13.4 95% CI) | (54) 11.9% (8.5-16.6 95% CI) | (46) 9.7% (7.2-12.8 95% CI) |
| Prevalence of Severe Underweight | (20) 2.2% (1.2-3.7 95% CI) | (7) 1.5% (0.7- 3.5 95% CI) | (13) 2.7% (1.3- 5.6 95% CI) |

| | | | |
|---|--------------------------------|--------------------------------|--------------------------------|
| Prevalence of Global Stunting | (313) 33.5% (30.1-37.2 95% CI) | (154) 33.8% (29.1-39.0 95% CI) | (160) 33.4% (28.3-38.9 95% CI) |
| Prevalence of Moderate Stunting | (201) 21.5% (19.0-24.4 95% CI) | (100) 22.0% (18.2-26.3 95% CI) | (101) 21.1% (17.6-25.0 95% CI) |
| Prevalence of Severe Stunting | (112) 12.0% (9.7-14.8 95% CI) | (54) 11.9% (8.6-16.2 95% CI) | (59) 12.3% (9.1-16.5 95% CI) |
| Prevalence of global malnutrition (MUAC and/or oedema) | (31) 3.3% (2.3-4.9 95% CI) | (15) 3.3% (2.0- 5.4 95% CI) | (16) 3.3% (1.8- 6.0 95% CI) |
| Prevalence of moderate malnutrition (MUAC) | (17) 1.8% (1.1-3.1 95% CI) | (9) 2.0% (1.1- 3.6 95% CI) | (8) 1.7% (0.7- 4.1 95% CI) |
| Prevalence of severe malnutrition (MUAC and/or oedema) | (14) 1.5% (0.8-2.7 95% CI) | (6) 1.3% (0.5- 3.6 95% CI) | (8) 1.7% (0.8- 3.5 95% CI) |
| Infant and Young Children Nutrition (IYCN) | | | |
| Ever Breastfed | 96.6% | 94.9% | 98.2% |
| Exclusive Breastfeeding Rate | 55.8% | 48.9% | 63.1% |
| Continued Breastfeeding (1 Year) | 85.4% | 86.4% | 84.2% |
| Continued Breastfeeding (2 Years) | 58.0% | 53.3% | 61.5% |
| Timely Initiation to Breastfeeding | 64.8% | 64.1% | 65.5% |
| Minimum Acceptable Diet | 54.8% | 55.1% | 54.5% |
| Minimum Dietary Diversity | 62.6% | 64.3% | 61.0% |
| Timely Complementary Feeding | 72.5% | 75.9% | 70.0% |
| Minimum Frequency of Feeding | 69.6% | 76.6% | 63.0% |
| Iron Rich Food | 76.6% | 80.5% | 73.0% |
| Immunizations and Vaccination | | | |
| Vitamin A Supplementation (12-59) | 36.4% | 37.7% | 35.6% |
| Vitamin A Supplementation (6-11) | 81.7% | 84.6% | 79.2% |
| Deworming Coverage (12-59) | 59.0% | 48.7% | 72.8% |
| Access to Immunization Services (DPT1) | 99.6% | 99.2% | 100.0% |
| Health Systems Performance Regarding Immunization Services (DPT3) | 98.8% | 99.2% | 98.5% |
| Zinc Supplementation | 29.0% | 37.5% | 21.6% |
| Measles Vaccination Coverage (9 Months) | 95.4% | 96.3% | 94.6% |
| Measles Coverage (18 Months) | 31.5% | 31.5% | 31.6% |
| Morbidity | | | |
| Morbidity (2 Weeks Prior to Survey) | 49.4% | 48.1% | 50.6% |
| Prevalence of Diarrhea | 33.1% | 31.7% | 34.4% |
| Prevalence of Fever | 24.7% | 20.8% | 28.3% |
| Prevalence of ARI | 60.9% | 63.3% | 58.4% |
| Health Seeking Behavior | 60.9% | 63.3% | 58.4% |
| Water and Sanitation | | | |
| Water Treatment | 49.2% | 52.0% | 46.5% |
| Access to Toilet | 93.2% | 93.8% | 92.6% |
| Hand Washing at Critical Times | 9.7% | 10.3% | 9.2% |
| Maternal and New Born Care | | | |
| Quality ANC | 39.1% | 41.5% | 44.0% |
| Tetanus Toxoid | 69.1% | 69.6% | 68.7% |
| Iron Supplementation for 90 Days | 23.9% | 30.4% | 17.6% |
| Skilled Birth Attendants | 86.0% | 89.4% | 82.7% |
| Trained Delivery Attendants | 91.4% | 91.9% | 90.8% |
| Clean Code Cutting | 47.1% | 39.6% | 53.5% |
| Clean Code Care | 36.6% | 39.4% | 38.1% |
| Immediate Drying | 81.1% | 83.9% | 78.5% |
| Active Management of Third Stage of | 28.2% | 33.0% | 23.6% |

| | | | |
|--|-------|-------|-------|
| Labor (AMTSL) | | | |
| Knowledge of Danger Signs during Pregnancy | 44.2% | 48.7% | 39.8% |
| Knowledge of Maternal Danger Signs During Delivery | 44.2% | 39.6% | 48.6% |
| Knowledge of Post-Partum Danger Signs | 59.1% | 58.6% | 59.5% |
| Knowledge of Neonatal Danger Signs | 70.2% | 68.1% | 72.2% |
| Essential Newborn Care | 17.6% | 13.9% | 21.1% |
| Post-Partum Visit for the Mother | 7.4% | 6.2% | 8.5% |
| Post-Natal Visit to Check the Newborn | 65.4% | 68.1% | 62.7% |
| Contraceptive Uptake | 67.5% | 65.9% | 69.0% |
| Maternal Nutrition | | | |
| Body Mass Index (WRA) | | | |
| Severe Underweight | 1.1% | 1.8% | 0.5% |
| Underweight | 6.2% | 7.7% | 4.9% |
| Normal | 54.7% | 54.8% | 54.6% |
| Overweight | 23.5% | 23.2% | 23.8% |
| Obese | 14.4% | 12.5% | 16.2% |
| Malnutrition based on MUAC for PLWs | | | |
| Severe Acute Malnutrition | 1.6% | 1.0% | 2.1% |
| Moderate Acute Malnutrition | 5.8% | 4.1% | 7.4% |
| Norma | 91.6% | 94.8% | 88.3% |

Conclusions and Recommendations

The survey concluded that the nutrition situation in the slums is *poor* according to the World Health Organization classification of malnutrition. Further, according to the survey, the stunting rates in the slums are classified as *high* according to the World Health Organization classification of stunting. The infant and young child nutrition indicators were found to be below the national targets. The survey also noted that the maternal and new child care indicators were poor. Finally, the health systems performance in the slums was found to be high and excellent.

Given the conclusion of the survey, then there is for continued management of Acute Malnutrition through the Integrated Management of Acute Malnutrition Program. This should include both the Outpatient Therapeutic Program and the Supplementary Feeding Program by the MoH and Nutrition Partners. There is also need to strengthen the on-going Micro-Nutrient Powder Program which aims to address the micro-nutrient and macro-nutrient food gap by MoH and Nutrition Partners. Finally, there is need to improve capacity building through training and supervision of staff in both public and private health facilities by government on continued obstetric care and agree on a unified maternal and child health information reporting systems

CHAPTER ONE – INTRODUCTION

1.1 Situation Analysis

Between 1980 and 2009, the number of people living in Nairobi, the capital, increased from 862,000 to about 3.4 million. Estimates (2007) indicate that around 60 per cent live in slums covering only 5 per cent of the city's residential land. Moreover, emerging evidence reveals that the urban population explosion in the region has been accompanied by increasing rates of poverty and poor health outcomes. It has been documented that the urban poor face worse health indicators than their rural counterparts or their counterparts in the urban non-poor settlements

Urban populace enjoys easy access to health services ⁴(Essendi et al, 2011). The incidence of child under nutrition, morbidity and mortality has been shown to be higher in slums and peri urban areas than in more privileged urban settings or, sometimes, even rural areas⁵. Life in these slum areas is associated with poor health indicators due to inadequate access to clean water, electricity and health facilities, and generally poor sanitation

Slum conditions create greater exposure to violence (often sexual and gender based), unwanted pregnancy and adverse health and nutrition outcomes, particularly for women and their children. Maternal and child outcomes are intimately linked. Poor maternal health affects the development of the foetus, the likelihood of a healthy pregnancy and birth outcomes. Maternal caring practices, including sub optimal maternal, infant and young child nutrition (MIYCN) practices from gestation up to two years of life, also contribute to poor and often irreversible child health outcomes. Poor nutrition in mothers and young children leave both vulnerable to opportunistic infections and diseases such as diarrhoea, malaria and acute lower respiratory infections.

1.1.1 Health Access and Health Seeking Behaviors

Public provision of health services in the slums is limited. A study conducted in 2009 shows that out of a total of 503 health facilities used by residents of three slum communities (Korogocho, Viwandani and Kibera), only 6 (1 per cent) were public, 79 (16 per cent) were private not-for-profit, and 418 (83 per cent) were private for-profit. Unless they offer in-patient services, the majority of public health facilities are closed in the evenings and on weekends making it difficult for community members who work long hours to seek health care. While there are a plethora of private clinics (often ramshackle clinics and maternity homes, with no working guidelines or standard protocols for services) in the informal settlements these are often sub-standard with many unlicensed and unrecognized by the Ministry of Health (MoH). These substandard facilities are what a good proportion of most local women go for maternal and child health care – seeking better-quality options only once complications occur. In contrast to public services, which seldom extend to informal settlements, these private facilities are perceived as friendly, accessible and trustworthy, perhaps because they invest more time in building relationships with patients. Only a small proportion of the urban poor has access to more reliable maternal health care services, including those offered at clinics and hospitals run by missionaries and non-governmental organizations (APHRC, 2012). As a result, many women seek maternity services outside of the slums; this can

⁴ Barriers to formal emergency obstetric care services utilization, Essendi et al, 2011. J Urban Health. Jun 2011; 88(Suppl 2): 356–369

⁵ Maternal and child health services for the urban poor: A case study from Nairobi. Kenya - Jean Christophe Fotso-APHRC 2012

create challenges for referral in the event of complication⁶. This coupled with poor health seeking more generally means that many women and children present to health facilities late, often with severe conditions.

Poor knowledge on maternal danger signs during delivery is yet another factor that greatly contributes to the high mortality rates and poor pregnancy outcomes. The major barriers faced include the inability to identify danger signs in time, poor health decision making, unaffordability of health care seeking, and poor physical access to formal care services, inadequately equipped health facilities, and poor attitude among health personnel. (Essendi et al, 2011).

1.1.2 Antenatal Care and Skilled Deliveries

Poor antenatal care (ANC) is a risk factor for adverse pregnancy outcomes for both the mother and the baby, including maternal mortality, perinatal mortality, premature delivery, low birth weight, pre-eclampsia and anemia, in many settings of the developing world. The frequency and timing of ANC are both important for timely identification and mitigation of potential pregnancy complications (Magadi, 2004). Apart from mere attendance of ANC, the quality of care received (in terms of the timing and frequency of visits and the content of antenatal care), does play a key role. ANC is important for the identification and management of maternal complications, as well as for providing essential services such as tetanus immunization, iron and/or vitamin supplementation, and nutrition education (Magadi, 2004). Research shows that despite many women in slums getting ANC (97% in slums against 88% nationwide), a considerable number of women (48% same as the national average) do not make the recommended number of four visits. Further, only 7% of slum women initiate the visit in the first trimester of pregnancy as required; this is low compared to the national average of 11% of Kenyan women who make first visit in the first three months of pregnancy. Various factors contribute to this state of affairs, among them being low levels of education in the urban slums as well as poverty. The prevalence of skilled deliveries is also low, with only 52% of the deliveries in Nairobi slums occurring with skilled birth attendants, as compared with 78% citywide⁷ (Essendi et al, 2011).

Appropriate care during delivery is important for the health of the mother and the newborn, especially in cases where childbirth complications develop. Although the majority of deliveries have no complications, sometimes sudden and unpredictable complications may arise, requiring urgent medical attention. It is estimated that 40% of pregnancies world-wide develop complications, 15% as life-threatening emergencies (Graham and Murray, 1997). The birth outcomes under such circumstances are greatly improved if the complications occur in the presence of a qualified attendant and in a medical facility with necessary equipment and supplies to adequately manage the complications (Magadi, 2004)

⁶ Challenges related to a lack of ambulatory services operating in slum areas, a lack of alternate transportation as well as insecurity particularly in the evenings and at night.

⁷ Barriers to formal emergency obstetric care services utilization, Essendi et al, 2011. J Urban Health. Jun 2011; 88(Suppl 2): 356–369.

1.1.3 Immunization

A study across the slums of Nairobi (Muoki et al, 2011) showed that full vaccination coverage of children was about 44% in these settlements compared to 73% for the whole of Nairobi with Polio and measles vaccinations in these settlements being substantially lower than coverage in Nairobi, but slightly higher than that in the rural areas of Kenya, despite the overall immunization coverage being lower than in the rural areas. Lower immunization coverage rates have also been observed in facilities that serve slums settlements in Nairobi and may be due to missed opportunities among clinic attendees and inappropriately administered vaccines⁸ (Mutua et al, 2011). Access to immunization services in the slums as mentioned earlier is seen as one of the main causes of poor immunization coverage.

1.1.4 Early Pregnancy and Child Spacing

Early pregnancy and poor child spacing are prevalent in the urban slums, with the sexual debut for women in the informal settlements starting early (before the age of 20). The family planning needs are largely unmet, which is further compounded by misinformation and misconceptions around family planning, including the association of contraception with female promiscuity.

1.1.5 Malnutrition, Child Feeding and Care Practices

The Child Survival and Development Strategy indicate that 50% of all under-five mortalities in Kenya are associated with malnutrition.⁹ Malnutrition in urban locations can take a number of forms. These include stunting, wasting and micronutrient deficiency. In many instances, different types of malnutrition overlap. Stunting is the predominant form of malnutrition found in urban informal settlements. Stunting results from a child having a poor diet, either from too few calories, too little nutritious food, or both, for a number of years, or an infection leading to mal-absorption of nutrients. The high malnutrition rates are associated with inadequate dietary intake, morbidity, and unhygienic practices and microbiological quality of food and water. Wasting and underweight are prevalent. While severe and global acute malnutrition rates are lower than rural areas, the case load is greater in the urban slums owing to the high population density.

Micro-nutrient deficiencies are also extremely high and overlap with both conditions of over- and under-nutrition. Stunting in early childhood has both short and long term effects; impaired growth, vulnerability to illnesses, and low work productivity when they become adults. The MoH adopted the High Impact Nutrition interventions (HINI) in Kenya in 2011. Despite the efforts put in place by the MoH and partners to address malnutrition in the slums, stunting levels remain unacceptably high and show no improvement over the years. This could be attributed to the complex nature of life in the slums and the fact that there are many underlying factors affecting nutrition status of children under five years (eg poverty, poor hygiene and sanitation and morbidity), which may not necessarily be addressed by a nutrition programme or nutrition related interventions.

⁸Childhood vaccination in informal urban settlements in Nairobi, Kenya: Who gets vaccinated?(Mutua et al, 2011)-BMC public health

⁹ Republic of Kenya, 2008. Child Survival and Development Strategy 2008-2015.

Sub-optimal infant and young child feeding (IYCF) practices including low early initiation of breastfeeding as well as exclusive and continued breastfeeding¹⁰ are attributed to demand for mothers to resume work as well as poor knowledge, attitudes and practices. Other factors affecting child nutrition and care practices include poor diet diversity, personal and environmental hygiene as well as child neglect and poor quality day care. Informal day care centres operating in the two slums are cited as one of the causes of disease and malnutrition in children¹¹. Assessments have indicated that two thirds of the caregivers rely on casual labour for their livelihoods hence rely on informal day care centres to take care to their children some as young as a month old. Most of the informal day care centres are unhygienic environments with limited spaces that provide poor child care that hinder optimal child growth and development.

1.1.6 Child Survival and Maternal Outcomes

Child survival indicators in the urban slums are poor. Limited but consistent evidence suggests higher infant and under-five years' mortality for children residing in slums compared with non-slum areas. Children suffer from higher rates of diarrheal and respiratory illness, malnutrition and have lower vaccination rates. Mothers residing in slums are more poorly educated and less likely to receive antenatal care and skilled birth assistance.¹² The risk of a child dying within one month of life in Nairobi is almost double in comparison to urban areas as a whole¹³. Neonatal deaths are attributed to poor maternal health, lack of skilled delivery and essential new born care practices. Indicators for infant and maternal mortality (IMR) in Kenya's slums are significantly worse than the national average. Slum specific IMR are higher than the city wide average; a longitudinal study conducted by APHRC between 2003 and 2005 in two slums in Nairobi revealed that the IMR was more than 40% than that of Nairobi as a whole¹⁴.

1.1.7 Maternal Mortality

The maternal mortality ratio in the country is 414 deaths per 100,000 live births. These indicators are worse among the urban poor. A recent study in the Korogocho and Viwandani slums in Nairobi indicates maternal mortality ratio to be at 706 deaths per 100,000 live births (Essendi et al, 2011). Formal Emergency Obstetric Care Services' Utilization is also poor with major barriers faced being inability to identify danger signs in time, poor health decision making, unaffordability of health care seeking, poor physical access to formal care services, inadequately equipped health facilities, and poor attitude among health personnel. (Essendi et al, 2011). Identification of the danger signs during delivery is a key component in decision making on seeking emergency obstetric care timely. Failure to correctly and promptly recognize the symptoms that require a birthing mother to be referred to a formal health facility could act as a barrier or a source of delay. It has been reported that some women in the urban slums that some women in labor take a long time before deciding to seek help. (Essendi et al, 2011), which could partly account for the poor pregnancy outcomes. Poverty which affects affordability of services has also been recognized barrier to the uptake of formal delivery

¹⁰ ACF sentinel surveillance estimates that only half of new mothers initiate breastfeeding within the first one hour after delivery.

¹¹ District Health Management Team consultation on key MNCH issues in Mathare and Mukuru, Oct 2013

¹² Children's health in slum settings , Unger A. Unger A.(2013)

¹³ Government of Kenya. 2010. Kenya Demographic Health Survey, 2008/09, Nairobi, Kenya.

¹⁴ Africa Population Health and Research Council, unpublished data 2007-2010, Nairobi, Kenya

services utilization. Most of slum households are poor and often unable to afford these services, despite their wish to access formal delivery services. Lack of money to pay for transport or hire a vehicle to transport a pregnant woman to a health facility was highlighted as a major hindrance to accessing referrals (Essendi et al, 2011). The unreliable road network within the communities, caused by the haphazard springing up of the slums, emerged as the major infrastructural challenge faced by Korogocho and Viwandani residents. Women with obstetric complications or in labor have to walk or be manually carried to the nearest facility or to public transport out on the main road. It is even more challenging during the rainy season due to the impassable pathways in the slums (Essendi et al, 2011).

1.2 Rationale and Objectives of The Baseline Survey

The survey was proposed in order to get integrated baseline slum level information on both health and nutrition indicators for needs identification. This was also necessitated by the lack of integrated slum level information and the only available data have only focused on specific slums. The survey was conducted through the partnership of the Ministry of Health, Feed the Children and Concern Worldwide and was funded by UNICEF. The survey was conducted between 26th May and 10th June, 2014.

The overall objective of the survey was to establish the baseline information on Maternal and Child Health and Nutrition information in the slums of Nairobi County. Specific objectives of the baseline survey:

- To estimate the current prevalence of acute malnutrition in children aged 6 – 59 months
- To estimate Measles, de-worming, BCG vaccination and ‘Vitamin A’ supplementation coverage for children 9-59 months and 6-59 months respectively
- To establish the Morbidity rates of children 0-59 months 2 weeks prior to the survey
- To establish the percentage of mothers of children age 0-23 months who had four or more antenatal visits provided by skilled health personnel when they were pregnant with the youngest child
- To determine the percentage of children aged 0-23 months whose births were attended by skilled health personnel
- To determine the prevalence of mothers of children age 0-23 months who consumed iron folate tablets during the last pregnancy
- To determine the percentage of children age 0-23 months who received a post-natal visit from an appropriate trained health workers within two days after birth
- To determine the percentage of mothers of children age 0-23 who received a post-partum visit from an appropriate trained health worker within two days after the birth of the youngest child
- To determine the percentage of mothers of children age 0-23 months who received AMTSL during the birth of their youngest child
- To determine the percentage of children 0-23 months who received all three elements of essential newborn care
- To determine the percentage of mothers of children 0-23 months who know at least two danger signs during pregnancy

1.2.1 Survey Area

The target geographical area was the slums in Nairobi County. Specifically, the survey covered the following slums Kibera, Mukuru, Mathare, Korogocho, Viwandani, Kawangware, Gitare Marigu, Majengo and Mji wa Huruma/Kibarage. Additionally, the survey area was stratified in two strata namely; Stratum 1 and Stratum 2. The stratification was based on the review of literature on the socio-economic, health and sanitation situation of the slums. Table 1, shows the slums from the specific strata.

1.3 Survey Methodology

1.3.1 Survey Design

The survey adopted a cross-sectional household survey design. Further, due to the complex nature of the slum population; the survey adopted a 3 stage sampling technique. A mapping of all the slums was done before the survey which was meant to provide the distribution of households in each slum. After the mapping was done, the slums were segmented into blocks of approximately 1000 households. With the list of the



blocks for all the slums, then the selection of the blocks to be included in the survey was selected using the simple random sampling which was the 1st stage sampling. The sampled blocks were then segmented into enumeration areas of approximately 100 households which were the primary sampling units for this survey. The selection of the enumeration areas was the 2nd stage sampling and this was done using the simple random sampling. Finally, with the sampled enumeration areas, a list of all households was drawn upon which 24 households was sampled using simple random sampling. This was the third stage sampling. *The photo on the right hand side shows an example of the blocking as done in Korogocho Slum. The white lines shows the blocks boundaries while the yellow lines shows the sub-location boundaries in the slum.*

1.3.2 Study Population

The target population for this survey was children aged 0 – 59 months and their caregivers

1.3.3 Sample Size

The sample size was calculated for the 2 strata independently with various indicators being considered. However, the global acute malnutrition (GAM) provided the highest sample size and hence it was considered to be the sample size for this survey. The anthropometric survey sample size

was calculated using the SMART survey calculator. The parameters of interest were captured in the ENA Nov 2013 software and the respective number of children required for the survey computed as indicated in Table 1.

1.3.4 Sample Size Calculation

TABLE 1: Sample Size

| | Slum | District | Target Sample Children Per Slum | Number of HH per Slum | Number of Enumeration Areas | Clusters per Strata |
|------------|----------------------|-----------|---------------------------------|-----------------------|-----------------------------|---------------------|
| Better Off | Korogocho | Kasarani | 62 | 134 | 5 | 40 (STRATUM 1) |
| | Viwandani | Makadara | 66 | 143 | 5 | |
| | Kibera | Lang'ata | 216 | 467 | 20 | |
| | Deep Sea | Westlands | 53 | 115 | 5 | |
| | Kawangware | Dagoretti | 43 | 93 | 5 | |
| | Total | | 440 | 952 | 40 | |
| Worse Off | Majengo | Kamukunji | 50 | 109 | 5 | 40 (STRATUM 2) |
| | Mathare | Starehe | 160 | 346 | 15 | |
| | Gitare Marigu | Njiru | 57 | 123 | 5 | |
| | Mukuru | Embakasi | 173 | 374 | 15 | |
| | Total | | 440 | 953 | 40 | Total |
| | Overall Total | | 880 | 1905 | 80 | |

The overall sample size for this survey was 880 children with 440 children being sampled from each stratum from 1,905 households. In the sampled households, anthropometric measurements for children aged between 6 and 59 months were taken

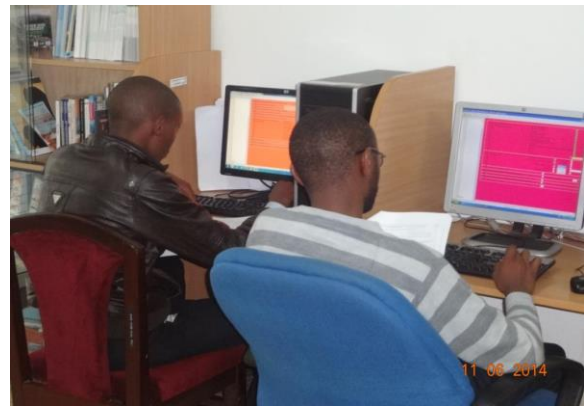
1.3.5 Organization of The Survey

- Coordination/Collaboration:** before the survey was conducted meetings were held with key stakeholders and briefed them about the purpose, objectives and methods for the survey. This included validation of the methodology at the National Nutrition Information Working Group, briefing the County Nutrition Office, liaising with the Sub-County MoHs, and working closely with the DNOs and District Community Strategists
- Training of the Survey Team:** the data collection teams were given 5-days training prior to field work, including a standardization test to ensure standardization of measurement and



recording practice. All data collectors were trained on taking anthropometric measurements, completion of questionnaires and sampling methodology. The data collection forms and questionnaires were pilot tested in clusters not selected to be part of the larger survey, to ensure that the interviewers and respondents understand the questions and that interviewers follow correct protocols.

- **Team work in the field:** Ten Teams each with four members who had experience in data collection were recruited from the survey area with each team consisting of 1 Team Leader, 2 Measurers and 1 female interview for the MNCH section. In addition, 5 supervisors with extensive knowledge of MNCH Surveys were recruited in order to oversee the execution of the survey at the field level. The Survey Supervisors worked closely with the DNOs, District Community Strategy focal persons and Community Health Extension Workers (CHEWs). There were also three Survey Coordinators, two of whom were from Feed the Children (FTC) and one from Concern Worldwide. Finally, the movement from one sampled household to another in every enumeration areas was facilitated by the Community Health Workers (CHWs) who were seconded by the District Community Strategist and the CHEWs. The questionnaires were administered in the households with children 0 to 59 months and as applicable.



1.3.6 Data Analysis

- **Data Analysis:** the data entry and analysis was done using ENA for SMART (November 16th, 2013 Version), CSPro Version 5.0.1 and SPSS Version 18 Statistical Softwares. To improve on the data entry quality, double data entry was done by 6 Data Entry Clerks and managed by one Supervisor. Daily quality of data was monitored through running the plausibility results for the anthropometric data and results were feedback to the team on every morning before leaving for the field.

CHAPTER TWO –BACKGROUND INFORMATION

2.1 Background Information

2.1.1 Response Rate

The target sample for this survey was 1,905 household which was to yield 880 children i.e. 440 children from each stratum. Of the sampled households, 1,005 households had children aged between 0 and 59 months. The total number of children measured was 934 while the number of children aged between 0 and 23 months was 557.

2.1.2 Caregivers' Age Distribution

The overall average age of the caregivers from the survey was 25.14 (± 4.96) with no significant difference in mean age of the respondents for stratum 1 and stratum 2. The median age at first birth in the Nairobi Slums was found to be 20 years with an interquartile range of 18 and 22. This means that 50% of the caregivers who were interviewed gave birth to their first born children before the age of 20 years. In addition, 75% of the caregivers had given birth to their first born children by the age of 22 years. The caregiver who had given birth at the youngest age was 13 years while the oldest caregiver to give birth to a first born child in the sample was 33 years old. This figure is lower than the national average meaning that women in this area are likely to deliver early. It is worth noting that early deliveries are associated with low birth weights and increased delivery related complications.

2.1.3 Gender of The Children in The Survey

Overall, anthropometric measurements of 934 children were taken with 486 being boys and 448 being girls. The sex ratio was 1.08 and was within the recommended range of 0.8 to 1.2 and hence the sample was unbiased for gender.

Finally, the overall average length of stay in the current slums was 6.4 years. In stratum 1 the average length of stay was 6.9 years while in stratum 2 the average length of stay was 5.8 years.

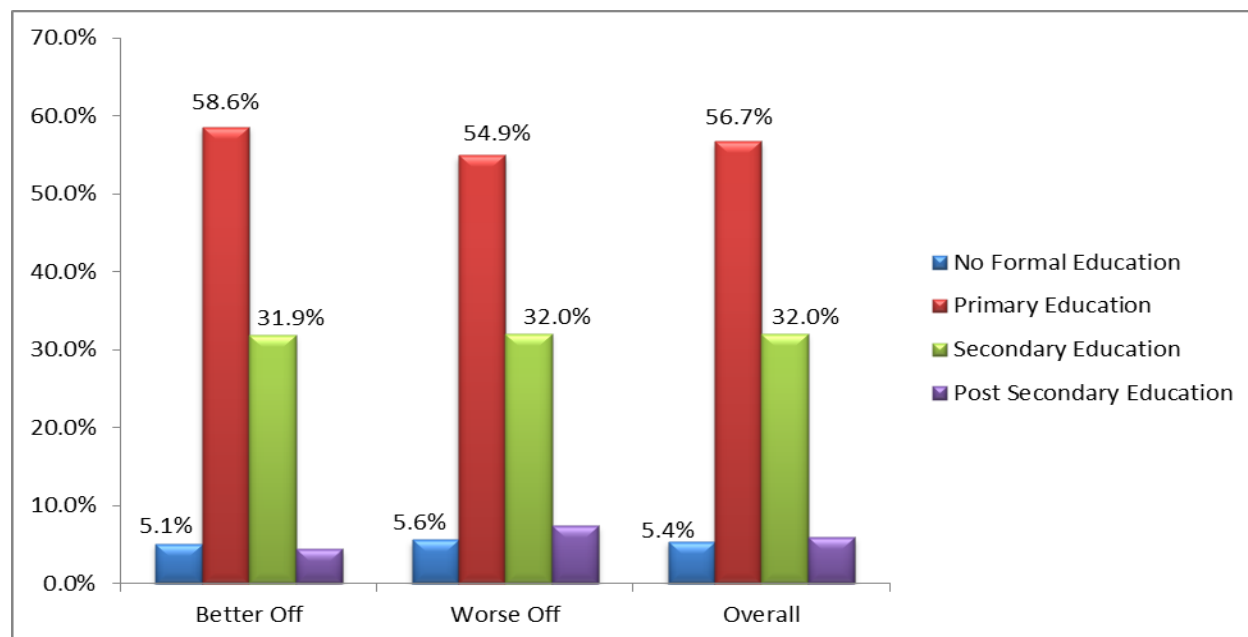
Table 2: Socio Demographic Information of the Respondents

| Indicator | Results |
|---|--|
| Average Household Size <i>Stratum 1</i> <i>Stratum 2</i> <i>Overall</i> | 4.3 (SD=1.5) 4.2 (SD=1.5) 4.3 (SD=1.5) |
| Median Age at First Birth <i>The median age at which the respondents gave birth to their first born child</i> | Median - 20 Years (IQR(18,22)) Minimum – 13 Years Maximum – 33 Years |
| Sex Ratio (Girls : Boys) <i>The sex ratio of the children in the sample</i> | Boys=486 Girls=448 Sex Ratio: 1.08 |
| Length of Stay in Current Slum <i>Stratum 1</i> <i>Stratum 2</i> <i>Overall</i> | 6.9 Years 5.8 Years 6.4 Years |

2.1.4 Caregivers’ Level of Education and Marital Status

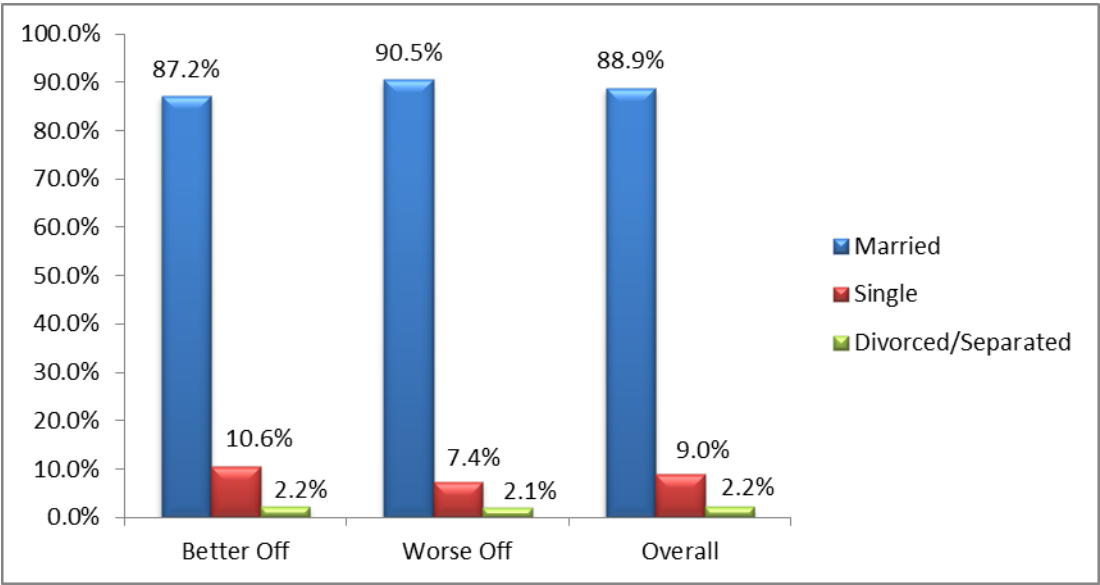
As shown in the figure below, nearly 57% (n=316) of caregivers in the slums of Nairobi were primary school education holders while 32% (n=178) were secondary school holders. It’s also worth noting that 5.4% of the caregivers in the slums had no formal education. The same trend was also observed in both the two categories of slums though the difference was not significant.

Figure 1: Caregivers’ Level of Education



The survey results show that 88.9% (n=495) of the caregivers interviewed were married with only 9.0% (n=50) reporting that they were single.

Figure 2: Marital Status



2.1.5 Households’ Main Source of Income and Livelihood

The main source of income in slums of Nairobi for the period of 30 days prior to the survey was casual labor reported by 43.4% (n=242) of the households followed by small businesses at 28.7% (n=160).

In the Better Off Slums (stratum 1), the main source of income for most of the households was casual labor reported by 46.5% (n=127) of the households followed by small businesses at 26.7% (n=73). On the other side, the main source of income for the Worse off (stratum 2) Slums was also casual labor reported by 40.5% (n=115) of the surveyed households while 30.6% (n=87) of the households reported that small business was their main source of income. The above results are indicative that the main source of income in the urban slums remains to be casual labor.

The main source of livelihood in the slums was casual labor reported by 43.1% (n=240) and this was followed by small businesses reported by 28.9% (n=161). This was the situation in both categories of the slums.

Table 3: Households' Main Source of Income and Livelihood

| Indicator | Category | Strata One | | | Strata Two | | | Overall | | |
|---|---------------------|------------|-----|-------|------------|-----|-------|---------|-----|-------|
| | | n | N | % | n | N | % | n | N | % |
| Main Source of Income in the past 30 Days | Salaried Employment | 67 | 273 | 24.5% | 78 | 284 | 27.5% | 145 | 557 | 26.0% |
| | Small Business | 73 | | 26.7% | 87 | | 30.6% | 160 | | 28.7% |
| | Casual Labor | 127 | | 46.5% | 115 | | 40.5% | 242 | | 43.4% |
| Main Source of Livelihood | Salaried Employment | 67 | 273 | 24.5% | 80 | 284 | 28.2% | 147 | 557 | 26.4% |
| | Business | 73 | | 26.7% | 88 | | 31.0% | 161 | | 28.9% |
| | Casual Labor | 128 | | 46.9% | 112 | | 39.4% | 240 | | 43.1% |

CHAPTER THREE –NUTRITION STATUS OF CHILDREN

3.1 Prevalence of Wasting

In this survey, the global acute malnutrition (GAM) is defined as the proportion of children with a z-score of less than -2 z-scores weight-for-height and/or presence of oedema. Additionally, severe acute malnutrition (SAM) is defined as the proportion of children with less than -3 z-scores weight-for-height and/or presence of oedema. Further, based on MUAC, GAM was defined as the proportion of children with a MUAC of less 125 mm and/or presence of oedema. SAM based on MUAC was defined as the proportion of children with a MUAC of less than 115 mm and/or presence of oedema.

Table 4: Prevalence of Acute Malnutrition Based On Weight-For-Height Z-Scores (and/or Oedema) and by Sex

| | All n = 934 | Boys n = 486 | Girls n = 448 |
|--|------------------------------|------------------------------|------------------------------|
| Prevalence of global malnutrition (<-2 z-score and/or oedema) | (53) 5.7% (4.2-7.6 95% CI) | (28) 5.8% (3.8-8.7 95% CI) | (25) 5.6% (3.6-8.5 95% CI) |
| Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema) | (35) 3.7% (2.7-5.3 95% CI) | (18) 3.7% (2.2-6.0 95% CI) | (17) 3.8% (2.3-6.2 95% CI) |
| Prevalence of severe malnutrition (<-3 z-score and/or oedema) | (18) 1.9% (1.1-3.2 95% CI) | (10) 2.1% (1.0-4.2 95% CI) | (8) 1.8% (0.8-3.8 95% CI) |

The overall GAM Rate in the slums was 5.7% (4.2 – 7.6, 95% CI) which is indicative of a poor¹⁵ nutrition status in the area based on the WHO classification of GAM. The prevalence of SAM among the children aged 6 to 59 months in Slums was found to be 1.9% based on the WFH and/or oedema. The SAM rate is considered normal based on the WHO¹⁶ classification of SAM. The results also showed that sex was not a risk factor of malnutrition in the slums of Nairobi as evidenced by the overlapping confidence intervals among the GAM rates and SAM rate for the two sexes. The prevalence of oedema was found to be 0.9% (n=8).

When disaggregated by the type of the slums, the GAM Rate by WFH and/or Oedema in the Better Off Slums was 4.4% (2.7- 6.9 95% CI) indicative of a normal GAM Rate while the SAM Rate was 1.3% (0.5- 3.6 95% CI) which is also indicative of a normal SAM Rate. However, in the Worse Off Slums, the GAM Rate by WFH and/or Oedema was 6.9% (4.7-10.0 95% CI) which is indicative of a poor nutrition situation while the SAM Rate was 2.7% (1.5- 4.9 95% CI) also is indicative of a poor Nutrition Situation.

When compared with the KDHS 2008/09 survey, the results show that the GAM Rate from this survey is relatively higher than the KDHS 2008/09 which recorded a GAM rate of 3.8%.

¹⁵ WHO cut off points for wasting using z-score (-2 Z scores in populations: <5% - Acceptable; 5-9% - Poor; 10-14% - Serious; >15% - Critical)

¹⁶ Emergency Level: SAM > 4%

Nevertheless it is worth noting that the KDHS survey targeted the entire Nairobi County, including the middle and upper socio economic groups, thus this could have accounted for the relatively low GAM rates compared to this survey, which only targeted the slums where malnutrition rates (undernutrition in this case) are likely to be lower. The GAM Rate in the slums of Nairobi is indicative of a hidden nutrition crisis. Ideally, a malnutrition rate of at least 15% in any given area is an indication of nutrition human crisis according to the WHO classification of malnutrition. However, this would not be ideal in an urban set-up where the population density is high. For instance, a GAM Rate of 15% in the slums of Nairobi would translate to approximately 66,000¹⁷ malnourished cases which would be a crisis of monumental proportions to which neither NGOs nor the government would have the capacity to respond to rapidly and effectively. In this survey, a GAM Rate of 5.7% translates to approximately 22,000 cases with the estimated cases of SAM being 7,500. To treat such cases, would require approximately 75 Million Shillings, which is hardly affordable to the MoH and the nutrition sector.. Further, with only 80 facilities offering Outpatient Therapeutic Treatment Program in the slums, then then average number of SAM cases per facility would be 94 which is quite high. Thus, there is need for concerted efforts by all stakeholders to address the major drivers of malnutrition in the slums.

Table 5: Prevalence of Acute Malnutrition Based On MUAC (and/or Oedema)

| | Overall n = 934 | Better Off n = 456 | Worse Off n = 478 |
|---|-------------------------------|-------------------------------|-------------------------------|
| Prevalence of global malnutrition (MUAC and/or oedema) | (31) 3.3% (2.3- 4.9 95% CI) | (15) 3.3% (2.0- 5.4 95% CI) | (16) 3.3% (1.8- 6.0 95% CI) |
| Prevalence of moderate malnutrition (MUAC) | (17) 1.8% (1.1- 3.1 95% CI) | (9) 2.0% (1.1- 3.6 95% CI) | (8) 1.7% (0.7- 4.1 95% CI) |
| Prevalence of severe malnutrition (MUAC and/or oedema) | (14) 1.5% (0.8- 2.7 95% CI) | (6) 1.3% (0.5- 3.6 95% CI) | (8) 1.7% (0.8- 3.5 95% CI) |

Using MUAC and/or Oedema, the prevalence of GAM in the slums was found to be 3.3% (2.3- 4.9 95% CI) while the prevalence of SAM was 1.5% (0.8- 2.7 95% CI).

On the different classification of slums, the prevalence of GAM based on MUAC and/or Oedema was 3.3% (2.0- 5.4 95% CI) and 3.3% (1.8- 6.0 95% CI) for the Better Off and Worse Off Slums respectively which was moreless the same. On other hand, the prevalence of SAM based on MUAC and/or Oedema was 1.3% (0.5- 3.6 95% CI) and 1.7% (0.8- 3.5 95% CI) for the Better Off and Worse Off Slums respectively.

3.2 Prevalence of Underweight

The measure of underweight gives a mixed reflection of both the current and past nutrition experience by a population and is very useful in growth monitoring. Children whose WFA Z score fell below -2 standard deviations of the WHO reference population or had bilateral oedema were classified as underweight. Children whose WFA Z score fell below -3 standard deviation of the WHO reference population or had bilateral oedema were classified as severe underweight.

¹⁷ The estimated slum population for Nairobi is 2.4 Million with the population of under 5 being 16% (KNBS)

Table 6: Prevalence of Underweight Based on Weight-For-Age

| | Overall n = 934 | Better Off n = 452 | Worse Off n = 476 |
|---|--------------------------------------|------------------------------------|------------------------------------|
| Prevalence of Global Underweight | (120) 12.9% (10.5-15.9 95% CI) | (61) 13.5% (9.7- 18.5 95% CI) | (59) 12.4% (9.4- 16.1 95% CI) |
| Prevalence of Moderate Underweight | (100) 10.8% (8.6- 13.4 95% CI) | (54) 11.9% (8.5- 16.6 95% CI) | (46) 9.7% (7.2- 12.8 95% CI) |
| Prevalence of Severe Underweight | (20) 2.2% (1.2- 3.7 95% CI) | (7) 1.5% (0.7- 3.5 95% CI) | (13) 2.7% (1.3- 5.6 95% CI) |

The results in the above table show that the prevalence of underweight using the weight-for-age z-score in slums of Nairobi was found to be 12.9% (10.5-15.9 95% CI). This prevalence of underweight was classified as medium using the WHO classification of underweight¹⁸. When compared between the slums, the prevalence of underweight in the Better Off Slums and Worse Off Slums was 13.5% (9.7-18.5 95% CI) and 12.4% (9.4-16.1 95% CI) respectively with the difference being insignificant.

On the other hand the overall prevalence of severe underweight was found to be 2.2% (1.2- 3.7 95% CI) which is considered normal. Additionally, the prevalence of severe underweight in the Better Off Slums was 1.5% (0.7- 3.5 95% CI) and in the Worse Off Slums was 2.7% (1.3- 5.6 95% CI) with the difference being insignificant.

3.3 Prevalence of Stunting

Stunting (height-for-age) is an indicator of chronic (long-term) malnutrition arising from persistently poor food security situation, micronutrient deficiencies, recurrent illnesses and other factors which interrupt normal growth. Unlike wasting, stunting is not affected by seasonality but rather related to the long-term effect of socio-economic development and long-standing food insecurity situation.

Table 7: Prevalence of Stunting Based on Height-For-Age

| | Overall n = 933 | Better Off n = 455 | Worse Off n = 478 |
|--|-----------------------------------|------------------------------------|------------------------------------|
| Prevalence of Global Stunting | (313) 33.5% (30.1-37.2 95% CI) | (154) 33.8% (29.1- 39.0 95% CI) | (160) 33.4% (28.3- 38.9 95% CI) |
| Prevalence of Moderate Stunting | (201) 21.5% (19.0-24.4 95% CI) | (100) 22.0% (18.2- 26.3 95% CI) | (101) 21.1% (17.6- 25.0 95% CI) |
| Prevalence of Severe Stunting | (112) 12.0% (9.7-14.8 95% CI) | (54) 11.9% (8.6- 16.2 95% CI) | (59) 12.3% (9.1- 16.5 95% CI) |

The results of the survey show that the prevalence of stunting in the Slums of Nairobi was 33.5% (30.1-37.2 95% CI) 23.3 – 30.4 95% CI) which is categorized as high based on the WHO classification¹⁹. Further, the prevalence of severe stunting was found to be 12.0% (9.7-14.8 95% CI

¹⁸ WHO Classification of Underweight: Low - <10%, Medium – 10 – 19.9%, High – 20 – 29.9%, Alarming/Critical - >30%

¹⁹ WHO Classification: Low - <20%, Medium - 20 – 29.9% , High – 30 – 39.9%, Alarming/Critical - >40.0%

which is considered high. On the different stratification of the slums, the survey results indicate that there was no significant difference in stunting. When compared with Nairobi as a whole with a stunting rate of 28.5% (KDHS 2008/09), the stunting levels were relatively higher in the slums. The high stunting levels in the slums represent a loss of both mental and physical potential for the affected children.

CHAPTER FOUR – BREASTFEEDING AND INFANT AND YOUNG CHILD NUTRITION

4.1 Breastfeeding/ Infant and Young Child Feeding

Breastfeeding practices and introduction of supplemental foods are important determinants of the nutritional status of children, particularly those under the age of two years. With improved nutritional status, the risk of mortality among children under five years can be reduced and their psycho-motor development enhanced. Breast milk is uncontaminated and contains all the nutrients needed by children in the first six months of life. Supplementing breast milk before six months of age is unnecessary and discouraged because of the likelihood of contamination, which may result in the risk of diarrheal diseases.

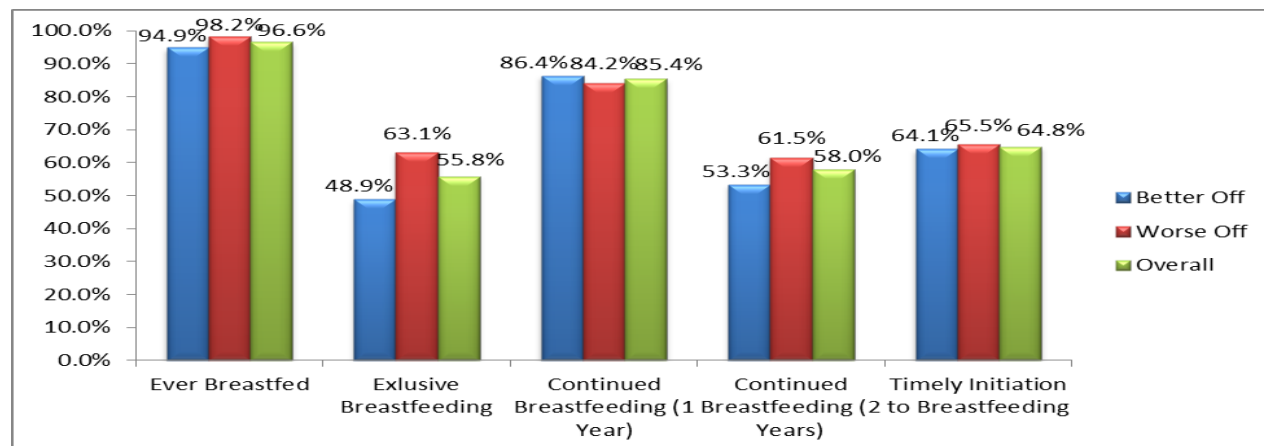
4.1.1 Breast Feeding

The results of the survey indicated that 96.6% (n=538) of the children aged between 0 and 23 months had been breastfed with no significant difference across the two strata. Timely initiation to breastfeeding was found to be 64.8% (361) which is considered below the national target of 80%. On Exclusive Breastfeeding (EBF) Rates, the results showed an EBF Rate of 55.8% (n=96) which is above the 50% national target. The EBF Rate was higher in the Worse Off Slums at 63.1% (n=53) when compared with Better Off Slums with an EBF Rate of 48.9% (n=43) though the difference was not significant.

For continued breastfeeding at 1 year, the results showed a rate of 85.4% (n=70) which was not significantly different across the different stratum, while, continued breastfeeding at 2 years was 58.0% (n=40) again not significant across the different strata.

Generally, the results of the survey show varying results on breastfeeding practices among the caregivers in the slums. In order to improve on the breastfeeding practices in the slums, there is need to put several measures in place geared towards behavior change of the mothers/caregivers of the children. While intensive counselling on IYCN at the health facility (during ANC visits and post-delivery visits) is one of the avenues to improve this, it should be supplemented with investment at community level to reach out to the mothers with children under 2 years and those who are expectant (the 1000 days

Figure 3: Breastfeeding Practices



4.1.2 COMPLEMENTARY Feeding Practices

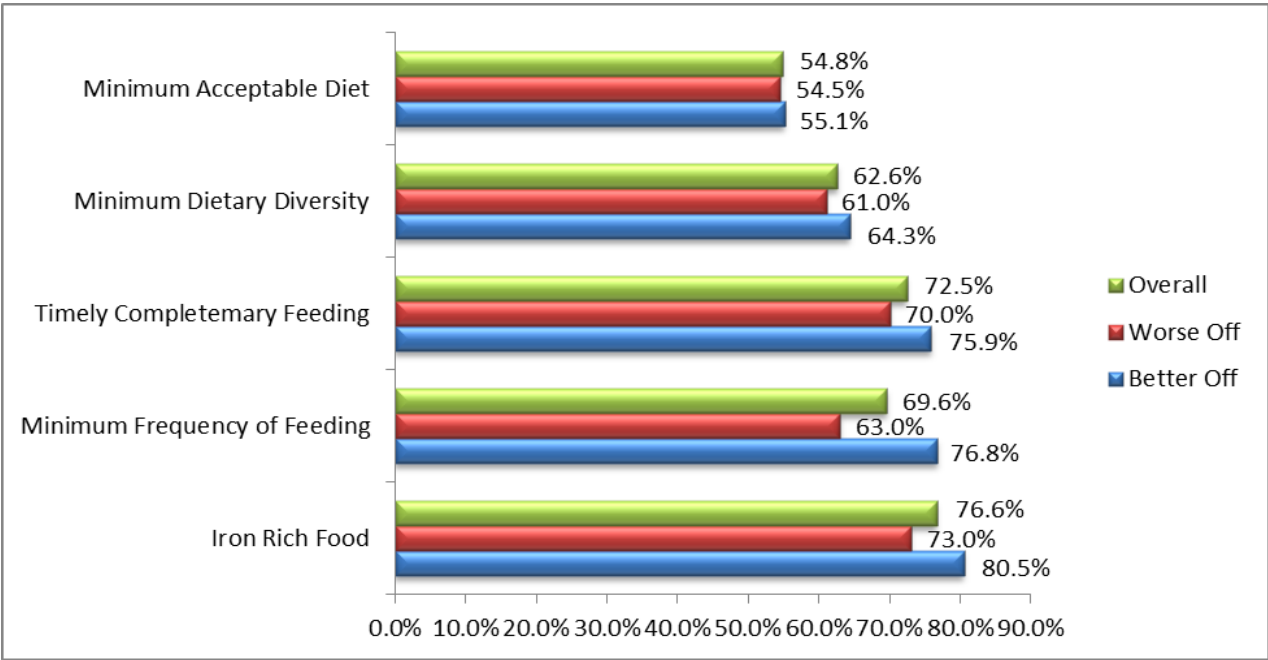
Diversification in complementary feeding of children is important in meeting the need for essential nutrients. All people need a variety of foods to meet requirements for essential nutrients, and the value of a diverse diet has long been recognized. Lack of diversity is a particularly severe problem among poor populations in the developing world, where diets are based predominantly on starchy staples and often include few or no animal products and only seasonal fruits and vegetables. For vulnerable infants and young children, the problem is particularly critical because they need energy- and nutrient-dense foods to grow and develop both physically and mentally and to live a healthy life.

The proportion of children who were fed on the minimum acceptable diet ²⁰ in the slums was 54.8% (n=211) which didn't vary significantly by the slum type. However, this was below the national recommended proportion of 80%. According to the results of the survey, 62.6% (n=241) consumed the minimum dietary diversity with the Better Off slums having a higher proportion though not significantly different with the Worse Off Slums. This is below the recommended 80% threshold nationally. On timely introduction of complementary feeding (at 6 months or 180 days of age), the results show that 75.9% (n=50) of the children aged between 6 and 8 months were timely initiated to food though this is below the national recommended 80%. Though there was no significant difference between the two slum categories, the Better Off Slums had good complementary feeding practices than the Worse Off Slums.

The result of the survey showed that the proportion of the children feeding on the minimum number of meals per day was significantly higher in the Better Off Slums than in the Worse Off Slums (p=0.0169). The overall proportion of children feeding on the minimum number of meals per day was 69.6% (n=268) which is below the national level recommended target of 80%.

Figure 4: Feeding Practices

²⁰ Minimum Acceptable Diet: The proportion of children aged 6 to 23 months who meet both the minimum dietary diversity and the minimum meal frequency



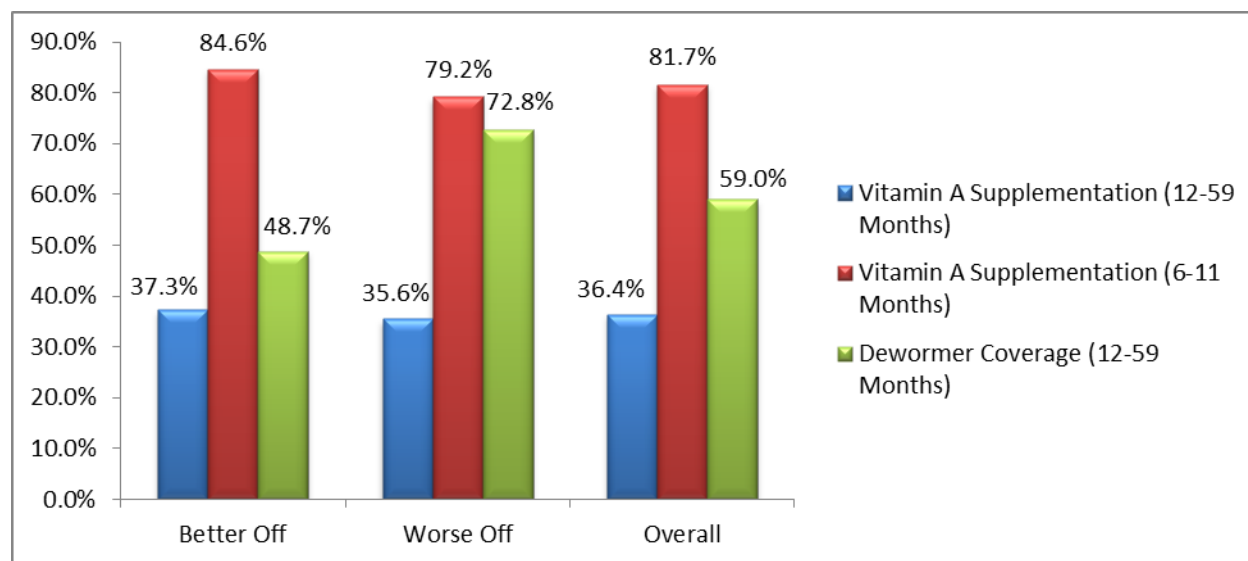
CHAPTER FIVE –IMMUNIZATION

5.1 Vitamin A Supplementation- (For Children 6-23 Months Only) and Deworming (12-23 Months)

A serious contributor to childhood morbidity and mortality is micronutrient deficiency. Children can receive micronutrients from foods, food fortification, and direct supplementation. Vitamin A is an essential micronutrient for the immune system and plays an important role in maintaining the epithelial tissue in the body. Severe Vitamin A Deficiency (VAD) can cause eye damage. VAD can also increase severity of infections such as measles and diarrheal diseases in children and slow recovery from illness. Vitamin A is found in breast milk, other milks, liver, eggs, fish, butter, red palm oil, mangoes, papayas, carrots, pumpkins, and dark green leafy vegetables. The liver can store an adequate amount of the vitamin for four to six months. Periodic dosing (usually every six months) of vitamin A supplements is one method of ensuring that children at risk do not develop VAD. Periodic deworming for organisms like helminthes and schistosomiasis (bilharzia) can improve children's micronutrient status.

The results of the survey showed that the overall proportion of children (12-59 Months) supplemented with Vitamin A for at least 2 times in the period of one year preceding the survey was 36.4% (n=291) which is way below the national target of 80%. The situation was not significantly different across the two slum categories though the Better Off Slums recorded a higher Vitamin A Coverage. On deworming coverage, the results showed an overall coverage of 59% (n=406) which was significantly higher in the Worse Off Slums as compared with the Better Off Slums (p=0.000).

Figure 5: Vitamin A Supplementation- (For children 6-59 months) and Deworming (12-59 months)



5.2 Child Immunizations

According to the World Health Organization, a child is considered fully vaccinated if he or she has received: a BCG vaccination against tuberculosis; three doses of DPT vaccine to prevent diphtheria,

pertussis, and tetanus (or three doses of pentavalent which includes 2 additional vaccines that prevent Hepatitis B and Haemophilus Influenza); at least three doses of polio vaccine; and one dose of measles vaccine. These vaccinations should be received during the first year of life. The baseline survey collected information on the coverage for these vaccinations among all children 12-59 months.

The information on vaccination coverage was obtained in two ways; from health cards and from mother's verbal reports. All mothers were asked to show the interviewer health cards used for the child's immunization. If the card was available, the interviewer copied the dates of each vaccination received. If a vaccination was not recorded on the card as being given, the mother was asked to recall whether that particular vaccination had been given. If the mother was not able to present a card for a child at all, she was further asked to recall whether the child had received BCG, polio, DPT/pentavalent and measles. If she indicated that the child had received the polio or DPT/pentavalent vaccines, she was asked the number of doses that the child received.

The measles coverage at 9 months in slums was found to be high at 95.4% (n=834) which was not significantly different across the slums. Additionally, measles coverage at 18 months was found to be at 31.5% (n=209) with no difference across the slums. On access to immunization services which was measured through DPT1, the results found a near universal access to immunization in the slums. Also, the survey results found a near universal performance of health services in the slums regarding immunization which was measured through DTP3.

Table 8: Immunization Coverage

| Indicator | | n | N | Proportion |
|---|-------------------|-----|-----|------------|
| Access to Immunization Services (DTP1) <i>Percent of children aged 12-23 months who received DTP1 according to the vaccination card or mother's recall by the time of the survey</i> | Overall | 256 | 257 | 99.6% |
| | Better Off | 126 | 127 | 99.2% |
| | Worse Off | 130 | 130 | 100.0% |
| Health Systems Performance Regarding Immunization Services (DTP3) <i>Percent of children age 12-23 months who received a DTP 3 according to the vaccination card or mother's recall by the time of the survey</i> | Overall | 254 | 257 | 98.8% |
| | Better Off | 126 | 127 | 99.2% |
| | Worse Off | 128 | 130 | 98.5% |
| Measles Vaccination Coverage <i>Percent of children aged 12-23 months who received measles vaccine according to the vaccination card or mother's recall by the time of the survey</i> | Overall | 834 | 874 | 95.4% |
| | Better Off | 415 | 431 | 96.3% |
| | Worse Off | 419 | 443 | 94.6% |
| Measles Vaccination Coverage <i>Percent of children aged 18-23 months who received measles vaccine according to the vaccination card or mother's recall by the time of the survey</i> | Overall | 209 | 663 | 31.5% |
| | Better Off | 101 | 321 | 31.5% |
| | Worse Off | 108 | 342 | 31.6% |

CHAPTER SIX –MORBIDITY

6.1 Morbidity

The survey found that nearly one out of every 2 children [(49.4% (n=465)] of the children aged between 0 and 59 months had been sick two weeks prior to the survey which is not significantly different across the slums. The most prevalent illness during this period was diarrhea which was estimated at 33.1% (n=154) with the Worse Off Slums having the higher prevalence though not significantly different between the two categories of the slums. The prevalence of Acute Respiratory Infections (ARI) during this period was 24.5% (n=114) while the prevalence of illnesses that present with fever was 24.7% (n=24.7%).



The health seeking behavior²¹ was found to be 60.9% (n=269) with higher preference on the Public Health Facilities (57.6%, n=155) though no significant difference was found across the slums. Further, among the children who suffered from diarrhea and sought medical treatment in hospital, only 1 in 3 children [29.0% (n=40)] who were supplemented with zinc which is below the HiNi target of 80%. However, zinc supplementation was significantly higher in the Better Off Slums as compared with the Worse Slums (p=).

Table 9: Immunization Coverage

| Indicator | | n | N | Proportion |
|---|-------------------|-----|-----|------------|
| <i>Proportion of Children under 5 Years who were reported to have been sick two weeks prior</i> | Overall | 465 | 941 | 49.4% |
| | Better Off | 221 | 459 | 48.1% |
| | Worse Off | 244 | 482 | 50.6% |
| <i>Prevalence of Diarrhea</i> | Overall | 154 | 465 | 33.1% |
| | Better Off | 70 | 221 | 31.7% |
| | Worse Off | 84 | 244 | 34.4% |
| <i>Prevalence of Fever</i> | Overall | 115 | 465 | 24.7% |
| | Better Off | 46 | 221 | 20.8% |
| | Worse Off | 69 | 244 | 28.3% |

²¹ Percentage of children who were taken to the health facility the last time they were sick within the last two weeks

| | | | | |
|--|-------------------|-----|-----|-------|
| <i>Prevalence of ARI</i> | Overall | 114 | 465 | 24.5% |
| | Better Off | 52 | 221 | 23.5% |
| | Worse Off | 62 | 244 | 25.4% |
| <i>Health Seeking Behaviour</i> | Overall | 269 | 442 | 60.9% |
| | Better Off | 140 | 221 | 63.3% |
| | Worse Off | 129 | 221 | 58.4% |
| <i>Percent of children supplemented with Zinc during diarrhoeal management</i> | Overall | 40 | 138 | 29.0% |
| | Better Off | 24 | 64 | 37.5% |
| | Worse Off | 16 | 74 | 21.6% |

CHAPTER SEVEN – WATER AND SANITATION

7.1 Water, hygiene and Sanitation

Increasing access to improved drinking water is one of the Millennium Development Goals (MDG) that Kenya along with other nations worldwide has adopted (United Nations General Assembly 2001). Lack of ready access to a water source may limit the quantity of suitable drinking water that is available to a household. Even if the water is obtained from an improved source, moreover, water that must be fetched from a source that is not immediately accessible to the household may be contaminated during transport or storage. Another factor in considering the accessibility of water sources is that the burden of going for water often falls disproportionately on female members of the household. Finally, home water treatment can be effective in improving the quality of household drinking water.

7.1.1 Access to Toilets

According to the survey, 93.2% (n=519) of the households have access to toilet facilities while across the slums, the proportion of households that have access to toilets in Better Off Slums was 93.8% (n=256) and 92.6% (n=263) with the difference being insignificant. Though majority of the households reported that they have access to toilets, 50% (n=264) reported that they have access to traditional pit latrines. Based on the observation made during the survey, most of the traditional pit latrines observed were in pathetic condition with majority of them being connected to open sewer which is a health hazard in the slums. *(The Photo on Right Hand shows an Example of a Traditional Pit Latrine in Kibera Slum next to the Nairobi River)*



7.1.2 Water source and Treatment at Household

The major source of water in the slums of Nairobi is piped water as reported by 98.9% (n=550). Further, it is important to note that 42.6% (n=237) of the households reported paying for the water. The results of the survey showed that 49.2% (n=274) of the households reported treating water before drinking. When compared across the slums, the results indicate that in the Better Off Slums, the proportion of households that practice water treatment was 52.0% (n=142) while in the Worse Off Slums, the proportion of household practicing water treatment was 46.5% (n=132) with the difference between the slums being insignificant. The most preferred method of water treatment in the slums was boiling reported by 54% of the households followed by ‘use of water guard²²’ reported by 48% of the households.

7.1.3 Hand Washing at Critical Times

Hand washing with soap is among the most effective and inexpensive ways to prevent diarrheal diseases and pneumonia, which together are responsible for the majority of child deaths. This behavior is projected to become a significant contribution to meeting the MDG of reducing deaths

²² Chemical Treatment

among children under the age of five by two-thirds by 2015. The WHO advocates for hand-washing with soap at four critical times: after defecation, after cleaning a child, before feeding a child and before preparing food. Studies have linked the under-5 diarrhea prevalence with poor hand washing practices among the caregivers²³.

The results of the baseline survey showed that among the caregivers interviewed only 1 in 10 caregivers [9.7% (n=54)] reported practicing proper hand washing at all critical times. In the Better Off Slums, the results showed that only 10.3% (n=28) of the caregivers who practiced proper hand washing at critical time and this was slightly higher than in the Worse Off Slums at 9.2% (n=26). When broken down by the specific times when the caregivers wash their hands, the results show that the most common was 'after visiting toilet' (74%) followed by 'before feeding the child' 46%, then 'before handling food' 42% and finally 'after cleaning the child's bottom' 41%. It is important to note that though hand washing at the specific instances was relatively higher (above 40% in all 4 critical times), soap utilization was really low and hence affecting hand washing at the critical times as recorded by WHO. According to the results, the proportion of caregivers washing hands at ALL the four critical times with soap in the slums as recommended was very low and this may be linked to high cases of diarrhea in the slums as evidenced in the morbidity section (prevalence of diarrhea in the slums was found to be 33%). Based on the above, it is highly recommended that intensified dissemination of information on the utilization of soap when washing hands at the community level is done. . This could be achieved through the use of community level education to the caregivers through the CHWs or through the media plat forms such as radio and TV. Also, utilization of the religious leaders in dissemination of the information on hand washing at critical time would be crucial as the survey results showed that over 98% of the caregivers were members of religious groups.

Table 10: Sanitation

| Indicator | | n | N | Proportion |
|---|-------------------|-----|-----|------------|
| Household Water Treatment | Overall | 274 | 557 | 49.2% |
| | Better Off | 142 | 273 | 52.0% |
| | Worse Off | 132 | 284 | 46.5% |
| Access to Toilet | Overall | 519 | 557 | 93.2% |
| | Better Off | 256 | 273 | 93.8% |
| | Worse Off | 263 | 284 | 92.6% |
| Hand washing at critical time ²⁴ | Overall | 54 | 557 | 9.7% |
| | Better Off | 28 | 273 | 10.3% |
| | Worse Off | 26 | 284 | 9.2% |

²³ Curtis V, Cairncross S. Effect of washing hands with soap on diarrhoea risk in the community: a systematic review. *The Lancet Infectious Diseases*. 2003;3(5):275–281

²⁴ Any Three of the Following Times: Before feeding child, After cleaning child's bottom, After using the toilet and Before eating

CHAPTER EIGHT –MATERNAL AND NEW BORN CARE

8.1 MATERNAL AND NEWBORN CARE

Maternal and newborn care is based on the premise that provision of quality basic care to women experiencing normal pregnancies, births and postpartum periods as well as to their normal newborns, not only improves the health of the mother and baby but also can help save lives.

8.1.1 Antenatal Care

Antenatal Care (ANC) is periodic and regular supervision including examination of mothers during pregnancy. Effective ANC is an important element in the continuum of care model. Antenatal care is important to ensure a normal pregnancy with the delivery of healthy baby from a healthy mother through screening for high risks mothers, prevention, detection or treatment at the earliest of any complications and continued medical surveillance and prophylaxis. Ideally, ANC visits should be scheduled as follows:

- 1st Visit- at 16 weeks
- 2nd Visit at 24-28 weeks
- 3rd visit 32 weeks
- 4th Visit at 36 weeks

ANC has been shown to play a role in prevention of maternal deaths and still births given that most occur during the last twelve weeks of pregnancy.

Quality ANC

Quality ANC encompasses a minimum of four antenatal visits, comprising interventions such as tetanus toxoid vaccination, iron supplementation screening and treatment for infections, and identification of warning signs during pregnancy. The majority of the antenatal interventions known to be effective can be delivered by a midwife or nurse or lower-level health care workers such as CHW, provided they have the necessary training, equipment and supplies and are appropriately supervised. However, for complicated cases, it is important to be able to draw upon more specialized skills such as those of a nurse or a doctor.

This survey assessed attendance in terms of number of visits and content of the intervention provided. Although attendance rates for the first visit and for more than 4 visits was over 60%, in both populations, the rates for mothers receiving quality ANC²⁵ were below 50% (at 39%).

There was no significant difference between mothers from better off and those from worse off settlements

²⁵ Percentage of mothers of children 0-23 months who had four or more antenatal visits with a skilled provider and were adequately counseled when they were pregnant with the youngest child

Figure 6: Antenatal Care Visit

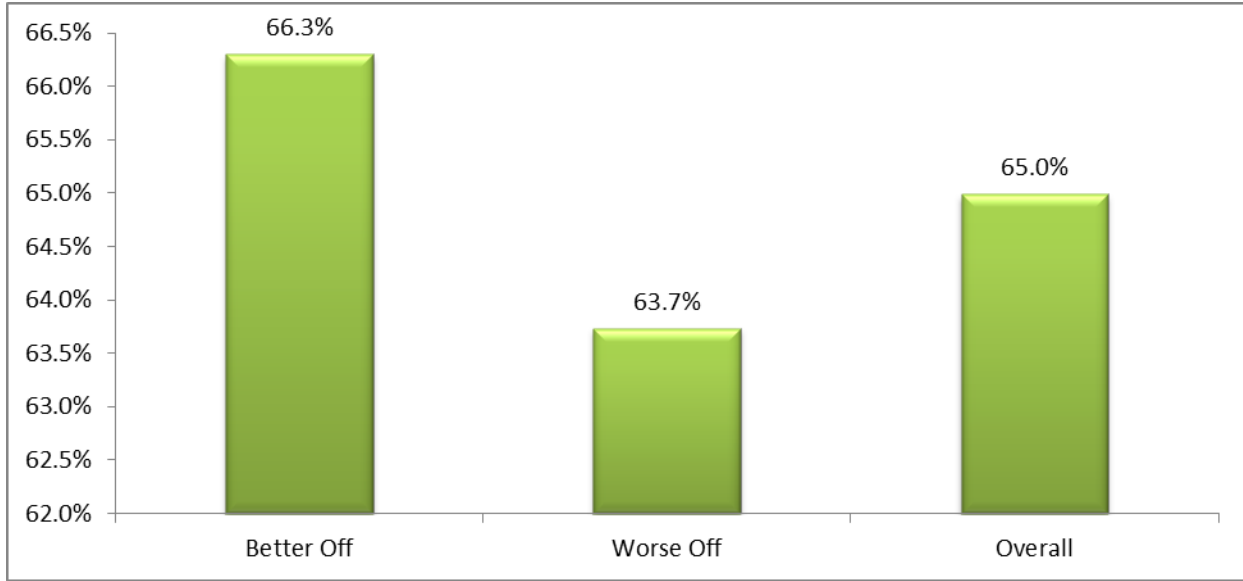
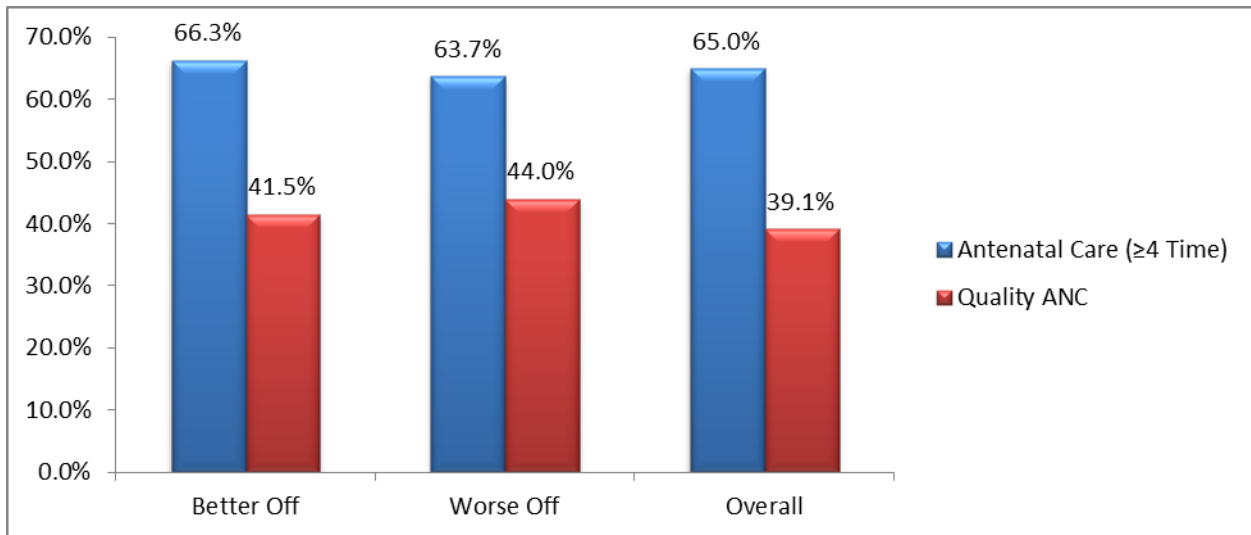


Figure 7: Quality ANC and Antenatal Care (At Least 4 Times)



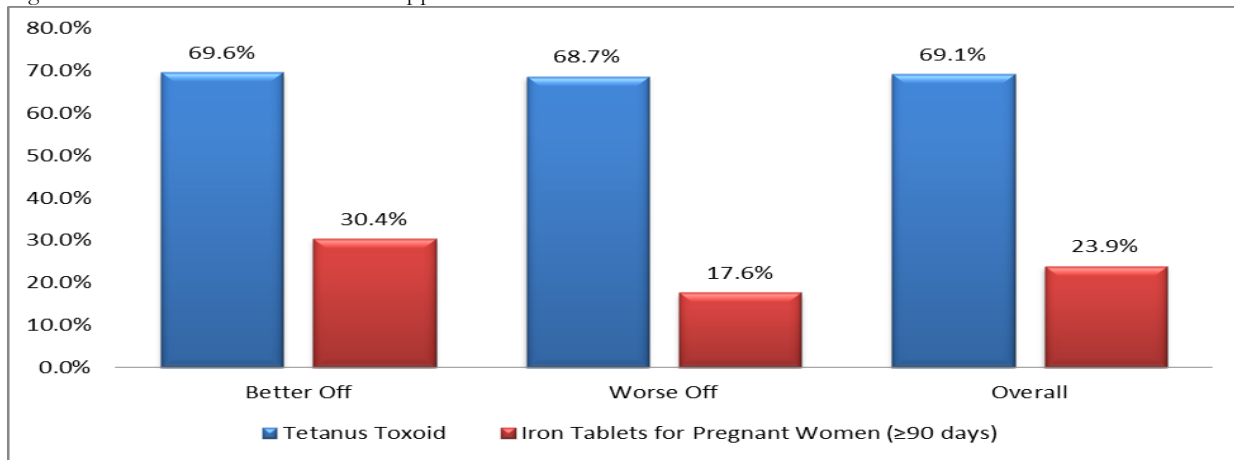
Improvements in the provision of quality ANC could have a significant improvement on four visits attendance rate, skilled birth attendance and reduction in maternal and neonatal deaths.

8.1.2 Tetanus Toxoid and Iron Supplementation

Neonatal tetanus is an important preventable cause of neonatal mortality that can be prevented by tetanus toxoid vaccination for the mother. Universal coverage for tetanus toxoid should be > 99%. Pregnant women require additional iron and folic acid to meet their own nutritional needs as well as those of the developing fetus. Deficiencies in iron and folic acid during pregnancy can potentially negatively impact the health of the mother, her pregnancy, as well as fetal development. Use of iron and folic acid supplements is therefore associated with a reduced risk of iron deficiency and anemia in pregnant women. Iron and folic acid supplementation has also been found to have a strong

protective effect against early neonatal death which means that early neonatal mortality could be averted in Nairobi urban slums by universal iron and folic acid supplementation during pregnancy.

Figure 8: Tetanus Toxoid and Iron Supplementation

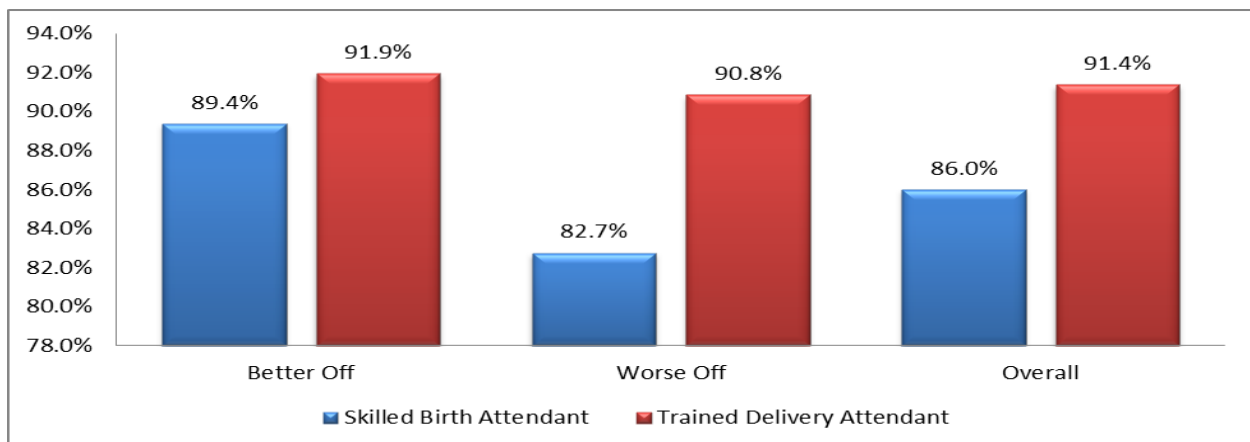


Coverage for both vaccinations was way below the recommended coverage of over 90%. There was no significant difference between the worse off and better off with regards to Tetanus toxoid. Iron supplementation rates in better off slums were almost twice those in the worse off areas suggesting potential barriers in access, knowledge or availability of the service in the worse off stratum.

8.1.3 Skilled Birth Attendant

Skilled birth attendance is delivery by professional (doctors, nurses, auxiliary nurses or other allied health professionals) and helps reduce complications during childbirth that can lead to neonatal and maternal disability and death.

Figure 9: Birth Attendants



There was no difference between the worse off and better off with an average of 86% using skilled birth attendant. Noteworthy is that in the two settlements, the use of Trained delivery attendant was higher than the use of skilled birth attendant which was below the recommended 100% coverage.

8.1.4 Neonatal Care and Management of the Cord

Studies have shown that many newborn lives can be saved by the use of interventions that require simple technology. The majority of these interventions can be effectively provided by a single skilled birth attendant caring for the mother and the newborn. Care of all newborns includes immediate and thorough drying, skin to skin contact of the newborn with the mother, cord clamping and cutting after the first minutes after birth, early initiation of breastfeeding, and exclusive breastfeeding. Proper management of cord is important in preventing neonatal sepsis, one of the leading causes of neonatal deaths in Kenya. Cord care includes clean cord cutting and clean cord care. Clean cord cutting happens during Active Management of Third Stage of labor (AMTSL) hence directly related with the practice. 53.5% of mothers in worse off settlements reported they had clean cord cutting at delivery compared to 39.6% in better off areas. While there was no significant difference between the two groups as relates to clean cord. Both cord care practices are low. Immediate drying after delivery was 81% overall showing good practice but there is need to increase this 100%.

Table 11: Neonatal Care and Management of the Cord

| Indicator | | n | N | Proportion |
|---|-------------------|-----|-----|------------|
| Clean Cord Cutting <i>Percent children age 0-23 months that had clean cord cutting at the time of birth.</i> | Overall | 163 | 346 | 47.1% |
| | Better Off | 63 | 159 | 39.6% |
| | Worse Off | 100 | 187 | 53.5% |
| Clean Cord Care <i>Percent children age 0-23 months that had clean cord care at the time of birth.</i> | Overall | 100 | 273 | 36.6% |
| | Better Off | 112 | 284 | 39.4% |
| | Worse Off | 212 | 557 | 38.1% |
| Immediate Drying <i>Percent of children age 0-23 months who were dried immediately after birth.</i> | Overall | 452 | 557 | 81.1% |
| | Better Off | 229 | 273 | 83.9% |
| | Worse Off | 223 | 284 | 78.5% |
| Active Management of the Third Stage of Labor (AMTSL) <i>Percent of mothers of children age 0-23 months who received AMTSL after the birth of her youngest child.</i> | Overall | 157 | 557 | 28.2% |
| | Better Off | 90 | 273 | 33.0% |
| | Worse Off | 67 | 284 | 23.6% |

8.1.5 Active Management of Third Stage of Labour

Postpartum hemorrhage is one of the leading causes of maternal death worldwide. AMTSL is highly effective at preventing postpartum hemorrhage among facility-based deliveries. Overall, only 28.2% of mothers reported having undergone AMTSL. Although mothers from the better off sections reported higher rates (33%) compared to 23.6% from the worse off areas, the rates were dismal.

Prophylactic use of a uterotonic drug, generally oxytocin, during the third or fourth stage of labour was 54.8% (n=299). The practice of fundal massage immediately after delivery of the placenta and follow-up palpation was 50.6% (n=279). This is very low and could suggest that there was insufficient surveillance of women during the hours when most maternal deaths occur. Incorrect AMTSL is due to multiple deficiencies in practice hence a need to thoroughly audit the system to find out where gaps lie while as well ensuring the availability of oxytocin. Facilities within these settlements should also consider having reduction in postpartum hemorrhage as a goal and the health workers responsible for most deliveries should be targeted with behavior change interventions.

8.1.6 KNOWLEDGE ON Danger Signs in Pregnancy

Table 12: Knowledge of Danger Signs

| Indicator | | N | n | Proportion |
|---|-------------------|-----|-----|------------|
| Knowledge of Danger Signs during Pregnancy <i>Percentage of mothers of children 0-23 months who knew at least two danger signs during pregnancy.</i> | Overall | 246 | 557 | 44.2% |
| | Better Off | 133 | 273 | 48.7% |
| | Worse Off | 113 | 284 | 39.8% |
| Knowledge of Maternal Danger Signs During Delivery <i>Percentage of mothers of children 0-23 months who know at least two danger signs during delivery.</i> | Overall | 246 | 557 | 44.2% |
| | Better Off | 108 | 273 | 39.6% |
| | Worse Off | 138 | 284 | 48.6% |
| Knowledge of Post-Partum Danger Signs <i>Percentage of mothers of children age 0-23 months who knew at least two post-partum danger signs.</i> | Overall | 329 | 557 | 59.1% |
| | Better Off | 160 | 273 | 58.6% |
| | Worse Off | 169 | 284 | 59.5% |
| Knowledge of Neonatal Danger Signs <i>Percentage of mothers of children age 0-23 who know at least two neonatal danger signs.</i> | Overall | 391 | 557 | 70.2% |
| | Better Off | 186 | 273 | 68.1% |
| | Worse Off | 205 | 284 | 72.2% |

Education on danger signs is one of the intervention activities for ANC. This is supposed to assist the mother recognize that she or her newborn has a problem and seek for medical care at the earliest time possible. There seem to be a better understanding on danger signs post-delivery compared to during pregnancy and delivery. Knowledge on neonatal danger signs was at 70% followed by knowledge on post-partum danger signs (59.1%) compared to 44% for knowledge on danger signs during pregnancy and of maternal danger signs during delivery (44%). The low rates for knowledge during pregnancy and delivery can be explained by the low rates in quality ANC while the other two can be linked to the over 80% rates of skilled birth attendance.

8.1.7 Essential Newborn Care

Essential newborn care encompasses comprehensive strategies that are designed to improve the health of the newborn through interventions before conception, during pregnancy and soon after birth in the post natal period. This survey looked at the period after birth in post natal period and assessed mothers' knowledge on key danger signs during pregnancy.

8.1.8 Postnatal and Post-Partum Care

Post natal care is care provided to the mother and the infant days/ weeks following child birth. This is a critical period for both the mother and the child and where most maternal and infant deaths occur.

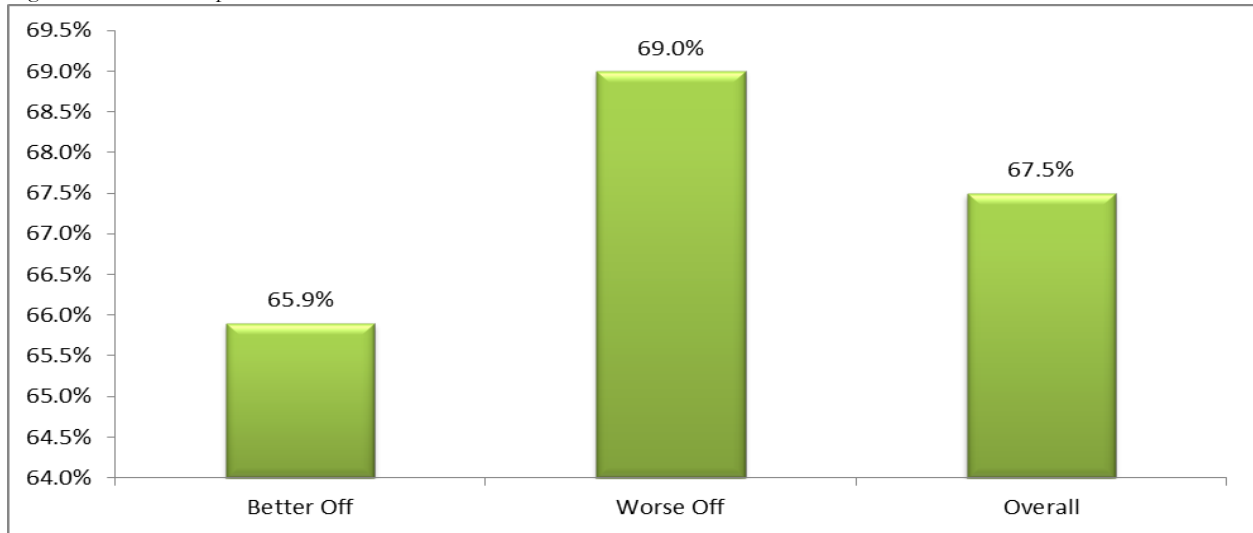
It is recommended that the mother and the child should be checked up as follows: at 24 hours after delivery, at day 3, at between 7-14 days and at 6 weeks. Essential Newborn Care and post-partum visit for the mother rates were dismal with only 17.6% and 7.4% respectively. Essential new care rates were however higher among the worse off (21% compared to 13.9% in the better off stratum) although still dismal. Post natal visit to check on the newborn and contraceptive use were over 65% with no significance difference between worse off and better off.

Table 13: Post Natal Care

| Indicator | | n | N | Proportion |
|--|-------------------|-----|-----|------------|
| Essential Newborn Care <i>Percentage of children age 0-23 who received all three elements of essential newborn care: thermal protection immediately after birth, clean cord care, and immediate breastfeeding.</i> | Overall | 98 | 557 | 17.6% |
| | Better Off | 38 | 273 | 13.9% |
| | Worse Off | 60 | 284 | 21.1% |
| Post-Partum Visit for the Mother <i>Percentage of mothers of children age 0-23 who received a post-partum visit from an appropriate trained health worker within two days after the birth of the youngest child.</i> | Overall | 41 | 557 | 7.4% |
| | Better Off | 17 | 273 | 6.2% |
| | Worse Off | 24 | 284 | 8.5% |
| Post-Natal Visit to Check on the Newborn <i>Percentage of children age 0-23 months who received a post-natal visit from an appropriate trained health worker within two days after birth.</i> | Overall | 364 | 557 | 65.4% |
| | Better Off | 186 | 273 | 68.1% |
| | Worse Off | 178 | 284 | 62.7% |
| Current Contraceptive Use Among Mothers of Young Children <i>Percentage of mothers of children age 0-23 months who are using a modern contraceptive method</i> | Overall | 376 | 557 | 67.5% |
| | Better Off | 180 | 273 | 65.9% |
| | Worse Off | 196 | 284 | 69.0% |

3.1.9 Contraceptive Prevalence

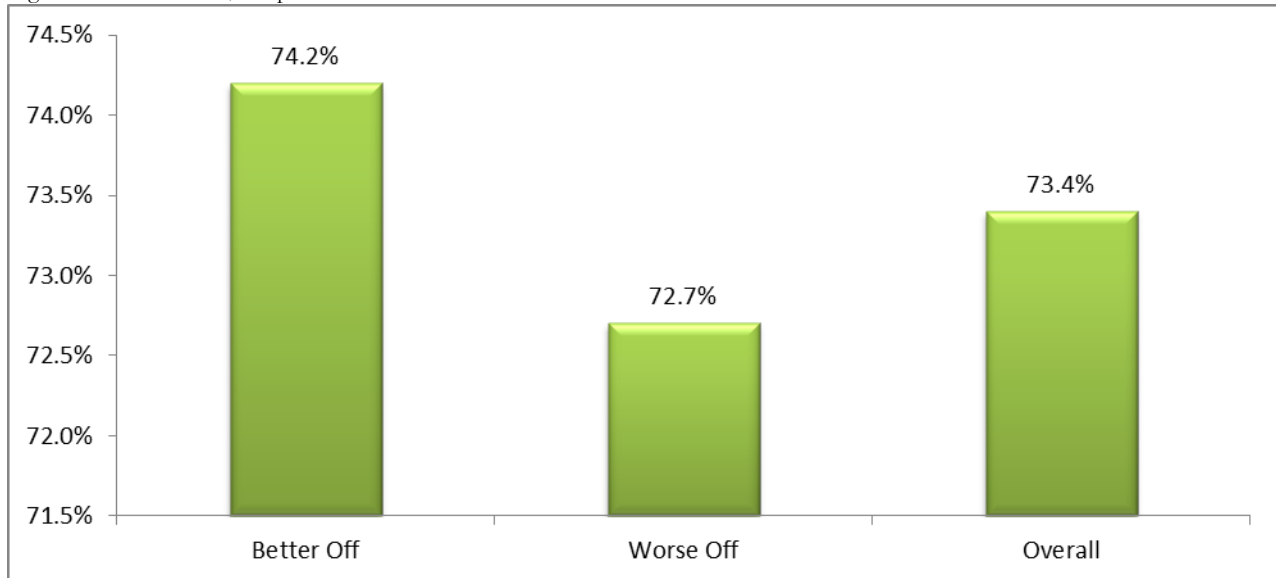
Figure 10: Contraceptive Prevalence



Mothers get counselling on contraceptive at 6 weeks during the post natal period. Post natal care could therefore have an effect in contraceptive use rates aside from other factors related to level of mothers' education, culture etc. the results of this survey showed that the contraceptive uptake among the women of reproductive age in the Slums of Nairobi was slightly above 65% which was above the national target of contraceptive of 56%²⁶ by 2015.

3.1.10 Birth Plan/Preparedness

Figure 11: Birth Plan/Preparedness



Birth plan is a record of what the mother will require or needs to put in place in preparation for delivery.

²⁶ <http://advancefamilyplanning.org/kenya>

Table 14: Birth Plan

| What was Included in the Birth Plan | N | n | Proportion |
|--|----------|----------|-------------------|
| Desired Place of Birth | 403 | 171 | 42.43% |
| Preferred Birth Attendant | | 9 | 2.23% |
| Closest Health Facility | | 36 | 8.93% |
| Money for Expenses | | 359 | 89.08% |
| Birth Companion | | 32 | 7.94% |
| Home Support While Away | | 21 | 5.21% |
| Transport to Health Facility | | 67 | 16.63% |
| Transport in case of Emergency | | 14 | 3.47% |
| Identifying Blood Compatible Donor | | 1 | 0.25% |

Although over 70% of mothers from both settlements had a birth plan, over 89% planned for money for expenses and only 1% thought of identifying blood compatible donor. Transport to health facility planned for by only 16% suggesting that probably access was not an issue for this population. Home support while away was also not a priority to them with only 5% preparing for that. Desired place of birth was relatively high with 42% of mothers planning for this. This has implications in terms of quality of service provided at facilities.

CHAPTER NINE: CONCLUSIONS AND RECOMMENDATIONS

| Conclusion | Probable Cause/Current Situation | Recommendations |
|---|--|---|
| <p>Poor Nutrition Situation in the Slums – 5.7%</p> | <p>Poor Health Situation in the Slums</p> <ul style="list-style-type: none"> • The results of the survey showed that 1 out of every 2 children aged between 6 and 59 months were sick two weeks prior to the survey with 1 out 3 children suffering from diarrhea which has a direct relationship with malnutrition. The high malnutrition rates in the slums has been exacerbated by high prevalence of diarrheal diseases and HIV related conditions which have been estimated as 30% (Concern Worldwide, 2014) and 18%-20% (Oxfam, 2009) respectively. • The poor health situation in the slums is mainly attributed to the poor environmental/sanitation situation in the slums. The survey established that 1 out of 2 households in the slums use traditional pit latrines which have open sewer and hence becoming a health hazard to the community. Observations made during the survey showed that majority of households dispose waste in open garbage which also contributed directly to poor health situation in the slums. The water treatment in the slums was found to be low with only 1 out of 2 households reporting that they treat water before use. <p>Poverty</p> <ul style="list-style-type: none"> • Various studies and has shown that majority of the slum dwellers do not have a constant livelihood with majority of them depending | <p>Short Term</p> <ul style="list-style-type: none"> • There is need for continued management of Acute Malnutrition though the Integrated Management of Acute Malnutrition Program. This should include both the Outpatient Therapeutic Program and the Supplementary Feeding Program by the MoH and Nutrition Partners • There is need to strengthen the on-going Micro-Nutrient Powder Program which aim to address the micro-nutrient and macro-nutrient food gap by MoH and Nutrition Partners • Strengthen continuous monitoring of the health and nutrition situation in the slums by MoH and Nutrition Partners • Strengthen the uptake of the DHIS data as part of the surveillance by MoH and Nutrition Partners • Strengthen the community strategy components of primary health care, with a focus on IMAM community-based component |

| | | |
|--|--|---|
| | <p>on casual employment. This has accelerated poverty in the slums.</p> <ul style="list-style-type: none"> • It has also been noted that there is sporadic food prices in the slums leading to food insecurity in the households. <p>Poor Infant and Young Child Care Practices</p> <ul style="list-style-type: none"> • Due to casual labor being the dominant source of livelihood in the urban slums, and increased poverty, then most caregivers opt to take their children to informal day care centers which take little or no consideration to the child feeding practices. Observation made during the survey showed that there are some children who are taken to the day care centers as early as when they are 1 month old. • Though, this survey showed relative IYCN indicators, the more in-depth ProPAN assessment for IYCN conducted in Viwandani Slums showed poor IYCN indicators. For instance the EBF Rate was 0%, feeding as recommended during illnesses was 0.4% and nutrient density consumption as recommended was almost 0%. | <p>by the MoH and Nutrition Partners</p> <ul style="list-style-type: none"> • Improvement of the sewerage system by the County Government of Nairobi • Improvement of the waste management and disposal by the County Government of Nairobi • Strengthen the reporting component especially for micro-nutrient supplementation, deworming and zinc sulphate as the MoH reporting tools currently do not have provision some of the indicators e.g. deworming and hence even when done, it is not recorded. • Capacity building: Training and supervision staff of both public and private health facilities by government on continued obstetric care and |
|--|--|---|

| | | |
|--|--|--|
| <p>Low Supplementation Coverage (All below the National Target) – Vitamin A Supplementation twice in past 12 months (36.4%), Deworming Coverage (59.0%), Iron Supplementation for a Minimum of 90 Days (23.9%) and Zinc Supplementation Coverage (29.0%)</p> | <ul style="list-style-type: none"> • Poor documentation: - • Stock-Outs??? | <p>agree on a unified maternal and child health information reporting systems</p> <p>Long Term</p> <ul style="list-style-type: none"> • Advocacy/public health campaigns on domestic water treatment such as boiling of drinking water and use of purification chemical to minimize risks of water-borne diseases should be carried out. • A coordinated multi-sectorial approach to tackle underlying causes such as poverty, insecurity • Advocate and support the on-going slum upgrading program |
| <p>Poor Quality Antenatal Care – Quality ANC Care (39.1%), Poor AMTSL (28.2%) and Low Knowledge on Maternal Danger Signs</p> | <ul style="list-style-type: none"> • ANC Attendance for a minimum of 4 times: 65% • Skilled Provider – 98% • Uterotonic Drug – 54.7% • Controlled Cord Traction – 63.9% • Uterine Massage – 50.6% • Poor Knowledge of Danger Signs during Pregnancy (44.2%), Poor Knowledge of Maternal Danger Sign during Delivery (44.2%), and • Low Essential New-born Care (17.6%) and Low Postpartum Visit for the Mother (7.4%) | |

APPENDICIES

Appendix 1: Plausibility Results

Overall data quality

| Criteria | Flags* | Unit | Excel. | Good | Accept | Problematic | Score |
|--|--------|--------------------|------------------|-------------------|-------------------|--------------------|---------------------|
| Missing/Flagged data (% of in-range subjects) | Incl | % | 0-2.5 0 | >2.5-5.0 5 | >5.0-7.5 10 | >7.5 20 | 0 (1.6 %) |
| Overall Sex ratio (Significant chi square) | Incl | p | >0.1 0 | >0.05 2 | >0.001 4 | <=0.001 10 | 0 (p=0.226) |
| Overall Age distrib (Significant chi square) | Incl | p | >0.1 0 | >0.05 2 | >0.001 4 | <=0.001 10 | 10 (p=0.000) |
| Dig pref score - weight | Incl | # | 0-7 0 | 8-12 2 | 13-20 4 | > 20 10 | 0 (2) |
| Dig pref score - height | Incl | # | 0-7 0 | 8-12 2 | 13-20 4 | > 20 10 | 0 (4) |
| Dig pref score - MUAC | Incl | # | 0-7 0 | 8-12 2 | 13-20 4 | > 20 10 | 0 (4) |
| Standard Dev WHZ . | Excl | SD | <1.1 and 0 | <1.15 and 2 | <1.20 and 6 | >=1.20 or 20 | 0 (1.07) |
| Skewness WHZ | Excl | # | <±0.2 0 | <±0.4 1 | <±0.6 3 | >=±0.6 5 | 0 (-0.16) |
| Kurtosis WHZ | Excl | # | <±0.2 0 | <±0.4 1 | <±0.6 3 | >=±0.6 5 | 0 (-0.15) |
| Poisson dist WHZ-2 | Excl | p | >0.05 0 | >0.01 1 | >0.001 3 | <=0.001 5 | 0 (p=0.572) |
| Timing | Excl | Not determined yet | 0 | 1 | 3 | 5 | |
| OVERALL SCORE WHZ = | | | 0-9 | 10-14 | 15-24 | >25 | 10 % |

The overall score of this survey is 10 %, this is good.

Appendix 2: Calendar of Local Events

| Seasons | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------------------------------|---|--|--|-----------------------------------|--|--|
| SCHOOL OPEN | | 52 | 40 | 28 RULING OF ICC | 16 | 4 |
| VALENTINE | | 51 RAILA SUSPENDS RUTO | 39 SACHIANGWAN TRAGEDY | 27 MICHUKI DEATH | 15 RESIGNATION OF POPE BENEDICT DEATH OF SAMUEL KIVUITU | 3 MISSING MALAYSIA AIRLINE |
| LONG RAINS | | 50 | 38 | 26 DISCOVERY OF OIL IN TURKANA | 14 GENARAL ELECTION | 2 BABY OSINYASURGERY |
| EASTER HOLIDAY | | 49 PASS OF THE DRAFT CONSTITUTION | 37 | 25 | 13 MUTULA DEATH,SUPREME COURT RULING | 1BOKO HARAM KIPNAPPING GIRLS |
| LABOUR DAY | | 48 | 36 DEATH OF SAMUEL WANJIRU | 24 OBAMA RE-ELECTION | 12 | 0 THIKA ROAD BLAST,EMBU SPEAKER KIDNAP |
| MADARAKA DAY | 59 | 47 WORLD CUP | 35 | 23 Death of Saitoti and Ojodeh | 11 | |
| COLD SEASON | 58 KOFFI ANNAN HANDED NAME OF SUSPECTS TO ICC | 46 | 34 KENYA FOR KENYA | 22 | 10 | |
| SCHOOL HOLIDAY | 57 CENSUS | 45 PROMULGATION OF THE NEW CONSTITUTION | 33 | 21 TANA RIVER CLASHES | 9 OTONGOLO ADOPTION | |
| | 56 | 44 | 32 SINAI FIRE TRAGEDY,DEATH OF WANGARI MAATHAI | 20 | 8 WESTGATE ATTACK | |
| MASHUJAA | 55 WANJIRU BREAKS THE MARATHON RECORD | 43 | 31 OPERATION LINDA NCHI | 19 | 7 JKIA FIRE,UMOINNER TRAGEDY | |
| SHORT RAINS,NATIONAL EXAMS | 54 MAU EVICTION | 42 | 30 ARREST OF S.SUDAN PRESIDENT OMAR | 18 BARAGOI CLASHES | 6 GINIWASEKAO GOR WINNING | |
| CHRISTMAX HOLIDAY | 53 | 41DEATH OF KIRIMA,EXPLOSION OF KAMPALA BUS | 29 NANCY BARASA SAGA | 17 | 5 KENYA @ 50,MANDELA DEATH | |

NAIROBI SLUMS MNCH BASELINE SURVEY QUESTIONNAIRE



| Identification | |
|---------------------|---|
| Cluster Number | |
| Household Number | |
| Team Number | |
| Slum Name | |
| Name of Supervisor | |
| | |
| Interview date | <p style="text-align: center;">_/_/_ day/month/year</p> |
| Name of Interviewer | |

INFORMED CONSENT

Hello. My name is _____, and I am working with (MoH). We are conducting a survey on health and nutrition and would appreciate your participation. This information will help (MoH) to plan health services and assess whether it is meeting its goals to improve children’s health in this community. The interview will take 30 minutes to complete. Whatever information you provide will be kept strictly confidential.

Participation in this interview is voluntary and you can choose not to answer any individual question or all of the questions. You can stop the survey at any time. You will not be penalized in any way for refusing to participate; however, we hope that you will participate in this survey since your views are important.

Will you participate in this survey? YES NO If YES proceed with interview, if NO terminate interview and thank the participant

At this time, do you want to ask me anything about the survey?

Signature of interviewer: _____ Date: _____

NB:

1. **THIS QUESTIONNAIRE IS TO BE FILLED ONLY FOR HOUSEHOLDS WITH CHILDREN UNDER-5 YEARS**
2. **SECTION 1 IS TO BE FILLED FOR ALL HOUSEHOLDS**
3. **SECTION 2 IS TO BE FILLED FOR HOUSEHOLDS WITH CHILDREN AGED BETWEEN 6 AND 59 MONTHS**
4. **SECTION 3 AND 4 IS TO BE FILLED FOR HOUSEHOLDS WITH CHILDREN AGED BELOW 24 MONTHS I.E. 0 - 23 MONTHS**

SECTION 1: INTRODUCTION (THIS SECTION IS TO BE FILLED FOR ALL SAMPLED HOUSEHOLDS)

| No. | Questions and Filters | Coding Categories | Skip |
|------|---|---|------|
| 101. | What is your highest level of education? <i>(The highest certificate which you hold - if still in school/college, record the latest highest education level attained)</i> | NO FORMAL EDUCATION..... 1 PRIMARY EDUCATION..... 2 SECONDARY EDUCATION 3 POST SECONDARY DECUATION 4 | |

| No. | Questions and Filters | Coding Categories | Skip |
|------|--|--|------|
| 102. | What is your marital status? | MARRIED..... 1 SINGLE..... 2 DIVORCED/SEPARATED..... 3 WIDOW..... 4 | |
| 103. | What is your age? | <div style="text-align: right; margin-bottom: 5px;"><input type="text"/> <input type="text"/></div> AGE (Yrs.)..... REFUSED.....998 DON'T KNOW.....999 | |
| 104. | What is your religion? | CATHOLIC 1 PROTESTANT 2 SPIRITUAL GROUPS 3 MUSLIM..... 4 OTHERS..... 5 SPECIFY..... | |
| 105. | What is the total number of household members? (Household members living under the same roof and share the same dish) | <input type="text"/> <input type="text"/> Members | |
| 106. | Number of children under five years? (From among the total) | <input type="text"/> <input type="text"/> Under 5's | |
| 107. | What has been the household's MAIN income activity in the last 30 days? | SALARIED EMPLOYMENT 1 BUSINESS 2 CASUAL LABOUR 3 OTHERS 4 SPECIFY _____ | |

| No. | Questions and Filters | Coding Categories | Skip |
|------|---|---|----------------|
| 108. | What is the MAIN source of livelihood for this household? Only | SALARIED EMPLOYMENT 1 BUSINESS 2 CASUAL LABOUR 3 OTHERS 4 SPECIFY _____ | |
| 109. | For how long have you lived in this community? <i>Record in terms of years, if less than 1 year, record 00?</i> | <input type="text"/> <input type="text"/> Years Don't Know98 | |
| 110. | How old were you when you gave birth to your first child? | <input type="text"/> <input type="text"/> AGE (Yrs.) DON'T KNOW999 REFUSED998 | |
| 111. | Yesterday, day or night did you wash your hands? | YES 1 NO 2 CAN'T REMEMBER 9 | → 114 → 114 |
| 112. | If YES to 111 above, at what instances did you wash your hands? <i>MULTIPLE allowed? PROBE</i> | AFTER VISITING TOILET A BEFORE HANDLING FOOD B AFTER CLEANING CHILDS BOTTOM C BEFORE FEEDING THE CHILD D BEFORE EATING E OTHERS F SPECIFY _____ | |

| No. | Questions and Filters | Coding Categories | Skip |
|------|--|--|----------------|
| 113. | What do you use to clean (wash) your hands? <i>Circle only one (1) response</i> | WATER ONLY 1 WATER AND SOAP 2 WATER AND ASH 3 WATER AND SAND 4 OTHER 5 SPECIFY _____ | |
| 114. | What is your MAIN source of drinking water? | BUYING 1 PIPED 2 WELL 3 SURFACE WATER 4 OTHER 5 SPECIFY _____ | |
| 115. | Do you do anything to the water to make it safer to drink? | YES 1 NO 2 DON'T KNOW 9 | → 117 → 117 |
| 116. | What do you usually do to make the water safer to drink? Anything else? RECORD ALL MENTIONED | BOIL A ADD BLEACH/CHROLINE B STRAIN THROUGH A CLOTH C WATER FILTER D SOLAR DISINFECTION E OTHERS F SPECIFY _____ | |
| 117. | Does your household have access to a toilet/ latrine facility (probe further/observe) | YES 1 NO 2 REFUSED 9 | → 120 → 120 |

| No. | Questions and Filters | Coding Categories | Skip |
|------|--|--|------|
| 118. | <p>If yes, what type of toilet/ latrine facility do you have</p> <p><i>Circle only one (1) response.</i></p> | BUCKET 1 TRADITIONAL PIT LATRINE 2 VIP LATRINE..... 3 FLUSH TOILET 4 OTHERS 5 SPECIFY | |
| 119. | <p>Do you share this toilet facility with other households?</p> | YES..... 1 NO 2 DON'T KNOW 9 | |
| 120. | <p>What is your current physiological status? <i>Only applicable is the respondent is a woman of 15 - 49 Years</i></p> | BREASTFEEDING (<6 MONTHS) 1 BREASTFEEDING (>6 MONTHS) 2 PREGNANT AND BREASTFEEDING..... 3 NOT PREGNANT/NOT BREASTFEEDING..... 4 PREGNANT 5 | |
| 121. | <p>Measure the MUAC of the Respondent? <i>Only applicable is the respondent is a woman of 15 - 49 Months</i></p> <p><i>Recode in cm to the nearest 0.1cm</i></p> | <input type="text"/> <input type="text"/> : <input type="text"/> cm | |
| 122. | <p>Measure the WEIGHT of Respondent? <i>Only applicable is the respondent is a woman of 15 - 49 Months</i></p> <p><i>Recode in kgs to the nearest 0.1kg</i></p> | <input type="text"/> <input type="text"/> : <input type="text"/> kgs | |
| 123. | <p>Measure the HEIGHT of the Respondent? <i>Only applicable is the respondent is a woman of 15 - 49 Months</i></p> <p><i>Recode in cms to the nearest 0.1 cm</i></p> | <input type="text"/> <input type="text"/> <input type="text"/> : <input type="text"/> m | |

SECTION 2: ANTHROPOMETRIC (THIS SECTION IS APPLICABLE FOR CHILDREN AGED 6-59 MONTHS)

| Q/N | Variable | Child # 1 | Child # 2 | Child # 3 |
|-----|--|--|--|--|
| N1 | Name of the Child | | | |
| C1 | Sex of child | Male.....1 | Male..... 1 | Male 1 |
| C2 | Date of Birth (Date/month/year) (If specific date is not available, kindly record 15 th) | Date..... <input type="text"/> <input type="text"/> Month..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Date <input type="text"/> <input type="text"/> Month <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> | Date..... <input type="text"/> <input type="text"/> Month..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |
| C2a | Age in months (Use the age calculator provided - calendar of events) | _____months | _____months | _____months |
| C2b | How age was determined | Health Card.....1 Birth Certificate.....2 Baptism Card.....3 | Health Card..... 1 Birth Certificate 2 Baptism Card 3 | Health Card 1 Birth Certificate.....2 Baptism Card.....3 |
| C3 | Weight (Kg)- (nearest 0.1) | Weight <input type="text"/> <input type="text"/> . <input type="text"/> | Weight <input type="text"/> <input type="text"/> . <input type="text"/> | Weight <input type="text"/> <input type="text"/> . <input type="text"/> |
| C4 | Height (cm)- (nearest 0.1) | Height <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> | Height <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> | Height <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> |
| C5 | Pitting Oedema both feet: (please Circle the correct answer) | Yes 1 No..... 2 | Yes..... 1 No..... 2 | Yes 1 No..... 2 |
| C6 | MUAC (to the nearest 0.1 cm) | MUAC <input type="text"/> <input type="text"/> . <input type="text"/> | MUAC <input type="text"/> <input type="text"/> . <input type="text"/> | MUAC <input type="text"/> <input type="text"/> . <input type="text"/> |
| C7 | Has child received OPV1 (Oral drop given at 6 weeks) | Yes (by card).....1 Yes (by recall)2 No.....3 Don't Know.....4 | Yes (by card) 1 Yes (by recall)..... 2 No 3 Don't Know 4 | Yes (by card) 1 Yes (by recall)2 No.....3 Don't Know.....4 |
| C8 | Has child received BCG (scar on the left hand side) | Yes (by card).....1 Yes (by recall)2 No.....3 Don't Know.....4 | Yes (by card) 1 Yes (by recall)..... 2 No 3 Don't Know 4 | Yes (by card) 1 Yes (by recall)2 No.....3 Don't Know.....4 |
| C9 | Has child received OPV3 (Oral drop given at 14 weeks) | Yes (by card).....1 Yes (by recall)2 | Yes (by card) 1 Yes (by recall)..... 2 | Yes (by card) 1 Yes (by recall)2 |

| | | | | |
|------|--|---|--|---|
| | | No.....3 Don't Know.....4 | No..... 3 Don't Know..... 4 | No.....3 Don't Know.....4 |
| C11 | Has the child received DPT1 (PENTA 1) | Yes (by card).....1 Yes (by recall)2 No.....3 Don't Know.....4 | Yes (by card)..... 1 Yes (by recall)..... 2 No..... 3 Don't Know..... 4 | Yes (by card) 1 Yes (by recall)2 No.....3 Don't Know.....4 |
| C12 | Has the child received DPT3 (PENTA 3) | Yes (by card).....1 Yes (by recall)2 No.....3 Don't Know.....4 | Yes (by card)..... 1 Yes (by recall)..... 2 No..... 3 Don't Know..... 4 | Yes (by card) 1 Yes (by recall)2 No.....3 Don't Know.....4 |
| C13 | Measles vaccination at the age of 9 Months | Yes by card1 Yes by recall.....2 No.....3 Don't Know.....4 | Yes by card..... 1 Yes by recall 2 No..... 3 Don't Know..... 4 | Yes by card 1 Yes by recall2 No.....3 Don't Know.....4 |
| C14 | Measles vaccination at the age of 18 Months | Yes by card1 Yes by recall.....2 No.....3 Don't Know.....4 | Yes by card..... 1 Yes by recall 2 No..... 3 Don't Know..... 4 | Yes by card 1 Yes by recall2 No.....3 Don't Know.....4 |
| C15 | Has the child received Vitamin A cap. (Last 6 months)? <i>show capsule</i> | Yes1 No.....2 | Yes..... 1 No..... 2 | Yes 1 No.....2 |
| C16 | How Many Times has the child received Vitamin A in the last one year | _____times | _____times | _____times |
| C17 | Has the child taken any drug for intestinal worms within the last 6 months ? <i>Show samples if available</i> | Yes (by card).....1 Yes (by recall)2 No.....3 Don't Know.....4 | Yes (by card)..... 1 Yes (by recall)..... 2 No..... 3 Don't Know..... 4 | Yes (by card) 1 Yes (by recall)2 No.....3 Don't Know.....4 |
| C18a | Has this child been sick in the last 2 weeks?(<i>if no, skip to section 3</i>) | Yes1 No.....2 | Yes..... 1 No..... 2 | Yes 1 No.....2 |

| | | | | |
|------|---|--|--|--|
| C18b | <p>What was the sickness?</p> <p><i>(Fever: High temperature with/ without shivering, ARI: severe, persistent cough or difficulty breathing, Diarrhea: 3 or more watery stools per day, Measles: reddish eyes, small rashes on face with fever, cough & running nose)</i></p> | Diarrhea.....A Fever.....B Measles.....C ARI.....D OthersE Specify_____ | Diarrhea.....A Fever.....B Measles.....C ARI.....D Others.....E Specify_____ | Diarrhea.....A Fever.....B Measles.....C ARI.....D OthersE Specify_____ |
| C19 | <p>When the child was sick in the last 2 weeks, where did you seek health assistance?</p> <p><i>Do not read the options</i></p> | Traditional Healer.....A CHW.....B Private ClinicC Shop/Kiosk.....D Public Clinic.....E OutreachF ChemistG Relative or FriendsH Local Herbs.....I No Assistance SoughtJ | Traditional Healer.....A CHW.....B Private Clinic.....C Shop/Kiosk.....D Public Clinic.....E Outreach.....F Chemist.....G Relative or Friends.....H Local Herbs.....I No Assistance Sought.....J | Traditional HealerA CHW.....B Private ClinicC Shop/Kiosk.....D Public ClinicE OutreachF ChemistG Relative or Friends.....H Local HerbsI No Assistance Sought.....J |
| D1 | <p>If the child suffered from Diarrhea in the last 2 weeks, what was he /she given to drink since the diarrhea started?</p> <p><i>Probe until the mother says nothing else. During the probing you can show the mother a sample of the zinc blister.</i></p> | Fluid made from a special packet called oralite or ORS-----A Homemade sugar/ salt solution-----B Zinc-----C Another homemade liquid (underline the specific type of liquid), porridge, soup, yoghurt, coconut water, fresh fruit juice, tea, milk, or rice water-----D Other.....E Specify_____ | Fluid made from a special packet called oralite or ORS-----A Homemade sugar/ salt solution-----B Zinc-----C Another homemade liquid (underline the specific type of liquid), porridge, soup, yoghurt, coconut water, fresh fruit juice, tea, milk, or rice water-----D Other.....E Specify_____ | Fluid made from a special packet called oralite or ORS-----A Homemade sugar/ salt solution-----B Zinc-----C Another homemade liquid (underline the specific type of liquid), porridge, soup, yoghurt, coconut water, fresh fruit juice, tea, milk, or rice water-----D Other.....E Specify_____ |
| D2 | <p>Was the diarrhea bloody/ mucous?</p> | Yes 1 No..... 2 | Yes..... 1 No 2 | Yes 1 No..... 2 |

SECTION 3: MATERNAL AND NEWBORN CARE (ONLY CHILDREN AGED BETWEEN 0 - 23 MONTHS)

| No. | Questions and Filters | Coding Categories | Skip |
|-------|---|--|----------------|
| 200a | How old is your last born child? | AGE (Months)..... <input type="text"/> <input type="text"/> | |
| 200b | What is the sex of the above child? | MALE 1 FEMALE..... 2 | |
| 200c. | Was this child breastfed yesterday? | YES..... 1 NO 2 DON'T KNOW 8 | |
| 201 | During your pregnancy with (Name), did you see anyone for antenatal care? IF YES: Whom did you see? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS SEEN. | DOCTOR/MEDICAL ASSISTANT A NURSE..... B MIDWIFE C TRADITIONAL BIRTH ATTENDANT D OTHER..... E Specify _____ NO ONE..... Y | → 205 |
| 202 | During your pregnancy with (Name), how many times did you receive antenatal care? | TIMES <input type="text"/> <input type="text"/> DON'T KNOW 98 | |
| 203 | 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? | YES..... 1 NO 2 DON'T KNOW 9 | → 206 → 206 |
| 204 | While pregnant with (name), how many times did you receive such an injection? | ONE 1 TWO 2 DON'T KNOW 9 | |
| 205 | Did you receive any tetanus injection at any time before that pregnancy, including during a previous pregnancy or between pregnancies? | YES..... 1 NO 2 DON'T KNOW 9 | → 207 → 207 |

| | | | |
|-----|--|---|----------------|
| 206 | Before the pregnancy with (Name), how many times did you receive a tetanus injection? | ONE 1 TWO 2 THREE OR MORE 3 DON'T KNOW 9 | |
| 207 | During (any of) your <u>antenatal care</u> visits, were you told about the signs of pregnancy <u>complications</u> ? | YES 1 NO 2 DON'T KNOW 9 | → 210 → 210 |
| 208 | Were you told where to go if you had any of these <u>complications</u> ? | YES 1 NO 2 DON'T KNOW 8 | |
| 209 | <p>During pregnancy, a woman may encounter severe problems or illnesses and should go or be taken <u>immediately to a health facility</u>.</p> <p>What types of <u>symptoms</u> would cause you to seek <u>immediate care at a health facility (right away)</u>?</p> <p>ASK: Anything else?</p> <p>DO NOT READ RESPONSES. RECORD ALL THAT ARE MENTIONED.</p> | VAGINAL BLEEDING A FAST/DIFFICULT BREATHING B FEVER C SEVERE ABDOMINAL PAIN D HEADACHE/BLURRED VISION E CONVULSIONS F FOUL SMELLING DISCHARGE/FLUID FROM VAGINA G BABY STOPS MOVING H LEAKING BROWNISH/GREENISH FLUID FROM THE VAGINA I OTHER _____ X (SPECIFY) DON'T KNOW Z | |
| 210 | During your pregnancy with (Name), were you given or did you buy any <u>iron folate tablets</u> ? | YES 1 NO 2 DON'T KNOW 8 | → 212 → 212 |

| | | | |
|-----|---|---|-------|
| 211 | <p>During the whole pregnancy, for how many days did you take the tablets?</p> <p>IF THE ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.</p> | <p>DAYS <input type="text"/> <input type="text"/> <input type="text"/></p> <p>DON'T KNOW 998</p> | |
| 212 | <p>Where did you give birth to (Name)?</p> | <p>HEALTH FACILITY 1</p> <p>OTHER (SPECIFY) 2</p> | → 214 |
| 213 | <p>Why did you choose NOT to deliver at a health facility?</p> <p>PROBE AND RECORD ALL MENTIONED REASONS</p> | <p>DISTANCE A</p> <p>COST B</p> <p>DISSATISFACTION WITH QUALITY OF CARE C</p> <p>PREVIOUS DELIVERY WAS SAFE D</p> <p>OTHER (SPECIFY) E</p> | |
| 214 | <p>Who assisted with the delivery of (Name)?</p> <p>Anyone else?</p> <p>PROBE FOR THE TYPE(S) OF PERSON(S) AND RECORD ALL MENTIONED.</p> <p>IF RESPONDENT SAYS NO ONE ASSISTED, PROBE TO DETERMINE WHETHER ANY ADULTS WERE PRESENT AT THE DELIVERY.</p> | <p>DOCTOR A</p> <p>NURSE B</p> <p>MIDWIFE C</p> <p>AUXILIARY MIDWIFE D</p> <p>OTHER HEALTH STAFF WITH MIDWIFERY SKILLS E</p> <p>TRADITIONAL BIRTH ATTENDANT F</p> <p>COMMUNITY HEALTH WORKER G</p> <p>RELATIVE/FRIEND/NEIGHBOUR H</p> <p>NO ONE I</p> | |
| 215 | <p>Was (NAME) dried (wiped) immediately after birth</p> | <p>YES 1</p> <p>NO 2</p> <p>DON'T KNOW 9</p> | |
| 216 | <p>How long after delivery was (NAME) bathed for the first time?</p> <p>IF LESS THAN ONE HOUR, CIRCLE 00.</p> | <p>IMMEDIATELY 00</p> <p>HOURS <input type="text"/> <input type="text"/></p> <p>DON'T KNOW 998</p> | |

| | | | | | |
|-----|---|---|--|--|--|
| 217 | <p>How long after delivery was (NAME) put skin to skin with the mother for the first time?</p> <p>IF LESS THAN ONE HOUR, CIRCLE 00.</p> | <p>IMMEDIATELY00</p> <p>HOURS <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table></p> <p>DON'T KNOW998</p> | | | |
| | | | | | |
| 218 | <p>After (Name) was born, did any health care provider counsel you on newborn danger signs?</p> | <p>YES.....1</p> <p>NO.....2</p> | | | |
| 219 | <p>Did you have any birth plan in place for your delivery? WHAT HAD YOU INCLUDED IN THE PLAN</p> <p>Anything else?</p> <p>PROBE FOR ELEMENTS INCLUDED IN THE PLAN AND RECORD ALL MENTIONED.</p> | <p>THE DESIRED PLACE OF BIRTH.....A</p> <p>PREFERRED BIRTHATTENDANT.....B</p> <p>CLOSEST HEALTH FACILITY.....C</p> <p>MONEY FOR EXPENSES.....D</p> <p>BIRTH COMPANION.....E</p> <p>HOME SUPPORT WHILE AWAY.....F</p> <p>TRANSPORT TO THE HEALTH FACILITY...G</p> <p>TRANSPORT IN CASE OF AN EMERGENCY H</p> <p>IDENTIFY BLOOD COMPATIBLE DONOR..... I</p> <p>NO PLAN..... J</p> | | | |
| 220 | <p>What instrument was used to cut the cord?</p> | <p>NEW RAZOR BLADE..... 1</p> <p>NEW AND BOILED RAZOR BLADE..... 2</p> <p>USED RAZOR BLADE..... 3</p> <p>USED AND BOILED RAZOR BLADE..... 4</p> <p>NEW SCISSORS 5</p> <p>NEW AND BOILED SCISSORS 6</p> <p>USED SCISSORS 7</p> <p>USED AND BOILED SCISSORS 8</p> <p>KNIFE 9</p> <p>REED 10</p> <p>OTHER _____ 97</p> <p style="text-align: center;">(SPECIFY)</p> <p>DON'T KNOW 98</p> | | | |
| 221 | <p>Was anything placed on the umbilical cord either before or after it was cut?</p> | <p>YES..... 1</p> <p>NO 2</p> <p>DON'T KNOW 9</p> | | | |

| | | | |
|-----|---|--|--|
| 222 | Was anything applied on the umbilical cord after the cord was cut and tied until the cord fell off? | YES..... 1 NO 2 DON'T KNOW 9 | |
| 223 | What was applied on the CUT cord? ANYTHING ELSE | COW DUNG 1 ANY TYPE OF OIL 2 ANTISPETIC (Chlorexidine) 3 ASH 4 OTHER _____ 97 (SPECIFY) | |
| 224 | Immediately after (NAME) was born, before the placenta was delivered, did you receive an injection to prevent you from bleeding too much? | YES..... 1 NO 2 DON'T KNOW 9 | |
| 225 | Did the birth attendant hold your stomach and pull on the cord to help the placenta come out? | YES..... 1 NO 2 DON'T KNOW 9 | |
| 226 | Immediately after the Placenta was delivered, did someone massage your uterus to make it contract strongly and to prevent you from bleeding too much? | YES..... 1 NO 2 DON'T KNOW 9 | |
| 227 | During delivery, once contractions started, woman may encounter severe problems or illnesses and should go or be taken immediately to a health facility. While having contractions or delivering a baby, what types of symptoms would cause you to seek immediate care at a health facility (right away)? ASK: Anything else? DO NOT READ RESPONSES. RECORD ALL THAT ARE MENTIONED. | CONVULSIONS A HIGH FEVER..... B HEAVY BLEEDING..... C FAST/DIFFICULT BREATHING..... D RETAINED PLACENTA..... E HEADACHE/BLURRED VISION..... F PROLONGED LABOUR..... G OTHER 97 SPECIFY | |

| | | | |
|-----|--|--|------|
| 228 | After (Name) was born, did anyone check on (Name's) health? | YES..... 1 NO 2 | →232 |
| 229 | How many hours, days or weeks after the birth of (Name) did the first check take place? IF LESS THAN ONE DAY, RECORD HOURS; IF ONE TO SIX DAYS, RECORD DAYS; IF MORE THAN 6 DAYS, RECORD WEEKS. | HOURS DAYS <input type="text"/> <input type="text"/> WEEKS <input type="text"/> <input type="text"/> DON'T KNOW 8 | |
| 230 | Who checked ON (NAME'S) HEALTH at that time? Anyone else? PROBE FOR THE MOST QUALIFIED PERSON AND RECORD ALL MENTIONED. | DOCTOR A NURSE..... B MIDWIFE C AUXILIARY MIDWIFE..... D OTHER HEALTH STAFF WITH MIDWIFERY SKILLS..... E TRADITIONAL BIRTH ATTENDANT F COMMUNITY HEALTH WORKER..... G COMMUNITY HEALTH EXTENSION WORKER..... H RELATIVE/FRIEND I NO ONE..... J | |

| 231 | Where did this check take place? | <p>HOME</p> <p>YOUR HOME..... A</p> <p>MIDWIFE/TBA HOME..... B</p> <p>OTHER HOME..... C</p> <p>PUBLIC SECTOR HOSPITAL..... D</p> <p>HEALTH CENTER E</p> <p>HEALTH POST..... F</p> <p>OUTREACH G</p> <p>OTHER PUBLIC _____ H</p> <p>(SPECIFY)</p> <p>PRIVATE SECTOR</p> <p>PRIVATE HOSPITAL..... I</p> <p>PRIVATE CLINIC J</p> <p>OTHER PRIVATE _____ K</p> <p>(SPECIFY)</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p> | | | | | | | | | | | | | | | | | | | | |
|-----|---|---|---|-------|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| 232 | <p>During the first two days after birth, did anyone do the following for your newborn? Ask all responses</p> <p>Examine the cord?</p> <p>Counsel you on danger signs for newborns?</p> <p>Assess the temperature of your baby?</p> <p>Counsel you on breastfeeding and observe your baby breastfeeding?</p> <p>Weigh the baby?</p> | <p>Examine the cord?</p> <p>Counsel you on danger signs for newborns?</p> <p>Assess the temperature of your baby?</p> <p>Counsel you on breastfeeding and observe your baby breastfeeding?</p> <p>Weigh the baby</p> | <table border="1"> <thead> <tr> <th>YES</th> <th>NO</th> <th>DK</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2</td> <td>9</td> </tr> <tr> <td>1</td> <td>2</td> <td>9</td> </tr> <tr> <td>1</td> <td>2</td> <td>9</td> </tr> <tr> <td>1</td> <td>2</td> <td>9</td> </tr> <tr> <td>1</td> <td>2</td> <td>9</td> </tr> </tbody> </table> | YES | NO | DK | 1 | 2 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | 1 | 2 | 9 | |
| YES | NO | DK | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 9 | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 9 | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 9 | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 9 | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 9 | | | | | | | | | | | | | | | | | | | | |
| 233 | Did a health care provider or a traditional birth attendant check ON YOUR HEALTH after the delivery of (Name), either at a health facility, at home, or other location? | <p>YES 1</p> <p>NO 2</p> | | → 235 | | | | | | | | | | | | | | | | | | |

| | | | |
|-----|--|--|--------------|
| 234 | <p>How long after the delivery did the first check take place?</p> <p>IF LESS THAN ONE DAY, RECORD HOURS; IF ONE TO SIX DAYS, RECORD DAYS; IF MORE THAN 6 DAYS, RECORD WEEKS.</p> | <p>HOURS 0</p> <p>DAYS 1</p> <p>WEEKS 2</p> <p>DON'T KNOW 998</p> <div style="display: flex; flex-direction: column; align-items: flex-end;"> <div style="border: 1px solid black; width: 40px; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-bottom: 5px;"></div> <div style="border: 1px solid black; width: 40px; height: 20px;"></div> </div> | |
| 235 | <p>Sometimes mothers after delivery have severe illnesses and should be taken immediately to a health facility.</p> <p>What types of symptoms would cause you to go to a health facility right away?</p> <p>ASK: Anything else?</p> <p>DO NOT READ RESPONSES. RECORD ALL THAT ARE MENTIONED.</p> | <p>EXCESSIVE VAGINAL BLEEDING A</p> <p>FAST/DIFFICULT BREATHING B</p> <p>HIGH FEVER C</p> <p>SEVERE ABDOMINAL PAIN D</p> <p>SEVERE HEADACHE/BLURRED VISION E</p> <p>CONVULSIONS/LOSS OF CONSCIOUSNESS F</p> <p>FOUL-SMELLING DISCHARGE FROM THE VAGINA.. G</p> <p>PAIN IN CALF H</p> <p>VERBALIZATION/BEHAVIOR THAT INDICATES SHE MAY HURT HERSELF OR THE BABY I</p> <p>OTHER _____ X</p> <p style="text-align: center;">(SPECIFY)</p> | |
| 236 | <p>Sometimes newborns, within the first month of life children get sick and need to receive care or treatment for illnesses. What are the <u>signs</u> of illness that would indicate your child needs treatment?</p> <p>RECORD ALL MENTIONED.</p> | <p>LOOKS UNWELL OR NOT PLAYING NORMALLY A</p> <p>NOT EATING OR DRINKING/BREASTFEEDING B</p> <p>LETHARGIC OR DIFFICULT TO WAKE C</p> <p>HIGH FEVER D</p> <p>FAST OR DIFFICULT BREATHING E</p> <p>VOMITS EVERYTHING F</p> <p>CONVULSIONS G</p> <p>DIARRHEA H</p> <p>OTHER X</p> <p style="text-align: center;">(SPECIFY)</p> <p>DON'T KNOW Z</p> | |
| 237 | <p>Did you ever breastfeed (Name)?</p> | <p>YES 1</p> <p>NO 2</p> | <p>→ 240</p> |

| | | | |
|-----|---|---|-------|
| 238 | <p>How long after birth did you first put (Name) to the breast?</p> <p>IF LESS THAN ONE HOUR, RECORD 00 HOURS. IF LESS THAN 24 HOURS RECORD THE HOURS, OTHERWISE RECORD DAYS</p> | <p>HOURS <input type="text"/> <input type="text"/></p> <p>DAYS <input type="text"/> <input type="text"/></p> <p>WEEKS..... <input type="text"/></p> <p>DON'T KNOW998 <input type="text"/> <input type="text"/></p> | |
| 239 | <p>Did you give (Name) the first yellowish liquid (Colostrum) that came from your breasts?</p> | <p>YES..... 1</p> <p>NO 2</p> <p>DON'T KNOW 9</p> | |
| 240 | <p>Are you or your husband/partner currently doing something or using any method to delay or avoid getting pregnant?</p> | <p>YES..... 1</p> <p>NO 2</p> | → 301 |
| 241 | <p>Which method are you (or your husband/ partner) using?</p> <p>DO NOT READ RESPONSES. CODE ONLY ONE RESPONSE.</p> <p>IF MORE THAN ONE METHOD IS MENTIONED, ASK, What is your MAIN method that you (or your husband/ partner) use to delay or avoid getting pregnant?"</p> <p>IF RESPONDENT MENTIONS BOTH CONDOMS AND STANDARD DAYS METHOD, CODE "12" FOR STANDARD DAYS METHOD.</p> <p>IF RESPONDENT MENTIONS BREASTFEEDING, CODE "15" FOR OTHER AND RECORD BREASTFEEDING.</p> <p>IF RESPONDENT MENTIONS ABSTINENCE OR ISOLATION, CODE "15" FOR OTHER AND RECORD RESPONSE IN SPACE PROVIDED.</p> | <p>FEMALE STERILIZATION 1</p> <p>MALE STERILIZATION..... 2</p> <p>PILL 3</p> <p>IUD..... 4</p> <p>INJECTABLES..... 5</p> <p>IMPLANTS..... 6</p> <p>CONDOM..... 7</p> <p>FEMALE CONDOM 8</p> <p>DIAPHRAGM 9</p> <p>FOAM/JELLY..... 10</p> <p>LACTATIONAL AMEN METHOD..... 11</p> <p>STANDARD DAYS METHOD/ CYCLEBEADS 12</p> <p>RHYTHM METHOD (OTHER THAN STANDARD DAYS) 13</p> <p>WITHDRAWAL 14</p> <p>OTHER _____ 15</p> <p>(SPECIFY)</p> | |

SECTION 4: BREASTFEEDING/ INFANT AND YOUNG CHILD FEEDING (ONLY CHILDREN AGED BETWEEN 0 – 23 MONTHS)

| No. | Questions and Filters | Coding Categories | Skip |
|--|--|---|----------------|
| 300a | Does the mother/caregiver have a child aged below 6 months? <i>(confirm with Question 200a)</i> | YES.....1 NO.....2 | → 306a |
| 300b | If YES to 300a, how old is the child? <i>(Kindly confirm with Question 200a)</i> | AGE (Months)..... <input type="text"/> | |
| 300c | What is the sex of the above child? <i>(Kindly confirm with Question 200b)</i> | MALE.....1 FEMALE.....2 | |
| 301a | <i>Question 301 to 304, to be filled for children 0-5</i> Was (Name) breastfed yesterday during the day or at night <i>(Confirm this with Question 200c)</i> | YES.....1 NO.....2 DON'T KNOW.....9 | → 302 → 302 |
| 301b | <i>Sometimes babies are fed breast milk in different ways, for example by spoon, cup or bottle. This can happen when the mother cannot always be with her baby. Sometimes babies are breastfed by another woman, or given breast milk from another woman by spoon, cup or bottle or some other way. This can happen if a mother cannot breastfeed her own baby.</i> Did (NAME) consume breast milk in any of these ways yesterday during the day or at night? | YES.....1 NO.....2 DON'T KNOW.....9 | |
| 302 | Now I would like to ask you about some medicines and vitamins that are sometimes given to infants. Was (Name) given any vitamin drops or other medicines as drops yesterday during the day or at night? | YES.....1 NO.....2 DON'T KNOW.....9 | |
| 303 | Was (Name) given ORS yesterday during the day or at night? | YES.....1 NO.....2 DON'T KNOW.....9 | |
| 304 | Now I would like to ask you about liquids or foods (NAME) had yesterday during the day or at night. NB1: Circle 2, if drink was not taken, don't leave blanks | YES NO DK | |
| A. Plain water? | | 1 2 9 | |
| B. Infant formula | | 1 2 9 | |
| C. Milk such as tinned, powdered, or fresh animal milk | | 1 2 9 | |
| D. Juice or juice drinks | | 1 2 9 | |
| E. Clear broth | | 1 2 9 | |

| | | | | | |
|------|---|--------|-------------|-----------|---|
| | F. Yogurt | 1 | 2 | 9 | |
| | G. Thin Porridge | 1 | 2 | 9 | |
| | H. Any other liquid such as (tea, coffee) | 1 | 2 | 9 | |
| | I. Any other liquids | 1 | 2 | 9 | |
| 306a | <i>Questions 306 to 308 to be filled for children 6 – 23 months</i> How old is the child?(confirm with question 200a) | | | | AGE (Months)..... <input type="text"/> <input type="text"/> |
| 306 | PLEASE FILL OUT THE FOLLOWING TABLE WITH THE ANSWERS TO THE QUESTIONS BELOW: 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 (NAME) drink/eat: | | | | |
| | GROUP 1: DAIRY | | YES | NO | DK |
| | A. Fresh milk, UHT milk, yoghurt, mala, milk tea, |1 | 2 | 9 | |
| | GROUP 2: GRAIN | | .YES | NO | DK |
| | B. Porridge, ugali, pancakes, pasta, rice, mandazi, chapati, or other foods made from grains? |1 | 2 | 9 | |
| | C. White potatoes, white yams, chips, cassava, or any other foods made from roots? |1 | 2 | 9 | |
| | GROUP 3: VITAMIN A RICH VEGETABLES | | YES | NO | DK |
| | D. Pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside? |1 | 2 | 9 | |
| | E. Any dark green leafy vegetables? e.g spinach, sukumawiki, kunde, Terere |1 | 2 | 9 | |
| | F. Ripe mangoes, papayas or avocado |1 | 2 | 9 | |
| | GROUP 4: OTHER FRUITS/VEGETABLES | | YES | NO | DK |
| | G. Any other fruits or vegetables like oranges, grapefruit or pineapple? |1 | 2 | 9 | |
| | GROUP 5: EGGS | | YES | NO | DK |
| | H. Eggs? |1 | 2 | 9 | |
| | GROUP 6: MEAT, POULTRY, FISH | | YES | NO | DK |
| | I. Any meat, such as beef, camel, pork, lamb, goat, chicken, or duck? |1 | 2 | 9 | |
| | J. Fresh or dried fish? |1 | 2 | 9 | |
| | K. Insects and other small protein food? |1 | 2 | 9 | |

| GROUP 7: LEGUMES/NUTS | | YES | NO | DK | |
|-----------------------|---|---|----|----|---------------------------|
| | L. Any foods made from beans, peas, lentils, or nuts? | 1 | 2 | 9 | |
| GROUP 8: OILS/FATS | | YES | NO | DK | |
| | M. Any oils, fats, or butter, GFD oil, or foods made with any of these? | 1 | 2 | 9 | |
| GROUP 9: OTHER FOODS | | YES | NO | DK | |
| | N. Any sugary foods, such as chocolates, candy, sweets, pastries, cakes, or biscuits? | 1 | 2 | 9 | |
| | O. Condiments for flavor, such as chilies, spices, or fish powder | 1 | 2 | 9 | |
| | CHECK Categories A-Q | If All "NO": | | | → 307 |
| | | If at least one "YES" | | | → 308 |
| 307 | <p>Did (NAME) eat any solid, semi-solid, or soft foods yesterday during the day or at night?</p> <p>IF 'YES' PROBE: What kind of solid, semi-solid, or soft foods did (NAME) eat?</p> | <p>YES..... 1</p> <p>IF YES, GO BACK TO 306 AND RECORD FOODS EATEN THEN CONTINUE WITH 308</p> <p>NO..... 2</p> <p>DON'TKNOW..... 9</p> | | | <p>→ 308</p> <p>→ 308</p> |
| 308 | How many times did (NAME) eat solid, semi-solid, or soft foods other than liquids yesterday during the day or at night? | NUMBER OF TIMES..... _ _ | | | |
| | | DON'T KNOW..... 98 | | | |

END OF INTERVIEW

Kindly thank the mother/caregiver for participating in the Survey